

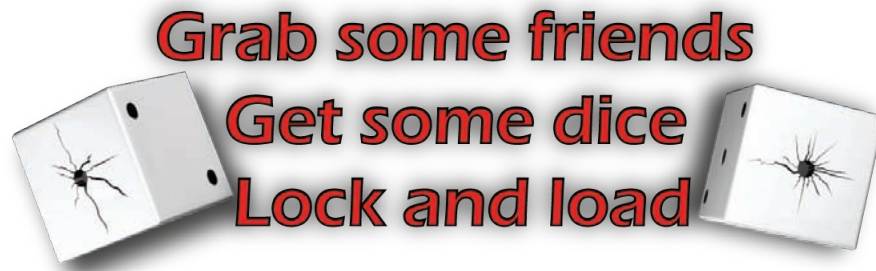
THE OFFICIAL TWILIGHT

2013



The Official Twilight: 2000™ 3.0

TWILIGHT 2013



It is the near future. The Collapse is over. Years of accelerating decay culminated in a brief and vicious global war. When it came, the final conflict seemed almost an afterthought in the wake of disease, famine, natural disasters, and economic and political failures on a previously unimaginable scale. None of these calamities could have ended the world by itself. Together, they brought the engines of civilization to a grinding, blood-soaked halt. Now, as the apocalyptic Last Year draws to a close, scattered survivors band together against the darkness. You are one of the ten percent of humanity to make it this far. Some would call you fortunate. You're not so certain.

Twilight: 2013 is the licensed third edition of Twilight: 2000, GDW's classic roleplaying game of gritty military conflict and grueling daily existence in the devastation of World War III. This core rulebook provides a complete setting in which players can take on the role of any survivors of the end of the world, from soldiers fighting the desperate last battles of the Twilight War to ordinary men and women struggling to rebuild shattered lives and cities. The staged complexity levels of the Reflex System, Twilight: 2013's all-new game engine, allow gamemasters to balance speed, detail, and lethality according to their own preferences.

Will you raise the flag of a fallen nation in the hope of rallying dreams to rise phoenix-like from radioactive ashes? Walk across half the world to see home one more time? Carry on a fight in the name of causes and leaders you've outlived? Cast your weapons into the weeds and carve out a new life where you now stand? Will you light the watchfires against the coming night - or will you help kindle the pyre of history? The choice is in your hands now. The last words from home set you free:

Good luck. You're on your own.

I went into a public-'ouse to get a pint o' beer,
The publican 'e up an' sez, "We serve no red-coats here."
The girls be'ind the bar they laughed an' giggled fit to die,
I outs into the street again an' to myself sez I:
 O it's Tommy this, an' Tommy that, an' "Tommy, go away";
 But it's "Thank you, Mister Atkins", when the band begins to play,
 The band begins to play, my boys, the band begins to play,
 O it's "Thank you, Mister Atkins", when the band begins to play.

I went into a theatre as sober as could be,
They gave a drunk civilian room, but 'adn't none for me;
They sent me to the gallery or round the music-'alls,
But when it comes to fightin', Lord! they'll shove me in the stalls!
 For it's Tommy this, an' Tommy that, an' "Tommy, wait outside";
 But it's "Special train for Atkins" when the trooper's on the tide,
 The troopship's on the tide, my boys, the troopship's on the tide,
 O it's "Special train for Atkins" when the trooper's on the tide.

Yes, makin' mock o' uniforms that guard you while you sleep
Is cheaper than them uniforms, an' they're starvation cheap;
An' hustlin' drunken soldiers when they're goin' large a bit
Is five times better business than paradin' in full kit.
 Then it's Tommy this, an' Tommy that, an' "Tommy, 'ow's yer soul?"
 But it's "Thin red line of 'eroes" when the drums begin to roll,
 The drums begin to roll, my boys, the drums begin to roll,
 O it's "Thin red line of 'eroes" when the drums begin to roll.

We aren't no thin red 'eroes, nor we aren't no blackguards too,
But single men in barricks, most remarkable like you;
An' if sometimes our conduct isn't all your fancy paints,
Why, single men in barricks don't grow into plaster saints;
 While it's Tommy this, an' Tommy that, an' "Tommy, fall be'ind",
 But it's "Please to walk in front, sir", when there's trouble in the wind,
 There's trouble in the wind, my boys, there's trouble in the wind,
 O it's "Please to walk in front, sir", when there's trouble in the wind.

You talk o' better food for us, an' schools, an' fires, an' all:
We'll wait for extry rations if you treat us rational.
Don't mess about the cook-room slops, but prove it to our face
The Widow's Uniform is not the soldier-man's disgrace.
 For it's Tommy this, an' Tommy that, an' "Chuck him out, the brute!"
 But it's "Saviour of 'is country" when the guns begin to shoot;
 An' it's Tommy this, an' Tommy that, an' anything you please;
 An' Tommy ain't a bloomin' fool -- you bet that Tommy sees!

-- Rudyard Kipling



CREDITS

G-1 (ADMINISTRATION)

Design: Clayton A. Oliver, Keith Taylor, and Ed Thomas

Additional Conceptual and Design Assistance: Candace Brunk (medicine and NBC warfare), Andy C. Davis, Kelly Gage (mounts), Robert Hudson, Camille Oliver, Tatu Salonen, Pete Sears, Justin Stodola (ballistics), Scott Taylor, Golden Tullis (close combat), and Jim Wardrip

G-2 (INTELLIGENCE)

Copyright © 2008 by 93 Games Studio.
All rights reserved. Printed in Canada.

Except for the purposes of reviews, reproduction without the written permission of 93 Games Studio is expressly forbidden. No part of this publication may be reproduced, by any form or by any means, without the prior written permission of 93 Games Studio. Character sheets and other game aids contained in this book may be reproduced for personal use. All characters, names, places and text herein are copyright by 93 Games Studio.

Twilight: 2013 is based on Twilight: 2000 by Game Designers' Workshop, and is published under license. The mention of or reference to any company or product in this product is not a challenge to any trademark or copyright concerned.

G-3 (OPERATIONS)

Written By: Clayton A. Oliver, Simon Pratt, and Keith Taylor

Additional Writing: Gary Astleford, Josh Benton, Andy Davis, Andy Miller, Martin Ralya, Tatu Salonen, Justin Stodola, and Team NPC (Derek Klein and Max Messina)

Cover Art: Tyler Windham

Interior Art: Andrew Dobell, Diego Gisbert, Scott Harshbarger, Rick Hersey, Johan Lindstrom, Art Lyon, Chris Martinez, Bradley McDevitt, Jesse Mohn, Matt Morrow, Clifford Morton, Jason Mullins, Miguel Santos, Filip Stojak, Keith Taylor, Kurt Taylor, Norm Scott, Jeff Ward, Richard Whyte, Tianyang Yan and Brandon Young; some artwork copyright Octavirate Entertainment, used with permission.

G-4 (LOGISTICS)

Production Director: Keith Taylor

Art Director: Keith Taylor

Editrix: Candy Hall Brunk

Layout & Typesetting: Keith Taylor

G-5 (CIVIL AFFAIRS)

Personnel Management: Keith Taylor

Playtesters: Jose Antonio, Gary Astleford, Josh Benton, Micheal Boehm, Phil Glotfelty, Robert Holleman, Neal Hyde, Derek Klein, Shane Mclean, Max Messina, Jason Mullins, John Palchak, Simon Pratt, Micheal Robuck, Norm Scott, Sean Shumate, Darren Stengel, Justin Stodola

Consultants: Ed Thomas, Robert Hudson, Derek Klein, Max Messina, Simon Pratt, Justin Stodola, Jim Waldrip and Tatu Salonen

G-6 (COMMUNICATION)

Special Thanks

Pete Sears, for meritorious service as an example to others
Zombie Squad, for unerring dedication to preparing humanity for the coming zombocalypse
All of the fans of Twilight: 2000, who without them this edition would not exist

Clayton's Dedication

To my my father, Bernie Oliver, for years of support in the face of my sometimes-questionable maturity and sanity
To Camille, for doing your part and most of mine
To Rich Dansky and Phil Brucato, for setting my feet upon this path

Keith's Dedication

To Robin for your incredible tolerance
To Clayton for going above and beyond the call of duty
Again, to all of the fans of Twilight: 2000 (and Twilight: 2013)



TABLE OF CONTENTS

CHAPTER 1	7
The Twilight War	
CHAPTER 2	35
On The Ground 2013	
CHAPTER 3	67
The Reflex System	
CHAPTER 4	89
Survivors	
CHAPTER 5	135
Combat	
CHAPTER 6	167
Maintenance and Survival	
CHAPTER 7	201
Equipment	
CHAPTER 8	271
Vehicles and Travel	
CHAPTER 9	299
GameMaster's Toolkit	
APPENDIX	331

CHAPTER 1

THE TWILIGHT WAR

Every generation seems to have a defining moment - a “where were you?” day when the world inexorably changed for the worse. 7/7, the Indonesian tsunami, 9/11, Challenger, JFK, Pearl Harbor... I’m pretty sure that back in the early Fifth Century, citizens on the fringes of the Empire always remembered where they were when they got the news that the Visigoths had sacked Rome.

The problem for my generation - the survivors - is figuring out which day was The Day. Was it nerve-gassed bodies fallen in windrows across the Paris suburbs? Russian tanks summoning up ghosts of the Cold War as they slunk through Kiev? Nuclear flowers blossoming in the Belorussian summer? The great engines of the world grinding to a halt as darkness fell like a hammer on the European Union? Winds off Lake Michigan fanning a firestorm that reached higher than the jagged stump of the Sears Tower? Pinpricks of light in the high orbitals as the lights at home went out forever?

I can tell you where I was on each of those days. Quite frankly, they all sucked. Today isn’t much better, and I can’t even tell you where I am now, let alone where I’ll be tomorrow.

Surprise, when it happens to a government, is likely to be a complicated, diffuse, bureaucratic thing. It includes neglect of responsibility, but also responsibility so poorly defined or so ambiguously delegated that action gets lost. It includes gaps in intelligence, but also intelligence that, like a string of pearls too precious to wear, is too sensitive to give to those who need it. It includes the alarm that fails to work but also the alarm that has gone off so often it has been disconnected... It includes the contingencies which occur to no one, but also those that everyone assumes that somebody else has taken care of.
— Julian Critchey, Warning and Response

It is now mid-July 2013. By most accounts World War III, the **Twilight War** as it is commonly referred to, has raged officially for almost three years. But in reality, the fighting goes back much further than that, at least a decade prior. When did it begin? How did it start? This chapter describes the major events that contributed to the Twilight War of **Twilight: 2013**.

Some historians openly refer to the 2006 global bushfire wars collectively as the beginning of World War III. By modest accounts there were over 30 armed conflicts raging on four continents. Some were traditional wars being fought over territory; some were part of spreading religious fundamentalism. The acceptance of this idea reached as high up as major political leaders of several countries, including a former U.S. republican Speaker of the House. Although, it was still several years before there was any doubt that the Twilight War was at least in its infancy if not full blown adolescence.

Politically the next couple of years followed in the same footsteps as previous years with hardliners, fundamentalists and conservatives winning several major elections around the world. Most notably in 2006, Mexico elected a conservative president, and Hamas prevailed in Palestinian elections. The main exception to this was in the United States, where democrats managed to win a majority in both the House and Senate of the U.S. congress and eventually claimed the White House in 2008.

Other than continued conflict and hard talk, the next few years also witnessed increased food production problems. With so much food being grown and processed, it was hard to see these problems could be forbearers of future calamity. In the US alone there were well over 100 separate food recalls due to contaminations ranging from E. Coli to simple allergens in 2006. This amounted to 100s of tons of meat, vegetables and processed foods. With a country as large of the US this wasn't necessarily a major problem, but coupled with the fact that the US was a large exporter of agricultural products, problems in the US supply chain affected many other countries.

Overall, the **Twilight War** was a combination of many factors...

Global War on Terror

Terrorist activities were a real concern even before 9/11. For almost a decade before the **Twilight War**, terrorism was a common front page story. Terrorist activities stretched across the globe; Philippines, Spain, England, Iraq, Pakistan, Afghanistan, Israel, Georgia, Somalia, Colombia, etc. However the most prominent activities recently emanated from Iraq and the Middle East. The Global War of Terror in both Iraq and Afghanistan provided hard core training and battlefield experience to many jihadists. This training later proved to be a major hindrance during the **Twilight War**, as experienced fighters were exported to other regions to further their causes.

While terrorism is a real concern in the players' world, terrorism was only a part in the **Twilight War**. The focus of this edition is not terrorism or religious extremism. Although there is room for these types of factions in the aftermath of the **Twilight War**.

Design Notes: The Twilight War

This game is a work of fiction and about the future. At some point we must mark a time where our current timeline and the events of **Twilight: 2013** separate. That break point for the future history of the **Twilight War** is 01 January 2007. That is our arbitrary line in the sand. Everything that happens after this point is completely fictional. We have, however, tried to include some of the events of the year 2007 as development progressed.

Also, unlike previous editions of **Twilight: 2000** that included tons of details about specific events and units; we decided to take a different approach in this new edition. The **Twilight War** has been along time in the making and a short time in its execution. While there are many facets of the war covered here, there are an equal number that are not. This should leave room for exploration and personalization.

We plan to offer enough details about the past to allow for an understanding of what happened and who took part in what, but we will leave the details to you, the players. This should allow for more individual and personal perspectives on the **Twilight War**. As future supplements are released, we will include more details about the events of the next few years. There are tons of conflicts and tensions not listed in the following pages that can be explored and flushed out in more detail. Several examples of such conflicts are: the Turkey-PKK conflict, the Turkey-Greek Cyprus conflict, and extremist groups in Southeast Asia and Somalia.

2007

2007 continues with the same pace of violence, upheaval and conflict as did previous years. The United Nations swears in its last Secretary-General. China successfully tests a new ballistic missile that has the ability to destroy space based satellites. The U.S. steps up its involvement in Iraq with the commitment of 21,500 extra soldiers. This is just January.

Russia cuts oil supplies to Germany, Poland and Ukraine for three days. Russia cuts off oil supplies along the Druzhba pipeline to prevent Belarus illegally siphoning off oil. This in turn affects the supply chain in Germany, Poland and the Ukraine as Russia begins to flex its muscles once again.

At the beginning of the year the European Union Battle groups (EU BGs) reach their operational capacity. Most of the EU BGs consist of multi-national groups numbering around 1500 soldiers plus command and support services. The EU BGs are the first steps towards a common EU military. The first EU BGs are rotated so that two of them are ready for deployment within 5 to 10 days.

The 2006 United States Congressional elections result in a centrist shift in the nation's legislative body. Growing displeasure with the incumbent administration's policies fuel many campaigns, and a large crop of freshman Senators and Representatives find themselves attracting attention from others facing reelection in two years.



Almost as soon as the new members of Congress take their oaths of office, national and world attention swings from their bright new faces to the 2008 Presidential election. Both major parties almost immediately hit the campaign trail. By midsummer there are 18 mainstream candidates with more potential still undeclared. Many states also move their primaries earlier in hopes of drawing more attention and political clout to their elections. The democratic and republican candidates are determined before the end of February of 2008.

On top of political changes in the U.S., 2007 also sees a continuation of the food recalls which were dramatically highlighted in the previous year. In addition to food and agricultural products, recalls also affect toothpaste, animal feed and even pet food. These tainted products are linked to China.

The U.S. isn't the only country to see a shift in political power this year. England watches a changing of the guard as the Prime Minister steps down, and a new more parliamentary minded First Lord assumes the helm. France holds elections with both the presidency and legislature secured by the same party, thus giving control of French policy to a single right wing, U.S.-friendly party. In the spring, the Ukrainian president dissolves their parliament and sets elections for the fall. The elections are widely seen as a fraud after the pro-president coalition takes control and ousts the former Prime Minister.

Venezuela's leftist President maintains his war of words with his American counterpart. With the shift in the American Congress, the Venezuelan tactics alter from antagonizing the leader of the large northern nation to ignoring him in favor of developing ties to the new legislative leadership and the governors of individual states.

Iraq continues to dominate international concerns and American foreign policy. The civil war between rival Islamic factions worsens throughout the year, despite the best efforts of the international community to negotiate – or force – peaceful settlements. Neighboring Iran covertly assists Shiite militants, which prompts an equal Sunni response from Saudi Arabia. Long-standing tensions between the two oil-rich nations hampers other multinational efforts, and the violence in Iraq continues unabated. In addition, Turkey begins armed incursions into the north to deal with Kurdistan Workers' Party (known as the PKK) rebels based out of Iraqi Kurdistan. Between Iran, Saudi Arabia and Turkey, by the end of the year there will be of over 20,000 foreign operatives inside the borders of Iraq.

In Afghanistan, American and allied forces continue their almost-forgotten campaign against Taliban and Al-Qaeda guerrillas. The Afghan government begins pressuring the American leadership to assist in internal law-enforcement efforts, particularly against opium growers, further stretching the already-overextended forces. Dwindling opium production, which was almost destroyed under the Taliban, dramatically increases production during Operation Enduring Freedom. Media coverage begins to force the newly democratic government to act against the growing opium trade straining relations with farmers and regional warlords who view this as a cash crop.

Pakistan's internal strife begins to boil over in the summer. The president's crackdown on militant groups inside the country leads to the Lal Masjid (Red Mosque) confrontation. The standoff with the Red Mosque leaves scores dead and wounded and severely tests the president's position. This standoff, however, sets off a chain of events resulting in a wave of violence that sweeps through the country. So penetrating are the operations against extremist groups that Al-Qaeda declares war against Pakistan.

In November, the Pakistani president declares a state of emergency and suspends the constitution. Protests demand that elections be held. Instead, thousands are arrested. The rest of the world looks on in shock as the country begins to devolve into

chaos. Pakistan's ability to secure its nuclear weapons is called into question, and many countries in the region put their militaries on high alert. The internal strife continues throughout the year and into next year.

November also sees a change of leadership in Australia. The new party in power runs almost exclusively on withdrawing Australian troops from combat missions in Iraq and addressing climate change. The U.S. led mission in Iraq is quickly losing partners and gaining enemies.

Low-intensity wars in Africa continue on, mostly ignored by the rest of the world. Ethiopia's increasing involvement in Somalia's civil war causes concerns in Eritrea and Sudan – the latter nation already embroiled in conflict in its western Darfur region. By the end of the year there more than 200,000 are killed in the Darfur conflict alone.

Like the previous couple of years, natural disasters also lend a hand in deteriorating the global situation. Large portions of the world are covered in drought throughout the year, including rich farm countries like China and the U.S. Floods sweep through many countries from England to China to the U.S. Earthquakes continue to strike the ring of fire. The Solomon Islands quake being one of the largest of the year, leaves thousands homeless and completely wipes out at least 13 entire villages. All of these disasters combine to put pressure on worldwide food resources; droughts and floods lessen the production, while contamination, earthquakes and other disasters begin to use up the available surplus.

2008

This year begins even more turbulent than 2007 ends. While previous years definitely added to the potential for the Twilight War, 2008 will be judged as the point of no return. In retrospect, the events of this year make it hard to believe that World War III is unavoidable. Global stability begins to decrease rapidly, and by the end of the year some form of chaos will touch every corner of

the globe.

In the U.S., January marks the beginning of the presidential election primaries. Surprisingly the Democratic ticket is won by a former governor from the southwest. This pits him against the hard-nosed Republican from New York.

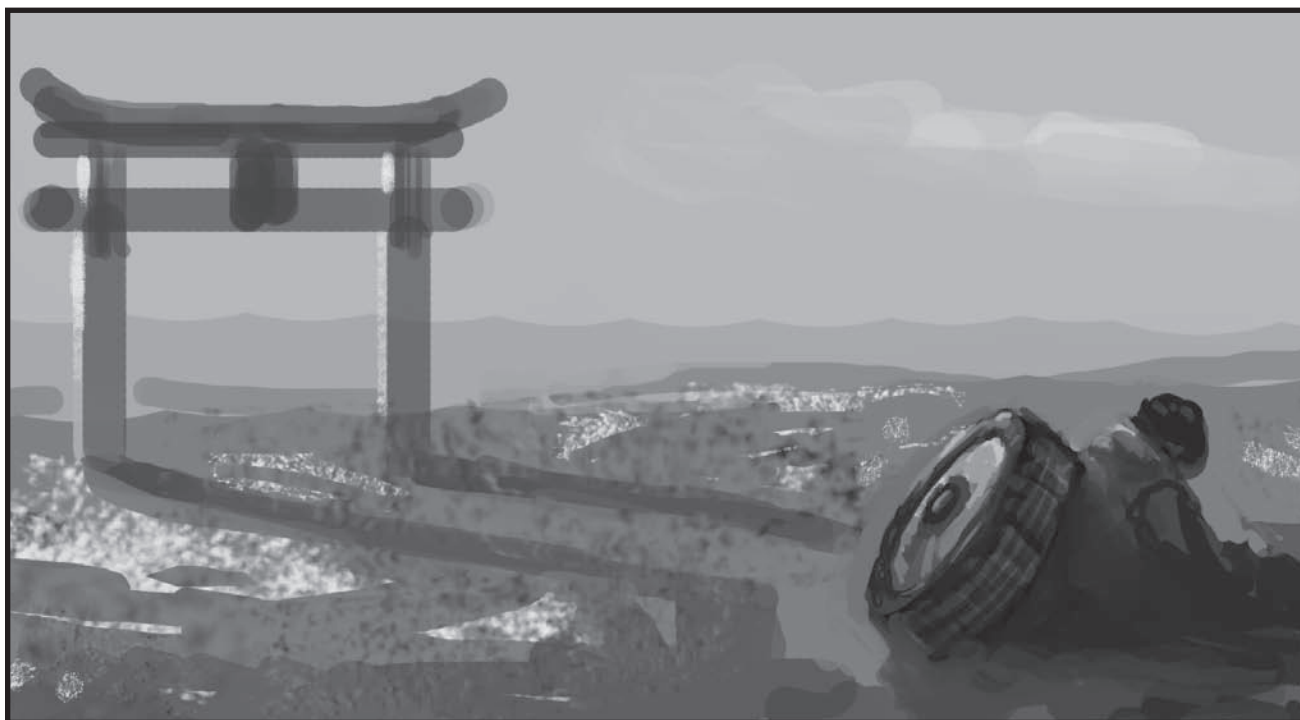
Reports in from late 2007 signaled trouble for Afghanistan. These reports prove eerily prophetic in the early months of the year. Over 60% of Afghanistan is reportedly under control of the former oppressive extremist government, and terrorists roam freely about the countryside. Coalition forces are under increasing attacks, and the first part of the year sees death tolls comparable to that of Iraq from 2006.

Elections are held in Pakistan in February. The result is called into question immediately, with the incumbent president winning in a landslide. Considering the political unrest, the continued protests and the military power the president still wields, most believe the election results to be a fraud. Western reporters are expelled from the country or arrested. The UN electoral commission is not allowed into the country, and a repeated request from the U.S. and EU for democracy is ignored.

Pakistan and India step up their standoff over the disputed Kashmir region. Due to last year's Red Mosque incident and the continued political unrest, Pakistan cracks down hard on extremists and political protesters. This puts more pressure on the Pakistani military that shifted more trained and experienced soldiers away from the Kashmir Line of Control. India begins to ratchet up its efforts against separatist militants in the wake.

The European Union peacekeeping force, the EUFOR Chad/CAR, begins deployment to Chad in February. The force deployed to the UN mission has 4,300 troops from 11 European countries, with the French responsible for nearly half of the contingent. Their mission mandate is to protect civilians, humanitarian aid and UN personnel.

In March, yet another toy and food recall is issued for products made in China. The U.S. is hit hardest as it imported over 90% of the recalled material. In addition to an already difficult year of recalls from Chinese made goods, this time one of the tainted food



2008 – The price of food and the availability of ammunition

Heather James, representative of the World Food Council (WFC), surveyed the camp shadowed by her three Spanish bodyguards in their distinctive blue berets. The heat was oppressive; the sweat glued her thin clothes to her body, and flies swarmed 'round her - getting into her nose, eyes and mouth with a relentless persistence. But the worst irritation of all was the smell created by ten thousand souls living on the bare earth with no sanitation.

The scorched earth was littered with bodies - dead, dying and barely alive. The only distinction between them was the occasional arm weakly swatting at the flies adding insult to the injured and a nuisance to Heather's WFC team.

"When was food last delivered here? How do they get water?"

The question was addressed to the local representative through a translator; her soft English accent came out harsh due to the parched air. The answer received was not expected.

"We received food about eight days ago. Water comes from the stream, but it is running dry and is polluted."

Heather turned and looked at the representative directly.

"A convoy left for this camp three days ago carrying fifteen tons of grain, medicines and water purification equipment. Didn't it arrive?"

"The vehicles were stopped short of the camp by the local warlord and raided for everything of value. The convoy arrived but held less than a hundred kilos of grain and nothing else of value. We reported to Colonel Delagarza, but officially his hands are tied unless the militia engage his troops. The militia have rifles, heavy machineguns, and anti-armour rockets; consequently, there is nothing we can do to stop them."

The local agent looked around the camp and saw desperation in the faces of those people strong enough to follow a well-dressed, well-fed, well-watered procession of foreign visitors.

Thinking out loud, Heather said "Three quarters the people here are suffering from malnutrition. Fifteen percent of those are probably within a few days of starvation. Two hundred people a day develop signs of dysentery. Malaria is rife, and the mortality rate in this camp exceeds our capacity to deal with the bodies in a respectful manner or in any manner at all. And this is just one of fifteen camps in this area I'm supposed to *manage*. The situation is out of control. We need more food, more medical support. Much as I hate to admit it, we need more troops with the dispensation to actually enforce the resolution. Right now this is anarchy, and that is costing more lives than this drought."

Heather scanned the camp again, gathering images in her mind for the report that she would file that day with the headquarters. The suffering brought tears to her eyes though she fought them back as best she could.

products is believed to have caused the death of a U.S. Senator's grandson. The U.S. government enacts swift action and imposes a strict ban on Chinese imports until safeguards and inspections are in place. Many European countries quickly follow the American action with Chinese import bans of their own.

In China, manufacturing companies begin massive layoffs. This sends a flood of people into the workforce, lowering wages and forcing many people into poverty. This causes a ripple effect in the Chinese economy as its own retail markets are forced to lower prices, creating more problems for those employed in the retail sectors. On top of that, the Chinese people were not the only ones affected. The ban effectively cuts billions of dollars out of the government's budget, one largely focused on military spending.

By the end of the year (since the ban will not be lifted until the summer of 2009), China is thrown into a great depression. Rather than blame government and manufacturing practices, many of its people blame the west and specifically the U.S. for their lot in life. Military enlistments will be at an all time high this year.

While in the U.S., consumer confidence plummets, and prices rise. Several old, large companies who moved their manufacturing to China file for bankruptcy and close down. The ban affects many aspects of American and European life from food to electronics. There are shortages of many of the products that western civilization has taken for granted. In addition, due to the effect the ban has at the corporate level, layoffs take place in all sectors forcing millions of Americans and Europeans into unemployment.

Many U.S. companies look to Mexico to replace their cheap Chinese labor and materials. Within months many new plants are built in Mexico. For a time this even begins to solve the immigration problems in the U.S. as scores of illegal immigrants cross back into Mexico for work.

The same pattern emerges with many European companies (although on a smaller scale than the U.S.) looking for cheap labor and production costs in Eastern Europe. While not as cheap as

Chinese or Mexican based plants, Eastern Europe offers cheaper production costs than those in Western Europe.

The U.S. government shifts focus towards homeland projects designed to repair the economic situation. Adding that this is an election year, every politician under the sun unveils a recovery plan. In all actuality though, little gets accomplished, and many foreign endeavors are placed in limbo, including the Global War of Terror.

After years of relative quiet, several countries in South America begin to make headlines during the summer. The war of words between the leaders of Colombia and Venezuela heats up and boils over into the general populace. In addition to severing all diplomatic contact last year, the Venezuelan president also imposes strict border controls and an embargo against all Colombian trade.

This action not only severs ties with the Colombian government but also enrages drug lords who use Venezuela as a point of departure for their drug trade. Border incidents increase as drug-related insurgents attempt to circumvent the increased border security. Pretty soon, rumors spread about Venezuelan ground forces crossing the border and operating inside the Colombian territory. The American Special Forces presence in Colombia is increased to help deal with the crisis.

The situation is finally brought under control thanks to a Brazilian led six nation summit, including Colombia, Venezuela, Argentina, Guyana, Peru and Brazil. In return for normalized diplomatic relations with Colombia, Venezuelan is granted increased trade and economic opportunities from the summits participating countries. The accepted view is that most of the South American countries are strong-armed into the agreement by Venezuela because of their oil. Even the U.S. seems to reluctantly hold off criticizing the agreement.

After failed talks last year, North and South Korea again agree to enter into peaceful negotiations. While the world watches the

Olympics in Beijing, the Korean leaders meet for a 5 day summit in the middle of the summer to discuss denuclearization of the north and other peaceful initiatives between the two countries. North Korea suppresses their historic obstinacy and several major accomplishments come out of this historic summit.

North Korea agrees to denuclearization in exchange for technology, oil and food (all in short supply). The South Korean President puts forth a Korean Peninsula peace arrangement to formally end the Korean War. Having tried the year before unsuccessfully, this move is largely seen as political. Surprising the world audience, the North readily agrees to it, declaring peace between North and South Korea. Thus on August 21st, the Korean War officially ends, 58 years after it began.

In November Americans go to the polls and elect a new president. This election is marred in character assassinations and petty politics. Even so, the American people vote overwhelmingly for a change in policy and direction. In a landslide victory, democrats win back the White House. In addition, democrats continue their congressional victories of 2006 and increase their majority in both houses of Congress.

The U.S. and Pakistan are not the only countries holding presidential elections this year. Russians elect another ex-KGB official as their president. His platform involves taking a hard line against internal extremist groups and the pro democracy west. He also reiterates Russia's right to a preemptive military strike in the name of national interest.

Presidential elections were also held in Taiwan. A win by the pro independence DPP party increases the tensions between the two Chinas. The day after the election results are made public, the Chinese premier announces China's right to a preemptive military strike in the name of national interest.

In Iraq the situation continues to deteriorate as more and more violence rages across the country. At the beginning of the year, there was a hope that American forces could begin to redeploy and draw down, but as the year progresses, attacks increase by innovative insurgent and terrorist forces. Attacks become more high-profile and deadly. Rather than seemingly random acts of violence, they become more strategic and surgical in nature.

The most significant act of the year takes place during a Shiite pilgrimage to the holy city of Karbala, which had been the target of several large scale bombings each year since the invasion. With over 100,000 pilgrims present, five gasoline tanker trucks are simultaneously exploded inside the city. The explosions and subsequent panic leave an estimated 5,000 dead and injured.

The Ukraine holds presidential elections early in December this year, where a hard liner with KGB connections is elected president. As with the previous elections, this year's is not without controversy. Pro-parliamentary forces band together under one banner - The Rada, or council. The Rada splits into two camps; the political arm, which continues to wage a war of words against the president and his puppet parliament; and the insurrectionary arm, whose goal is to unseat the presidency by means of force.

One of the oddest causes for the preludes to the Twilight War begins to surface this year. As demand grows for alternative and greener fuel sources, many farmers in the U.S. and worldwide begin shifting their entire crops to produce corn. The majority of this corn is destined for ethanol production plants. This shift causes a decrease in agricultural food stores by over 20%, which are already hurting in the U.S. due to the Chinese ban.

By the end of 2008, thanks to this shift, drought, E. Coli, salmonella and other causes, many developed countries start to experience wide spread food shortages. The need to feed their own people soon takes precedence over humanitarian aid to less developed nations. Many third world countries that depended upon food exports in the form of aid from countries like the U.S. experience systematic starvation.

The Treaty of Lisbon, signed by the EU countries in 2007, enters into force on January 1st. The treaty carries out several reforms in the EU, many of which have no effect in the life of ordinary citizens as the treaty is mostly political in nature. The most visible change is the selection of the President of the European Council, a position which has important symbolic value even if the president has no executive powers. Later this year, the European Council appoints its first permanent president, an ultra-conservative Frenchman who was once a prospect for a high level position in the current French administration.

January 20, 2009 the newly elected U.S. democratic president assumes office and by the end of the month issues orders for the redeployment of troops in Iraq and Afghanistan. His first move is to decrease the number of troops in Iraq to around 100,000, bringing the majority of those soldiers home, while shifting some to Afghanistan. The reductions in forces also include naval forces located in the Persian Gulf. By mid-summer U.S. naval presence in the area is also reduced, but it is still above its pre-war numbers.

The new American policy is to focus on fighting extremist groups. The U.S. forces remaining in Iraq are redeployed to areas outside of Baghdad. Their mission is shifted to three areas of focus: national border security, training of Iraqi security personnel and combating extremist groups, rather than provide for population security.

In contrast to the old strategy, the new shift in direction shows quick progress for the first six months of the year. Since the bombing in Karbala, Iraqis have shown real progress towards peaceful reconciliation. The bombing has the effect of actually bringing the country together rather further driving a wedge between religious factions.

Combined with the withdrawal of one third of the American forces, Iraqi politicians and religious leaders begin to find ways to make their government work for all Iraqis. The Iraqi army steps up to replace American forces in Baghdad. The Iraqi Prime Minister replaces the entire Ministry of Interior staff and promotes a Kurd to the position of Interior Minister. The national police force is then purged of its sectarian leadership by the new Interior Minister.

American forces also experience a higher level of success on the terrorism and insurgency front than in previous years. In the early months of the year, U.S. forces interdict several large shipments of weapons and reinforcements from Iran. One such shipment carries Iranian uniformed soldiers and a high level officer (although his identity is never released). The renewed efforts of the Americans, as well as the loss of their major supply of equipment and logistics, force the extremists groups to retreat and reorganize.

A casualty of the ban on Chinese imports from the U.S. is the Three Gorges Dam in China. Cutbacks in the Chinese budget force many cost cutting measures to be implemented in its construction. It is completed in February of this year; however, within weeks cracks begin to appear and other structural elements show signs of fatigue and stress. On May 13th, water begins to break through a large crack in the surface. Two days later, the dam almost completely disintegrates.

The dam's rupture causes flooding on an epic scale along the Yangtze River valley. Over three thousand square kilometers are flooded and over 5,000 people are reportedly killed or listed as officially missing, while an additional 900,000 more are affected in some way. The dam's collapse also causes wide-scale power interruptions throughout the region. It takes almost two months to return power in some areas.

In June, one of the largest car bombs ever explodes in Islamabad, Pakistan destroying an entire city block and killing the president of Pakistan and several key National Assembly members

in the process. The Prime Minister immediately assumes power but is assassinated within the week. Seizing the moment, the former exiled ex-president assumes control of the government while the top Pakistani General assumes command of its armed forces.

This splitting of power creates a tension between the military and the government. Prior to the previous president's coup, the control was split sufficiently for the military to conveniently ignore

politicians. The new government begins pro-reform crackdowns aimed at reigning in the military and stopping the carnage that is swallowing the country. The military however is continuing its operations against extremist and anti-government forces.

On July 15th, most of the Caribbean and the southern half of Florida are decimated by Hurricane Larry, a category five hurricane. Hardest hit is Cuba. The island is left utterly destroyed; even the

2009 – Mercenaries on the Man-made River

"Rolling"

Dust swirled briefly around a pair of worn leather loafers as Ewan Thomas gathered his thoughts. His still image in the monitor to the left of the cameraman contrasted the vague motions in the background of numerous construction vehicles digging foundations and pushing roads through what was once infertile desert. Ewan Thomas was an Australian reporter tasked with covering the build up of the Libyan Manmade River project. He hated this place. Growing up in the heart of Sidney, he avoided the outback for the most part. He was NOT prepared to 'rough it' in this god awful stretch of country without even the possibility of a taxi back to civilization with cool sheets, warm showers, and identifiable food.

"This is Ewan Thomas reporting from the construction site of what will be the town of Silicon, Libya. This town is the result of an infusion of American money from a conglomerate of small microchip manufacturers intent on taking advantage of the cheap labour and plentiful materials available here on the Manmade River."

The camera panned to show a collection of backhoes and excavators digging trenches, a fleet of cement trucks roaming the site and a virtual army of local labour moving materials and building the reinforcement for future structures.

"This site will soon be home to over ten thousand men, women and children with all the amenities you expect from a western town. The building behind me will be the school where the worker families, both local and foreigners, will be educated. In addition, plans include a fully equipped hospital, a shopping mall, sports centre and five thousand homes built to the highest standards."

The camera panned back to Ewan, now in the company of a man in a business suit and dark glasses. Ewan grizzled a bit at the man for not removing them, but that was the image the head of security wanted to present, and a reporter's opinion that he looked like an idiot wasn't going to change it.

"With me now is Justin Kinsman, former United States Green Beret and owner of Orion Safety International, the security firm tasked with both the security of the construction crews and the finished town. Mr Kinsman, exactly what are you doing here?"

His voice was a rich baritone with a distinct Kansas accent. He spoke slowly and clearly as his PR assistant instructed him and removed his glasses to reveal his eyes to the people watching at home.

"Well Ewan, We're here to ensure antagonistic local elements and international terror organisations don't get the chance to sabotage this project."

"And actually how do you accomplish this mission?"

"Well, I'm not at liberty to discuss my deployment in detail, but I have the effective equivalent of a motorized infantry company deployed around the construction site. It's composed of two hundred and fifty men including support elements and fifteen armoured vehicles. We have modern equipment not even the United States can match that gives us the ability to defend this installation against both a conventional and unconventional enemy."

Ewan forced a smile and looked around. The camera followed to a flat expanse of land where thirty men and women of various races and ages practiced a moving formation and basic weapons drill. Ewan set it up earlier to provide a focal point while talking to Kinsman about his troops. He noticed that Kinsman picked the most photogenic and, from Ewan's view, most disciplined of his Rabble. Nearly all the troops looked rough and ready, quick with a curse and a threat if you got in their way.

"And what advantages do Private Military Contractors, or PMCs as you call yourselves, bring to this project that the United Nations Security Forces can't?"

Kinsman smiled and pointed to his troops performing for the cameras.

"As seen before in places like Sudan and South America, the UNProFor soldiers are shackled by the chains of command imposed on them. They can't fire unless specific events occur; they can only return fire for a limited time. Contractors are not burdened by bureaucracy. Buying weapons directly and making engagement decisions independently, we can act to protect ourselves and our client's interests in any way necessary as long as we don't violate international law. Freedom makes us the perfect choice for hostile situations such as this. Our employer is concerned about attacks and would never receive this level of protection from the United Nations or even from the Libyan government, despite their support of this project. For a fraction of the estimated violence recovery cost, he can hire people such as ourselves to protect his people, project and schedule."

Kinsman flashed a condescending smile at Ewan in his soft GQ loafers and turned in dismissal. Suppressing the urge to vomit, Ewan realized he hated this man for both how he regarded the media and for how he made his money. The parting jab came almost instinctively.

"And what of reports of PMC's walking off contracts after attempting to renegotiate a deal mid way through a term?"

A veteran like Kinsman wasn't easily disarmed and countered with barely concealed anger.

"We're a business Ewan, and we trade on our reputation. I'll admit there are a few less reputable operators who'd try something underhanded, but try it once, and word gets around. Yes, we're like the Mercenaries of old - selling our services, but we're as well trained and disciplined as any military force and audited by the city as thoroughly as any bank both for our finances and our behaviour. That's the way I set this firm up and the way most of the other big outfits work. Anyone who tries something illegal with that many checks and balances better be either good or tolerant of jail time."

Ewan retreated with a standard closing tag line. "Thank you Mr Kinsman. As you can see, Libya is growing through intense foreign investment and is secured through the work of men like Mr Kinsman's troops. This is Ewan Thomas, Central Libya, for FRN News."

U.S. base at Guantánamo is completely leveled. While the U.S. is kept busy dealing with the devastation from Hurricane Larry in Florida, Cuba's longtime ally Venezuela comes to its rescue.

Hurricane Larry strikes Florida as a category five hurricane with wind speeds exceeding 265 km/hr. Larry makes landfall about 20 miles south of Miami and proceeds up the middle of the state for about 200 miles before heading back out to the Atlantic near Orlando. The level of destruction exceeds that of Hurricane Katrina from 2005. Having learned their lessons from Katrina, officials activate almost the entire southeastern military might immediately to assist in the disaster.

The U.S. government sends only a small detachment of marines to secure the U.S. base at Guantánamo and evacuate the survivors. Only a few of the prisoners survive, fueling speculation (and congressional inquiries) for years about the actual happenings during the hurricane. With Venezuelan forces on the ground already, the situation becomes tense and soon mirrors the Cuban missile crisis decades before. Cuba officially denies U.S. forces access to their base and rejects all offers of humanitarian aid. With the destruction of the naval base at Guantánamo, Cuban officials use this as an opportunity to end what they feel is an illegal occupation by the U.S.

After weeks of political wrangling, the U.S. decides not to press the issue and reluctantly withdraws. With a stretched military and the threat of the loss of Venezuelan oil, the U.S. has no real alternatives (except an unappealing military one). In retaliation, the U.S. steps up its Coast Guard interdictions in the Caribbean. Many of these "interdictions" involve "official" Venezuelan cargo ships destined for Cuba. These actions further exacerbate the growing tensions over Venezuela in the entire region.

At the same time a tremendous heat wave stretches across most of the northern hemisphere during the summer months. The effects of this heat wave are far worse than those of 2003. By the time it begins to cool down, almost 60,000 people are dead with a 50% shortfall in crops worldwide. Unlike the 2003 heat wave, almost every French vineyard is completely devastated, adding to the psychological torment of the Parisian people.

Whole harvests are destroyed in the sweltering heat, and the food reserve in many countries is rapidly depleted. Not only is the current yield affected, but the seed crop for the following years is stunted. This leaves many countries not only hurting this year but also for several years to come. The strain on the U.S. and other nation's food aid exports is almost at its breaking point.

Summer of 2009

July and August of 2009 are two of the hottest months on record globally in over 100 years. Hundreds of cities worldwide experienced temperatures in excess of 38° Celsius for weeks on end. The chaos and devastation caused by the heat wave and its after effects are felt equally across the northern hemisphere.

The heat causes more problems than just discomfort and death. It creates havoc with national infrastructures: interrupted river transport due to low water levels, building fatigue, strain on energy consumption and weak economies due to poor retail sales. The U.S. Dow Jones drops by almost 100 points a day for the month of July. Before the summer ends it will dip below the 10,000 mark for the first time in a decade. It's estimated that up to 50% of summer deaths in the U.S. are suicides related to the stock market plummet.

The most dramatic event of the heat wave results from a wild fire in Kansas. A large wheat farm catches fire due to the high temperatures and destroys 500,000 acres of farm land before it is contained. At one point smoke can be seen from as far away as St. Louis.

The economic strain is also too tough for many countries to bear. No harvest means no food to eat, but it also means no money from crop sales. Economic pressure points surface: low water levels threaten everything from generating power to fighting fires, outdoor events suffer low attendance, movie production delays from being unable to film in the heat, and even tourism rates drop as people stay away from "hot" locations. This creates further problems both nationally and internationally for many countries. Tensions rise between the "haves" and the "have-nots" countries.

Because of the continued redeployments of combat troops in the Middle East and the Koreans' quiet and accommodating manner since the peace treaty of 2008, the U.S. officially ends its military presence on the Korean peninsula in August. Almost all of the 35,000 troops stationed there are shifted to Afghanistan and Iraq, allowing a large contingent of Army personnel to cycle back stateside. Only a thousand U.S. soldiers and Department of Defense (DoD) civilians remain in South Korea in a logistics capacity and to continue the combined relationship in affect for the last 60 years.

Since the car bombing that killed the Pakistani president, India has been beefing up its troop strength along the Kashmir border. Its public goal is to deter terrorism from spill over into its region, while its private reasoning focuses on the hope of possibly taking advantage of the chaos to seize the disputed area. By September, India enjoys a 4 to 1 superiority along the border.

The Libyan leader dies in September. Because he actually has no official state title and Libya being "a state of the masses", no person replaces him. Instead the Prime Minister steps up and assumes all of the former's duties and responsibilities. The death of the Libyan leader causes great unrest throughout the west as they prepare for all possibilities, but by the end of the year most fears are subdued.

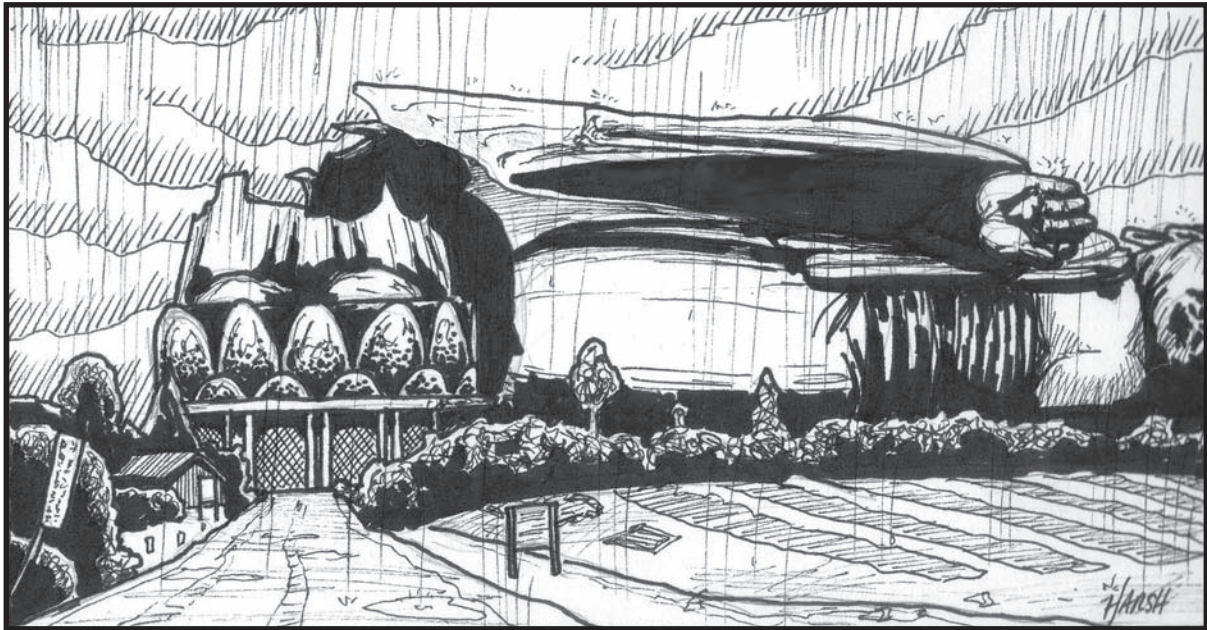
One of the Prime Minister's first acts as de facto head of state is to continue to expand the Great Man-made River project. Libya contracts with several additional large European companies to develop the project. In exchange for their assistance Libya grants them all large swathes of land (about 10 sq. km. each) near Benghazi along the Mediterranean coast. The companies quickly setup their own company towns, construct ports, and begin importing in thousands of workers (both labor and security).

In addition to public works, the Prime Minister goes on a European and North American tour to repair political ties and Libya's national image amongst the west. The new democratic president of the U.S. welcomes the offer and holds a North American summit with Libya, Canada and Mexico. Officially not much is accomplished at this meeting; however, the groundwork is laid that will see benefits next year as the river project is expanded and offered to American companies.

Having continued unabated, the conflict in Darfur begins to spread throughout central Africa, first into Chad and then in the Central African Republic. Unable to idly sit by while the region erupts into chaos (or more realistically before the carnage threatens European interests in Libya) the UN decides to step up its involvement in the peacekeeping process. In October, several European Union Battle groups (EU BG), mostly from Central European nations, land in Sudan.

Man-made River Project

The Man-made River Project is one of the largest engineering feats undertaken in the modern era. Connecting over 1300 wells, a network of pipes supplies water from the Sahara Desert in Libya via the Nubian Sandstone Aquifer System. Work began on the project in 1984, and progress was slow until 2007 when an explosion of construction began to see tangible results.



The United States, already stretched thin due to the War on Terrorism, continues to abstain from entering this conflict directly. They do, however, offer assistance to the EU forces through intelligence gathered from CJTF-HOA (Combined Joint Task Force-Horn of Africa).

The Islamic world views the U.S. as defeated in Iraq, based on troop withdrawal and comments by the U.S. President. His apologetic and conciliatory tone perpetuates this view by most of the Arab world despite the apparent peaceful transition occurring and vigorous prosecution of the remaining extremists in Iraq. Thus the remaining terrorists seek to exploit their recent "victory" elsewhere, and see the Sudan as an opportunity to take the Jihad against more Westerners.

It's estimated that over 25,000 foreign fighters enter Sudan and its neighboring countries. These insurgent units not only throw more manpower into the conflict, they also bring techniques and experience learned from the battlefield of Iraq.

As EU BG forces make their way from village to village, they find further atrocities that are quickly beamed around the world by the embedded reporters. Images and news reports fill the airwaves; public opinion in both Europe and North America quickly turns against the conflict. The fighting in central Africa intensifies as the months drag on. After only three months of fighting, the EU mission in Darfur already seems destined to become a quagmire.

Tension continues to mount in Pakistan between the government and the military. In November, the Parliament passes resolutions to end the military's ongoing anti-terrorist operations, which are quickly signed into law by the President. On the morning of the 18th of November, in retaliation for these resolutions, the military seizes control of both the Parliament offices and the Presidential residence in Islamabad.

The coup is executed rapidly and is over by that afternoon. Unlike the previous coup, which was bloodless, the military quickly holds a military tribunal and tries the entire Parliament and the President for treason against the peoples of the Islamic Republic of Pakistan. It takes only 3 days to find the entire lot guilty. Public outrage is swifter than the military coup, as tens of thousands take to the streets. The protests do not affect the outcome of the tribunal as death sentences are carried out over the next 4 days.

The international community is as shocked over the turn of events in Pakistan as its own citizens are. Extreme concern over the security of Pakistan's nuclear weapons in the midst of this conflict prompt numerous countries to petition the UN for action. However, all resolutions aimed at abating the internal Pakistani dispute fail to pass the Security Council due largely to the influence of India, China and Russia.

The Pakistani public, enraged at the actions of the military, actively begin to resist the military and make calls for the arrest of top military officers and the reinstatement of governmental officers. The military response is more of the same, swift and forceful actions toward those members of the general populace they view as insurrectionists and traitors. This only fans the flames of rebellion, and by December, Pakistan is engulfed in a full fledged civil war between the military and pro-government forces. The U.S. military, along with several detachments of European forces, move swiftly to secure nuclear weapon sites in Pakistan.

Throughout the year, the Rada and their methods are mostly underground and covert in nature in the Ukraine. However, in December, they successfully launch an attack on a military post in the Luhansk Oblast region gaining both supplies and heavy ordnance (tanks, APCs, artillery, etc).

2010

By the end of 2009, Al Qaeda and other extremist groups shift their focus away from Iraq and into Pakistan and Central Africa. This allows for a further reduction in coalition forces from Iraq. By January 2010, all non-U.S. combat forces have fully withdrawn from Iraq. This reduction in U.S. combat troops is augmented by an increase in the U.S. presence in Afghanistan.

At the first of the year, the European Union sends in several additional Battle Groups to the Sudan, augmenting the existing peacekeeping force. With the additional troops, the EU BG forces manage to gain control of the conflict and begin to provide real aid to those in the region. By March, the region is relatively calm, scaling down from dozens of small engagements a day to one or two major fire fights per week. The influx of foreign extremists though,

does manage to create enough havoc to force the peacekeeping mission to an indefinite presence.

Siding with the pro-government forces in Pakistan, terrorist and other extremists groups arm and train the civilian insurrection. Throughout January and February pro-government forces score victory after victory against the military. In February the military starts targeting rebel villages in an effort to deny them aid and comfort. On the 21st of February, the Pakistani army moves into a small village north of Khost to pacify it. The facts of what really happened are never made fully public; allegedly the army received heavy weapons fire as it entered the village. The subsequent fire fight left the village completely decimated with its entire population killed.

Until now, warlords and pro-Taliban forces in western Pakistan have remained quiet, preferring to let the dust settle before making their moves. After the Khost incident, they come out of the western mountains in droves. Fearing that the army will move against more villages, the once reclusive western villagers sweep into central Pakistan aimed at destroying the military's capability of waging further war in their region. The civil war in Pakistan is now a three-way fight between the pro-Taliban, western warlords, the military and the pro-government civilian populace.

The European Union takes another step toward a unified EU military, as the EU countries sign the Treaty of Cordoba. The treaty forces the EU countries toward joint training and procurement programs, and moves EU BG, Eurocorps and Eurofor troops under the command of the EU Military Committee.

In March, the President of the U.S. announces the further withdrawal of an additional 50,000 American soldiers from Iraq. This brings the total Americans in country to less than 40,000 combat troops. This is mainly accomplished through non-replacement of cycling forces as they end their tours. This reduction in force is finished by the end of May.

Preparations are made for August elections in Iraq. Since the first huge American troop reduction in 2009, the Iraqi government has made tremendous strides in reconciliation and peaceful coexistence. The elections will be held entirely by the Iraqis with the assistance of a UN election monitoring team.

In response to the attack by the Rada, Russia increases its presence along the Ukrainian border. They send an additional 20,000 troops to Belgorod and transfer several additional naval vessels into the Black Sea fleet. Since 85% of all Russian oil and natural gas heading to Europe passes through the Ukraine, the NATO send additional representatives and advisors into the Ukraine to ease the tension and dissolve the mounting civil war.

The situation in the Ukraine grows worse as a steady stream of refugees leave the country heading west. Most refugees continue past the former Warsaw pact countries and begin to settle in France, Germany and northern Italy. The surge in refugees escaping the conflict in the Ukraine quickly outnumbers those from Africa and the Middle East. Anti-refugee sentiment rises in these countries with political protests and attacks on refugee, on a weekly basis. Special "refugee camps" are created outside major cities to deal with and contain the situation.

Many western European cities start to experience increased civil unrest, crime and economic strain due to the large amounts of refugees pouring into them. Refugees are not just escaping the eastern turmoil, but are also leaving the inhuman conditions of the refugee camps. These refugees provide cheap labor causing high unemployment rates while at the same time burdening civic institutions such as hospitals and schools. Throughout Europe many demonstrations and riots take place as citizens protest this influx.

Also in March, France begins to crackdown on refugees pouring in from the east, enacting strict border controls and

turning away thousands of refugees. Within a week Germany Italy and Austria follow suit, however France retains the media spotlight being the first and loudest. The situation quickly deteriorates in many cities. Eventually "concerned citizen" groups mobilize against ethnic neighborhoods under the banner of weeding out refugees. Rumors circulate about the French conducting "secret" midnight deportations with people simply disappearing.

The tension between different groups in France culminate in a border incident near Haguenau on July 2nd. Border guards stop several tractor trailers full of refugees trying to enter the country illegally. With temperatures in the mid 90's, the French guards refuse to let any of the refugees out of the trucks, leaving them locked in all afternoon in the steaming heat. By the time French immigration and diplomatic officials arrive later that evening, most of the 2100 refugees have succumbed to the heat.

The incident is covered up and kept out of the news. That is until a video of the incident surfaces on a popular internet video website. Outrage sweeps throughout eastern European countries, and the incident is publicly condemned by world leaders. Investigations from both the EU and the U.S. begin; however, it will be next year before the investigation findings are made public.

Protests are staged throughout France by various immigrant and refugee groups. While meaning to be peaceful, these protests turn violent with repeated confrontation by "concerned citizen" groups and local police forces. On July 20th a rally in Paris of 30,000 protestors clash with counter-protestors and police. The resulting confrontation results in over 1000 wounded and 81 dead (the dead all belonging to the protesting groups).

On Sept. 11, 2001, the Americans suffered their day; on July 30, 2010 the French suffer theirs. During the Coupe de France in the Stade de France, a group of "terrorists" release a highly toxic Novichok agent (a broad classification for a series of Russian next generation nerve agents) into the crowd. During the panic and confusion they also detonate a van full of an approximately 1000 kilos of ANFO (Ammonium Nitrate/Fuel Oil high explosive) near the soccer stadium converted to a triage area. The resulting blast causes the collapse of the entire southern goals section. Over 10,000 casualties are estimated because of the agent, stadium collapse and the chaos that follows.

By the end of August, numerous resolutions are hurriedly signed into law targeting extremist groups of all kinds; Muslims, neo-Nazis, anti-government, communists, even leftist political parties. Anyone associated with or believed to be associated with any of the extremist groups on the government's list are arrested and sent to detention centers. Mass deportations begin in earnest, starting with Ukrainian refugees, then with other groups as the government begins its unofficial program of "peaceful" ethnic cleansing. Again, Germany Italy and Austria, along with Spain, Denmark and Great Britain follow up with similar laws of their own.

Coupe de France

"*Coupe de France*" soon becomes a rallying cry for French nationalists looking to avenge the Stade de France attack. Numerous atrocities are committed in the days and weeks after the Coupe de France attack in the name of justice. It will be a year before anyone takes responsibility for the Coupe de France attack, but this is ultimately immaterial as the French public looks for someone/anyone to extract revenge upon. While no official count exists (or at least none publicly acknowledged), estimates are that there were more than 10,000 victims during this time of chaos. The French government reiterates its right to use nuclear weapons against any state supporting the terrorists responsible for these attacks.

South American Breadbasket

A combination of climate and location creates an ideal situation for Argentina. This year's harvest sees an almost a 50% increase in food production. Agricultural exports for 2010 increase over last year's and now account for over 50% of overall exports. The benefits are far reaching in the Argentinean economy, more money for farmers, more money for the government, more money for commerce; it's a win-win-win situation. The increase in governmental revenue allows Argentina to invest in infrastructure, health care and military programs. An unexpected side effect of this year's prosperity will be a sizeable baby boom next year.

Libya's Great Man-made River project enjoys huge milestones. The program is expanded beyond what most thought it could. By the end of the year hundreds of small villages and towns are reached and included in the system. Large areas of the once desert area are even turned into lush, fertile valleys. Encouraged by this success, several U.S. companies are granted company towns in order to speed further expansion. With the profits these companies start seeing, the financial markets joke that soon there will be more money in water than in oil.

After seeing the success of Libya's company towns, many other African nations openly adopt the same practice. Most of them are set up for legitimate ventures, such as port operations or diamond mining (as many of them try to turn away from the blood diamond image). However, a few of them are allowed to operate without oversight and begin to create walled citadels where all manner of rumored activities exist.

The most famous of these new company towns is located in Côte d'Ivoire (Ivory Coast) about 15 miles up river from Grand-Bassam near Amia, named Utopia. Utopia's secret will remain intact even past 2013; however, many rumors will travel the world about what happens there.

As many countries are still reeling from the devastating heat of 2009, South American countries are experiencing an economic boom due to agricultural exports. Due to the mild summer and good harvests in the southern hemisphere many countries experience rich harvests. This produces an abundance of food, enough to provide for their people cutting their imports and increasing their exports, creating economic benefits as well.

The exception to the rule is Bolivia. Since the culture clashes between the campesino (farmers) and urban Bolivians began (in early 2007), the government has been unable to take advantage of the explosion in worldwide demand. Watching their neighbors get richer and richer while they dip deeper and deeper into poverty, the campesino double their efforts against the government.

The campesino attempt to paralyze cities by blockading highways, bridges, and main roads (a tactic they have tried before to try and bring the government down). This time the government mobilizes the military in hopes of squashing the conflict once and for all. The military easily quails the uprising through the use of force. Several hundred people are killed during the summer from military actions against the blockades.

This causes an unforeseen backlash of support among the rural populace, with more and more of them pouring in from the countryside. After trying several non-violent means to revolutionize, the campesino change their own tactics and begin an armed revolt against the government. By September fears of an all out Bolivian civil war spread throughout the region. Many countries begin to wonder what effect this will have on the blooming trade situation and begin moving troops to their borders to keep the conflict from spilling over.

In respond to the growing crisis, Brazil hosts a South American Summit (only the fourth of its kind) at the end of September. The sole topic of this summit is the crisis in Bolivia. In attendance are all South American countries except Bolivia. After three days of intense meetings and deliberations the summit is adjourned without any real solution to the conflict. By the end of the year, Bolivia will be embroiled in a full scale civil war split along class lines.

Although many U.S. companies have moved their manufacturing plants to Mexico, illegal immigration is still a problem in the U.S. During the hot summer, border patrol agents along the U.S. - Mexico border encounter a large (approximately 200 individuals) group of illegal immigrants crossing the border near Nogales. Intermixed among the immigrants are members of a Mexican drug cartel. While attempting to stop the group, the border agents come under fire from members of the cartel. After a 5 hour fire fight, 50 Mexicans lay dead with another 100 wounded while 10 border patrol agents were killed and 10 more wounded.

According to the Mexican government, the border agents executed the unarmed immigrants and refuted the cartel connection with the incident. The general public in both countries is outraged over the incident but are equally polarized over who was to blame. Politicians from both governments come out on national TV and radio denouncing the other for the blatant disregard for international law.

Protestors fill the streets of border towns, especially in the U.S. where pro-Mexican leaning demonstrators rallying almost daily at the U.S. government for what they feel is a criminal act by the border agents. Animosity toward immigrants in the U.S. grow and over the next few months, tensions raise along the border with at least a dozen more incidents of hostiles.

Elections in Iraq take place as planned in August without a single act of violence. However, one single non-violent act destroys all of the progress of the previous two years. Shiites loyal to a firebrand cleric, who also happens to control the largest private militia force in Iraq (which had been relatively inactive for the last two years) win a solid majority in the new government. Without any evidence of impropriety, the UN watchdog group declares the elections legitimate.

Leaked video footage from inside the Rada controlled section of the Ukraine in August shows what is believed to be a nuclear weapon left over from the former USSR. The Rada deny the claim publicly, but shortly after the leak several journalists from the Ukrainian Independent Information Agency (UNIAN) are found executed. For weeks the footage is analyzed and blasted about on cable news networks. Many people claim the video is a fake or old and outdated being used by Russia to drum up the war beat. Others incite fear and terror over the video. The UN begins an investigation into the source of the video and its authenticity.

This firebrand cleric is elected as the new President of Iraq. Shiites with an Islamic theocracy agenda quickly assume all the major power positions in the new government. All of the vestiges of the previous government are removed, and quickly the sectarian tensions of 2004-2007 return. Record numbers of sectarian violence and civilian deaths are reached in August and September. U.S. forces, now even more undermanned and ill-equipped than during the previous outbreaks of sectarian violence, shift their focus to areas outside of Baghdad, securing U.S./multinational interests and personnel. This allows the new Iraqi government to operate without any real resistance. However, the situation rapidly devolves into an all out civil war.

In November, both the U.S. and Mexican governments officially close their respective borders and prevent all tourist travel within their countries. Mexican tourists are halted at the border and turned away from the U.S. Mexican illegals are rounded up in massive raids across the U.S. and deported back to Mexico. American tourists in Mexico are jailed, beaten or worse. The treatment of trapped American tourists threatens to send the situation into a tailspin.

2010 – New York minute

The screen on the stage in the centre of Times Square flashes up an eight foot high “60” and begins to count down the last few seconds of the year 2010. The square is packed with thousands of revellers enjoying the festivities despite all the turmoil happening around the world.

Eighteen year old Ellen Watkins is experiencing her first New York New Year’s Eve celebration. Her folks are visiting her sister and brother-in-law in Germany for Christmas. She is staying at the university with a few other friends, and the chance to be part of this is too big an opportunity to pass up. Ellen is a farm girl from a small town in Vermont, and the noise and the crowds are almost enough to force her back inside. People mass in each direction. Her every movement within the swarm results in a brush with a stranger, sometimes in more intimate ways than she is comfortable.

She drifts towards the edge of the crowd and now watches the LED ticker on the side of the NASDAQ building as much as the show on the stage.

*****FRENCH PREMIER DEMANDS ACTION ON STADE DE FRANCE TERROR SUSPECTS*****

The counter ticks over to fifty seconds as Ellen’s mind conjures images of the hundreds of body bags being dragged from the Parisian stadium, the demands for action, and the news stories of people being rounded up and deported or just “disappearing”.

*****RUSSIAN CEASE FIRE HOLDS FOR FIRST WEEK IN KIEV*****

Forty seconds left in 2010. Thousands of Ukrainian people are hoping for safety from the conflicts raging around them. The Russian forces are encamped to stay, and it appears no action by the Ukrainians will dislodge their invaders.

*****INDIAN FORCES PUSH DEEPER INTO KASHMIR. INDIAN PRIME MINISTER THREATENS FURTHER ACTION SHOULD TERRITORIAL GAINS BE ATTACKED*****

Thirty seconds remaining. Another conflict rages in the Far East. Added to the ones closer to home, there must be hundreds of thousands of people celebrating the entrance of the New Year in fox holes and armoured vehicles.

*****SHORTAGES THREATEN TO BRING INTERNATIONAL TRADE TO A HALT. FUTURES MARKET CONTINUES TO FLUCTUATE*****

Ellen knows the farm struggled to obtain certain chemicals this year, and prices are set to increase for even tighter supplies next year. Her father is planning ahead and managed to purchase some older, less chemically dependant, strains of wheat and oats from a friend with a hobby farm. If the situation rectifies itself he’ll be out a lot of money. If it doesn’t, their farm may yield one of the few crops in the area.

*****THOUSANDS ATTEMPT TO FORCE GM TO PAY WAGES OWED TO STAFF OF CLOSED MICHIGAN PLANT*****

Everyone in the United States knows someone who lost their job in the collapse of manufacturing as parts supplies from Mexico dried up. Her own brother lost his job at Hewlett Packard in Littleton, NH when they had to scale back support to match the reduction in output. He is helping on the farm now, but millions of others are without work, or hope. The crowd begins to shout, counting down from five, not letting the global situation dampen their spirit for a party. The ball on the top of 1 Times Square disappears, and the fireworks explode across the city skyline.

Ellen can’t help but feel this is too much celebration for a year with nothing to recommend it. Perhaps 2011 will be a better year for all concerned.

Exacerbating the problem is both the pressure corporate America exerts now with the loss of their Mexican plants and the growing tension between farmers and migrant workers. Many U.S. companies, including those in the automobile industry, regret their previous addiction to cheap parts from Mexican-based plants and are forced to shutdown their American-based plants due to broken supply lines. With the poor crop harvests and high temperatures, migrant workers are receiving less pay for more work.

A week before Thanksgiving, the president of the U.S. sends a former president turned diplomat to Mexico to try and resolve the issue. The Thanksgiving Day Deal (as it’s come to be called) is announced to the general public. It allows for the reopening of the border as well as a joint U.S.-Mexican border patrol initiative. Neither side is entirely happy with the terms of the deal that takes 9 months to actually pass the U.S. Congress. Public tension settles down but still remains high in towns on both sides of the border.

One month after the video making its way onto the internet, Russia launches a major assault into the Ukraine. The Russian

president gives a speech to the media declaring Russia’s right to preemptively protect itself from threats. In a spectacular show of combined arms Russia quickly encloses the Rada controlled areas and begins to tighten the noose. Russia now is effectively fighting extremists on two fronts, in the Ukraine and in Chechnya.

Russian forces make light work of most of the Rada resistance except for the areas around the city of Luhansk, the Rada stronghold. Rada insurgent fighters manage to inflict moderate losses on Russian troops in heavy fighting in and around the city. It takes another month of fighting before the Russians declare the city liberated. Although beaten, the Rada are not destroyed totally. Many survivors go on to wage an Iraqi-style insurgency against their Russian occupiers.

The Ukrainian government does not take the intrusion into its sovereign territory lightly. While they are grateful for the assistance Russia is providing against Rada elements, the Russian invasion is seen as an act of war. Rather than engaging the Russian military however, the Ukrainian military sets up the Luhansk Oblast as



a containment zone. The goal being to keep Russian forces from engaging targets elsewhere in the country and to be prepared to repel the Russian invaders once the Rada is put down.

Russia has not been immune to the severe weather seen around the world. Crop production is at an all time low, and the Russian people are demanding action from the government. During the Soviet years, the Ukraine region was often seen as the breadbasket for Russia being a major source of grain, sugar, meat and milk products. With the Russian military already in the Ukraine, it does not take much provocation to extend the action.

Arguing that the current Ukrainian government is incapable of controlling its people, the Russians again state their rights to protect their people even against perceived threats. Once the Luhansk Oblast has been pacified though, Russia begins to target the entire country for "pacification". Using forces already within the country augmented by units near Kursk they move on the Ukrainian capital of Kiev.

Although the Ukraine is a supplier of UN peacekeeping forces, no other country comes to their aid. The massive refugee crisis in Western Europe has many believing the Russian rhetoric. Once the action in the Ukraine progresses from securing against a possible nuclear threat to complete pacification, people in France and Germany for instance side with the Russians. Many European media outlets begin to portray this action as an expanded security action by the Russians rather than an invasion. The politicians in Europe are basically forced to abide by the wishes of their constituents. Russia's threat of the oil supply coming through the region into Europe quiets those European politicians not swayed by the media or the populace.

The U.S. also abstains from the conflict both militarily and diplomatically. With no backing from the European members of the UN Security Council and no willingness to go at it unilaterally, the U.S. sits this one out. Although that doesn't mean that U.S.-made weapons and supplies don't reach Ukrainian insurgents.

Although the march to Kiev is not a cakewalk, the Ukrainians are severely outnumbered. This is especially true once Russian VDV (or airborne troops) combat drop to the west of Kiev. In doing so, they capture and secure the main highways west and south of Kiev cutting off reinforcements to the city. Russian naval infantry also assault and capture Odessa. With the Ukrainian forces split on four

fronts, the main Russian assault faces only moderate resistance on their way to Kiev.

Russian naval forces in the Black Sea dispatch or capture almost all of the vessels in the Ukrainian navy, most while still in port. The only real issue of consequence is with the Zaporizhzhia, a Foxtrot class submarine. Russian naval forces are unable to account for her after the capture of Kiev and the fall of the Ukrainian government. Most military officials believe that she is scuttled rather than allowing her to fall back into Russian hands.

Kiev falls on December 23rd. A military coup takes place against the Ukrainian government after Kiev falls. The new "President-General" of the Ukraine officially surrenders the country on the 25th with a cease fire declared on the 26th. Rather than leaving the country as a sovereign nation and then having to deal with "nation building", Russia formerly dissolves the Ukrainian government and absorbs the entire nation into Russia. Most Western nations are appalled by this action but reluctantly agree that it is simply the easiest method to deal with the situation.

Surviving Ukrainian military personnel and equipment are absorbed into the Russian military and pressed into service along the Belarus/Ukraine border far from the political center of the country. The Ukrainian armed forces personnel outside of the Ukraine (including those in Kosovo, Lebanon and Sierra Leone) take political asylum with their respective host nations rather than return. A small insurgency takes hold in Ukraine but it does not have the equipment or manpower to do more than become an annoyance for the Russian military.

India's inaction during the Pakistani civil war, while publicly hailed as an action of peace, secretly unnerved leaders around the world and left them wondering about Indian motives. On December 3rd, those motives are brought to light. After fighting throughout the year weakened the Pakistani military, India decides that the timing is right to seize control of the disputed Kashmir region. The military force India has been slowing building up along the border into the disrupted area moves across the border and secures village after village and city and after city.

As 2010 comes to a close almost every developed nation and hundreds of third world countries are involved in some sort of conflict. This is up four fold from just a few years ago. A domino effect surfaces as more and more countries begin to experience

armed conflicts. With most of the world participating in the global economy as one nation's situation worsens so does another's.

Normal commercial shipping and trade is all but halted with many nations who provide much needed raw materials. Several international incidents involving piracy and attacks on civilian shipping take place. With Navies already stretched thin due to brush wars, there is little protection for many non-military vessels.

Not only is trade and commerce globally linked, but the stock markets of East Asia, Europe and the U.S. are also linked. As one falls so do the others. The situation between the U.S. and China bleeds over to the European markets causing economic problems for the EU. This is one of the reasons that commercial ventures with former hostile states, such as Libya, begin to pop up. The lines between who is a friend and who is not starts to blur once the pocketbooks start to dry up.

2011

As the new year unfolds, Argentina, Peru and Brazil step up their border protection with the crisis in Bolivia growing worse by the month. Taking a different avenue of action, Venezuela begins to arm and train the campesino. They even send in several units to provide security for the campesino leadership.

Not wanting to have Venezuelan influence spread throughout South America, nor wanting to have the violence spread beyond the Bolivian border, Argentina, Peru and Brazil enter into Bolivia as a peacekeeping force. For the first few weeks, things seemed to calm down, and there no major clashes are reported. All of that is ended the first week of February, when an Argentinean helicopter is shot down by Venezuelan forces.

Venezuela refuses to issue an apology, stating that the helicopter entered into Venezuelan/campesino controlled airspace. Argentina claims the helicopter was well within a (Bolivian) federally controlled area. The crash site is secured by the Venezuelan army who deny access to Argentinean military. If not for cooler political heads in Argentina, the situation could escalate into open conflict between the two nations. As it stands though, Argentina is not willing to commit to such an action.

In the two months since India moved on the Kashmir region, they have managed to wrestle control away from Pakistani military forces. Pakistani insurgents take to the mountains and attempt to wage a guerilla style resistance against their Indian occupiers. However, this is the only opposition India faces in the region after expunging the Pakistani army. After the heavy fighting is over, the Indian army halts its advances and settles into securing and pacifying the region. Indian armed forces are now within 60 miles of Islamabad but hold their advance, since civil war is still waging in central Pakistan.

After the Pakistani army retreats from the disputed Kashmir region, the only thing keeping Pakistan from launching its arsenal of nuclear weapons against India is the confusion of control between military and government forces (and the multinational military presence providing security at the Pakistani nuclear weapon sites).

The Indian army stops shy of entering areas disputed with China. Even though the Indian army does not encroach upon Chinese territory, the Chinese army is mobilized to the disputed zones in an effort to dissuade India from such action. Under pressure from the Chinese government, India agrees to diplomatic talks regarding the region. After a week of intense negotiation, India concedes control of the controversial districts to China while China recognizes India's rightful annexation of

the region. This essentially blocks any UN action against India over the military incursion into the Kashmir disputed region.

After weeks of unsubstantiated rumors regarding failing health of the de facto leader of North Korea, he is found dead on the morning of April 13th, 2011. Surprisingly, news of his death travels world wide in a matter of hours. Immediately, South Korea begins preparation for an invasion into North Korea in an effort to unify the torn country.

On the 16th of April, South Korea launches its invasion of North Korea. The invasion force encounters light resistance as it makes its way across the DMZ and into North Korea. However, the Republic of Korea Army only advances about 50 km before a cease fire is declared, and Reunification is in the works.

Once the invasion begins, a North Korean General seizes control of the Korean People's Army and starts a coup. By mid-afternoon on the 17th, the coup is over and the general declares himself Eternal President of the Republic, a gutsy move and one which successfully rallies the people behind him. His first order is to disband the government and surrender North Korea to the South. On April 19th, Reunification Day, North Korea formally surrenders at Juche Tower in Pyongyang.

The Reunification of the Koreas has immediate effects on the Korean people. Food and other aid is distributed amongst the North. Population centers begin to shift as families migrate south to join their loved ones there. The population shift opens up massive amounts of land, which after help from the U.N. and Seoul is made farmable by the spring of 2012.

One unfortunate side effect is the loss of military equipment after an immediate downsizing of the Korean People's Army due to desertions. Most of this equipment finds its way on the black market. South Korean investigators find evidence of the North's on going secret nuclear research. The one thing they don't find is three nuclear bombs reported in North Korea possession from over five years ago.

After almost a year of investigating, the Renseignement G n raux (French Intelligence) is able to identify the group responsible for the Coupe de France bombing. The attack is believed to have been perpetrated by an extremist group operating out of eastern Belarus, in retaliation for the treatment of Ukrainian refugees fleeing the crisis in the Ukraine. The group has ties to several other terrorist organizations and is rumored to be run by a former high ranking KGB officer.

The French president immediately demands that the Belarus government track down and turn over those involved in the Coupe de France attack. France sends a diplomatic team to Belarus to discuss the joint eradication of the extremist group responsible for the attacks. After a week of talks, the French diplomats are expelled from the country with no resolution. Partially due to corruption combined with an inability to carry it out, the Belarus government refuses to comply with the French ultimatum. France declares Belarus a terrorist safe haven. This is especially poignant as it is the same justification Russia used to invade Ukraine in the previous year.

Although in 2006, the French president announced that France would be willing to use nuclear weapons against any state launching a terrorist attack against it, the initial French response is much more conventional. Launching from Latvia, a company of French Foreign Legion troops attempts a nighttime infiltration of Belarus in order to deal with the extremist group responsible for the Coupe de France bombing.

The following day, the Belarus government releases footage of several downed aircraft that they claim to be evidence of a French incursion into their sovereign territory. Included in the footage are what appear to be 15 survivors, which Belarus claims they've captured and later executed as enemies of the state.

Invasion

If polled, most educated people world wide resoundingly expected any attack on the Korean Peninsula to be initiated from the North. However, they were wrong. Why did South Korea, a normally peaceful nation, decide to take military action against its northern brethren (especially after the years of quite and calm radiating from the North)? The answers given to the world a week after the invasion were for human decency; to finally free their fellow Koreans from tyranny and oppression; to unite all of Korea under one free flag.

The North Korean leader's death and the subsequent power vacuum created (largely due to his cult status) presented the prime opportunity for reunification by the South. Two large assumptions, however, were that the southern army would be welcomed as liberators, and that the Korean People's Army would be both ineffective and unwilling to stop them. Both turned out to be correct.

No one is ever told a different story nor is there ever any serious publication regarding the reasoning behind the invasion before the collapse of modern civilization.

After the details of the Belarus fiasco the French government is forced to step up its response. Promising swift and decisive action, the French Parliament authorizes the Prime Minister to take any and all necessary actions to deal with these terrorists.

Such action is finally exercised on the anniversary of the Coupe de France attack as France launches a single nuclear Submarine Launched Ballistic Missile (SLBM) with six independently targetable nuclear warheads, from a submarine located in the Baltic Sea. Five of the nukes target several suspected terrorist strongholds in an area north of Cherikov in Belarus. The last warhead strikes the Belarusian military's Western Operational Command at Grodno.

The French believe the strikes to have successfully decimated the terrorist group, their infrastructure and Belarus' capability to retaliate. Public outcry is high especially when the dust settles and it is determined that all of the approximately 17,000 civilians in Cherikov are also killed in one of the strikes (not to mention the deaths from the surrounding towns).

The submarine responsible for the launch is believed to have been hunted down and destroyed by Russian naval forces before it is able to make its way back into open waters.

The nuclear attack is soon dubbed the "Shots Felt 'Round the World" by the press as word of the attack spreads faster than its blast wave. At 9 p.m. that night, the French president takes to the air waves explaining to the world what the French people have just done. It is believed for a brief moment the whole world is silent in shock and awe. In a double-speak twist, most of the civilized world publicly condemns the action and calls for retaliation against France, while many of those same nations privately offer France support and assurances of inaction from the UN and EU.

Russia (as well as most Middle Eastern nations) immediately pulls its ambassador from France and closes its embassy there. Russia then goes before the UN Security Council demanding immediate action against France over its blatant disregard for international peace and national sovereignty. This time around though the U.S. blocks any action from the Security Council, since the attack is seen as a necessary escalation in the Global War on Terror. Outside of the Security Council, Germany also sides with the French as does Spain, Israel and Italy.

As the conflict escalates and countries begin to take sides, Russia ceases all oil exports to Europe. The embargo also includes any nation that publicly issued statements of support for France over the Belarus attack. This embargo is absolute and includes all

means of transport (trucks, ships and pipe).

Since Belarus lacks the ability and resources to respond to a nuclear attack on its soil, it turns to mother Russia for aid and assistance. Russia sends aid and troops into Belarus. Within a month over 50,000 Russian troops enter Belarus on the peace mission. It doesn't take long, however, for Russia to expand its mission in Belarus to also include the supposed weeding out any surviving extremist groups.

Back in Europe, a war of words is being waged over France's actions and the threats from Russia, with each side taking a more and more belligerent posture towards the other. By the end of August, this devolves into the whole of Europe versus Russia with the Russian oil embargo matched by a complete trade embargo by all EU countries. European nations start to ramp up their military in preparation for what looks like an inevitable confrontation.

The EU has its attention diverted elsewhere with the quagmire in Darfur breaching the borders. It's been a year and a half since the fighting became manageable, but all that changes in August. Muslim extremists make their way into Chad, Ethiopia, the Central African Republic and the Democratic Republic of the Congo raiding villages all along the borders of those countries with Sudan.

The action prompts a quick and violent response from those respective governments. All of them send their militaries into Sudan hoping to kill the threats at their source. The situation quickly destabilizes all of the previous year's work and throws the whole region into chaos.

With the situation between Russia and France, the member nations of the Darfur peacekeeping force refuse to send anymore troops (and several actually pull theirs out). This leaves far too few troops to deal with the escalating crisis. Elements from each of the invading armies eventually cross paths with each other, and these meetings always end violently. Incidental skirmishes spark a war within a war as invading armies now are not only fighting the EU BG forces but each other. Fighting rapidly spills out of the Sudanese border and escalates into open warfare between surrounding nations.

A side effect of this chaos is the chance for many African nations to let loose the reigns of their own militaries and actively engage in open conflict with their neighbors. Once it becomes clear the UN is not sending any more military personnel, or substantially more aid, into the region, additional countries use this opportunity to extract revenge for ancient grievances or raid for supplies.

By the end of November all of the EU peacekeeping forces are withdrawn home to deal with the Russian threat. Most of Africa falls into chaos by the end of this year. Only a handful of bright spots remain by December – Egypt, Libya, South Africa and Côte d'Ivoire. The worst areas end up being those along the coast as the region witnesses a massive return of piracy on the open waters.

Seeing the explosive growth of rich farm land in Libya, Egypt embraces its neighbor and in the fall, signs multiple treaties of mutual support. The treaties include provisions for sharing the water system, providing cheap Egyptian labor for the project's use, mutual defense and sharing of technology. Egypt manages to open its first company town along the Libyan-Egypt border. These treaties prove to be very beneficial to both countries in the coming years.

Egypt experiences a huge boom in oil and gas transport coming thru the Suez Canal heading to Europe. The amplified revenue allows Egypt to provide increased financial support for the Man-made River Project as well as increasing its military might.

Throughout the year, Iraq slips further into its ongoing civil war. Right before Ramadan, the U.S. Army moves a large contingent (about 20,000 troops and equipment) north into Kurdistan to protect American interests and its Kurdish allies. The Iraqi government is disbanded by the Iraqi president, merely a token act, as the government essentially ceased operating months

2011 – Le Terrible

Le Terrible

Baltic Sea

02:21 hrs (Local) (20:21hrs EST)

Captain Julien Moliere of the French Navy SNLE (Ballistic Missile Submarine) Le Terrible checked the status of the various lighted boards around his submarine's control centre and turned to his diving officer.

"Make your depth thirty meters, all ahead dead slow."

The diving officer confirmed the order and repeated it to the young helmsman who made the necessary adjustments to the control yolk. The diving officer made some adjustments to the submarine's ballast to maintain the correct buoyancy for the depth. At dead slow Le Terrible made no headway at all against the currents, maintaining just enough water flow over the hull to sustain heading. The boat was new, less than seven months out of the yard and specifically designed to be silent. Captain Moliere was called into port twenty-three days ago and learned of new orders for him and his boat. His crew was replaced with one hand picked for this very task. His entire career led up to this moment.

"Weapons control, begin sequence for firing of number three missile. Key authorisation will be provided once required."

The crew was selected from the ready pool of submariners trained on the Le Redoutable Class submarines; every man tested in the top 2% of a specialized set of psychological tests. The crew were trusted to a man to take this action without question or hesitation. Captain Moliere didn't know it, but in addition to a psychological pre-disposition to follow orders, nearly twenty percent of his crew had some connection to the bombing of the Stade De France. Naval command and the government weighted the dice toward their desired outcome.

"Captain? Weapons control. We require authorization."

Captain Moliere walked to the weapons control station and took a very simple-looking key from around his neck. With care he inserted it into the designated lock and turned it. He watched as a green light turned red, then another, then another. At various positions, key members of his command staff removed systems that prevented the firing of the M45 missiles and the arming of its nuclear payload. Missile number three was no different from the other fifteen missiles Le Terrible carried. The missile was a three stage ICBM carrying six, TN-75 warheads, each capable of producing a yield of 100kt. Captain Moliere and his crew spent sixteen days at sea, including a very difficult passage through the Danish straits, positioning this ship and this missile in exactly the right position.

"Captain? Weapons Control. Missile number three is ready."

Captain Moliere turned to his diving officer who, without being asked, reported the boat at the correct depth and speed.

"Weapons control. Open door number three."

The faint "thunk" as the door opened and the pressure equalized sent the first tremor of fear through the crew. Every man aboard worried about Sound. Less than six hours ago they heard the passing of a Russian Kilo Class diesel / electric submarine. The Kilo passed within six thousand meters without hearing Le Terrible, and the crew lost her at a range of fifteen thousand. But any man-made noise could attract unwanted attention from kilometres away in every direction.

"Captain? Weapons control. We are at firing point, and missile three is ready."

Captain Moliere turned to the control centre crew and said in a quite voice "Coupe de France" before turning back to the weapons station.

"Launch missile three."

Cheyenne Mountain Facility

Control Room

16:30hrs (Local) (20:30hrs EST)

"What the hell?"

Sergeant Marie Long tapped a long string of commands into her terminal which brought up several strands of data onto her screen.

"Launch detection. Baltic Sea area."

She rattled off the coordinates of the launch and shunted her feed to the main screen at the front of the control room. Within seconds the watch commander stood leaning over her left shoulder.

"Anyone have a test scheduled?" He shouted across the now silent bull ring.

"Live fire cruise missile test into Kamchatka. Nothing from the Baltic Sea."

"Launch details?"

"Target shows at five thousand feet and climbing, minimal lateral travel. She's ballistic Colonel."

"Someone get General Hall on the phone now."

For a minute eyes watched the blip on the screen elongate into a dotted line that stretched from the Baltic Sea right

2011 – Le Terrible continued

across the heart of Eastern Europe and up into Belarus.

“Lateral motion increasing; she’s heading north. Tracking shows first stage separation at one minute fifteen seconds after launch. Altitude is now seven six thousand feet and climbing slowly. Tracking suggests depressed trajectory shot. We’re estimating maximum altitude at nine zero thousand and final target in Belarus.”

The Colonel was almost unable to act. A circle over central Belarus shrunk slowly as the missile arced towards its final target.

“Do we have any identification?”

“First stage separation is consistent with a French M45. Six warheads of one hundred kilotons nominal yield. Circular Error Probability is three hundred and fifty meters.”

“French? Double check. Why would the French be firing into Belarus?” The Colonel’s mind was spinning. One hundred kilotons would rip the heart out of any city, but a depressed trajectory shot was low and fast. The chances of missing your target and over shooting, or under shooting, were incredibly high.

“Altitude now falling rapidly. Second stage has not yet separated. We are now showing MIRV separation. Six warheads have separated. Missile is still consistent with French M45.

For the first time in a long military career, the Colonel’s instinct conflicted with his training. He could do nothing. The missile was thousands of miles away. But in his heart he wanted to bellow orders and make it stop. For four more minutes the entire control room watched as the first nuclear weapon fired in anger since the Second World War hurtled with five sisters toward Belarus. Each person felt isolated, and yet shared the same conflict that raged inside their commander - We have to stop it/we can’t stop it. Reports flashed from the control room to a dozen organisations, which flashed it to a hundred more, which flashed it to thousands of individuals. Not one of them could make a difference.

“Altitude now seven zero thousand... six zero thousand... Five zero thousand... Four zero thousand... target expected to be town of Cherkov... three zero thousand feet... two zero thousand... Detonation.”

Cherkov

Belarus

03:37hrs (Local) (20:37hrs EST)

Natalya sat in her bedroom window and looked out at the night sky. Her parents were in bed in the next room. She knew she should be in bed too, and she would get a spanking if father found her awake. But stars fascinated six-year-old Natalya. The city was dark, lights turned off to conserve power, so she had a perfect view of the thousand pinpoints of lights that dotted the heavens. As she scanned the sky one last time she saw a shooting star. Closing her eyes she wished for a pony.

Paris

France

03:00hrs (Local) (21:00hrs EST)

The French President walked into the briefing room to the assault of a hundred camera flashes and a barrage of questions and shouts. He walked up to the dais and stood facing the assembled reporters.

“I have a statement to make. I will not be taking questions afterwards.”

He reached over and took a sip of water from the glass provided and then looked down at the autocue on which his prepared statement was starting to appear.

“This day we have proof that the bombing of the Stade de France was perpetrated not by a radical group, but by another nation intent on destroying the basic tenets of our nation’s Liberty, Equality and Fraternity.”

The cameras whirled and clicked; strobes blurred his vision and made the faint words on the autocue difficult to read.

“This nation stole the liberty of ten thousand of our citizens and stretched the limits of national brotherhood we felt toward other countries in this time of darkness. France endeavoured to promote order and stability as nations made war on nations. Peaceful International leadership was thrown in our face on July 30th last year when operatives sponsored by the state of Belarus detonated a bomb that took the lives of over ten thousand of our sons, daughters, lovers and parents. This bomb was aimed solely at the people of France with the expressed aim of breaking our will to fight. Those who planned this act greatly underestimated that very same will to fight.”

The room was silent except for the whir and click of cameras and a cough from someone at the rear. The President’s public speaking manner was intense and always drew crowds to cheer. Now every voice was silent, waiting for the bombshell.

“Our Liberty was assassinated. Our Fraternity shattered. We were left with Equality. Five hours ago I ordered the Force de Frappe to commit a retaliatory strike on training camps near the town of Cherkov in Belarus. This area has been

2011 – Le Terrible continued

identified as not only the source of the bombers, but also as a harbour for those who planned and organized the atrocity on French soil. Repeated attempts to extradite these individuals failed, and we were left with no choice but to extract our justice in the way we promised for the last six years.”

Cameras fired again as a few photographers in the room realized what the “Force de Frappe” were and aimed to capture the photograph that would head tomorrow’s papers world wide.

“Two and a half hours ago those orders were executed with a single nuclear strike launched from a French Submarine. The strike was executed by my authority and with the correct procedural backing of the government majority. We warn other nations that we will not tolerate the detention, harassment or murder of our citizens any longer.”

His words spoken, the President turned and walked from the room. The stunned reporters never had time to gather their thoughts and throw questions at him. Everyone in the room, and those watching live on television around the world, knew that a major turning point had been reached, and that the signs were not good.

before. Sunni Arabs in Iraq send envoys to the king of Saudi Arabia, while Shiite clerics turn to the Supreme Leader of Iran for assistance in dealing with the civil war.

The day after Ramadan ends, the Iranian Army drives into Iraq from the east while Saudi Arabia invades from the south. Both nations proclaim their actions are in accordance with international and Islamic law and further announce their intentions are only regional stability. However, both quickly resort to open warfare against the other. This new twist in the Iraqi conflict is merely the start of a new era in the Middle East, the Great Muslim War.

A month into the renewed conflict, Kurdistan officially announces its independence and breaks away from Iraq to form its own sovereign nation. While this is heard around the world, it makes little noise in Baghdad as Sunnis battle Shiites. U.S. forces consolidate and prepare for attacks from either forces but nothing materializes. There is the occasional skirmish but no full scale attack from the Saudis or Iranians on the newly independent Kurdistan. Turkey, however, takes this opportunity to step up attacks against PKK targets in Kurdistan but encounter American forces and is easily thwarted. This doesn’t stop them from the occasional incursion and long ranged attack.

One of the first casualties in the Great Muslim War is the almost complete disappearance of the remaining terrorist groups in Iraq. Neither the Saudi nor Iranian forces suffer these groups to operate. Within a month of the invasion, terrorist groups in Iraq are either killed or retreat to other areas to continue their war against the West.

In retaliation for supporting Shiite Muslims during the last seven years in Iraq which they believe to be the central cause of the whole situation, Saudi Arabia places an oil embargo on the U.S. and all coalition forces that took part in the war. Saudi Arabia agrees to lift the embargo under an “Oil for Weapons” program. Reluctantly the U.S. agrees to supply arms and equipment to the Saudis during the Great Muslim War and to not interfere with Saudi operations

He Who Cares The Least

The most tragic casualty of the **Twilight War** has to be Africa. Out of all of the conflicts around the globe, those waged on the African continent are completely forgotten by the rest of the world. The peoples of many African nations are simply left to fend for themselves with no internal or external assistance. Once the Twilight War is in full swing next year, these African conflicts are simply forgotten. Many nations will run out of industrial supplies (oil, ammunition, medicines, etc.) by the end of 2012. This causes many to revert to less modern methods of survival. Only those nations near the coast maintain the resemblance of a 21st Century way of life.

in Iraq (including giving control of Basra and southern Iraq to the Saudis). For this, the U.S. will continue to enjoy an uninterrupted supply of oil. The remainder of U.S. forces in Iraq move north into Kurdistan.

During the fall, Russia transfers two Army divisions to Kaliningrad Oblast. In November Russia sends a diplomatic envoy to the President of Belarus. The diplomat offers Russia’s terms of surrender to the president. Having so many Russian troops within the borders, additional troops in the Ukraine and in Kaliningrad Oblast, not to mention the fact that Belarus is dealing with a national emergency beyond their capabilities, the president reluctantly surrenders Belarus to Russia without a shot. While the Belarusians are not particularly happy with this situation, there is little they can or want to do. At the moment they are completely dependant on mother Russia’s gracious aid.

On December 1st Russia responds to France’s attack on now Russian soil. Two Delta IV class submarines off the western coast of France launch one SLBM missile each at Europe. Each warhead consists of eight nuclear multiple, independently targeted re-entry vehicles (MIRVs) rated at 100 kt a piece, for a total of 16 nuclear strikes. The two submarines slip into the North Sea and join the rest of the North Fleet as they prepare to tackle the French Navy.

Four of those strikes are high attitude bursts creating an electromagnetic pulse (EMP) that serves to knockout and disrupt communication and other electronic equipment. Most modern day equipment is rendered inoperable either directly from the EMP or because of the loss of power.

Everything within about 800 miles of Paris, France is affected by the EMP. This covers all of Britain, Ireland, France, Germany, Belgium and the Netherlands. It also covers parts of Portugal, Spain, Italy and parts of most Western European countries. In an instant Europe is blanketed in darkness. The Russians calculated this effect to stop well short of their current locations. The remaining 12 nuclear targets are the cities of Paris, Brest, Toulon, as well as several key French military installations.

In retaliation, France immediately launches over three dozen nukes targeting various sites in Russia. However, the U.S. decides that an all out nuclear exchange is not an acceptable situation and uses its new missile defense system in Poland and the Czech Republic to shoot down the French nukes. They manage to successfully engage 75% of the missiles. The remainder go on to strike their intended military targets in Russia, including an EMP burst over major industrial areas in western Russia, centered over Kazan, Russian and reaching as far as the Kiev, Ukraine.

As soon as other European nations can mobilize their representatives, they meet with the French military (now in charge of the country) imploring them not to continue using nuclear weapons against civilian cities. They also negotiate with Russia against any further use. Both sides decide to heed their pleas and



through intermediaries agree to a nuclear cease fire against non-military targets. However, both the EU and Russia prepare for all out war.

As Russian oil supplies are cut off from Europe over the war, a harsh winter settles in. After suffering years of record high temperatures during the summer and mild winters, 2011 turns the tables, and the world witnesses the most brutal winter in at least a century. By October, frost sets in. By November many countries already see snowfall, and by December almost all of Europe, Russia and North America are covered in blizzard-like conditions.

As November rolls around, Argentina sends additional units into Bolivia to secure its area of control and counter Venezuelan

actions. Surprisingly, Venezuela counters this by withdrawing all of its combat troops from Bolivia. Also, not wishing to be dragged into a sustained conflict, Brazil and Peru pull their troops out of Bolivia in response and move them to secure their border with Bolivia.

The conflict in Bolivia spreads across the border though and begins to influence poor farmers in other countries such as Paraguay. The Soybean War in Paraguay is now taken to a new level as campesinos there take arms against the wealthy foreign controlled farms in an attempt to take them back. In addition, several anti-government factions in other countries begin renewed actions, including the Shining Path in Peru.

At the end of the year, several Central Asian countries hold a conference to address the Great Muslim War raging to the south. At attendance are Turkmenistan, Uzbekistan, Kyrgyzstan, Tajikistan and Kazakhstan. The conflict in Iraq essentially boils down to a conflict between Sunni and Shi'ah Muslims. With the conference attendees being predominately Sunni Muslims, there is a heavy inclination to join the fight. However, for the time being cooler heads prevail. They do draft the beginnings of a loose confederation of nations. The Islamic Confederation of Nations (ICN) is the first step towards a unified coalition of nations aimed not only at thwarting Shi'ah religious extremists but also to provide mutual support and assistance.

The Nuclear Winter of 2011

The result of the nuclear exchange across Europe causes a global climate shift compounding an already harsh winter. All across the northern hemisphere countries are covered in snow measured in feet not inches. Due to the extreme heat waves that blistered the summer months for the past few years most people fell into a lull regarding winter and forgot how bad she could be.

The effects of the winter of 2011 go way beyond the numbers of dead left in its wake. Sickness is rampant and medicine in short supply, as the previous years' wasted stockpiles caused minimal productions from pharmaceutical companies. Industry comes to a standstill; those companies not forced to close due to the weather or the EMP are forced to close due to worker shortages caused by sickness and death. By spring of 2012 there are not enough jobs, food, or money to go around for people to continue a "normal" life.

Europe is hit the hardest. On top of the unusually cold weather, Europe is also under the effects of a nuclear winter. Finland, Sweden and Norway take the brunt of the wintry blast. All three countries are blanketed in over 10m of snow and average temperatures of -20° C for almost the entire winter. The rest of Europe deals with the high numbers of refugees streaming in from the east only to find food and work shortages and a geopolitical climate not seen since post WWI Germany.

2012

The situation in South America begins to rapidly spiral out of control. Almost every country is now involved in some sort of serious conflict. The nuclear exchange in Europe cuts out a huge market for goods both legal and otherwise from the South American economy. On the legal side, many of the South American countries that were prospering from their unique situation now begin to feel a huge pinch as at least 40% of their market is cut off. Those involved in the South American drug trade are also hit hard by the war in Europe, which cuts shipments by almost 90%.

The increasing economic strain felt by many adds new fuel to the fires already burning. Many people who were content and enjoying the benefits from the past few years are suddenly left unemployed. A lot of people turn to the different fighting factions to offset their new lot in life, adding an influx of warm bodies to aid their various causes. The typical response unfortunately involves violent crackdowns rather than social reforms and improved government assistance, again adding more fuel to the conflicts.

Argentina and Brazil are the only two countries without serious internal strife. Neither is heavily dependent on the drug trade, and both have invested heavily in their infrastructure allowing them to better handle the new situation. Many countries begin to look upon them with envy. To help secure Brazil against the growing chaos, the U.S. sends a Marine Expeditionary Unit (MEU) to aid in securing the interior in January. The Marine units are based out of Mato Grosso, a Brazilian state in the western part of the country near the Bolivian border.

The entirety of the European Union has joined the French coalition save Ireland and Great Britain who declare their neutrality. The U.S. although involved also declares its neutrality in the matter. All of this might be moot as the worse winter in over a century rolls through the region and brings everything to a stand still. There is no Russian ground invasion until the end of February when Russia invades Poland. The severe cold even hinders the naval and aerial war.

Russia waits until both the nuclear fallout and the winter eases before beginning their ground invasion. They launch a three prong assault on Europe on February 25th. The two divisions from Kaliningrad Oblast strike northern Europe, one marching toward Berlin and the other toward Paris in an attempt to strike at the heart of the EU defense. Army-sized elements from the former Belarus and Ukraine regions strike at central and southern Europe respectively.

In addition to the main attack force, a division of VDV troops (Vozdushno-Desantnye Vojska or Russian Airborne Assault Troops) is airlifted into parts of Western Europe and dropped in small platoon sized elements to disrupt and distract defending forces. Russian VDV troops attack train depots, shipyards and minor manufacturing centers. Using guerilla style tactics they wreak havoc with EU forces in Spain, France and Germany.

A majority of the European forces are in civil emergency mode reacting to Mother Nature when the Russians begin the ground invasion. Although there has been some preparation for the inevitable attack, the severity of the freezing weather forces most countries to focus their attention internally. However, during the winter there are several minor confrontations with EU units as Russian forces probe the Polish border.

Russian forces want to get as far into Europe before the snow and ice start to melt, making travel all but impossible. Modeling their attack after the WWII blitzkrieg style, the Russians make tremendous and rapid headway into Europe. They manage to complete their conquests of Romania and Poland before severe flooding begins. But they are stalled on the western borders of those countries as the countryside becomes almost completely impassible, with roads and even some small towns washed away (and with resistance from both EU BGs and civilian insurgents picking up). With the bulk of the EU BGs awaiting them, Russian forces settle into containment zones, securing their gains and solidifying their lines.

Spring of 2012

The effects of the extremely harsh winter of 2011 continue into the spring of 2012. The winter stretches deep into the month of March and almost into April. Across the northern hemisphere there is almost no early season planting anywhere. The cold temperature isn't the only fault, once the weather begins to warm the melting snow and swollen rivers leave soil too unstable to plant. This interferes with more than just the spring planting; commerce, travel and other aspects of normal life are equally impeded by the rain, mud and lack of food.

It isn't until late May and early June that many farms are able to plant crops. Once planting begins in earnest, many farms find that the much needed top soil itself has been washed away. Large quantities of perennial crops suffer, too damaged from the freezing winter to yield anything viable. In many parts of the world this year's harvests will be only about 10% of what it had been last year. Even the U.S. experiences a crop shortfall of over 65%. Agricultural imports that would have normally been used to offset crop shortfalls are affected as well in many nations.



With the loss of a major supply of oil, natural gas and electricity, this winter is extremely harsh for most Europeans. Many towns and cities are low on fuel, food, medicine and other necessities when the Russians come through. A lot of cities the Russians encounter on their march through Poland and Romania are forced to surrender and side with the Russians just to deal with the realities on the ground.

The delay of ground forces does not stop the naval and aerial war. A major battle for air superiority is waged along with daily bombing attempts from both sides. Unlike the early ground war, the aerial war is a one of attrition with neither side coming out the victor. Several key cities and numerous military assets are targeted and successfully bombed both conventionally and by nuclear weapons during this time on both sides. On the naval front things are not much different than the aerial one. Massive battles take place in the North Sea, the Baltic Sea, the Mediterranean and the Atlantic.

Restricted availability of fuel and oil, due to both the Great Muslim War and the loss of industry thanks to the EMPs, plus massive combat losses create a problem for both sides. By the summer, both sides are left with few naval and aerial resources and begin to use them sparingly, mostly in support.

While all of this is going on, the U.S. moves all of its military assets from Eastern Europe to central Germany and England to add to their defensive capabilities. For the time being the U.S. officially declares neutrality in the European conflict, but makes preparations for the defense of the European civilian population.

The Islamic Confederation of Nations is ratified by Turkmenistan, Uzbekistan, Kyrgyzstan, Tajikistan and Kazakhstan in each of the respective countries by March. The first act of business is to setup a Supreme Council of Elders to lead the confederation. The second act is to raise a coalition force to deal with Iran. This proves more difficult than selecting 50 men to serve on the council due to the terrain and remoteness of many of the regions in this area. It takes six months to raise an army for the purpose of joining the fight against Iran.

Several Middle Eastern nations (Syria, Iran, Jordan and Egypt amongst those attending) hold a May political conference in Jordan. Openly reported to deal with the growing worldwide crisis, its hidden agenda is the formation of a coalition of forces to attack Israel. Although all present welcome the prospect, none save Syria is able to provide anything more than a token force for the task, although Iran agrees to contribute equipment and supplies to the campaign.

The one exception being Egypt, who in the midst of an economic boom, presses for tolerance and peace at this time. With the U.S. being one of their major suppliers of military technology, Egypt finds itself in an awkward position. The desert is harsh on equipment, and parts come in short supply. With the growing conflicts in the region, Egypt sees its safety as a precarious situation.

Although Egypt and Israel had their problems in the past, for the last several years the tensions between them has been at a minimum. Seeing the turn of events unfolding, Egypt decides that Israel is serving as the perfect buffer state between it and more aggressive Arabs. Egypt sends envoys to Israel to warn them of the threat of war from Syria and offers "back door" support.

Before Syria can take its first steps, Israeli air forces target key Syrian military installations, including most of their SCUD and other surface-to-surface missile launch sites. Both Syria and Israel suffer heavy losses in this initial exchange. Almost all of the missile sites are destroyed, but the Israeli Air Force pays a high price suffering at least 50% losses due to heavy anti-aircraft defenses surrounding the targets. The remaining Israeli aerial assets are tied up for the duration of the conflict dealing with numerically superior Syrian air assets. Although able to hold their own, the

Israeli Air Force is none-the-less kept from playing a key factor in the ground war.

A mixed regiment of Syrian and Iranian Special Forces infiltrate into Gaza prior to the start of the conference and begin training and equipping Palestinians (including giving them access to small caches of chemical weapons). Once the news of the Israeli preemptive strike comes down, they launch a massive assault. Using scorched earth tactics, they burn a swatch through Israel until they reach just outside of Qiryat Gat where they are stopped by Israeli Defense Forces. Survivors slip into the countryside and begin to wage a guerilla war against the Israel Defense Forces (IDF) in hopes of tying up as many units as possible.

In the meantime, the Syrian Army invades Lebanon in order to reach Israel. Their main focus is to simply use Lebanon as a staging area with the idea of succession as a secondary goal. It takes Syrian units five days to reach the Israeli border and once there engage the IDF in a week long battle. The ensuing battle at Metulla is the largest engagement of modern armor with over 2000 tanks and other Armored Fighting Vehicles (AFVs) committed to the battle. While technologically inferior to the IDF Merkava's, the T-72s of the Syrian Army are numerically overwhelming. Twice the IDF calls upon reserve units and are close to calling upon a third before the IDF withdraws to Hatzor, and the Syria force retreats back into Lebanon.

For the next couple of months Israel and Syria use Lebanon as their own personal battleground. But things quickly resolve themselves to a stalemate with neither side making any headway.

The spring flooding throughout Europe begins to subside at the end of May. At the first signs of letting up, the Russian forces renew their onslaught through central Europe. This time they are met with heavy resistance from the EU BGs. Casualties are extremely high in these confrontations. The terrain is still hostile to both sides, and several engagements end in draws as natural disasters such as massive mud slides or sink holes claim both sides.

By mid-June conditions become favorable for conventional warfare. The Russians make hard thrusts into Czech Republic, Germany and Hungary. The central and southern forces fair better than the northern arm, both being able to secure most of the Czech Republic and Hungary. The northern arm enters Germany hoping to assault Berlin from the north.

However, the severe winter begins to take its toll on both the Russians and EU BGs. Dwindling food and fuel supplies soon bring the war to a crawl. Many front line units are reduced to rationing and scrounging just to exist, let alone fight. Most of the fighting is shifted to several key fronts, Berlin, Vienna and Udine (the German, Austrian and Italian fronts). As resources become more and more scarce, the fighting slowly evolves into a highly calculating game of chess. Neither force can risk losing men or equipment in an all out battle. Most of the next few months are spent moving units into positions, each jockeying for an advantage before committing to a battle.

In August, Spain informally withdraws from the EU BG force in order to deal with internal strife. Basque separatists groups armed and trained by Russian Spetsnaz "advisors" begin attacking soft targets and minor military installations, threatening internal security. In one attack they manage to capture a tank company and aided by the Spetsnaz begin attacking more and more military oriented targets. By the end of the year, Spain is enveloped in an internal war of its own.

Iranian Quds Forces penetrate deep into Saudi territory in a daring June raid. Making their way to the Ghawar Field, they manage to destroy 75% of the facilities and ignite many wellheads. It is believed that all members of the Quds Force are captured and executed.

The loss of one of their main oil fields, prompts the Saudis to move to secure their borders and reign in oil production and export. Even without the Saudis pull back, the attack causes a world wide ripple by the loss of almost 7% of the global oil supply. The Saudis cut an additional 25% of their oil exports.

Seeing the writing on the wall, many oil exporting nations also begin to cut their exports. In many cases nations cut off their exports completely. By October, the worldwide supply of oil is less than 50% of what it was before the Ghawar attacks. Many small countries with no oil reserves are forced to ration their existing supplies and make concessions and deals with their neighboring nations. This cut and the decrease in overall production cause oil prices to skyrocket to slightly over \$500 per barrel.

For the past few years, China has been in an economic and cultural recession. Having lost a huge source of income from foreign manufacturing, coupled with several severe internal disasters (such as the Three Gorges Dam incident), the Chinese government has been looking for ways to stabilize their economy and feed their people. In contrast, many of the other Southeast Asian countries are prospering in the wake of Chinese turmoil.

To prevent outright dissension and revolt, the Chinese President has been televising speeches invoking nationalism and sacrifice for the last few years. Beginning in 2012, the speeches take an ominous turn and began to demonize the fortunes of China's neighbors and in particular the U.S. (which is blamed for the downfall of the Chinese people). China's citizens easily take on an extremely xenophobic attitude.

On August 10th, a pair of Chinese submarines, one off each coast of the U.S., launches their contingent of nuclear missiles (almost 100 warheads total) at various targets within the U.S. Even with very little warning, the military manages to shoot down over three dozen warheads before they strike their targets. Several prominent cities are struck including Washington DC, Norfolk, Los Angeles and Chicago (some with multiple hits). At least two high altitude air bursts take place as well. Simultaneously a Chinese cargo ship is scuttled by her crew in the Panama Canal, at the Pedro Miguel Locks. The Chinese boomers are tracked by U.S. submarines. After the launches the Chinese subs are quickly destroyed. This incident fuels conspiracy theories for years to come.

There are only moments of warning before the Chinese nuclear strike. Both the President and Vice President survive. President is at a meeting of the Joint Chiefs at Camp David, and the VP is held at a secret location. Most members of Congress, however, are in the capital and perish in the attack. Only 10 Senators and 50 Congresspersons survive, due to being back in their home districts when the attack happens.

Great Muslim War

The Great Muslim War is just a name for a particular theatre of operation in the Twilight War. By the end of 2012 it encompasses almost all of the Middle East and Central Asia. By including the conflicts in Afghanistan, Pakistan and India, there are over a dozen countries and ethnic groups involved in Muslim-on-Muslim fighting. The only non-Muslim groups fighting within the region are the three U.S. Army divisions in Kurdistan and the Israelis.

By the end of the year, most of the fighting devolves into archaic means of attacking, with only a few mechanized units. The Saudis are the only well equipped units in the region. At a time when most transportation is provided by horseback, the Saudis still have operational tank brigades. Air superiority is determined quickly with the Saudis coming out on top. With all of these technological advantages, the Saudis gain no more ground than their Iranian counterparts.

Most federal agencies are decimated: the FBI, Justice Department, the Pentagon, the CIA and including many civilian agencies such as the Postal Service and Federal Deposit Insurance Corporation (FDIC). Along with the damage to the civilian and political infrastructure, the attack on Norfolk decimates a good portion of the U.S. Atlantic fleet, not to mention the United States Navy SEa, Air and Land forces (SEAL) community and Command and Control. What remains of the Atlantic fleet, personnel and command structure is forced to move south to Charleston, SC.

The airbursts create EMPs that cover almost the entire continental U.S. as well as portions of southern Canada and northern Mexico. Isolated pockets where the EMPs have little to no effect exist, especially in the deep south.

Six months prior to the attack, China sends a steady stream of 2- to 6-man Special Operations Forces teams via international travel to various cities, and establishes safe houses all over the western U.S. For additional support, they setup rental storage units housing all the weaponry they need to build several light infantry battalions to cause further havoc. Several days before the invasion these light infantry battalions gather into company size elements, equip and prepare to wage a guerilla style campaign against U.S. military forces from within.

Their mission is to engage military targets and delay any American response to China's SE Asian campaign. Their first targets are lightly guarded National Guard and Reserve centers scattered throughout the western part of the U.S., both to create havoc and to equip themselves with heavier ordnance. Their first few initial raids are overwhelmingly successful both in creating panic and in gaining heavy weapons.

The chaos created by the nuclear attacks provides the perfect distraction for the Chinese attacks. Word quickly spreads of an outright Chinese invasion. With very limited communications and no TV or radio, there's very little intelligence broadcast to describe the actual size of incursion troops. Both civilian and military organizations prepare for the Chinese invasion. National Guard units in every state are activated. Reserve units are called up across the country as well. Unfortunately, it takes over a week for most units to fully activate.

With the Pentagon destroyed and communications severely compromised, federal armed forces are delayed in responding, which further allows for the Chinese forces to gain success and make deep infiltrating strikes. These initial penetrating strikes are targeted at resupplying food and medical stores. This provides the Chinese forces the much needed supplies to allow for an extended campaign and buy their comrades valuable time to secure the gains of the true Chinese campaign in the South Pacific.

With reports of attacks coming in from all over the western U.S., the President institutes Martial Law and assumes control of the National Guard (thanks to a bill passed in 2006). Immediately, the states protest, although their pleas go unheeded. Within days, the President also signs into effect several Executive Orders, including splitting the U.S. into regions with military commanders setup to control civilian assets, authorizing the capture and detention of suspected Chinese nationals/sympathizers and suspension of the federal courts. All of which further shift power to the military and away from the states and the federal government.

Once accurate intelligence begins to come in about the Chinese attacks in the west, the military shifts assets and begins sweep and clear operations. These operations often create more chaos than the Chinese attacks. Soon, the Chinese are able to manipulate the military into committing large amounts of resources with very little effort on their part. The military is further hampered due to mass migrations away from the front line areas. The U.S. highway system, built to move military assets in case of an attack, actually begins to work against the military as it becomes clogged with civilian assets. It often takes days to clear routes in some areas.

The federal government, Department of Defense and senior military officials, now basing themselves out of Cheyenne Mountain, Colorado, begin to formulate a defense plan that places Army and Marine forces in reserve and lets National Guard and Reserve units take the lead on dealing with the Chinese attackers.

The use of nuclear weapons is temporarily banned by the President at the beginning of the Chinese attack. Even though the Chinese used nukes against American targets, the President feels that the collateral civilian damage, risk to allies, and the long term effects outweigh their potential military value.

The day after the nuclear attack on U.S. soil, China also successfully launches a series of the next generation of Anti-Satellite (ASAT) missiles targeting U.S. and Japanese imagery intelligence satellites. This effectively shields their movements, build-up and troop locations.

The attack on the U.S. is only the beginning of a major Chinese offensive in the South Pacific. Also borrowing a page from WWII, the Chinese hope the attack on American soil will serve to stay or delay American forces from their quest for expansion and domination of the South Pacific. By the time the Americans enter the battle, China seizes Taiwan and lands assault troops in Korea, Japan, the Philippines and most of SE Asia.

China focuses all of its military might into a series of island hopping operations designed to gain as much ground as possible in the shortest amount of time. The Chinese military commits to multiple simultaneous operations. The first wave involves Taiwan, Korea, Japan and the Philippines. Taiwan falls in just over a week, while the others put up stiff resistance (backed largely by American forces). However, China gains enough ground in each of their initial assaults to gain a strong foothold for continued operations.

The Allied forces of Australia and Great Britain, along with American and Canadian naval assets in the area respond to the Chinese aggression. Chinese forces land their first waves before any counteroffensive is launched. Once the Allied coalition naval forces begin operations against the Chinese, the island hopping campaign is essentially stopped save for those islands already occupied.

The Chinese enact the second phase of their campaign, a ground war throughout SE Asia, starting in Myanmar. A Chinese army over 500,000 strong pours into the country and begins a massive ground invasion, again designed to secure as much ground as possible in the shortest amount of time.

Meanwhile, the U.S. also launches a massive aerial bombardment campaign of Chinese military targets from bases in Japan and Guam. The bombardment lasts for 21 days, while both sides suffer heavy losses in the air. The U.S. does gain a kill-to-loss ratio of 10-1; however, the sheer numbers of the Chinese aircraft engaged after three weeks leaves both sides seriously depleted.

Chinese naval forces are systematically hunted and destroyed by coalition forces. However, the Chinese commit enough air forces to counter the coalition naval forces in the area. In at least three major engagements, the Chinese are able to put up enough aircraft for a 10 to 1 ratio. By the end of the aerial campaign, U.S. and British naval forces are down to only 25% of the original contingent in the region, including the loss of several aircraft carriers. Australian losses are enough to force them to retreat back into national defense roles.

With little to stop further Chinese aggression in the area, the U.S. is left with only one option. From the South China Sea, the USS Kentucky launches her full compliment of two dozen nuclear SLBMs at selected military targets throughout China. At least one warhead is a high altitude detonation over Eastern China producing an EMP burst. Effects of the EMP however are not as devastating as those in the U.S. or Europe because a large portion of the population lives without the conveniences of the west.

The last warhead strikes in the heart of Beijing, resulting in hundreds of thousands of civilian deaths. The total death toll from the strikes and the resulting effects is estimated to be in the millions; however, no official count is ever performed.

Radiation from the nuclear attacks is carried across Japan, Korea and even reaches the U.S. mainland. In Japan alone over 20 million people are affected by radiation related illnesses. Many major cities in Japan come to a screeching halt as the radioactive fallout climbs. Several small islands witness a 100% fatality rate due to the fallout. In Guam, almost 60% of the U.S. armed forces stationed there succumb to radiation related illnesses.

Within a week, sickness is reported across the globe. Outside of China, the U.S. and its allies are the hardest hit. The resulting environmental impact from so many nuclear strikes (not to mention those preceding the U.S. and Chinese bombs) results in a unanimous agreement to cease the use of nuclear weapons.

Also, in September, the U.S. president further infuriates the states when he issues an executive order to suspend national elections (after already instituting martial law nationwide), largely due to the chaos caused by the Chinese attack. There simply is no longer a traditional infrastructure with which to hold elections. Most local and state municipalities ignore the EO and proceed with their own elections.

In another controversial move, the President sends the military into the larger cities to disrupt and squash the elections. During several incidents the military fires upon the pollsters in an attempt to breakup the elections. Riots quickly breakout in several cities, including Atlanta, Dallas and Detroit. Even with the federal interference, almost every district is able to elect a new Congress.

The 113th U.S. Congress sets up in Sioux City, Iowa. Due to the current state of the U.S. and the apparent abuses of power, many people begin calling this the Third Continental Congress. Their first order of business is to pass laws declaring the current military control unconstitutional and return power to the civilian government. This creates a conflict between the civilian government and military control, dubbed by some as a conflict of wills between the Civgov and Milgov.

On Sept. 21st, forces from the Islamic Confederation of Nations invade Iran in an effort to seize the Khorasan region. Since this region's major ethnic groups include Uzbeks and Tajiks, the theory is that many will rise up and join the coalition forces to fight against the Shi'ite Theocracy. Recruitment is a necessary action, since the invading force numbers only 30,000 in light infantry, light armor and virtually no air support. This assumption does not prove to be true, and by the end of the year, the ICN forces reach no further than Mashhad and settle in to a well defined containment zone. As far as the ICN is concerned their mission is somewhat successful since they have now tied Iran into a two-front war.

After the initial surge of conflict in Europe, the war becomes relatively peaceful. With little supplies and reduced numbers, Russian and EU BG units settle into containment zones along the line of conflict. By November most actions are simple meeting engagements by elements scrounging for supplies. There will not be another major action undertaken by either side until next spring.

With the winter approaching, Canada begins to destabilize. Southern Canadian cities are without power due to the EMPs (and thus heat). Riots begin; neighbor turns on neighbor for basic supplies, and desertion rates skyrocket as service members rush home to help loved ones. Not wishing to witness another season like the Nuclear Winter of 2011, Canadians look to escape to a warmer climate and begin heading south. At first the influx of "refugees" is welcomed (mainly for their pocketbooks). But by October the influx turns into a flood. The strain on increasingly diminishing supplies becomes too much for some communities to withstand, and the welcome quickly wears out.

2012 – Look back in Anger

Heather James

In all her time working for the United Nations she never expected to be monitoring a humanitarian crisis in her home country. Over a million people in the Greater London area were abandoning the city because of a lack of food, power and basic sanitation. People walked miles with their personal belongings on their backs because there was no fuel for their cars. Government cars using a fuel allocation moved along the bus lanes kept clear by police forces. Although rough, travel allowed the ministers to move from their constituencies to Westminster in the hope of organizing a miracle to stop the exodus from putting further pressure on the rural environment.

Heather visited a camp last week that put her in mind of the Glastonbury music festival - thousands of tents in a muddy field, a block of portable toilets attempting, but failing, to cope with the needs of the populace. But unlike the loud, celebratory atmosphere at “Glasto”, everyone was subdued and quiet. Even the delivery of food made little impact on the mood of the camp.

Ewan Thomas

The last mortar shell dropped on the town and, after a few seconds for the dust to clear, the PMC squad escorting him reformed from their various positions of cover and began to move forward. Ewan picked himself up and slapped some of the dust adhered to his clothing.

“Come on Camera Jock, last train’s leaving, and you’re going to miss it.”

Outside the town’s new earth wall an old UH-1N sat with its rotors turning, kicking up a dust cloud. He wasn’t sure about this hunk of scavenged metal. The cockpit reminded him of a Freckled Duck picture from Biology class, but he hoped this bird proved more graceful in flight. It was destined to carry him and a selection of non-essential personnel from Silicon to the coast where a ship would carry him back to Australia... assuming the rebels surrounding the town didn’t do him, or the chopper, in first. He hefted his ruck and his camera case and began to stumble on.

“Blow it out your ass Jefferson, you try hefting this pile and see how stable you are.”

Jefferson, 190cm of pure muscle turned to him and grinned. He shucked his own field pack and rifle and dropped them at Ewan’s feet before taking Ewan’s bags on himself. Ewan was still trying to get the heavy field pack set on his shoulders as the squad moved toward the chopper. He picked up the rifle just as the mortars began to fire again. He dropped to the ground as the cracks of the impacting rounds walked across the open ground followed by a massive blast and a wall of heat. He looked up to see the helicopter a blazing wreck and the squad on the ground unmoving where the mortar impacts and explosion had flung their lifeless bodies.

“Aw crap.”

Holding “his” rifle Ewan turned and raced back to the safety of the town. Inside the gates he ran straight to the schoolroom and looked at the maps on the wall.

“Libya, Egypt, Saudi, Iraq, Iran, Pakistan, India, Bangladesh, Myanmar, Thailand, Malaysia, the Northern Territory, Queensland, New South Wales, Sydney. Christ that’s 12,000 miles over some of the most hostile territory there is. He looked around the town, full of people who had nowhere else to go. Families hiding from the relentless shelling hoping that someone would rescue them.

“Bugger that. Ten miles a day, twelve hundred days, three and a bit years. At Least I’ll be fit.”

At nightfall he hoisted the pack, the rifle and as much water as he could carry and set out for the long walk home.

Ellen Watkins

The farmhouse was warm despite the biting wind outside. The layers of snow on the roof and drifts against the walls provided additional insulation, and the fire in the hearth warmed the room the family was using that night. Ellen had been lucky. She’d gotten out of New York and back home before things became impossible. Her father had been wise to keep much of his crops back for replanting and to feed the family plus a few others who came to work on the farm. There were thirty men, women and children now living in the house and farm buildings. Most of them were useful, a mechanic, a paramedic, hunters, and construction workers. When the winter broke they should have enough hands to plant the crops and to keep the farm producing enough to feed them.

She knew that some of the men folk were trying to build an ethanol still in one of barns over winter in the hopes of running the generator next winter, but building it from scratch was proving slow. There was little else to do while winter raged outside, so they kept cannibalizing parts and scouting abandoned farms and houses when the weather broke enough to allow it.

They worked hard, but they were comfortable and could survive indefinitely as long as no-one decided to try to force them out.

Cherikov

Cherikov sat quietly under a blanket of snow, the only signs that it ever existed were a few shattered concrete walls and twisted steel frames poking through the smooth white surface. Even at midday there was not a sound other than the crunch of his boots in the snow and the gentle crackle of his Geiger counter.

In the distance he saw a motion, a flash of grey/brown against the snow. Raising his rifle he took aim and let loose a pair of quick rounds that caught the young buck and dropped it to the ground.

Slings the rifle, he charged over to the fallen creature, stumbling in the snow and breathing hard against the filter of his hooded coat. He dropped to the side of the animal and ran the counter across its fallen form. The needle spiked high and remained there.

The figure dropped to his knees in disgust. He would have cursed, but it had been nearly six months since he had spoken to anyone, and he wasn’t sure he could even manage to form the words without a period of practice. He stood up and set off away from the ruins of the city empty-handed. The hunting here was good, but the prey was getting more irradiated as time went by.

When he cleared the area and the counter settled down again, he stopped in the shelter of an old cave and pulled off his hood to reveal a radiation-scarred, hairless face. He pulled out a small note pad and looked at the numbers scribbled on the first page. He did a quick mental calculation and replaced the 256 with a scratchy 277. Coughing slightly he tasted the blood in his mouth and knew he couldn’t stay here much longer. The very land he used to feed himself was killing him slowly.

At first there is an attempt to close the borders and beef up security to stop the flood. It soon becomes evident that short of a military force there was no way to really stop it. "Concerned" citizens begin to take up the cause. Men with guns soon begin patrolling the border region. At first the civilian border patrol's goals are to detain and deport. As the problem grew worse and as news trickled in from the west about the Chinese "invasion", the detainings eventually turn into shootings. It isn't long before the shootings turn into executions.

Once word spreads throughout Canadian of the atrocities taking place across the border, Canadians begin crossing the border armed. They even go so far as to stop at abandoned army posts for heavy weapons (several tanks are even commandeered in this effort) all in order to protect themselves. This move is seen as aggressive by both the citizen patrols and the military, which sends additional units to the border.

The International Bridge, in International Falls, MN., collapses with over 400 Canadians trying to cross into the U.S. Witnesses report two large explosions on the bridge and a jet flying overhead. The U.S. explanation of the "explosions" is that the bridge's support columns gave way, while the jets were merely defensive measures against the armed Canadians.

On November 13th, heavily armed Canadians (with several Leopard tanks) take up positions overlooking the Sweetgrass, MT Border Crossing Station. As border patrols attempt to stop approximately 10,000 people from crossing, the Canadian tanks fire several warning shots over the station. The U.S. units respond with fire and the Canadians with yet even more fire. Within 20 minutes the fire fight is over, and the Canadian forces move across the border securing the crossing.

For the next few months, several more "Sweetgrass" incidents take place. Each one ends with more and more armed Canadians (AC or Albert Charles as they are called) crossing into the U.S. Once inside, there continue to be armed encounters with U.S. defense forces. By the end of December, the AC engagements outweigh Chinese ones.

While all of the chaos is happening in the U.S., there is still a need for produced goods. With manufacturing at a stand still in the U.S., the still functioning Mexican power grid proves too valuable an asset to ignore. The U.S. Army sends 10 Brigade Combat Teams (BCT) south of the border to secure manufacturing plants in Mexico. The plants are also reorganized for wartime production rather than for children's toys and cheap home appliances. On

The Death of Cities.

All modern cities depend on electricity and fuel to survive. Most modern houses around the world are designed to be heated by gas or oil-fire, district heating or electricity. After the collapse of fuel trade there is little to no gas or oil available, and even if there were, the heating systems usually also depend on electricity to work.

Then come the cold winters. After embargos and EMPs, most modern buildings are uninhabitable in the cold of the winter, since there is no way to heat them safely. Open fire is inefficient and dangerous, often resulting in a burned down building. In several cases huge swathes of cities are burnt to the ground because of improvised fires (especially since modern firefighting is all but non-existent).

People in large cities demand food. This food is produced elsewhere and transported to the cities, often from hundreds of miles away. This chain of transportation needs a complicated logistical system that is completely dependant on both fuel and electricity. Without them, no-one is capable of bringing what little food survived the harsh winters to the cities' various markets.

The larger the city, the larger its dependency on fuel, electricity and outside food sources. People living in large cities are forced to abandon them in a desperate move to find shelter and food from the surrounding countryside. The farmland does not fare much better, and the small communities are often not friendly toward a large number of urban refugees in search of the already scarce food and warmth. This forces the migrations further south; Canadians flee to the U.S., Americans to Mexico, Northern Europeans to Europe, etc.

November 25th, elements from the Mexican army move to repel the invaders.

The Mexican army is devastated in an awesome display of technological advantage and tactical prowess by the U.S. Army. By mid-December the Mexican army within the area of occupation is totally destroyed. The U.S. presses the attack and moves further south in an effort to stave off any further incursions. By the time the U.S. military stops, it secures the entire area north of the 24th



parallel and proceeds to settle into a defensive posture.

The Mexican military begins a guerilla war against its occupiers. Hit and run attacks will be a constant presence over the next few months. In mid-2013 the Mexican army is augmented by troops from Honduras, Nicaragua and El Salvador, who see the American incursion as an affront to the whole region. Although the Mexican army does little to oust the American invaders, they manage to cause high casualty rates among the units securing the region.

With the reduction of oil from the Middle East and South America, the U.S. armed forces are forced to restrict the types and strength of operations they run. These restrictions are not just for operations in North America but those against the Chinese in SE Asia as well. Chinese ground forces take advantage and are able to edge out their defender and gain more areas of control. By the end of the year, the Chinese have full control over Myanmar and are moving east.

In South America, the situation goes from bad to worse as the U.S. drug market all but shrivels up. An American Army presence in northern Mexico along with the chaos caused by the EMP cuts exports to about 20% of what they used to be. The economies of countries tied to U.S. and European commercial (and illegal) trade hit rock bottom by year's end. Critical services such as hospitals, police, fire, etc. are cut to the bone and many tragedies result.

After the shutting down of the Panama Canal, Venezuela and Peru also are forced to deal with the tens of thousands of refugees fleeing the threat of war with China. These refugees put further strain on the already stretched resources and economy of these countries and force them to take similar actions as North America and Europe when they faced mass migrations. Peru strengthens its border presence to thwart the refugee flood, while Venezuela welcomes the refugees through conscription into the military. After only a month, Venezuela strengthens their military by 20,000.

Venezuela uses this opportunity to turn its people against enemies of the state rather than the government. After years of pomp and rhetoric, the Venezuelan president, through speeches of heroic proportions, convinces his people that food, wealth and opportunity exist, but they must be willing to take it. In October, the Venezuelan army crosses the border into Guyana and marches all the way to French Guiana by the end of the year. The Venezuelan navy also takes to the sea and begins to take Caribbean islands one by one from Venezuela to Cuba.

This action prompts a token response from the U.S. and Europe due to their own current situations. Not willing to shift valuable resources away from homeland defense, the U.S. sends only an Expeditionary Strike Group to tackle the Venezuelan navy. This is enough however to create a stalemate and tie up Venezuelan naval forces from advancing further north.

The U.S. MEU in Brazil is sent to French Guiana to repel the Venezuelan invading force. Although outnumbered, their technological advantage allows the Marines succeed in forcing the Venezuelan army to retreat into Suriname. Pressing forward, the Marines attempt to continue to drive the Venezuelan army back. Unfortunately, the supply train for the MEU begins to dry up, and they are forced into a practice of battlefield salvage, thus ending their technological advantage. Still superior in training and tactics but severely outnumbered, they too are effectively forced into a stalemate situation in Suriname.

2013

The winter of 2012-2013 is even more brutal than that of the Nuclear Winter of 2011, thanks in part to the nuclear attacks initiated by China. One additional phenomenon witnessed this

winter is the Oakland Flu-a global outbreak of a mutation of H3N2 ("swine flu"), a relative of the virus that caused the 20th century's Spanish Flu pandemic. Over the course of the winter almost 200 million people fall victim to its effects. The first major cases start popping up in Oakland, CA among captured Chinese soldiers then rapidly proliferates throughout the civilian population, who then spread it across the U.S., Mexico and Canada. Eventually it multiplies to Europe and South America.

England and Ireland, while not active participants in the Euro-Russo War end up being as devastated as many of the nations who actively take part in it. The winter of 2012 blankets England and Ireland in over 10 ft. of snow and temperatures below the 0° C mark for almost three straight months. The death toll in London alone is estimated at 100,000 just from the freezing temperatures.

After numerous Israeli air strikes against Syrian targets, two SCUD missile launch sites manage to survive. However, Syria awaited delivery of a very special payload from Iran. Due to their involvement in the Great Muslim War, Iran's shipment was delayed. This payload is finally delivered on January 1st. On February 1st, Syria launches six "dirty" SCUD missiles laden with nuclear material from Iran, all targeting Tel Aviv. All 6 make it through Israeli defense systems and strike heavily populated civilian districts. The dirty nature of the attack sets off a nationwide panic and increases public demand for Israeli officials to take steps to end the Syrian aggression.

In retaliation for the dirty bombing of Tel Aviv, Israel publicly announces that they are indeed a nuclear power by dropping one of their nuclear bombs on Damascus. Unfortunately rather than causing Syria to back down, the nuclear attack creates uproar throughout the Muslim nations of the region. Within a week Jordan and Saudi Arabia throw money, men and equipment at the Israeli "problem".

While facing eminent extinction, Israel receives a special offer of life from Egypt. Egypt offers to set aside an area within the newly converted desert border area with Libya in exchange for Israeli military power and experience, including their remaining nuclear arsenal. Egypt's sole agenda is to secure the Canal Zone and defend her borders against the east and south. Israel, while militarily superior, knows the sheer numbers being thrown at them means defeat is inevitable. Reluctantly, the political and military commands agree and begin a great exodus into Egypt. However, many pockets of civilian resistance refuse to leave. Some conservative estimates put this percentage at around 40% of the populace.

It takes three weeks to evacuate the majority to Egypt. Several IDF forces remain behind to cover the exodus, destroy valuable military assets (buildings, manufacturing, etc.) and to defend as they could those civilians who refused to leave. For about a week after the exodus these units regularly report back, then there is silence. Due to strict crackdowns on journalists within the country, no news escapes the region after mid-March.

Seeing weakness from China, India presses into the disputed areas between the two nations. Emboldened by the lack of resistance, India presses further inland not just in the previously disputed area, but along its entire border.

In early February, Russia sends an old Akula submarine to aid Venezuela against the U.S. interdictions in the Caribbean. Armed with several RU-100 (SS-N-16) 20 kt nukes, the sub launches one of its missiles as soon as it comes within range of the Florida Keys. Targeting Naval Air Station (NAS) Key West, the Russian sub attempts to deprive the U.S. of an Armament Systems Wing (ASW) base.

The sub continues up the Florida coast striking Miami before heading further north toward Charleston, SC. U.S. naval elements manage to intercept the Akula, and after several days of "playing hide and seek" they manage to sink her off the north Florida coast.

2013 – *The end of the world as we know it*

A view from the box

Oliver Stratton sat in his lounge chair beside the crackling wood fire and listened to the radio hissing now that the broadcast was over. He knew in a few minutes it would return to the emergency broadcast signal that had been the sole transmission on airwaves for the last few weeks. Seated opposite, his long time confidant and business partner Ali Hassan was sipping a glass of twenty year malt deposited a few minutes earlier by Stratton's butler.

The house was remote and stocked well enough to last until the local farmers could be persuaded to produce more food for the new lord of the manor.

Stratton was a lawyer of the old school, as much interested in his money and position as he was in the truth of any argument. He used his fortune to buy a large estate in the deep woods of the Ozarks and to equip a small force to guard it. He had a private hunting ground that would stock the larder as required, and the local farmers all owed him favours. But this Presidential declaration would catalyze him from a want-to-be lord into something akin to those British land owners of old.

"It's totally illegal. He can't dissolve the government."

"I know that Ali. I'm certain he knows it as well. Old Goldberg wouldn't be doing his job if he didn't give a good legal counsel to the President. But what matters is that the general populace won't know it."

Hassan swirled the amber liquid in the glass and looked at the fire.

"So what do you plan to do about it?"

A smile crept across Stratton's face as he stabbed the poker deep into the embers on the hearth. It caused a burst of sparks to erupt and swirl up the chimney as the embers settled further.

"I plan to take advantage. Tomorrow I'm going to send out some of my men to raid one of the outlying farms, probably the Donald Farm; he owes me nothing. I can use that to draw the rest of them together as a collective. They'll need someone to organize and control this grand enterprise."

"You?"

"Can you think of anyone better Ali? Local personality, rich, well equipped. I'll be a shoe in. Give it a year, and I'll be running this town."

A view from the stalls

"Well, I guess we're on our own."

The entire populations of Ten Sleep, WY sat huddled around one of the few working radios remaining in the county. Every man, woman and child was in the Baptist Church to listen to the President's broadcast. Hoping for a miracle. Hoping that someone would be coming for them.

Hugo Gonzales, owner of the local farm store, was as close to a government as the town currently boasted. Sarah Downs, a Highway Patrol officer who roped calves even faster than she caught teenage drag racers, was an "Army of One" military unit. For a few seconds there was calm before people began talking. The rumbles started as simple statements of disbelief and quickly turned into frightened rant of grabbing all the food and sitting out the crisis. Hugo listened for a minute before banging on the lectern. When that didn't work he lifted two fingers to his lips and let out a shrill whistle that stopped the babble almost dead in its tracks.

"Listen to me, we can't just grab everything and run. No place is going to be any better than here. We need to see what we have, and then get ready to support ourselves. We need to pull together now, not tear our home apart."

The people sat down and began to listen. Some of them paid close attention, others just waited.

"We have enough food for weeks yet, maybe longer. Tomorrow I want to take stock of what we have and perhaps send riders out to some of the other towns within a few days travel to see if we can pull together. If we have to leave we will, but if we do I want to make sure we all have a place to go not just a place to starve. Go home, sleep tonight as best you can and come back here at midday tomorrow with a list of everything you have that's edible or useful in a survival situation. I'm going to trust you all not to hold back anything. We're all friends here; we all know everyone else, and the only people you're going to hurt in the long run is yourselves. I'm going to do the same at the store, and we'll send a team out to do the same at the camp tomorrow. I'd also like anyone with military training to come to me after this meeting. I know many of you here own firearms, and we're going to need to set up some sort of group to keep the town safe. We'll organize that tomorrow."

The meeting went on for another half hour before people drifted away. During the night Hugo heard the sounds of vehicles driving off. By the morning the population dropped from 365 to an even three hundred as several families fled to try to find a better life or to reach family elsewhere. The process of making the town self-sufficient was going to be a long one, but everyone knew it needed to be done.

Before she goes down, the sub launches one more strike against coastal targets, hitting Savannah, GA.

The spring brings with it a chance for a renewed effort by both sides on the European front. Russia prepares for one last big push into Germany and Italy in hopes of finally breaking through the resistance. EU BGs prepare to stage several large pushes into Russian occupied territories in order to break their holds and disrupt their supply chain, forcing them to withdrawal.

Needing oil and gas in order to survive another year, England reluctantly agrees to enter the war on the EU side. Two brigades of Royal marines are mustered (although it takes cannibalizing quite a few units to form the brigades due to the winter devastation).

Incensed with the Russian nuclear attack, American forces in the United Kingdom (UK) side with them and take part in the operation. As soon as the brigades are formed, the navies set sail with a sizeable fleet heading to Murmansk. The daring move is designed to hit the Russians from behind drawing their attention away from the frontline with Europe, while at the same time giving England a chance to raid for much needed supplies.

Russia also augments their front lines, by shifting interior forces to the front during the winter. Russian forces then stage a two front surge, one toward Berlin and the other one toward Vienna. Both assaults run head first into an EU counteroffensive.

Simultaneously the allied British and American navy assaults

Murmansk. Due to the extreme winters and the fact that the Russian navy is almost non-existent at this point, the marines make headway. They manage to secure Murmansk and the Kola Peninsula within the first week and proceed to march south.

Unfortunately the supplies at Murmansk were already raided by the Russian army and what little civilian population tried to ride out the winters. The Allied navy does not have enough supplies to return or even carry out additional movements, so they choose to fortify at the Severomorsk naval base.

They manage to make it as far south as Kem before meeting any sizable resistance from the Russian Army. Allied forces manage to setup a solid defensive perimeter and within a month settle into containment and effectively hold everything north of Kem.

Along the European frontlines fighting is intense; however, neither side is able to gain headway over the other. Within a month the frontlines stabilize into pretty much the same areas as before the surges. The offensives officially wrap up by May, and both sides settle into a stalemate situation, lacking enough resources to cause any further effective progress.

The New Year is an ambitious one for the U.S. military. Having spent the winter planning, supplying and recruiting, the army is prepared to make targeted thrusts on all three fronts. With low fuel reserves though, it takes 3 months to position men and equipment for their assault. This is precious time that is put to good use by their enemies as they dig in and fortify their positions.

The U.S. sends an additional battalion of troops and a company of Abrams tanks to strengthen the force protecting the manufacturing centers in Mexico. This allows the military to perform search and destroy missions, expanding their zone of controls. Out of the three offensives, this move turns out to be the most successful.

The Chinese infiltrators have plenty of time to secure their positions and prepare for any offensive to dislodge them from their gains. The Chinese add hit-and-run and insurgent style tactics against the Americans all along their trek through the west. By the time the Americans reach any of the Chinese defensive perimeters, they end up being down to about half supplies and low on fuel. Within a month of fighting, the U.S. army shifts their focus from ousting the invaders to containing them.

The Canadian offensives end in the same result for the U.S. army. With plenty of time to prepare, the Canadians make great use of the winter snow melting. With rivers and creeks over flowing and clear terrain all but impassable due to mud, this leaves only well paved roads for transport. With enough time, the Canadians setup roadblock after roadblock, obstacle after obstacle and purposely destroy most of the main arteries to and from the north.

In February, an additional Army enters into the North American conflict. A large Russian Army contingent invades Alaska. Their intent appears to merely be to secure U.S. oil sources. They are able to reach Juno before meeting any resistance. The city is mostly deserted, and the Russians are able to setup Juno as a rear headquarters. From there they launch raids against Canadian and American forces. Both militaries put up token resistance, however, neither are able to mount an effective counteroffensive.

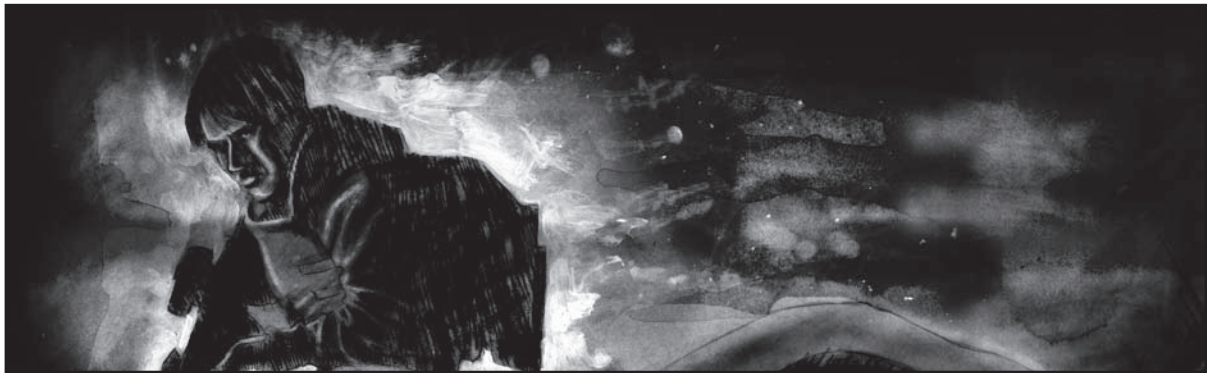
By May, all American offensives wind to a halt. The Americans lose very little to casualties along the way, but spend more supplies than they had anticipated. The fuel shortages force them to ditch about 75% of their vehicles, and those remaining are sent to the rear and used sparingly. Ammunition supply is also running low. Most soldiers only have 1-2 magazines worth of ammo left when the stalemate happens. Attrition becomes the name of the game.

The situation in the U.S. steadily deteriorates even before the failed offensives. Cities throughout the U.S. are effectively acting as their own city states. With a stable population of people who are able to survive in the current situation, the southeast fairs much better than the rest of the U.S. While not official until after the disillusion of the Union, the southeastern U.S. revives the idea of a loose confederation of states. Most northern cities are simply abandoned due to both the Canadian threat and the severe winters. Urban areas are the worst; there just isn't a way to survive once the power goes out.

Engaged at four front lines in North America (not to mention the additional fronts throughout the world), the U.S. is also dealing with growing conflict between the Civgov and Milgov. In May, Georgia declares its sovereign right for independence against what they see as an unconstitutional military controlled government. With forces stretched thin, the Milgov is unable to deal with the secession. Soon after, other southern states (Mississippi, North and South Carolina, Alabama, Tennessee, Kentucky, Arkansas, Louisiana and Texas) also declare their independence.

The U.S. is not alone in this situation; many other foreign governments strain under their current conditions. It is not uncommon for federal governments to simply disappear and leave things in total anarchy.

On July 4th, 2013 the president of the United States delivers his "Good Luck" speech. This speech is picked up by ham operators around the world and rebroadcast through every available method of communication. Although the U.S. has for all practical purposes ceased to exist for some months now, this speech officially marks the end of the last great super power.



CHAPTER 2

ON THE GROUND 2013

Back before the Collapse, if someone had asked me to choose a place to spend the apocalypse... I can assure you it wouldn't have been Kurdistan. Hell, this wasn't even a country then. It isn't much of one now, but at least there's a vague semblance of order. More importantly, most of the locals aren't shooting at us, which is a distinct improvement from a lot of other places we could have wound up.

One of the few benefits (if you can call it that) of being stuck in the Third World is that the place didn't have as far to fall as home did. Yeah, when the lights went out, the cities took a hit, but out here in the foothills of the Zagros, you'd hardly notice. Life goes on as it has for centuries. Damned if I can see how, but our hosts manage to scrape a pretty good living out of what, to my eye, looks like a bunch of half-frozen rocks. And they're willing to share it with outsiders as long as we put in a share of the work.

So we have at least the base of Maslow's pyramid. We eat – not well, most days, but enough. We stay relatively warm and dry. The monthly supply run from Arbil brings in a trickle of the other things we can't make or make do without: batteries, ammo, lamp oil. And there are occasional luxuries, by today's definition. I almost cried the day they brought in a case of toilet paper.

So it's a life. It could be a lot worse. But, you know... there are days I'd kill someone I knew for a bacon cheeseburger and a hot shower.

He who wishes to fight must first count the cost. When you engage in actual fighting, if victory is long in coming, then men's weapons will grow dull, and their ardor will be dampened. If you lay siege to a town, you will exhaust your strength. Again, if the campaign is protracted, the resources of the State will not be equal to the strain. Now, when your weapons are dulled, your ardor dampened, your strength exhausted and your treasure spent, other chieftains will spring up to take advantage of your extremity. Then no man, however wise, will be able to avert the consequences that must ensue... In war, then, let your great object be victory, not lengthy campaigns.

— Sun Tzu, the Art of War

The world of **Twilight: 2013** is physically and technologically no different than the world of today; it's still the planet Earth in the 21st century. What differences there are come from the living conditions on the ground in 2013. With both nuclear and conventional attacks throughout the world, numerous cities are destroyed or abandoned and in many instances, both. Those remaining cities are but a remnant of their former selves and with only a fraction of their former population.

Life outside of major cities shifts as well; many now are comparable to forts both in style and physical features. What governments previously existed are now gone; replaced with whatever fits the local needs of the people or most often by whomever is strongest to take it. Life between the towns and cities is a virtual no-mans land where only the toughest or most desperate dwell.

Even areas that saw little to no actual combat experience conditions that range from what people of 2008 would call normal to complete and utter devastation. Bombs and bullets were not the only things to bring cities down and governments to a halt. Whole cities, and even some countries, felt the destructive power of the global depression, disease, epidemics, starvation, dwindling birth rates and climbing death rates, and other equally crippling circumstances. No place is immune to the chaos wrought by the **Twilight War**.

The **Euro-Russo War** has currently drawn to a stalemate. Russian forces occupy all of the former Warsaw Pact countries along with parts of Germany, Austria and Italy. Scattered forces throughout Eastern Europe, Germany, Spain, Italy and France create havoc where they can.

Europe now lies in ruins. The massive Russian nuclear assault on France left that nation's territory a virtual dead zone separating the Iberian Peninsula from the rest of the continent. Germany and Poland once again saw countless battles on their soil, and the Balkan nations are a chaotic mess of lawless fiefdoms. European Russia is no better – cities hit with both nuclear and conventional weapons have laid further waste to the region.

The **Great Muslim War** has also drawn to a stalemate in the Middle East. Baghdad is in the hands of Iran along with most of the southern regions. Most of central and western Iraq is under Saudi control. Northern Iraq is now Kurdistan, along with parts of southern Turkey and western Iran. The Islamic Confederation of Nations occupies a section of northeast Iran; however, most of that fighting has died down to just an occasional skirmish action.

Saudi Arabia seized all of the Arabian Peninsula. Syria now occupies what was once Lebanon and Israel. Islamic factions are struggling for control over the Israeli resources and religious sites. The Pakistani civil war ripped the country apart. Pakistanis are vying for control with Afghani, Taliban and Indian occupation forces.

The **North American Conflict**, while not classified as a stalemate has wound down to a relative calm. Chinese forces secured several small towns in the west. Canadians claim large sections along the northern border, including most of New England. American forces occupy sections of Mexico along the border with the U.S., but Mexican and other Central American militias are staging an effective insurgency. Russia entered into the conflict – securing the rich oil deposits off their neighboring region and creating a containment zone out of former Alaska and the northwestern Canadian territories.

Design Notes: Vagueness

One thing you have probably already noticed is the lack of detailed OOB (*Order of Battle* or a listing of military units, including their size, type, equipment and any other relevant information, for non-grognards), as well as, an annotated listing of nuclear targets. This is intentional and as you'll discover, continues throughout this book. I realize this may disappoint fans of the earlier versions, but let me explain our reasoning.

First, times have changed; it's been 15 years since the last edition was published. The targeted audience (yours truly included) of the earlier editions was mostly wargaming grognards who lived off that kind of information. Players today are not that concerned with detailed military data and often are turned off by the inclusion of it.

Secondly and more importantly, we're designing this edition for customized play based on each party's needs and desires. Player groups are now free to determine for themselves which cities were hit and which were not; with the exception of only a few key cities (only listed to further the timeline plausibility). In addition, the timeline nor background lists any tactical nuclear targets (which there were many), leaving this completely up to the GM and party.

Nothing in this book will prevent you and your group from generating your own OOB and/or nuclear targets lists. In fact this is encouraged. You are allowed to play in any town/city and with any military unit you desire.

After the dissolution of the country, the U.S. is split into rival factions trying to claim presidency and re-unite the country. Many cities and towns, however, are simply operating as individual city states. The exception is in the southeastern U.S. where the states fared better than most and created a loose confederation of states.

The **War of Chinese Aggression** (as some have labeled it) is all over the map in the South Pacific. Chinese forces occupy many countries in Southeast Asia. China itself is unstable after the nuclear attack with large portions of the surviving population seeking refuge in the newly absorbed countries. Unfortunately for the nations of the region, this helps to solidify the Chinese occupation in these areas.

The massive American nuclear attack on China inflicts as much devastation among neighboring countries as the Chinese invasions. Nuclear fallout and radiation blanket the sector causing millions of casualties due to sickness and death. Chinese forces occupy parts of Japan, Korea and the Philippines, the whole of Myanmar and Taiwan, and clusters of small islands in the region.

The **War of the Amazon** is a unique case study in regards to the **Twilight War**. South America is weathering the aftermath best of all other continents. While the nations of South America battled almost as long as everyone else, their wars were 100% conventional and mostly limited to unpopulated areas, thus leaving most of their infrastructures intact.

The **Forgotten War** of Africa is a study in contrasts. Along the Mediterranean coast, Egypt and Libya have united in all but name, and are positioning to become the dominant force in the area. French refugees and nationals have flooded into Algeria.

FISH

Fighting In Someone's House (FISH) or urban combat is combat in towns and cities or other urban areas. In years past, most wars were fought in open countryside or barren deserts or dense jungles. During the Twilight War, many military engagements became urban in nature.

Urban combat is very complicated with civilians, places of worship, politically sensitive targets, and other facets that generally interfere with one side in the conflict and not the other. Generally, this target hopscotch is orchestrated through an intense level of micromanagement from political leaders often thousands of miles from the front lines, thereby slowing the progress of an attacking force. The pace of modern urban combat makes WWII hedgerow fighting in France seem like warp speed in comparison.

Additionally in urban areas, defending units are well dug in and protected with both cover and concealment; whereas attacking units are repeatedly exposed as they move about on the streets. A single sniper in a well-covered post or a squad of defenders strung out over a city block can stop the advance of an attacking unit of platoon or company size.

Street tactics make defending an urban area easier than assaulting it. As a result, well equipped and trained armies such as the U.S. military make little progress in removing invaders both locally and in foreign territories.

Sub-Saharan Africa suffered few direct effects of the global war, but deep-seated tribal and regional conflicts have only increased in ferocity. The interior of the country devolved into an all out war, and the coastal areas exist only as a refuge from the interior fighting. Utopia and South Africa being the exceptions, have survived virtually intact. South Africa has even managed to thrive. Its industrial complex has become a major supplier of arms and equipment for many of the world's conflicts.

All of the political power shifts and border rearrangements go above and beyond the other global effects of the **Twilight War**. Outside of the major conflict regions, almost every nation on the globe suffers the environmental and economic effects of the **Twilight War** as well.

MAJOR CONFLICT REGIONS

The majority of the **Twilight War** centered in Europe, the Middle East, Asia and North America. The heaviest fighting, most destruction and highest death tolls took place in those theaters of operations. But destruction and devastation were not limited to these locations. Almost every corner of the world witnessed some aspect of the War, if not direct conflict then by indirect means such as fallout, nuclear winter, famine or other such catastrophes.

EUROPE

Prior to the **Twilight War**, many of the countries of Central and Eastern Europe were experiencing a revival of sorts. Their economies were beginning to improve.

Much of the war between Russia and the European Union is fought on land that has already seen countless battles. For thousands of years, militaries faced off across the varied terrain, fighting for scarce resources, ethnic and religious causes, and sometimes nothing more than a route through the region.

Fallout from the Russian counterattack on France rains all over the region, and the land bears dozens of scars from battles between Russian and European Union forces. Transportation and communication networks lie in shambles, and civil authority is virtually non-existent in many areas. The previous winters have also taken their toll on the land; rivers are swollen, towns flooded, roads washed away, and farmlands now lay buried beneath debris.

UK

France's 2011 nuclear attack on Belarus causes problems for many countries throughout the world, none more troublesome than for the UK. Britons for the most part agree with France in principal, but once Russia responds with a nuclear attack of its own, the situation becomes even more complicated.

The British Prime Minister spearheads the negotiations with both France and Russia against any further use of nuclear weapons. British people setup and organize humanitarian missions to both France and Belarus. British companies provide oil, gas and fuel to her European allies during the winter of 2011. The British navy provides security and safe passage for commercial vessels in the North Atlantic and the Mediterranean during the stand off.

Once the Russian invasion becomes inevitable, the Queen and Parliament decided it is in the best interest of the British Empire to stay neutral and provide for the safety of her people. For most of 2012, the UK is content to contain the war in Europe and minimize its impact, not just in Europe but elsewhere around the world. It isn't until the situation in the UK becomes dire that the Queen and Parliament enter the Euro-Russo War.

The British Royal Family

The youngest prince of Wales is part of the assault force during the spring assault; during the push out of Murmansk he is reported as missing in action. News of the Prince's disappearance reaches the UK a short time later, and a Special Air Service (SAS) unit is drafted with the mission to find the Prince and bring him home. This information is kept secret to preserve public morale, with only a few members of the SAS and Royal Protection even made aware of the rescue mission.

The older prince of Wales, acting in a military capacity, is critically wounded during a patrol operation. He is rushed to hospital, and by the time he arrives, has fallen into a coma. He is kept in a specially maintained unit at the Wellington Hospital in London.

During this dark time, already reeling from the effects of the Oakland Flu pandemic, the nation suffers a tragedy to rival all that has come before. Weakened beyond the point of recovery, Her Majesty the Queen passes away at the age of 87 from complications caused by severe pneumonia, despite the best medical care available.

With the rest of the Royal line devastated by pandemic or the cold, the Prince of Wales and his oldest son incapacitated and the youngest one missing in action, the Earl of Ulster, previously 20th in line of succession is crowned King. Unchallenged, the Earl ascends to the throne of Britain, taking the title King Alexander IV.

His first act as Sovereign is to take control of the Armed Forces, and via a swift coup coupled with Royal prerogative, he dissolves what is left of Parliament, replacing the coalition government with a new advisory body. In doing so, he implements a plan to return Britain to an absolute monarchy, and the Royal armed forces begin their task of "reclaiming" the British Isles.

Ironically, a single report changes everyone's mind. In March 2013, a Government study suggests that the combined factors of lack of power for heating, lack of food, violent crime, lack of shelter, lack of medicine, lack of hospitals, disease outbreaks (including tuberculosis as well as the Oakland pandemic) and insufficient emergency services are responsible for depletion of Britain's population to approximately between 7 and 18 million. It also estimates supplies the country will need over the coming year to survive and start to rebuild. According to the study, the required resources are running dangerously low. Needing larger supplies of oil and natural gas in order to survive another year, Britain reluctantly agrees to enter the European War. The UK is able to convince their American allies (who needed no real convincing after the Florida nuking) to side with them and take part in Operation Marauder – the invasion of Russia.

By mid-2013 the UK is now like many nations throughout the world, a mere shell of its once glorious self. On the home front things are starting to fall apart rapidly. The winters of the two previous years killed millions. The Oakland Flu, now reaching the British Isles, adds to the death toll from the winter of 2012. The country's infrastructures, such as roads and buildings, begin to deteriorate due to the extreme climate and lack of maintenance.

Mass evacuations take place from UK cities; children and others are sent out into the UK countryside, just as they were in World War II. Many are taken in by micro-national settlements, and civilian militias are formed by local police and ex-military, to help protect the evacuees. The government grants formal approval of this, forming a Civil Defense organization; its Wardens are civilians, ex-police and ex-military volunteers recruited to patrol the communities where they live.

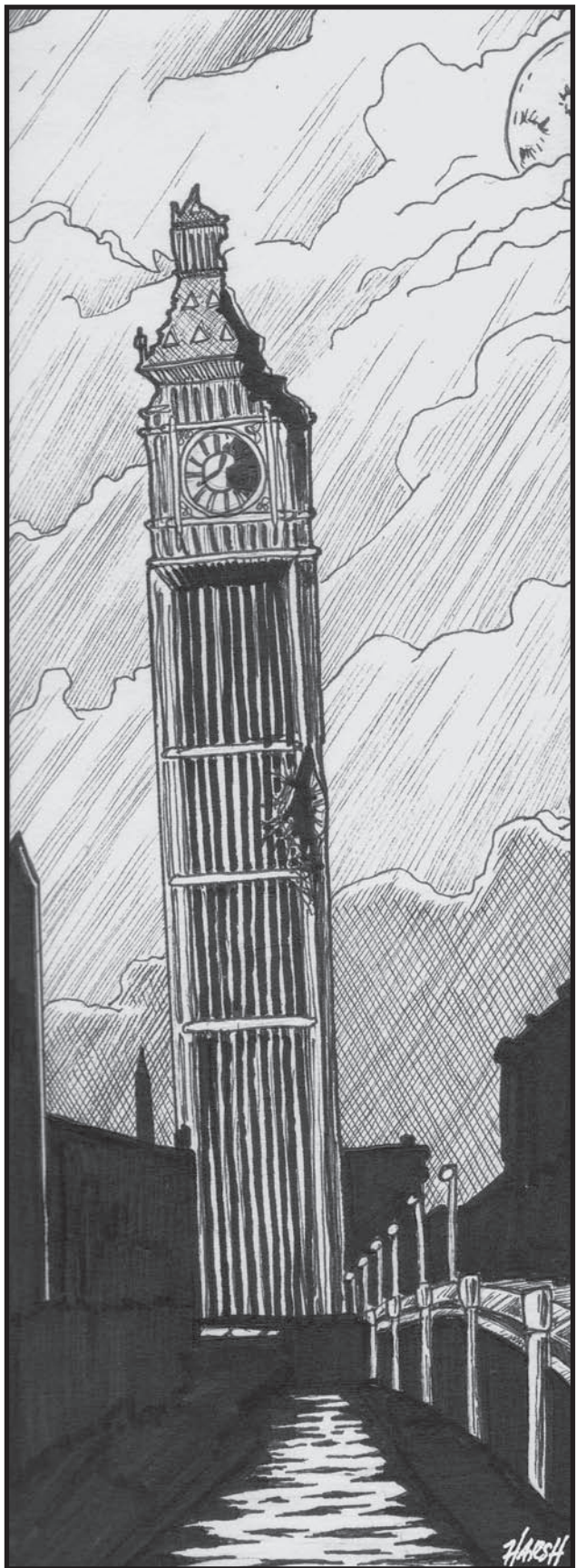
The Prime Minister vanishes shortly prior to this announcement when a government transport convoy is attacked by armed gangs outside of Birmingham. The King selects an ex-Conservative Member of Parliament as his successor, who enthusiastically begins to implement the directives of the new monarch, efficient past the point of care or concern for the wellbeing of the surviving population. Under the new governments supervision, Civil Defense is renamed Civil Protection, and the emphasis shifts from protecting and assisting the public to making sure that government infrastructure is maintained, and orders are carried out. A large number of Civil Defense Wardens quit in protest.

Civil Defense (CD) is usually found in the micro-national settlements as a dedicated militia/police force, focused on defending the town, making sure that supplies are distributed properly and that peace and order is maintained. They were respected members of their community, loyal to the public and to their town.

Civil Protection (CP) in government-controlled areas is mostly petty bureaucrats and thugs in uniform. They are loyal to the Government, and assist in monitoring communities to make sure no uprisings occur. That's not to say that there weren't a few CP Wardens grandfathered in from CD, who believe that CP is largely corrupt and totalitarian. These individuals are either too scared to argue, or work from within CP to assist the Resistance movement.

The remaining governments of Wales and Cornwall state that they will not follow the dictates of the King, as long as these methods are used, and declare their secession from the United Kingdom in order to become independent nations focused on their own survival. Wales and Cornwall form a joint defense pact against the Royal Armed Forces.

All communications with Ireland cease shortly afterward, and western coastal towns in England start to suffer raids from the west. All along the Eastern coastline, European insurgents conduct hit-and-run raids for supplies, leading the government to build makeshift torpedo batteries and minefields to aid in defense.



Nuclear Meltdown

The nuclear attacks around the world lead to further disaster as the targeted nations nuclear reactor stations are either caught in the initial attacks (thereby adding to the overall destruction) or go critical some time afterwards. Nuclear power plants need constant maintenance to continue to operate; both in personnel and parts (and require disposal of the waste material generated). As the **Twilight War** drags on, many power plant personnel die, migrate to other areas or otherwise leave the plant. The parts and other equipment needed to keep the plants operational (or at least operating safely) require a high level of industry to produce; which as of 2013 is almost non-existent.

In France, around a dozen or so nuclear reactors experience some form of “meltdown”. Most of these accidents are on a scale similar to that of the Three Mile Island incident, resulting in a simple leakage of radiation. However, three sites (Gravelines, Bugey and Cattenom) explode, resulting in a Chernobyl-like disaster and continue to spew further radioactive material. In late 2012, the French military sends teams to all the still operating nuclear power reactors to secure the facilities. All French nuclear reactors are shut down and defueled since the Russian attacks.

Throughout the world nuclear power plants are increasingly going offline. By 2013, only about 10% of the prewar nuclear power plants are still operational, although most have been voluntarily taken offline to prevent meltdown.

With the breaking away of the rest of the Home Nations, the political entity known as the United Kingdom ceases to exist, and in its place rises the Kingdom ruled by King Alexander IV. In the best interests of the new state’s security, and to prevent the spread of plague, the King declares the Kingdom’s borders sealed. The British Isles become an island fortress, with the eastern coastlines watched by Royal troops and civil militia, and surrounding waters patrolled by the remnants of the Royal Navy.

France

In 2010, everything changes for France. The *Coupe de France* incident sets the country and its people on a course that eventually leads to their demise. By 2013, France essentially exists only as a footnote in history. Today France is mostly a no-mans land. Beyond the nuclear attacks, the winters of 2011 and 2012, along with the Oakland Flu manage to wreck further havoc with the already decimated nation. Millions die from disease, malnutrition and the elements in the year and a half after the nukes hit. France’s once majestic cities now lay in ruin from riots, fire and neglect. Those few cities still intact are controlled by military garrisons.

France’s major population centers are destroyed in the nuclear attacks of 2011. The remaining cities, towns and villages either dissolve in the fallout or to the Nuclear Winter of 2011 (and the subsequent winter of 2012). Ironically, many of the French survivors of the initial nuclear attack become refugees in Spain, England and Germany. By 2013, the population of France is down to about a tenth of its pre-war numbers.

The government of France is eliminated in the nuclear strike that hit Paris. The French president along with the Prime Minister and most of the parliament are killed in the blast or its secondary effects (fires, fallout and building collapses). The loss of the government creates delays in responding to the nuclear attack, create more chaos and lead to many cities burning out of control. The French military assumes control and issues martial law and many other strict control measures, including sealing all borders and immediately recalling all military units from foreign soil.

Armed Extremists

The day after the nuclear attack on France, the military installations at Reims and Haguenau are sacked by opportunistic Islamic extremists. Taking advantage of the situation and the EMP effects, they managed to overrun the bases, securing weapons and ammunition in the process. They take to the countryside afterward and wait until the proverbial dust settles to make their next moves. The conditions on the ground continue to worsen, and by 2013 only small bands of these Islamic extremists now roam the countryside, seriously outnumbered by other roaming bands of marauders and highwaymen.

The French military does not fair much better than the federal government, although the upper military command structure manages to survive intact. Military bases in Paris, Brest, Champagne and Orleans are almost 100% destroyed in the attack. However, with military bases scattered throughout the country, most of the French military machine survives the initial attacks.

Before the nukes hit France, the French military is already making plans to redeploy all of its forces on foreign soil. After the nukes hit, the military sends out an instant communiqué to all foreign-based French troops – abandon your post and return to France immediately. By 2013, only about half of the military forces have returned (most of which are naval and aerial forces). Many French army units are still trying to make their way back to France, although some simply give up and either offer their services to their host country or throw down their weapons and blend in with the civilian populace.

On a side note to history, the U.S. interdiction of the French retaliation attacks immediately puts the two nations on unstable ground. There are serious discussions at the most senior levels in France about listing the U.S. as an enemy nation and seizing all of its assets inside the country. If not for the almost unanimous voice from other EU countries France would have most certainly done so.

As of 2013, France is nothing more than a handful of independent city states, mostly in the south. Each of these cities acts as its own independent governing body, although many still pay homage to one of the two seats of power. Lyon is the headquarters of the tattered French military, while Bordeaux is the seat of a new French civilian leadership. No population center of more than 100,000 exists north of Lyon, and the majority of those are only small villages.

Germany

When France launches its nukes at targets in Belarus; Germany is placed in a precarious situation; support a longtime ally and accept the consequences or stand neutral in the face of extremism. In the end, Germany chooses to side with France and strikes a blow against terrorism and the states that support it.

German heavy industry is the single largest target of the aerial campaign of 2012 by the Russians. Every major German city is targeted in a fierce bombardment that has not been seen since WWII. The bombing is so intense, several cities, such as Bremen, are almost completely leveled. The loss of the Bremen industry is especially hard on the Germans as it was home to many food producing companies.

In the waning months of 2012, the German Chancellor meets with the Queen of Denmark in private. The details of discussions at this meeting are never released publicly, although there are plenty of conspiracy theories about it. In January of 2013, the Queen of Denmark surprises everyone and dissolves the parliament, then announces a peaceful annexation of Denmark by Germany. This

Nuclear Fallout

France is not the only country affected by the nuclear attack from the Russians. Many European countries are hit by the fallout from the attacks and subsequent nuclear reactor incidents; none more so than Germany. The radioactive fallout rains hard on Germany, causing millions of its citizens to fall ill and die from exposure. German survivors near the French border flee the area, either heading into the eastern cities or north into Belgium and The Netherlands (further stretching those countries finite supplies).

effectively gives total control of access to and from the Baltic Sea to the Germans. Theoretically, this also gives Germany easier access to the Russian rear areas going overland through Sweden (after crossing the Baltic of course). As of the summer of 2013, Germany is not utilizing this feature to attack the Russian homeland.

In order to secure the region of Denmark with little resistance from her citizens, Germany floods the major population areas with what food and medical supplies it can afford. While the majority of the population is opposed to the annexation, the influx of food, fuel and medicine quiets most dissenters. A resistance group, the *Holger Danske* (in honor of the WWII group of the same name) organizes in the city of Copenhagen to fight what they call the German Invasion and Occupation of Denmark but as of 2013 is lightly armed and poorly trained.

Germany of 2013 is a mish-mash of territories under differing control. Whole sections along the western border with France, where the nuclear fallout is concentrated the most, are virtually deserted and effectively lawless. Central Germany is under civilian control with some semblance of normalcy, albeit greatly reduced because of the lack of supplies and population. Eastern Germany is mostly under military rule by one side or the other. Russians control the northeast corner of Germany as far south as Templin with the remainder of eastern Germany under EU authority of varying countries.

Italy

Much of Italy's industrial complex is destroyed in the conventional bombing campaign by the Russians. What is left of it now resides in the southern portion of the peninsula. Outside of the aerial bombardment, the only fighting Italy sees on its own soil is carried out by its own citizens.

The military now rules large parts of the north, in part due to the fighting with the Russians and also due to the lack of civilian control. Throughout the Italian peninsula Martial Law is declared. In addition to that and other totalitarian measures, the military issues a draft for all able-bodied men and women of fighting age, putting a further strain on the Italian populace.

The civilian population decides that their situation is the result of the government's policies and actions. The military's enactment of martial law and effectively seizing control of the government adds fuel to their fire. Several insurgent groups are actively engaged in a guerilla-style war to wrestle control away from the military and return Italy to a civilian controlled government, one which will end the war and declare peace.

Major Italian cities are either destroyed or in anarchy. While the more remote and rural cities are increasingly insular and isolationist, most of the cities in central and southern Italy are cantonments or independent city states. Both Sardinia and Sicily declare their independence from Italy. Sardinia forms a strategic alliance and mutual assistance pact with Corsica.

The Vatican

The Pope is touring Ireland as the Russian nuclear attack falls on France. Rather than return to the Vatican to face further threats from the Russians or from the French nuclear fallout, he decides to weather the events in Ireland. A large portion of the Vatican staff and Swiss Guards are moved to Northern Ireland. The pope commandeers St Patrick's Cathedral, Armagh and is using it as his Vatican-in-exile.

Spain

In early 2012, Russian VDV forces are air dropped into the Spanish countryside. Operating in platoon-sized elements, the Russians make contact with Basque separatists. Arming them with equipment and training, the Spetsnaz "advisors" use the separatists as their military action troops against Spain. Spanish forces are able to keep the separatists in check until they manage to capture a large quantity of heavy weapons and even a few armored vehicles. With this "*acquisition*", the separatists increase their attacks, targeting valuable military resources.

With their new company of Spanish tanks, the Basque separatists move on the Portugal town of Chaves. Their goal is to strike discord between Portugal and Spain, hoping to force Spain into a three-front war, which will stretch their supplies and men too thin. Their tactics are successful in forcing armed conflict between Spain and Portugal. However, Spain drops out of the Euro-Russo conflict.

These actions eventually force Spain to withdraw from the Euro-Russo war altogether. In August, orders are issued for all Spanish military units capable of returning home to do so immediately. Those not capable of immediate return are ordered to hold fast until such time as they can be retrieved. Most of these units "on hold", are forced to merge with other EU units in early 2013, because of lack of supplies.

Spain is a favorite target of Russian forces vying for control of the Mediterranean. During the summer of 2012, Russian naval forces launch an assault on Gibraltar. It takes three weeks to establish control of the city by Russian marines. By August, Russians control the entire southern tip of Spain south of San Roque.

Today, Spain is embroiled in armed conflict throughout its borders; facing Portugal on the west, Basque separatists and French refugees from the north and Russian forces from the south with civilian riots breaking out all over due to lack of food, heat and electricity. The Spanish government consolidates forces in Madrid, Saragossa, Barcelona and secures the link between these cities. Outside of this region, Spain and Portugal have devolved into random chaos and border disputes with both sides claiming large swathes of territory.

Scandinavia

During the major naval combat phase of the Euro-Russo war, EU naval assets use Norway bases for refueling and resupply. Doing so forces the Russian Navy to target these ports and bases for both bombardment and seizure. The Russian attacks damaged large sections of the country's critical infrastructure, completely cutting most cities off from each other. As of 2013 there are still a handful of Russian Naval Infantry units engaging Norwegian and EU armed forces in and around Norwegian coastal towns.

On a strategic note, Norway still has a limited capacity to produce oil, but at the moment the country has no real way to sell and deliver the product.

On the combat front, Sweden escapes the fate of most of her European counterparts. The only combat casualties the nation suffers are related to EU BG operations in Africa prior to the Euro-Russo War and then later in the defense of the eastern European borders against the Russian advance. No major combat actions take place inside Swedish borders; a few coastal areas do see some small unit/maritime operations.

The last few years haven't been easy on the Swedish people, though. Several factors lead to the decline of the Swedish way of life; namely, accepting more refugees (post-nuclear exchange) and immigrants (pre-nuclear exchange) than what they can handle, and 'semi-organized' crime spirals out of control.

Sweden is now just as fragmented as almost every other European country, with no true central government. Small areas are in a state of chaos and anarchy, but as with their peer nations, most problems are related to lack of food, medicine, and other basic necessities.

Also not wanting to leave a large section of their border open to EU BGs to simply walk across and into their flank, the Russians send two army divisions to spearhead the assault into Finland. The Russians' primary goal is to secure naval operations on the Gulf of Finland and on the northern parts of Baltic Sea. By invading and holding southern Finland Russians will have control of the Finnish Coastal regions and hamper any attempted EU operation against the Russian flank.

The fighting is bloody, and expensive for both parts. In the end, Russians manage to gain control of the eastern parts of Finland, but at that point Russian supply is nonexistent (as the focus is now on the eastern European front), and the troops focus of survival. Most of the Eastern Finland is "no-mans land", with Russian troops, Russian refugees from Republic of Karelia, small numbers of Finnish troops and some of the original population occasionally fighting for food and other necessities. Eastern Finland becomes a region where the value of humanity is measured against the value on a few calories each day.

Western Finland experiences the war mostly in the form of small unit operations and aerial bombings of its major industrial and military targets. Once it realizes the Finns have no way of forcing the Russians out of eastern Finland, they decided to withdraw, consolidate and secure the central and western parts of the country. This is the situation in late 2012. The last few resources of the Finnish military are assigned to protect the west and keep Russian forces from reaching Helsinki.

Northern Finland is more affected by the nuclear winters than anything else. Prior to the onslaught of the **Twilight War**, the northern regions had a very low population density. The recent decimating winters force the remaining population in the north to migrate into the southern regions. There are still some Finnish military troops holding individual areas here and there, but for the most part northern Finland (areas north of Oulu) is relatively quiet.

Switzerland

As expected, Switzerland declares its neutrality in 2011 and maintains it through the Euro-Russo War. After the EMP hits Europe, the Swiss issue a moratorium on all banking until a manual audit can be performed; effectively seizing all foreign assets being held by Swiss banks. This sends shockwaves throughout the international community; however, there is little anyone can do as no one can spare the time and manpower to fight the issue.

The last communication from Switzerland is sent in November of 2012 by short wave radio. It declares that the sovereign nation of Switzerland is off limits to any outsiders for the duration of the conflict. Shortly thereafter, all roads, tunnels and passageways into Switzerland are dynamited. Nothing

is heard from this tiny nation afterward. Several German and Austrian teams are sent to Switzerland to reestablish contact; however, all contact is lost with those teams.

Turkey and Greece

Both Turkey and Greece see the proverbial writing on the wall with the French retaliation to the Russian nuclear strikes. Within days of the French nuclear attack on Russia, both Greece and Turkey formally withdraw from NATO and declare their neutrality with regards to the Euro-Russo conflict. However, their motives are slightly less noble than avoiding open warfare.

The gradual resolution of tensions between Greece and neighboring Turkey during the end of the 20th and early years of the 21st centuries disintegrates under the mounting pressures that lead to the **Twilight War**. A low-intensity war begins in late 2012 and continues to this day between the two countries over Cyprus and possession of small islands and petroleum reserves in the Aegean Sea.

Offshore artillery and small scale invasions leave many Greek and Turkish coastal cities in shambles. Further in country, many towns are free from combat damage but suffer the usual effects of the war: famine, resource strain, refugees, etc. Currently, both sides have fighting forces in most major coastal cities, and neither can claim a definitive foothold in the other's territory. Cyprus becomes the Lebanon of the Mediterranean.

Other Nations

The Netherlands and Belgium both suffer from the Russian aerial and naval campaigns to destroy shipping and port access. The city of Amsterdam is heavily bombed and what isn't destroyed in the bombing is wiped out due to the flooding that occurs. As cities are targeted, bombed and destroyed, it forces the citizens of these two countries to pack tighter into already densely populated areas. Refugees streaming out of France further exacerbate the living conditions in these countries.

In an ironic twist, French citizens feel they were being treated poorly - like second class citizens by their Dutch and Belgium hosts. Rioting begins during the winter of 2012 when food supplies become extremely sparse and tensions with the French reach their breaking points. By the spring of 2013, those cities not destroyed by the Russians, are smashed by civil unrest and protests. By the summer of 2013, The Netherlands and Belgium are reduced to an almost complete state of anarchy.

Luxemburg suffers heavily due to fallout from the French nuclear attacks and the subsequent winters. In 2011, the fallout claims almost 25% of the population, with another 10% seriously ill. The following winters eradicate an additional 60% of the population. While Luxemburg declares neutrality in the Euro-Russo conflict and thus is spared any direct actions against it, the side effects from the war cause this little principality to exist only on paper now. Spared from bombing, the Luxemburg industry is largely intact; it merely lacks manpower. None of the surrounding countries take any action to secure Luxemburg and claim her land, yet.

Monaco suffers not from radiation or bombing or even from riots, Monaco is severely dependant on tourism. Once the Russians nuke France, tourism becomes a forgotten memory. By the summer of 2012, many Monacans begin to migrate to Italy or southern France, looking for food and work. By 2013, there are only about 1000 people living in the various wards. The EMP that hits Europe cripples many of the cruise and luxury ships that are docked in and around Monaco at the time. Most are repairable but are simply left behind in the exodus.

RUSSIA

Russia did not start the war according to the Russian president; Russia is merely defending itself from imperialistic aggression. All the same, Russia is now embroiled in one of the largest, most destructive wars in all of history.

Unlike many nations (the U.S. included), Russia maintains its presence as a country. There is still a functioning central government that controls both the civilian and military aspects of the nation.

To effectively deal with such a vast country and the lack of centralized control, Russia converts itself over to a more feudal system of governmental control. The central government sets up city-states, all controlled by loyal party hardliners. These party officials report back to the central government, along with paying the appropriate taxes (in food, materials and manpower), for these city-states are loosely monitored and act in a semi-autonomous manner.

Because of this loose federation of city-states with long leashes, the conditions in each of them vary from one to the next. Some, such as Krasnodar, are ruled by a brutal tyrant who treats his citizens as his personal play things. Others, such as Samara, are governed by a true patriot of the people who protects her citizens and treats them respect.

Western Russia

By 2013, it is difficult to determine where Eastern Europe ends and Western Russia begins, partly because of the heavy damage both receive from the Euro-Russo War and partly because of the conquests Russia makes in the region. By July 2013, Russia secures many of the Eastern European nations that once made up the Warsaw Pact and slowly makes headway into Central Europe. But even with the military successes in Europe, back in the motherland things are not going so well.

The aerial campaigns from EU forces destroy many cities and industries in Western Russia. Most of the cities such as Moscow, Leningrad, Kiev and the like are leveled during the bombing. Thanks to the EMPs there is no more public technology. What little food sources survive in the west are either irradiated, frozen or both. What the Europeans don't destroy the Russian government takes, by force most of the time.

Southern Russia

Southern Asia is an area forgotten by the west but not by Russia. Having been involved in armed conflict in the region for decades before the **Twilight War**, Russia seizes the opportunity to end it once and for all. Using the entire forces available to the North Caucasus Military District, Russia moves to wipe out all opposition in the region and secures its southern region from spillover from the Great Muslim War.

Eastern Russia

Russia, being indifferent to the polluted lands of the Chinese and Koreans, spends most of the war propping up her eastern border defenses to prevent invasions and floods of refugees from crossing over. In 2013, Russia changes tactics in the east. Still uninterested in Southeast Asia, Russia heads further east crossing, into North America. Using the well-rested and equipped eastern forces, Russia secures Alaska and parts of northwest Canada.

Along with military forces, Russia sends thousands of oil workers and engineers to tap into the region's oil deposits, especially in the ANWAR.

In retaliation to this act of aggression, the U.S. launches its remaining contingent of nuclear missiles into eastern Russia; targeting supply lines, industry and military control points. By spring of 2013, northeast Siberia begins to resemble western

Secrets of the Twilight War

The **Twilight War** is the most documented and reported conflict in the entirety of human history. There are reporters and cameras in every corner of the world. Before the EMPs, every nightly news channel since early 2010 features some sort of story dealing with the war or its lead up. However, after the EMPs hit Europe and North America things change. It's not that reporting stops; it's just that the audience disappears. Most of the atrocities of the **Twilight War** are committed after this becomes apparent.

One of the biggest secrets of the war is the massive chemical attack on Chechnya, Georgia, Armenia and Azerbaijan by Russian forces. The Caucasus Massacre is designed partially to quell the region so they can focus on Europe but also to secure the southern border of Russia against collateral damage from the Great Muslim War. Still, the death toll from this region reaches into the millions.

Russia in terms of death and destruction. Civilian survivors seek refuge in the Krasnoyarsk Krai and make this the most populous region of all of Russia.

In June 2013, the Krasnoyarsk Krai declares its independence from Russia, and military assets in the region are seized by loyalists to the new patriotic government. In reality, the only control the new government has is centered in Krasnoyarsk itself. Outside of that city, there is no control, no government, Russian or otherwise.

Baltic States

While taking the fight to the Europeans, Russia can not afford to leave the Baltic states (nor access points) in a position to threaten their rear echelons. Along with the Russian forces in Kaliningrad Oblast, the Russians pull several divisions of interior forces and send them to Latvia, Lithuania and Estonia. Without defense from Europe or America, the states fall in less than a month, leaving the Russian rear protected. The only real resistance the Russians face is outside of Riga, where combined with elements of the Estonian and Lithuanian armed forces, the Latvian army holds out for three weeks against the Russian invasion.

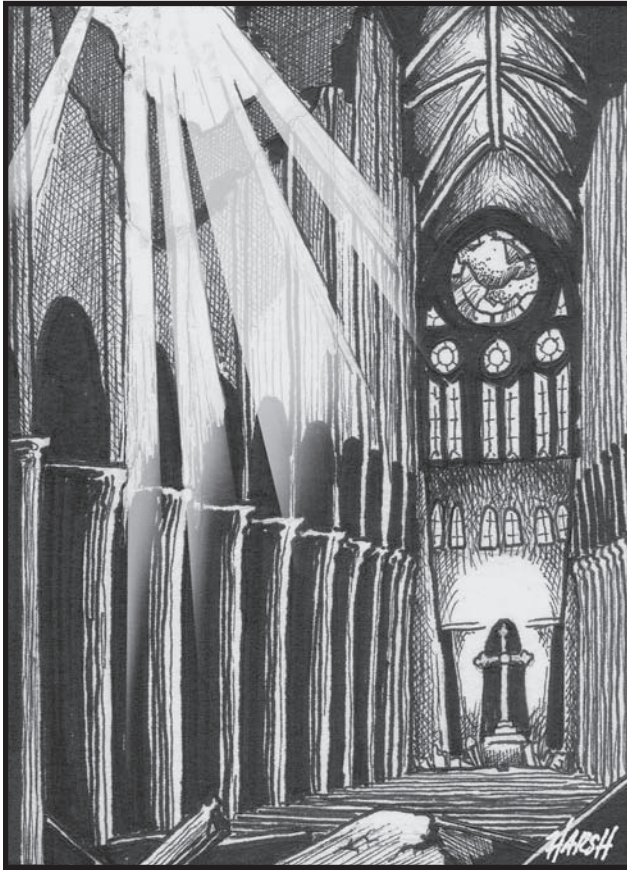
The Russians for the most part abuse the Baltic region for conscription and supplies for their march toward Western Europe. This region was assaulted heavily by EU naval forces at the beginning of 2012, and as such has very little industry left. Those areas of industry critical to the war effort are moved into the central areas of mother Russia.

Kaliningrad Oblast

As the staging area for the Russian invasion of Eastern Europe, Kaliningrad Oblast receives its share of retaliation from the EU counter bombardment. The bombings are tactical rather than strategic in nature, aimed mainly at massed troop formations, thereby leaving the region's industry largely intact.

A minor invasion by a German armored brigade takes place near Pionerskij in the fall of 2012, in hopes of slowing Russian approach to Berlin. The German units are not able to make much headway into the region but do have a solid hold on the western coast. Now cut off from the fatherland, the units setup containments throughout the coastal region and settle into limited harassment engagements only.

The rest of the Kaliningrad Oblast fairs much better than the rest of the region. Russia keeps the area as a major supply route for the European advance; meaning that food, fuel and other supplies are in ready abundance as they make their way to the front. Still, the area is controlled primarily through military might.



Ukraine and Belarus

As of the start of the Euro-Russo War these countries technically no longer exist. Russia invades and conquers the Ukraine in 2010 and Belarus in 2011. One of Russia's first acts in each of these regions is to move what critical industries they have into central Russia.

Both of these countries are a vital part of the Russian invasion plan and the EU knows this. During the aerial war preceding the ground invasion, both countries are continually targeted. As a result, almost all of the cities are effectively leveled, and the population disperses out into the countryside (at least what remains).

In recent months the various insurgent groups (birthed by Russia seizing control of both countries) begin to operate more brazenly and attack more hardened military targets. This forces Russia to shift some of its fighting forces around to these areas to protect what supply trains they do manage to operate. Due to the weakened state of the Russian military though, its provincial government resorts to more drastic measures to quell the insurgency. Midnight kidnappings, mass public executions and other extremely questionable means are used against the rebels.

Poland

United States and NATO forces stage out of Poland during the invasion of Russia in early 2012, and the country suffers the brunt of Russia's conventional counterattacks. The devastation here is, perversely, less extreme than in much of the rest of the world, as neither faction is willing to risk hitting its own troops with a nuke. Polish forces offer up a token resistance to the Russian invasion, but essentially Poland is a "gimme" for the Russians.

During the final offensives of 2013, Poland witnesses an influx of her former EU allies (along with a fresh US BCT recently transferred from England) as they try to push back at the Russians. Presently, large numbers of European, American, and Russian troops are now on Polish soil. Command authority for these units varies widely, with EU forces tending to have the highest cohesion. As of mid 2013 though, most non-Polish EU units are gearing up for withdrawal to their home nations; there is no way to maintain an effective supply train.

Russian forces are concentrated in northern Poland, from the Kaliningrad Oblast all the way to Germany, and effectively add the territory under their control to that of the Russian outpost. American troops are lining up with their EU counterparts, hoping that some ports in Western Europe still have ships available for the trip back home, and that they can break their way through the Russian lines to get to them.

Poland's surviving civilian population and government make entreaties to both EU and American forces within the nation's borders. The Poles are concerned that Russia may launch another attack with fresh troops from Kaliningrad or across Belarus in an attempt to shore up the border with the EU, possibly dissolving Poland entirely.

The Czech Republic and Slovakia

Located on some of Europe's oldest and most important land travel routes, the Czech Republic is positioned to control transportation across the continent. The small country also controls an invaluable resource – the still-functional Temelin nuclear power plant. At full capacity, Temelin generates more than 1700 megawatts of electricity; reduced output will still be sufficient to provide power for the small country's residents and industries – including iron and steel production and armament manufacture.

Neighboring Slovakia is closely tied to the Czech Republic's economy and industry. Fuel for the aforementioned Temelin plant is produced in Slovakia, and energy supplies have long been shared between the two nations. A similar industrial base, a result of decades of central planning under Communist rule, allows for easy trade and combined manufacture.

These two countries are major battlegrounds during the push into central Europe. Currently most of Slovakia is under Russian control, however, the Czech Republic is teeming with troops from almost every European nation along with a few battalions of Russians. A true "front" line does not exist in the Czech Republic; units are spread throughout the country. The Russians are concentrated around Temelin though, with at least two battalions of armor protecting the reactor.

The dissolution of Czechoslovakia into the two current countries is, for many residents, a living memory. The border today is gone. Refugees from Slovakia flood into the Czech Republic and the surviving military forces of both countries combine and are tasked with ensuring internal security, operating under joint command. Criminal elements remain strong though, and even after the nuclear exchange there is some production of synthetic drugs in both countries.

Austria and Hungary

A century ago, these two small countries were the cores of an empire spanning much of central Europe. Following the First World War, the empire was divided into a handful of independent powers.

As members of the European Union (and, in Hungary's case, NATO as well), Austria and Hungary take part in the defense against Russian forces in 2012. Both nations keep the majority of their armed forces within their borders as a hedge against possible counterstrikes and illegal entry into the EU. Because of the internal political climate of these two nations, no EU forces are allowed to

be stationed in either country. In the spring of 2013, this policy is lifted (at least in Austria's case) but it's too little too late to save either of them.

By the end of 2012, almost all of Hungary is now under Russian rule, and a large number of Russian units are within Austria's borders. By 2013, Russia sets up a regional command post in Budapest to control the action as the Russian army moves toward capturing Vienna. Along with Hungary, the Russians now control the southwest section of Austria.

As Austria and Hungary form a major prong in the Russian advance westward, both suffer from the two years of conflict. Hungary's border with Serbia is heavily patrolled by surviving police and some Russian military units. Criminal organizations based in the Balkan region presented a threat to Austro-Hungarian security for decades, and the situation only worsens during the **Twilight War**. Traffic in contraband, from narcotics to weapons to kidnap victims, is rampant.

The Former Yugoslavia

The small nations formed out of the breakup of Yugoslavia are wildly different from one another, but they all face similar problems. Years of ethnic cleansing and civil wars, as well as pervasive corruption in government and widespread organized crime, caused tremendous problems for their citizens even before the world blew itself apart.

Russia bypasses this region entirely on her march west, at least in the sense of sending army units into their borders to fight and die. Instead, surplus Russian weapons and equipment found its way into the region. Tactically the Russians feel it will be easier to let them kill themselves off rather than spill Russian blood in any pyrrhic victory.

Today, better than half of the surviving population of these countries is in a refugee state. Semi-permanent tent cities are widespread, usually clustered around remnants of United Nations or European Union peacekeeping forces and their installations. Guerrilla troops made up of former soldiers, criminal enforcers, and other combatants roam the countryside and cityscapes, fighting for control of territory and resources. In southern Serbia's Kosovo province, the specter of ethnic and religious genocide has resurfaced.

Eastern European criminal organizations are the functional government throughout most of this region. They are ruthless and tolerate no interference in their enterprises, but provide employment and, in many cases, security for the areas in which they operate. Legitimate authorities deal with these organizations on a more-or-less equal footing.

The exception to these troubles lies in Slovenia. The small country establishes close ties with Austria and Italy, and troops from both nations can be found within its borders, establishing Slovenia as a de facto buffer zone against other regional threats.

Other Nations

As the final prong in the Russian European attack plan, Romania serves as the gateway to central Europe. One third of the Russian assault force sweeps through Romania in a matter of weeks, seizing control of major roads, industry and supply dumps.

Moldova is a speed bump on the way to Romania for the Russian Army. Before the invasion, however, the Russia delivers an ultimatum to the Moldovan government – surrender or face annihilation. They choose to surrender, and the country is assimilated into Russia without a shot being fired. Protected by early surrender, it escapes any harm both from Russia and from the EU. Not one bomb falls on the country, and for the most part its infrastructure is still intact (although it still endures the nuclear winters and Oakland Flu along with everyone else). Life in 2013

Moldova is very similar to what it was years ago, albeit with fewer people and Russian tanks rolling along the highways.

Along with the former Yugoslavia, Bulgaria is also spared a direct Russian invasion. It too becomes a haven for criminal organizations. Even though it escapes the military conflict, Bulgaria is currently being ripped apart by rival crime syndicates fighting for what little territory they can grab. It is also serving as a buffer zone for Russia against the Greek-Turkey conflict.

MIDDLE EAST

Always the world's trouble spot, the Middle East is ravaged during the Great Muslim War. The American invasion and occupation of Iraq eventually lead to open warfare between Iraq's various factions. Israel, bereft of international support when the global war intensifies, collapses under the combined assault of Arab and Palestinian forces.

Saudi Arabia is the region's dominant power, with Iran very close behind. Both nations maintain oil reserves, and while production facilities are targets for all sides during the war, refining and shipping are beginning to resume throughout the region. Saudi Arabia's military is a match for Iran's remaining forces, and the two countries currently maintain a tense stalemate while vying to gain the upper hand.

Saudi Arabia

Once open war with Iran begins, the Saudi King quickly surrounds himself with hardliners and hawks for advisors. These hardliners not only see the enemy outside the gates, but within them as well: Iranian, American, European, etc. Most of the actions taken during this time period are not necessary defensive tactics, but veiled ethnic cleansing activities.

Internally, Saudi Arabia repeals of all the social reforms it initiated in the last 10 years. The Mutaween (religious police) triples in size and is stepping up its enforcement of the Sharia (Islamic religious law). Thousands of people are detained and even more disappear. Publicly, the Mutaween is helping weed out Shia influence, but privately their efforts are aimed at also undoing years of western influence.

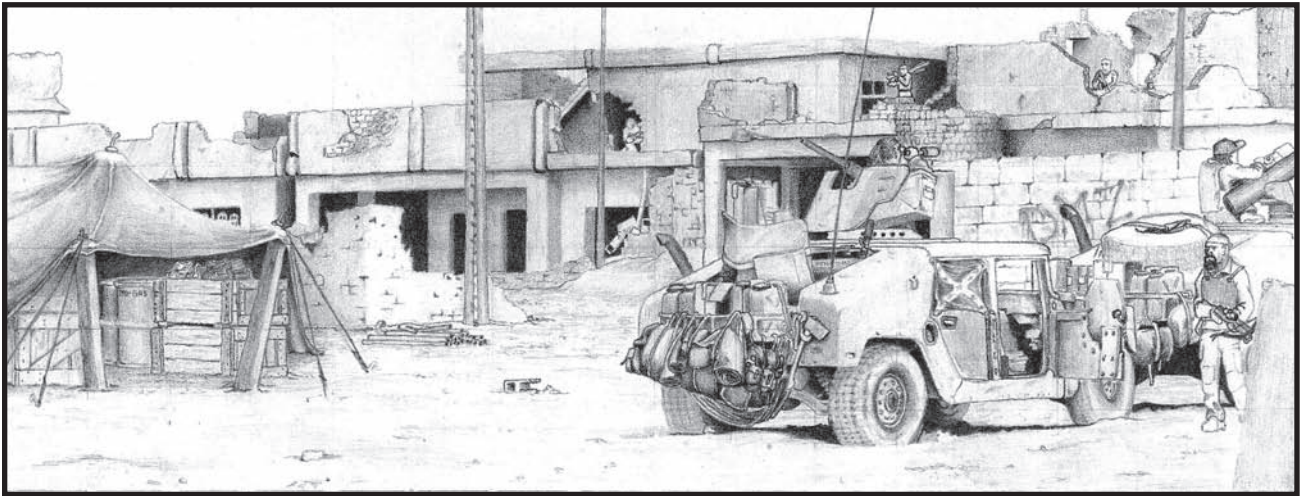
During the Great Muslim War, Saudi Arabia also seeks to remove all potential enemies in the region, leaving them the sole powerhouse. The smaller nations on the Arabian Peninsula (Dubai, Kuwait, Qatar and Yemen) are "annexed" by Saudi Arabia; only Bahrain manages to be nominally independent.

In the opening phases of the Great Muslim War, Iran launches several successful bombing runs into Saudi airspace, targeting mostly the oil industry, but they also hit a few manufacturing plants. As the air war quickly turns in the Saudi's favor, Iran resorts to launching surface missile after surface missile to destroy targets inside of Saudi Arabia. All in all, over 100 missiles detonate inside Saudi territory (a few being a little dirty).

Persian Gulf

The Great Muslim War, being the third major conflict fought in the region in the last twenty years, results in a lasting mark on the gulf. The intense naval war between Saudi Arabia and Iran leaves hundreds of ships (mostly Iranian patrol boats and dozens of oil tankers) strung out along the bottom. Many of the shipping lanes are now impassable.

In a last ditch effort to counter Saudi dominance in the Gulf, Iran minelayers plant vast amounts of mines in the Gulf of Oman, effectively shutting down the Persian Gulf. Iran still has one operational submarine operating in that sea hunting Saudi targets.



Even with the destruction to Saudi oil fields, the country still has more than enough oil and gas to supply itself and a small surplus as pittance to its “allies”. Saudi Arabia maintains a technological advantage over their Iranian enemy through the supply of western weapons flowing in for the Oil for Weapons program.

Iraq learned from its war with Americans that superior technology is often undone by simple insurgent tactics. By the summer of 2013, the war with Iran in Iraq is measured more by neighborhoods than by miles. Actual combat has now boiled down to house-to-house clearing rather than battlefield engagements.

Iran

Iran has very few friends right now - not because it has isolated itself with its actions, but because everyone else is preoccupied with their own mess. Being largely Shia in a Sunni world, the Iranians have wolves at every door. The Saudi's are coming from the west; the ICN has secured footholds in the east, and the Russians are inching closer in the north. With the ocean to the south, they've little place left to turn.

Early in the **Twilight War** the Royal Saudi Air Force secures free reign in the skies over Iran. They successfully target everything from military assets to hospitals. Western Iran now resembles the bombed out remnants of Europe during WWII (or more like the current bombed out radioactive ruins of Europe, minus the radioactive part). Even though the Saudis focus on the western part of the country, no part of Iran escapes damage. Every day of the Great Muslim War at least one sortie flies against some Iranian city.

Because of the mining of the Gulf of Oman, the port city of Chabahar becomes one of the most important cities in Iran. Iran funnels as many resources (money, manpower and military might) into this city as it can afford. It develops into the favorite target of offshore bombardments from the Saudi navy; every day at noon, at least a dozen shots are fired into the city.

Over 80% of Iran's mechanized elements are either destroyed or otherwise placed out of commission. This includes tanks, APCs, aircraft and naval vessels. The Saudi technological advantage wins out time and time again during open engagements. By 2013, Iran uses infantry and mounted cavalry as its main attack arm to do what the mechanized forces couldn't - stop Saudi Arabia's march across Iraq.

Iran now has very few military assets in the northwestern part of the country, having committed most of its forces to the south to oppose Saudi incursions in 2012. While mainly attempting to contain the conflict in the Middle East, Russian forces in Caucasia are keeping an eye on northern Iran for a possible resource grab.

Islamic Confederation of Nations

The ICN invasion of Iran is declared both a failure and a success; it really depends on who you ask. The Iranians feel that because they've managed to hold off the incursion near Mashad, that there really hasn't been an invasion. The ICN feels that because it is tying down several regiments of Iranian ground forces and drawing much needed supplies away from the fight with Saudi Arabia that their mission has been (at least somewhat) successful.

The ICN forces spread throughout the Razavi Khorasan province are actively engaging Iranian forces when and where they can. Most are hit and run insurgent style attacks, but they've been extremely successful.

Back in their home nations, things aren't better or worse since the start of the Iranian campaign. Mostly it's business as usual. The only noticeable difference is the supply convoys returning from Iran loaded with art, books, rugs and other “loot” (including water from the many mineral springs in the region).

Iraq

Iraq technically no longer exists as the nation it once was. It's essentially divided into three areas of control: Kurdistan (northern Iraq), Saudi controlled areas and Saudi/Iranian contested areas. The central government put in place during the American period has been erased. In its place is a regional form of government where local clerics hold the real authority.

The Saudi's have total control over the Salahuddin, Diyala and Al-Anbar provinces. They hold varying degrees of control on all other provinces (save those that belong to the Kurds in the north). The fighting is heaviest in and around Baghdad and Basra. The only area that can be said to be under total Iranian control is Amarah.

Outside of the major cities (and sometimes in them) Iraq is fully tribal, with warfare between Islamic factions continuing and growing. Refugees escape the region at an alarming rate. Of the surviving population (already less than half of that of 2008), over 50% are in refugee status. Most travel along sectarian lines, Sunnis heading west, and Shia traveling east. Going north is suicidal – Kurds, Turks, Americans, none of whom are well-disposed towards large groups of Iraqis, armed or otherwise.

Kurdistan

In 2011 the U.S. contingent on the ground is moved into the Kurdish region of northern Iraq to protect American interests while Saudi Arabia and Iran battle for control of the rest of the country. During this time, the provisional government declares

the region independent of Iraq and formally creates the nation of Kurdistan.

In addition to the Iraqi territory, Kurdistan quickly annexes parts of Turkey and Syria. As of 2013, Kurdistan is the region of eastern Turkey, northern Iraq, and smaller parts of northern Syria.

The U.S. Army positions its forces along the border with Turkey and Iraq to act as the primary defense for the region. Initially, their goal is to protect American allies and assets. Following the President's "You're on your own" speech, their new goal is to secure the region long enough for other American and Coalition forces to arrive. After that, their plans are to extricate themselves along with the newly arrived forces back to what's left of America.

Even though the Saudi's are content to leave Kurdistan as is for the time being, they have on occasion sent bombing sorties out to destroy key infrastructure points. They seem to be prepping for an eventual strategic invasion of the region (after dealing with Iran of course).

Afghanistan

Afghanistan has been home to large numbers of American and allied troops since the Global War of Terrorism began in 2001. As the **Twilight War** required U.S. and NATO countries to turn their attention elsewhere, Afghanistan quickly became a low priority. By mid-2010 almost half of the participating coalition nations remove their forces from Afghanistan; many of the remaining ones end up cutting their numbers by 2011.

In 2007, the Taliban returns throughout much of the nation, having been sheltered in neighboring Pakistan. By 2013 with superior numbers, improved tactics, along with the weakened technological advantage of the coalition forces, the Taliban and other factions, such as al Qaeda, return to power within the country. The western backed government topples; its members are either dead, in hiding or sheltered amongst coalition forces.

Western coalition forces are now concentrated in the southern part of Afghanistan, preparing for the push across northern Iran. The remnants and descendants of various guerilla groups are scattered throughout the mountains and valleys, carrying out raids against supply depots and other resources maintained by standing militaries.

Afghanistan's surviving farmers produce a still-significant amount of opium alongside subsistence crops. However, most of the opium now produced is for local consumption. With supply lines hopelessly disrupted, some military medical teams have negotiated independent trade agreements for the drug as a substitute for approved painkillers.

Pakistan

Pakistan is in ruins, the entire country. There isn't one city, town, village, hamlet or outhouse that hasn't been caught up in either the internal Paki-Civil War or the invasion by India. After taking control of Kashmir, India sets back and watches as Pakistan burns (without fiddles though).

Evacuation

After the American President's speech and disbandment of the federal government, the remaining American and NATO forces in Afghanistan and Pakistan (AfPak) are preparing for a mass evacuation. They are currently assembling outside of Kandahar. Their mission will be to join up with larger allied forces still in Kurdistan (northern Iraq) and then attempt to secure passage back to their home countries. The evacuation route will take these forces directly through a heavily defended Iran.

Pakistan is now one of those places where the word 'survivor' holds little meaning. While people live through the shootings, bombings, shelling, fires and other such attacks, the war leaves little in the way of living conditions. Food is scarce, oil and gas reserves are depleted, public services such as running water don't exist (available water is stagnant and rampant with diseases) and medicines throughout the country are exhausted (irrelevant as no hospital is left standing).

The Paki-Civil War takes a heavy toll on the country and its people. What was once called Pakistan is nothing more than a smoldering pyre (even the fire dies). And none of this takes into consideration the nuclear attacks from India in 2013.

Prior to 2013, India's plan for Pakistan was conquest, not annihilation. However, plans change in war. Indian Defense Ministry Intelligence learns that the multinational force in control of Pakistani nukes is preparing to retreat to Afghanistan. The result is a full-scale preemptive strike to protect Indian cities.

In one day India fires over 100 missiles, targeting all of the Pakistani nuclear missile sites. A staggeringly high percentage hit their targets, and all the nukes are believed to be destroyed in their tubes. There are fears inside the Indian military that a few Pakistani missiles survive, but without local intelligence there is no way to be sure. Secrets leak in both directions. It appears the multinational security force protecting the sites have enough warning to evacuate in time.

India now waits for the fallout from the nuclear attack to dissipate before moving further into the Pakistani interior. However, once the dust settles (pun intended) India intends to take full control of a weakened Pakistan.

India

With hostile nuclear powers on two sides, India is hit hard during the **Twilight War**. Pre-existing overpopulation problems lead to massive death tolls from starvation and the unchecked spread of disease. Depletion of already scarce resources only makes things worse for the world's second most populous nation.

India's traditional caste system revives since the war's escalation and resolution, although placement based on birth gives way to a limited meritocracy. Blessed with large numbers of well-educated citizens, India's new social order places primary importance on an individual's ability to contribute to the community. Those most able to provide necessary services or knowledge are held in high regard.

The country's still-large military is deployed throughout the new national boundaries. The long-disputed Kashmir region is firmly under Indian control. As the nuclear arsenals of both nations are depleted or destroyed, an effective truce takes hold – rebuilding is considered a higher priority than continuing a shooting war between the largest armies left on the continent. A detachment of the Indian army moves into Bangladesh to guard against refugee movement, continued terrorist operations, and a feared military infiltration from the Southeast Asia peninsula.

The national capital relocates to Bhopal, as the government facilities in New Delhi are badly damaged by Pakistani nuclear strikes. The surviving Parliament and new Prime Minister focus on keeping the nation secure and preventing epidemics and mass starvation.

Long in decline, the centuries-old tradition of banditry returns. In the northern region of the Chambal, gangs are reforming and recruiting new members from the local villages and towns. The gangs continue a long tradition of protecting and assisting the poor residents in the areas where they operate, and there are hopes that these Robin Hoods of the subcontinent will keep more hostile elements at bay.

Israeli Nukes

After using a nuke on Syria, Israel trades the two left in its arsenal as barter for a safe haven in Egypt. Apparently Syria discovers this transfer and alerts the Saudi Ministry of Defense. The Royal Saudi Air Force launches two squadrons to destroy the nukes before they can be handed over. Following a brutal aerial engagement with the Israeli Air Force, it is believed that the Saudis successfully destroy the nukes. Still, the Saudi's remain extremely cautious in their dealings with the Egyptians.

India's occasional ethnic and religious conflicts flare during the **Twilight War**. The eastern part of the country is home to at least two separatist groups who become very active when national attention turns outward. The Nagaland and Assam separatists establish cultural enclaves near the old border with Bhutan. Minority Muslim groups suffer some attacks from other ethnicities following Pakistan's attacks, and tension remains there.

Syria

One of the few countries to come out ahead (at least on paper) during the **Twilight War**, Syria now controls all of Lebanon and Israel. They also develop a strategic alliance with Jordan to form a strong deterrent against both Saudi and Egyptian encroachment into their regions.

The country and its people are not as well off as things might appear. The Israeli air war destroys large portions of the local infrastructure and military defense, not to mention a good percentage of the population. The war wins them Israel but costs them the ability to control their people and provide basic necessities. The country is now locally managed within each governorate.

Rioting breaks out in all major Syrian cities. The violence escalates until the entire western half of the country resorts to martial law in mid-2012. More Syrians die during the riots and subsequent crack downs efforts than during the Syrian/Israeli war.

In addition to the rioting, triumphant Kurds in the northeast join with Kurds from southern Turkey and northern Iraq to form the nation of Kurdistan. Other regions also begin to rebel against the government and threaten open revolt if things do not improve.

Israel

Israel as a nation doesn't exist any more; however, Israelis and their culture survive in exile in Egypt. What is left of the nation of Israel is now controlled by Syria. Israeli Defense Forces left behind are able to destroy a good portion of the Israeli infrastructure: buildings, roads, bridges and other strategic fortifications (except religious fixtures). After ensuring that the Syrians will not "profit" from their conquest, they hunker down to wage a low-level guerilla war against the "occupiers".

NORTH AMERICA

The decline of civilization in the west can be measured almost by a stop watch. The nuclear strike and winter of 2012 end a way of life that developed in a few short centuries to become one of the most promising in all of recorded history. Dependence on technology, electricity, food distribution, banking and modern medicine became a crutch to cripple the mighty giants as thoroughly as the war itself.

The United States

A scant five years ago, the United States of America was the last superpower and the most influential nation on Earth. Today, the nation exists mainly as ideas, memories, and a name on prewar maps.

Following the suspension of the Federal government in early 2013, authority becomes mostly a state-level affair. The disaster recovery supplies still available to the central government are distributed throughout the country in the months between the nuclear exchange and the 2013 State of the Union address. These meager measures provide only the slightest aid, punctuating the end of the country as any kind of legitimate political entity.

After the winter of 2012, the U.S. is not the same. The chaos created by the EMP, nuclear attacks, multiple enemies on American soil and the U.S.'s own invasion of Mexico is almost enough by itself to destabilize the country. Throw in two years of extreme winters, the flu outbreak and a three-front war at home, and it's a guarantee.

The U.S. is in the unique position of experiencing polar opposites of post-war conditions throughout the states, rather than seeing flat statistics across all 48 continental states. In some areas, it's a desolate wasteland of radioactive debris and destruction, in others it's almost life as normal. Selected areas have begun reconstruction while others are still neck deep in rubble. Certain things are constant no matter where you live; highways are clogged for miles with broken cars; running water is a running joke; and death is everywhere (literally) as dead bodies are scattered throughout cities and the countryside.

Militarily things aren't much better. The military is stretched thin between battling armed Canadians, Chinese, Mexicans and recently Russians. The pressure is compounded even more with combat troops still operating in other parts of the world. Over the past two years, a growing movement within the continental command structure realized defense of the home land takes precedence over foreign wars and planned troop recall initiatives. Now, with the very little means the military has at its disposal, this becomes more of a practical matter than a philosophical one. Those units operating outside of the U.S. are ordered to use whatever means necessary to ensure their security, supplies and evacuation home.

It Came Out of The Sky

The EMPs exploding over the U.S. do more than send almost everyone back to the dark ages. At the moment the nukes hit there are thousands of airplanes in the sky. The EMP bursts send the vast majority of them crashing to the ground instantly. Of those initial survivors, again the majority of them crash while attempting to land with no ground-based assistance or direction (due to the lack of air traffic control). This day only about 1% of the airborne flights manage to land successfully, and most of those are smaller aircraft.

The one-day death toll is extremely high from the aircraft passengers alone, but many of those planes crash into highly populated areas of major cities. Fires, caused from the burning fuel, rage for days and even weeks; igniting hundreds of city blocks in some major metropolitan areas. Destruction in Atlanta from the airplane crashes is worse than the nuclear attack on Washington DC.

This experience is not isolated to the U.S.; all countries hit by EMPs have flights in the air. The sheer number of flights airborne in the U.S. however, makes the level of destruction and fatalities experienced in the U.S. unique.



The U.S. military members fighting back in the states aren't that much better than those abroad. The almost complete information blackout, the immediate loss of normalcy, and the extreme conditions, all take their toll on the U.S. military. Chinese forces scatter throughout the west, mostly operating in small units. Armed Canadians can be found as far south of the Ohio River. Russians encroach into the Northwest.

By June 2013, stress levels are through the roof among the military, not just from the fighting but also from the worry about family and friends. Desertion rates in the continental U.S. armed forces near 50% as soldiers go AWOL to tend to their families or to simply to get away from the war.

The South

The southern states were quick to plant their feet after the Chinese nuclear attack on America. Being largely rural and agricultural, these states depend on electricity as a convenience item rather than a necessity. That's not to say there aren't problems; it's that southerners adapt faster, become more innovative, and show more resilience to their new lifestyle.

The southern states who declared their independence form an extremely loose confederation with each other. Unlike the previous confederation between them, this one exists only for the purpose of trade; there is no mutual defense agreement among them. For this purpose, a council is appointed and a draft of trade terms drawn up. These terms are delivered to the each state's capital for adoption.

The trade terms include a common standard of currency (gold and other precious metals and gems), their ultimate value, and an agreement to respect the pre-collapse boundaries for the purposes of taxation. The next meeting of the council is scheduled for August 2013, where they will meet in Asheville, NC. to discuss new items and report on each state's adoption status of the trade terms.

For the most part, the south is under Civgov control (their own). Those military units remaining after they declare independence are seized by the states, and those National Guard units involved in defense outside of their home state are ordered to immediately return home. Several Alabama National Guard units are caught in a "command" war after the order to return is given. They are seized before they make it home and are summarily executed for treason.

Inside each southern state a few Milgov holdouts still exist, mainly around former U.S. military bases. Fort Knox, Fort Jackson, Camp Lejeune and a few others are still under Milgov control. The most fortified and supplied Milgov base in the south is the naval command at Naval Weapons Station Charleston, the new home of the ragged United States Fleet Forces Command (USFLTFORCOM).

Currently there is a Laissez-faire approach regarding relations between Milgov and Civgov forces in the region. Occasional supply raids generate more irritation than resolve for open conflict. This situation could become more perilous though as Milgov forces outside the south become more and more strained.

The Northeast

In the northeastern part of the U.S., life grinds to a standstill. More than 50% of the population migrates south to escape the winter of 2012. By the Spring of 2013, there is no accurate count of the survivors. A conservative estimate is that at least 60% of those who remained didn't make it.

The winter wreaks havoc on more than just people. The region's infrastructure rapidly begins to deteriorate. Many roadways disappear as the ground beneath them gives way from the freezing then melting ice. Buildings collapse under the weight of the falling snow or wash away in the spring floods. Fields

Shall Not Perish

The satellite races over the horizon at a speed that, by any terrestrial standard, would be blistering. It's in a fast, low orbit, covering ground hungrily as it speeds toward a rendezvous with destiny. The satellite's journey began eighteen hours ago when a scratch crew of technicians scavenged it from an assembly facility, mated it to the last remaining air-launched booster, and rolled it into the back of a hastily-converted former transport.

This is its fourth lap around the planet and will be its last. The orbital environment is a dangerous neighborhood these days. Two automated hunters are silently closing in, trading altitude for velocity as they burn hard toward self-immolation. Relics of the last war that never happened, they're more than adequate to finish the final space action of the current one. It's all right; orbital mechanics are in the satellite's favor, and it will fulfill its purpose several minutes before a collision with a cloud of ball bearings tears it into an equally small cloud of nascent meteors.

The coastline snakes along beneath the satellite, scattered pinpricks of light showing the few isolated communities that enjoy electricity this evening. No view of the night side from orbit has been so dark since man first looked down upon his world from above. The satellite, eyeless and unaware, cocks an antenna ear to listen for the voice of its masters.

Several hundred kilometers below, a ground station's own dish aligns. Technicians in a shadowed operations center report signal acquisition. Studio lights flare, and cameras come alive. Uplink begins. The satellite faithfully rebroadcasts every data packet, burning through its batteries at a prodigious rate to scream an electronic dirge.

The alert tone is hauntingly, terrifyingly familiar, dancing along frayed nerves and bringing people leaping to their feet across a war-torn continent. But instead of the stylized eagle and shield of the agency normally responsible for broadcasting fell tidings, a similar but much more venerable symbol flickers from the few thousand surviving and powered television screens. Millions more listeners, with only battery-driven or hand-cranked radios, miss this first indication that the announcement is something other than another drumbeat in an inexorable rhythm of disasters.

The tone holds steady for an eternal fifteen seconds, and then abruptly falls silent. Static crackles, and the seal fills screens for a full minute as nightly tasks slither to a halt and crowds gather. The image flickers, going black just long enough to pull hearts into throats before it resolves into a man in a blue suit, seated behind a wooden desk. The office is familiar, as is the expanse of green outside the window behind the man, but the too-crisp lines of real-time computer-generated imagery can't conceal the lie. That office, its contents and surroundings are now so much bubbled glass and unrecognizable debris, smashed flat nine months ago beneath an incandescent hammer of preemptive vengeance. Those who know of emergency contingencies and continuity of government plans have their own beliefs about the man's actual location: perhaps airborne over the relatively unscathed mountain states, maybe deep beneath a mountain in Colorado or West Virginia, possibly aboard the rumored surviving super carrier somewhere in the Atlantic. Ultimately, it doesn't much matter. What matters is what he will say now, and ninety million survivors tense in anticipation.

"My fellow Americans," begins the President of the United States.

"This evening, on the two hundred and thirty-seventh anniversary of our country's founding, I come before you with a message of apology and farewell. When you chose me five years ago to lead this great nation, you did so because of your belief in my promises of renewed peace and prosperity. I promised to restore to this office the integrity that it once held, to prove it worthy of your trust once more. I promised to restore to America the fortune and certainty that we all enjoyed in happier times. Your government – no, I personally have failed to uphold those promises. And I am sorry.

"This past year brought you face to face with the greatest crisis our nation has ever known. You endured unimaginable losses and hardships not experienced since the first days of our republic. And through it all, you persevered, responding with magnificent spirit that has always defined America. I have never been prouder to be an American than I have been in this, the Last Year." A sigh rustles across a country at the implicit capitalization, as the President speaks the two words that have grown to symbolize the death of everything that came before.

"Tragically, I must now speak of failure. The past half-century has seen a diminishing of that spirit, and I have no choice but to accept the blame for this most terrible of losses lies squarely at the feet of myself and my predecessors. My countrymen, for two generations your government betrayed you – not through treachery or oppression, but through sweet seduction, by shouldering your burdens in a misguided attempt to buy your loyalty and silent consent with luxury and security. The events of the Last Year challenged us and found us wanting, and we all paid the price for this assumption of responsibility as your government failed to honor its obligations to you, its citizens. The most basic guarantee of a government to its people, of peace and safety, was a lie.

"My compatriots, I now call upon you one last time to rally, to march to the sound of the guns, to light the watch fires in this twilight of an age and to hold back the darkness that threatens to engulf all mankind. I call upon you to rekindle the spirit of explorers and colonists, tradesmen and statesmen, pioneers and citizen-soldiers who forged the United States of America upon the anvil of adversity. I call upon you to dream again the dreams that made our nation great and raised it to dazzling heights: dreams of liberty, equality, and justice."

The President bows his head over clasped hands for a moment, as if praying for guidance – or pausing to regain his composure. When he again looks into the camera, his face is lined with an internal struggle, showing the legacy of every sleepless night that he endured while cities burned. A nation holds its breath.

"There are times when it is necessary to tear down the ruins of the old before building anew. I spent the past weeks consulting with every one of your elected leaders who could be reached, and, with deepest regret, the consensus we reached is that this is such a time. The United States yet lives, and will so long as a single American heart beats, but it is deeply wounded, clothed in sackcloth and ashes. Any attempt to continue blindly in a single, centrally-determined direction would be doomed to failure. You could not and should not trust our guidance now when we have so gravely erred before.

Shall Not Perish cont.

"Therefore, my final executive order as President of the United States, duly authorized by the surviving members of Congress and the Supreme Court, is that the federal government and all agencies thereof are disbanded, effective as of this date, the fourth of July, two thousand thirteen. All former federal employees, both civil and military, who now stand on American soil are requested to place themselves and the assets they control at the disposal of the local governor or equivalent interim authority. All such personnel outside American territory are requested to return here as best they may, and may whatever God you pray to keep and protect each of you as you walk that long road home.

"Many years ago, in another time when this country was torn apart by strife, it was led by a better man than I. He called then, as I call now, upon his citizens to dedicate themselves to the unfinished work of their fallen brethren, to bring about a new birth of freedom, that government of the people, by the people, and for the people should not perish from the earth. In my last moments as your President, I call upon you to dedicate yourselves to the rebirth of this nation, to shelter and cherish our shared ideals until a time when America has the strength to raise itself up again on the hands of men and women who dare to dream.

"But this time must not be prematurely forced upon history by men who seek to maintain their own power because they know nothing else, nor by those who are guided not by reason but blind and misplaced faith in their own infallibility. It must be brought about by you and your children, by common consensus, through common wisdom, for common good, at a time when you as a people have healed the wounds of our betrayal and are ready to choose new leaders who will not repeat our crimes. Until that time, you must trust in yourselves first, remembering that America has always been made great by individual, exceptional, men and women.

"Good night, my fellow Americans... and good luck. You're on your own."

overtake empty parking lots. In some areas, it looks as if 50 years have passed, and Mother Nature has already begun to reclaim her land.

There is no functioning government above the Mason-Dixon Line. All that exists is the Milgov, and even that is sparse after the harsh winter. Currently those surviving Milgov elements are staging in four areas: West Point, Fort Drum, Boston and Plattsburgh, NY. Their primary missions are to continue to engage armed Canadian forces and secondly to round up survivors and rebuild.

Because this region is now largely uninhabited, it interestingly becomes the favorite target of both southern and Canadian raiding parties. Most of the necessities have long been stripped from store shelves, but those that remain (including those of people who didn't survive the winter) are virtually free for the taking.

The Midwest

The seat of the former U.S. civilian government structure rests now in Sioux City, Iowa. Even after the President disbanded the federal government, Congress has not given up (on both their control and the United States). They are in the process of negotiating terms for the election of the first post-collapse president. About 40 people step forward claiming the presidency; most do so outside of the congressional process.

Several small "fiefdoms" now exist throughout Kansas and Nebraska, each claiming to be the duly authorized government of the United States of America. One Missouri town claims to be the seat of the Free States of America, although its power only reaches a few miles outside of the city limits.

To extend Civgov control over the area, Congress busily makes promises and delivers what supplies it can. Most of the area is run by semi-autonomous city-states since you can travel miles before hitting the next town. The power struggle boils down to which control/government holds the most city-states' allegiance. Often it's found that they pledge support for whichever government happens to be in town distributing supplies this week.

For protection many of these city-states and even Congress raise their own militias, some as small as 5- or 6-men squads. It's common for these militias to be placed under the control of the local sheriff to help enforce law and order as well as provide protection from bandits and highwaymen. By June of 2013, Congress has a functioning battalion (equipped with mostly military grade weapons) at their disposal with the potential to call in additional militia units from neighboring towns.

Drought and Flood

In the land of milk and honey, this year marks a dramatic climate change. Throughout the southeastern portion of the U.S. many towns and cities experience a draught of epic proportions. Lakes and rivers dry up to a fraction of their normal size. Cities are forced to ration water supplies throughout the summer. Many small towns require water to be trucked in daily to supply even limited water usage.

By contrast, the mid-west experiences 100-year record floods that devastate towns along the Mississippi and ruin whole crops for the year. Added to the destruction caused by the flooding, the general populace contends with disease outbreaks from swarms of mosquitoes and poor to non-existent sanitation.

The Midwest has always been prone to flooding and this year is no exception. After two extremely harsh winters, the spring thaw dumps millions of gallons of raging river over the flood walls and into the countryside. Many towns along the Mississippi wash away completely. Only the small number of survivors prevents the death toll from reaching the tens of thousands.

The West

Of all the places in the U.S. the west suffers most from the Chinese attacks. Not only has their world come crashing to a halt thanks to the EMPs, they comprise the sole target of the Chinese Special Operation Forces attacks. The Oakland Flu takes a devastating toll on the populace as an added bonus.

California is an example of the extreme post-war affects on the people and the region. The loss of modern technology, electricity and comfort creates panic, riots and mass suicides of epic proportions. Survivors of the initial shock begin a steady migration out of the major cities and into the countryside looking for cooler temps and sources of food/water. However, these areas are soon overrun and sacked of all available resources causing further migrations. At least a dozen massive roving caravans move from town to town pillaging each in turn.

One of the favored Chinese tactics involves speeding through small towns lighting everything ablaze. With no running water, many of these towns burnt to the ground. One lucky side effect to the EMPs' destruction of basic utilities is a huge exodus from the usually arid western and southwestern states to greener climates, thus

keeping actual casualties lower than what they could have been.

The Chinese utilize hit and run tactics against hard targets when necessary and turn the vast wilderness to their advantage. Because of their small size and large numbers, they often appear to be in hundreds of places at once, creating chaos for the U.S. military and frustrating attempts to counter them. Since 2012, they've raided hundreds of towns and even a few National Guard armories.

By the spring of 2013, the U.S. Army (under Milgov control) breaks several of their reduced battalions into E-Teams (engagement teams) of squad-size elements and spreads them across the western states. Each E-Team is lightly armed and equipped with civilian vehicles (rather than military HMMWV or Humvees). This allows them to more easily, blend in, and react faster. Each team enjoys procurement rights, allowing them to "take" whatever they need from local areas to accomplish their mission, a highly unpopular and controversial action. Several engagements result from American citizens simply defending their own.

Alaska

In early 2013, Russia launches a bold invasion of Alaska with fresh and well equipped forces. By June 2013, the Russians dominate the region (from Alaska to Vancouver, BC) and settle into a long containment. Seizing control over all of the oil and gas resources, their first act is to deny access to the Americans and Canadians, thereby cutting off flow from the various pipelines and transportation routes.

After the invasion their connection to the motherland is severed, so troops focus on controlling resources until their connection back to Russia can be reestablished. Currently, Russians conduct reconnaissance missions in Washington, Oregon, and Alberta to determine the American and Canadian forces capable of countering their presence, increase their control, and gather additional supplies.

Canada

Often ignored in the shadow of its powerful neighbor to the south, Canada is not targeted by any other nation during the **Twilight War** until this very last year. All of the damage so far to this nation and its people comes from the environmental consequences of worldwide nuclear exchanges.

Following the Russian nuclear counterattack, thousands of French citizens from around the world seek refuge in Quebec. The province's resources are sorely tested by the refugees. The national government and infrastructure are never able to recover from this stress, and the situation grows continually worse until the mass exodus of 2012.

Albert Charles

Armed Canadians, or Albert Charles as they're referred to, become active in the U.S. in late 2012. Their motives aren't necessarily anti-American; they just respond to actions they feel are anti-Canadian. Americans view these "invaders" as such, whereas the Canadians see themselves as refugees, escaping horrendous conditions.

Not all American-Canadian relations involve guns. There is a movement within the U.S. to shelter and assist their northern brothers. This underground movement operates very similarly to one from over 150 years ago, with a series of secret meeting places, routes, and safe houses stretching from Detroit, MI to Laredo, TX, essentially moving them through the U.S. into Mexican territory.

The EMP attacks that cripple the United States also cause widespread damage to Canadian power and communications networks. Without power and heat, the winter of 2011 devastates Canada. Facing another, potentially more disastrous winter in 2012 is the breaking point for many. Millions of Canadians fly south before the coming freeze. Of those who stay, millions more die. By 2013, only a couple million people remain in all of Canada, with the largest concentration residing around Windsor, Ontario (the new provisional capital).

All major railroad and highway lines are still intact, and those in the southern portions of Canada are still passable. Canada's farmlands are relatively intact, but even after they thaw, production will be reduced for years to come without the advantages provided by prewar fertilizers and equipment.

The Canadian government places troops along the border with the United States and at major transportation and government facilities. The garrison at Windsor, Ontario, is tasked with preventing excursions to and from the ruins of Detroit, Michigan, and troops are rotated in and out of this post regularly, due to the radioactive contamination in the area.

Relations strain between Canada and what's left of the U.S. government. Further exacerbation occurs when Canadians recognize the Milgov faction as the leading body. This view is more practical than political, as the Milgov forces directly conflict with armed Canadians who cross the border.

In June 2013, the U.S. Congress sends a delegation to Canada to begin talks regarding a consolidation of forces and material. After the President's speech, negotiations are on hold; however, the U.S. delegation remains in Windsor.

Mexico

Conditions in post-nuclear exchange Mexico aren't much different than before the nukes started flying, with one exception though – the American occupation of northern Mexico.

With the collapse of U.S.-China trade and the boom of Mexican manufacturing towns, many illegal immigrants in the U.S. return home, looking for work. Americans cross the border after Chinese attacks, and in an ironic twist, now become the "illegals". In addition to Americans and repatriated Mexicans, Mexico experiences a refugee boom from Central America.

Even with all the deaths from famine, the Oakland Flu and poor sanitation, many small towns remain the same size or grow due to refugees. The real areas of population decline are found in major cities, which by summer 2013 are a mere fraction of their former sizes.

The federal government in Mexico still retains constitutional power. Destruction of the Mexican army during the American invasion leaves no ability to actually enforce such authority. A battalion-sized element remains for the protection of Mexico City, still the capital. However, that is the extent of the military power of the federal government.

Political and administrative power transfers to the various municipalities in Mexico. Each is authorized to provide for the people using any means necessary. As such, conditions and treatment vary from municipality to municipality. Some still function as stewards of the people's trust, while others are seized by local warlords treating the people like their own personal slaves.

American forces essentially control everything north of Durango, the new seat of American manufacturing. Even though the U.S. controls the region, Mexican and Central American guerilla forces operate throughout the area, attacking supply dumps, convoys and other soft targets using insurgency tactics similar to assaults on coalition forces in Iraq.

SOUTHEAST ASIA AND THE PACIFIC RIM

The War of Chinese Aggression dominates Southeast Asia, as well as the Pacific Rim nations, for the latter part of the **Twilight War**. China attempts a “buckshot” approach by attacking as many countries as it can as fast as possible. The net result is theoretically a success as they still control assault forces in Korea, Japan, the Philippines, Taiwan and Myanmar (and technically the United States as well). In exchange for hundreds of millions of Chinese dead China’s only solid conquest is Myanmar (the strategic equivalent to winning the *booby* prize at the fair).

The Peoples’ Republic of China

Many prewar strategists view China as the West’s most likely opponent in a future global conflict. The world’s most populous nation rapidly develops into an economic and military powerhouse, with a military structure clearly designed around countering American assets deployed near the Chinese mainland.

After the embargoes of 2008 cause the downfall of the Chinese economy, the Chinese experience a rapid decline and are on the verge of collapse by late 2009. The government enacts a plan for expansion and conquest of the region should opportunity arise. With the war in Europe, that time has come. However, things do not go exactly as planned.

A large part of the Chinese plan relies on Europe being too entangled in its own mess to care, and the U.S. being stretched too thin to offer any real resistance. With the UK and the U.S. both abstaining initially in the Euro-Russo War, neither of these

Chinese Math

One surprising aspect of the Chinese military plan for South East Asia domination is the small size of each invasion force. By contrast, the Normandy Invasion consisted of close to one million men. Combined airborne and seaborne operation forces used to invade Japan, Korea, Taiwan and the Philippines is less than 100,000 fighting soldiers each.

The Chinese count on blitzkrieg-style attacks to shock and awe their opponents, thereby allowing the invasion forces to secure footholds in advance of the main attack force landfalls. In addition, splitting her armies into four thrusts forces other countries, such as the U.S., to focus attention on only one or two targets and leaving the others as easy conquests.

The Chinese also use enemy urban environments (save Korea) to their advantage. The close proximity of civilians and necessary infrastructure assets forces defenders to rely more on light infantry than heavy support; thereby, allowing China to also rely heavily on light infantry. These tactics severely hamper defending unit responses and allow Chinese forces to gain much needed footholds.

The violent conventional Allied forces reprisal attack wipes out the Chinese navy and most of its air power within a few months after the initial action. The following enormous U.S. nuclear response decimates the upper command of the People’s Liberation Army.

After the nuclear devastation, the new Chinese commanders opt for a different goal, mainly survival of the Chinese people. Those invasion units still active are issued orders to secure transportation home, or failing that, to wreak continued havoc amongst their host nations until such time as they can be retrieved (or failing that, to fight to the last man). The exception is in Korea where invaders become guardians charged to stand their ground and defend the homeland from a northern counterattack.

conditions manifest. Soon China is faced with the full might of these two countries and their other allies.

China is able to utilize its massive numerical advantage to compete on an even level with these two powerhouses; that is until the U.S. brings its nuclear arsenal to play. By the time the mushroom clouds settle, there is not much left of China. Most of its industry destroyed, surviving military scattered, civilian population decimated, and government evaporated.

What’s left of China today is divided and controlled by former People’s Liberation Army generals who declared themselves the legitimate ruling authority following the American nuclear strikes on the nation and the subsequent destruction of China’s centralized government. It’s estimated that over 100 such “warlords” seize power by 2013, with at least a dozen claiming to be the legitimate government of all of China. The former comrades-in-arms view each other as threats and usurpers in public statements, but in practice, each is more concerned with solidifying control of his region, its population and resources than overextending his own forces by eliminating rivals and.

Japan

Japan suffers a similar fate as that of Germany. The nuclear attack on China causes heavy fallout throughout Japan, and the conventional war practically finishes what the fallout started. In addition, parts of the island are affected by the EMP blast that hits China.

The air war over China spills over into the skies of Japan. Most Japanese cities suffer damage to some extent from the Chinese retaliations during the three-week long aerial campaign. Cities such as Hiroshima, Nagasaki and Tokyo receive heavy damage.

In the fall of 2012, the Chinese army invades Japan with three entire groups in the first wave. Their landfalls are near Sapporo, Niigata and Hamada. The island of Hokkaidō is pacified by the end of 2012. The remaining Chinese army groups begin to converge on Tokyo. The combined U.S. and Japanese security forces manage to halt their progress and force them into containments. As of July 2013, Chinese forces control the almost the entire southern tip of Honshū from Hiroshima south but in the north are still bottled up in and around Niigata.

Aiding the Chinese assault is the 50% depletion of the 240,000 strong Japanese Self-Defense Forces who serve as first responders and die from the same accidental fallout exposure from the American nuclear attacks on the Chinese mainland as the people they try to save. This compels the Japanese to rely heavily on United States Forces Japan (USFJ) for the defense of the island from that point on.

The Japanese are not at all happy with the side effect of the nuclear strikes against China. To this end they assisted Allied forces in the region to the minimum extent possible and not one iota more. In a situation eerily reminiscent to the end of WWII, the Japanese are again left to pick up the pieces after an American nuclear attack; only this time the island is still infested with an invading army (two if you poll the Japanese people).

Korea

After the reunification of the two Koreas into one nation, things began to look up for the Koreans. Families are reunited, resources are shared, and new markets open up. For the first time in decades the economy of the north improves. People not only live in peace, but prosper as well.

Then comes the second invasion of northern Korea from Manchuria as two Chinese army groups (along with several reserve infantry divisions) cross the Yalu river. One army group, bypassing any avoidable confrontation, makes a blitzkrieg-style rush for Seoul while the other heads for Pyongyang.

Good Will

As an act of good will towards an enemy of the former North Korea, the Korean government repatriates the USS Pueblo within a month after the reunification. The U.S. administration welcomes the return of her vessel (captured in 1968) and in sends teams of diplomats and advisors to assist in the transition of power.

The U.S. also sends a Weapons of Mass Destruction (WWD) search team to assist the Korean military in tracking down the chemical and nuclear weapons of the former regime. The teams find several large caches of nerve agents throughout the northern peninsula. However, no traces of suspected nuclear bombs are ever found.

One of the first post-reunification acts the Koreans under take is the reorganization of the two militaries. Using the structure from the Republic of Korea (ROK) military, the two are combined and streamlined. Within a year the militaries reduce from over two million active personnel to a little over 500,000. The reserves are also cut down to nearly four million. The Korean government offsets the loss of military jobs with a boost in the civilian sectors directed at the impoverished north.

This reduction and integration of the Korean armed forces leaves the army in a state of flux by the time the Chinese invade, contributing to most of the early Chinese successes. Moving fast and leaving rear areas under reserve units' control, both army groups make good progress toward the south. Prominent battles are fought at Anju and Sunchon; with both outcomes as decisive wins for the Chinese.

In their wake the Chinese leave hundreds of villages in ruin; most are completely razed to the ground. Their march to Pyongyang becomes a modern version of Sherman's march to Atlanta. In front of the Chinese army nearly a million refugees flee the destruction.

Both army groups stop just north of Pyongyang after the Chinese capture the Sunan Airfield. The Koreans manage to use the terrain and failing infrastructure to bottle up the Chinese in the region. Over the next three weeks the Chinese and Koreans engage in a series of shoot-and-run encounters. Chinese reinforcements eventually land near Nampo in October of 2012 with two divisions of reserve infantry. Their target is to attack Pyongyang from the south with a hope of drawing the Koreans away from the main northern thrust.

However, in November, winter is already well on its way. Both sides are forced to halt all actions and shelter in place due to the ferocity of the winter. Neither side makes any brazen action until the snow begins to melt in early spring of 2013.

By March of 2013, the Chinese begin a new strategy in their conquests. The units in Korea are ordered to continue fighting their way to Pyongyang and Seoul regardless of the toll, thereby protecting China from counterattacks from Korea and her allies. Over the next few months, the Chinese army dissipates into the countryside in platoon-sized elements to sow seeds of chaos and destruction. By July, there are very few villages north of the 39th parallel that haven't been attacked by the Chinese.

The south, while spared destruction at the hands of the Chinese, does not fare much better. The flood of northern refugees and the lack of supplies from overseas leave an economy in shambles and a people with barely enough food to survive. This situation becomes even worse after the American nuclear attacks on China as Korea, like Japan, is hit hard by fallout.

With not enough medical supplies to go around, many hard choices are made. For the most part, hospitals allot treatment based on refugee/resident status, giving preferential treatment to

actual residents over refugees. This drives a wedge between the two groups, and soon open rioting begins in the south. Like the north, the winter calms things down a bit but like medical supplies, food, fuel and other necessities are apportioned based on residency.

After the spring thaw, many cities in the south wake to millions of dead refugees (from exposure and radiation). By this point there clearly exists a divide between the two recently reunified peoples. An open civil war between refugees from the north and the residents of the former South Korea begins by March of 2013. By July almost every major city in the south is ablaze from the internal conflict.

Taiwan

While the dust swirls in Washington, DC. Chinese assault troops land on the island of Taiwan. Before the U.S. (or any other Taiwanese ally) can organize and send a defense force to the island, the Chinese secure the surrender of the Taiwanese government. The weeks following the surrender of Taiwan are filled with swift executions and stiff military actions against any possible insurgency.

Suddenly, the Taiwanese become caught in a power struggle between the Chinese and the Allied forces, mainly spearheaded by the U.S. Part of the bombardment of Chinese forces takes place on the tiny island nation. Once the island forces are severely pounded, a Marine Expeditionary Force lands to clear all remaining Chinese elements.

Unfortunately in-between the time the Chinese take control of the island and the aerial bombardment commences, the Chinese manage to fortify positions and scatter forces among the country's various off-limit targets (such as hospitals, schools, temples, etc.). When the Marines land, rather than facing the depleted survivors of the Chinese invasion force, they run right into a well stocked, full strength Chinese army group.

Fighting between these two forces leaves victory for the Taiwanese a moot point. By the spring of 2013, the island is almost completely decimated. Most of the civilian population is already dead or evacuated the island. The remaining U.S. Marines pull off the island in April and redeploy to Japan to help deal with the Chinese foothold there.

Today there are about 5,000 Chinese soldiers and another 2,000 to 3,000 Taiwanese civilians left on the island. There is no power, running water or other facilities (such as hospitals, schools, etc.) left. These people remain simply because there is no way to get off the island.

The Philippines

Along with Korea, Japan and Taiwan, the Philippines are part of the initial wave of Chinese assaults in the Pacific region. In a coordinated effort, while simultaneously attacking Japan and Taiwan, two army groups of Chinese land near Dagupan and proceed to Manila. Most of the Chinese assault forces manage to make it ashore during an intense naval encounter with U.S. and British forces in the area.

The Pangasinan Battle is one of the bloodiest and most intense battles of the war in the Pacific. More than 20,000 Chinese, 5,000 Allied soldiers and a reported 100,000 civilians are killed or wounded in the battle during the two-month siege. Eventually elements of the Chinese army break out and head north into the mountains to wage a guerilla-style war while waiting on reinforcements and supplies that never materialize.

After the Pangasinan Battle, the Chinese separate into small lightly equipped and extremely mobile 30- to 50-man units. During the next year they harass local towns and villages in the northern mountain region while engaging in limited hit-and-run encounters with Filipino and American military units. When ordered to return, very few Chinese units are in a position to secure transportation

and those that do are often captured or killed at sea. The majority of Chinese, however, opt to remain and fight rather than risk their lives at sea.

With U.S. and Filipino attention focused on the Chinese invaders, extremists (foreign terrorist and local anti-government organizations) on the island step up their attacks and insurgency against the Filipino government. Like many other nations, the Filipino government starts a ration program for food, fuel and medical supplies in anticipation of a hard winter. Corrupt government officials and criminal elements subvert the system. Many Filipino citizens flock to either criminal gangs (to get their "fare" share) or extremist groups (to fight the system).

By the spring of 2013, the Philippines take on the look and feel of a mix between 17th century pirate islands and the 19th century American Wild West. While there is still a government in existence, the real power lies with whoever controls each individual city, most of which are criminal, extremist or Chinese controlled. Outside Manila, the national government holds little power.

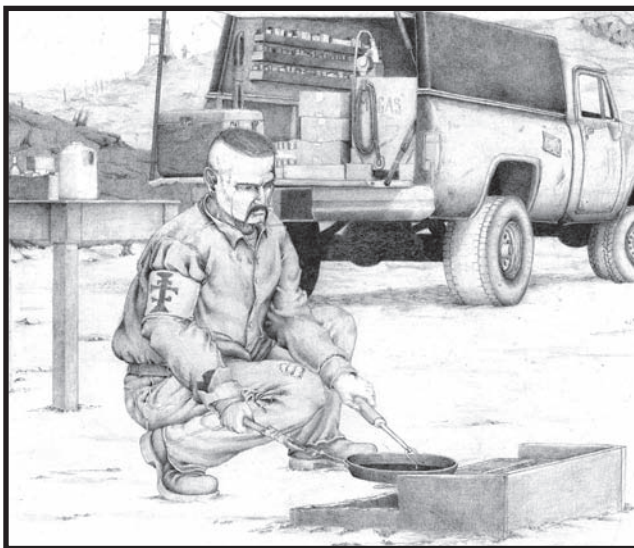
Of the 7,108 islands making the archipelago, very few still claim loyalty to the government. The island of Mindanao declares itself a sovereign country and expels or executes any official still loyal to the Manila government (as it's been coined). Many who no longer recognize the Manila government do so simply to survive. With the **Twilight War** in full force, supplies such as food, fuel and medicine become scarce. People do what's necessary to survive; for many that means no longer waiting on Manila provide solutions.

Myanmar

In 2012, China invades Myanmar and quickly defeats the military Junta that has been in power for the last half a century. While Myanmar does not offer any strategic value to the overall goals of the Chinese military, its agricultural offerings are needed by both the military and civilian population.

The invasion happens so fast and with very little actual combat, leaving the country's infrastructure largely intact. The Chinese spend several months "dealing" with the civilian population; although this is mostly due to terrain rather than resistance.

However, the Chinese military forces inside Myanmar are targeted by numerous conventional and nuclear attacks from U.S. warships toward the end of the year. The Chinese invade with 500,000 and although depleted to just over 100,000, they still maintain complete control over the former nation.



The Chinese warlord in charge of the Myanmar invasion has declares the region for himself and severs all ties with his former comrades. In an effort to win over the remaining populace, he renames the region Burma and envisions himself as a liberator of the people from the former oppressive military junta. While this PR move does little to win over the people, his influx of food and other supplies is more successful, thus securing his control over the region.

By late 2012, "Burmese" forces march east in an effort to seize more territory. The Thai military, supported by the UK and the U.S., offers stiffer resistance than anticipated and by mid-2013 Burma makes little headway into the Southeast Asian country.

Southeast Asia

The remaining countries of Southeast Asia are in various states of chaos and "normalcy". To some, the current state of the world is no different than every other day. To others, especially those who managed to gain a small economic foot-in-the-door in the west, it's a trip back in time.

Australia

During the **Twilight War**, Australia is one of the few places on earth that receives little or no direct damage from another warring nation. Even China in her attempts at conquering most of the region never fires at shot at the continent itself. Merciful winds and geography save it from the US vs. Chinese nuclear fallout. However, sometimes the most horrific damage can come from within.

The Allied forces request more and more of Australia's resources to continue the fight against Chinese aggression in the region. First it was out of sheer convenience, use the local food, fuel and other supplies and replace with supplies from home as they come in. By the end of the air war, the Allied partners use Australia like a 24/7 convenient store and offer nothing but IOUs to pay for it all. Coupled with losses this last straw prompts the Aussies to end all active participation in the war and provide merely for a national defense.

By this time however, the country's own supply of fuel, food and other necessities is running low. The Parliament enacts a policy of rationing available supplies and for a time the country is relatively calm. Not everyone is happy about it, but there is an unwritten acquiescence as news comes in of the dire U.S. and European conditions.

Things turn sour though when British warships engage in the region demanding supplies in the name of the Queen. The Australian citizens, already stretched to a breaking point see this as an affront to their sense of decency and common sense. They barely provide for themselves, let alone for the Queen's navy. During the winter of 2012 this "theft" from the British increases. Riots break out in port cities as British warships dock to resupply.

The Dingo Fence

As people flood the outback one unexpected casualty is the Dingo Fence. The "pest-exclusion fence" stretching over 5,300 km was designed to keep the dingoes out of the south-eastern part of the country, protecting both the sheep flocks and fertile farm land of the southeast. The fence, previously maintained by the Department of Natural Resources and Water loses priority once resources and manpower run low. By the spring of 2013, whole sections of the fence have disappeared, and dingoes are now free to roam. They explode in numbers as they ravage sheep flocks, kangaroos and other livestock in the area.

In January of 2013, the British frigate, the HMS Aberdeen sinks off the coast near Garden Island (and HMAS Stirling). No investigation is ever launched, but several groups come forward to claim responsibility. The British Royal Navy is outraged at the sinking of one of her ships. However, before the Royal Navy instigates action against Australia, the Australian Prime Minister delivers a letter to the admiral of the fleet. The letter announces Australia's formal and complete independence from the crown and furthermore states any action by the Royal Navy or British people will be seen as an act of war against the Independent State of Australia.

Brits receive the declaration badly, but realize little can be done with supplies and manpower at an all time low.

Oakland Flu reaches Australian shores and spreads rapidly throughout the population due to low medical supplies. By the time the worst passes, more than 50% of the population succumbs to the flu. A good percentage of those who survive take to the outback, leaving little more than 25% of the pre-2013 population in cities and towns.

The economy and population decline turn remaining towns and cities into little more than ghost towns; most lack basic services such as running water, electricity and garbage disposal. Today, Australia is a scene from a "mad" 80's movie; food and fuel resources are scarce; people are spread throughout the outback; there is little to no law.

New Zealand

During 2010-2012, New Zealand actively participates with Allied forces in the South Pacific. However, in late 2012, New Zealand recalls all of her military personnel in the region without reason to partner nations. After all personnel return, the New Zealand government broadcasts on all radio frequencies and in many languages "This region is off limits, turn around immediately or your actions will be considered hostile and dealt with accordingly".

All attempts at contact with either the New Zealand government or its citizens fail. A British courier team is sent by ship to inquire about the country's self-imposed isolation in February 2013. No contact is made with the courier team after its departure.

In response to the courier team's disappearance, a joint British and American rescue is planned in March 2013, but as of July no resources are allotted for the effort. However, a small British SAS team deploys in June to gather information. As with the courier team, nothing is heard from the SAS team, which is presumed to be lost or captured.

CENTRAL AND SOUTH AMERICA

The **Twilight War** is largely focused in Europe, Asia and North America but not limited to those regions. Brush fire wars throughout Central and South America unchecked in the years preceding the start of the **Twilight War** eventually explode into outright war between many of the countries in the region. While not forgotten like Africa, Central and South America behave as if they are.

Colombia

Within a week of the Chinese sabotage in the Panama Canal, Colombia experiences the beginnings of a population shift. Many, fearing the Chinese have further intentions in the region, shift from areas near the canal to those deeper in the country. On top of that, floods of Panamanian refugees are already crossing the border.

The New Cocaine

After the collapse of international shipping and a severe drop in demand (not to mention the ability to pay) for Colombia's most illicit export, drug lords turn their production to another, more valuable, commodity – coffee. With wars raging all over the globe the only thing more important than bullets is a soldier's *mornin' cup o' joe*. Best of all, it always comes in the right caliber no matter which army chow line dispenses it – strong.

Whole new supply logistics are developed to get the coffee from Colombia to the various front lines. This involves complicated overseas and overland coffee convoys. Coffee convoys are now some of the most protected of any field army out there. There is also an unwritten rule of not attacking a coffee convoy; Colombia would not look too kindly on any such maneuvers.

During the years leading up to the **Twilight War**, the situation with Venezuela makes things tough on all Colombians, from private citizens to drug cartels. By the time the flood of refugees start pouring in, the national support structure is already at a critical breaking point; add in thousands of Panamanians looking for work, food and support, and you've got the makings of an economic collapse.

During this time, the Colombian government becomes a lame duck government while Revolutionary Armed Forces of Colombia (Fuerzas Armadas Revolucionarias de Colombia or FARC) and other criminal groups rise to true power; taking over where the government fails to act. Promising to support the people and going so far as to perform "Robin Hood"-like behavior, FARC's ranks swell while the Colombian National Army shrinks. In late 2012, FARC begins outright military actions against the Colombian government. By 2013, FARC controls most of the major cities, while the Colombian national government is holed up in Bogota.

Outside the major cities, various drug cartels have so much control that several infiltrate the Colombian National Armada and now control the fleet; which is used heavily in the coffee convoys.

Venezuela

Venezuela prepares for five years in anticipation of some sort of military conflict with its enemies; quietly building up its military; making alliances; and storing supplies for the prolonged conflict. In addition, it stokes the fires of any "hotspot" it finds. The first major incidents involve Cuba, followed by Bolivia, then northern South America and the Caribbean.

In the beginning Venezuela is able to win the war of words because of its oil resources. No one is really ready to push that button and see how far they are willing to go. As the **Twilight War** begins to grip the world, Venezuela is essentially able to engage in outright war to get what it wants; always by targeting weaker countries.

While the Venezuelan military is no match for the likes of the U.S. military, it does have one thing the U.S. doesn't (or at least possesses in great numbers) and that is fuel. In the end, it isn't the strength of the forces or even their numerical advantage that determine the outcome of the conflict; it's who has the fuel to keep what they have moving forward.

By the time the U.S. really enters the South American conflict (Caribbean included), it is already low on fuel (not to mention manpower, being already engaged against the Chinese, Iranian, Iraqi, Taliban, Indian, Canadian and Russian militaries to name a few) and can only send a token force to deal with the Venezuelan threat. Hopes are that other South American countries will step up to the plate and assist in repealing the threat, unfortunately though

most of them are either doing exactly the same as Venezuela or playing the greed card.

During the battles for northern South American, the U.S. engages in some minor (involving only three cruisers) offshore bombardment of the Venezuelan coast, but this obvious wasted effort is stopped after only a week. The Venezuelan interior is largely in the same shape it's always been. The only exception is the improved roads in and around the borders (to better move troops and equipment).

So far the Venezuelan government has done nothing but benefit the Venezuelan people. They have no complaints and no desire to stop. They've increased their territory, faced down the U.S. (except in French Guiana), and improved their economic situation. What's there to complain about? Strategically speaking, Venezuela is one of the most successful countries actively participating in the **Twilight War**.

Cuba

A half-century ago, the world faced its first real threat of nuclear war over Soviet missiles installed on this island nation. Cuba remains a thorn in the western superpower's side, and is the remains an unwilling host to an American military installation on its southeastern coast.

With the aid of Venezuela, the remnants of Cuba's government work to establish the island nation as the dominant power in the Caribbean. The economic situation in Cuba has improved greatly over the last few years. The nations' unemployed are put to work under government programs (sponsored by Venezuela) to rebuild after Hurricane Larry. Trade between the two nations also increases, with Cuba importing much needed resources. In just a few years the country manages to go from the 1950s to the 21st century (OK maybe the 1980s).

Venezuela does not attempt to exercise any control over or formally invade Cuba. Both countries form a mutual alliance providing the other with much needed resources. There is a contingent of Venezuelan military on the island nation, and the Venezuela Navy uses its various ports as bases for Caribbean operations. A small pro-democracy insurgency is holed up in the ruins of Guantánamo Bay and occasionally skirmishes with government forces providing what relief they can to local residents.

Despite the fevered imaginations of some remaining American nationalists throughout the Southeast, there is no evidence that Cuba is massing an invasion force to sortie across the Florida Straits and reestablish global Communism.

The Caribbean

Most of the islands in the Caribbean still operate as independent states or are now controlled by the Venezuelan military. Islands with strategic resources are seized or plundered, while mere "tourist" islands are left to fend for themselves (although no source of labor resource escapes the occasional seizure attempt).

When the **Twilight War** starts in earnest, tourists from many nations are vacationing in the Caribbean and are subsequently stranded. With no long distance transportation available, their only alternatives are to stay put or head to potentially Venezuelan-controlled islands. On several of the islands a small American-led insurgency takes root. Venezuela chooses to temporarily ignore this minor threat in order to secure more islands, but military leaders keep a running list of items for later consideration.

Guyana and Suriname

Venezuela crosses the border in October and by November takes control of the capital, Georgetown. Suriname puts up as much resistance as Guyana, and the outcome is the same. By the first week of December, Venezuelan forces capture Paramaribo.

Even though neither country is under total Venezuelan control, capturing their capitals reduces fighting to low-level insurgency. Surviving members of the Guyana Defense Force and Suriname National Army (now in the jungles) spearhead the insurgency against their Venezuelan occupiers.

As part of their standard operating procedure the invading army pillages the cities and towns for necessary supplies, keeping the need for a lengthy supply train at a minimum. Capitals acquired, the Venezuelans leave a battalion-size securing force in each and proceed to French Guiana.

After heavy fighting (their first of the campaign) against American Marines in French Guiana, the Venezuelan Army retreats back into Suriname. The Marines quickly follow as far as Moengo before running out of necessary supplies to continue active engagement. Instead, they make contact with the Suriname National Army. However, as of summer 2013, there are no joint operations regarding the two forces.

Fighting between U.S. Marines and the Venezuelan Army dies down to the occasional meeting engagement. Supply issues force the U.S. troops to secure whatever supplies they can from the local area. This action creates indifference in the minds of the population between the two fighting armies.

If the boys of Semper Fi are unsuccessful in driving the Venezuelans out of Paramaribo, they have a contingency plan to blow the dam holding back the Brokopondo Reservoir, to flood the entire region.

Brazil

It is believed that one of the American Marines taking part in resupply operations brings with him the Oakland Flu. Having very little defense against its rapid contagion, the population succumbs with an almost 75% fatality rate. The flu spreads to the indigenous people of the Amazon, where it wreaks untold havoc. It's estimated that most villages experience a fatality rate in the 90th percentile with some reaching 100%. By the July of 2013, the flu claims millions.

In early 2013 though, Brazil begins a program of forced consolidation. This makes it easier for the government to provide basic public services and supplies a work force to those areas of industry the government deems necessary.

Outside of the rampant flu epidemic, Brazil weathers the **Twilight War** pretty well. As a largely self-sufficient nation, Brazil's decline in imports does not impact the people negatively, while her exports increase exponentially. Brazil is now a large supplier of automobiles, clothing, food, medicines, and technology. She also has the world's largest "operational" shipping fleet, not to mention a functional Navy.

Many countries sign trade treaties (mostly mutual) with Brazil, exchanging foreign military hardware for Brazil's commodities. Receiving over two dozen U.S. Abrams tanks, at least two Russian Sovremenny class destroyers, several CF-18 Hornets from Canada and many more from all over the world, Brazil becomes an equal opportunity trading partner.

Seeing the prosperity their northern brothers experience, both Paraguay and Uruguay approach Brazil regarding some form of formal agreement between them. Brazil demands nothing less than full annexation and offers all the corresponding benefits (Brazil needs more warm bodies than it has to keep pace with international demands). Uruguay cannot come to terms with the Brazilian demands, and Paraguay is too tied down with internal fighting to agree to them. Both sign trade agreements where Brazil brokers their goods to her international trading partners for a small 'handing fee'.

Falkland Islands

As English attention focuses on preventing war on its shores, Argentina makes a play for the Falkland Islands. The British are unable to spare more than a token force for the island's defense. It takes only two weeks to secure the islands. In the end, the British choose diplomacy over deployment. In exchange for the islands, Argentina guarantees the safe passage of any British citizen who chooses to leave the island and continued shipments of refined fuel.

As it turns out, almost all 3000 people on the island seek shelter on the main land. The British manage to stretch this out though until the end of 2012, thus denying the Argentines complete access to the islands until 2013.

Argentina

Like Brazil, Argentina weathers the **Twilight War** rather well. Its people are happy and prosperous without any notable civil discontent. The country reinvests in infrastructure, schools, people and other areas, which helps make the nation self-reliant during these trying times. Like Brazil, Argentina also enters into numerous similar trade agreements with foreign countries.

Unlike Brazil, Argentina actually participates directly in the **Twilight War**, first in Bolivia, then the Falkland Islands and lastly Chile. By July 2013, Argentina effectively annexes each of these nations. In addition to the expanded territory these conquests bring, they also increase the might of the Argentine military, almost doubling in size and firepower overnight.

When the other countries involved in peacekeeping operations withdraw from the country in 2012, an Argentinean delegation meets with the Bolivian government. These meetings remain classified to this day, but the outcome is the "peaceful" annexation of Bolivia into Argentina. All of the former top government officials receive lucrative postings within the Argentine government, except a few who are sent to remote postings (and as the cliché goes, are never seen again).

In late 2012, Argentinean military forces cross the border into Chile. Using a combination of the Rapid Deployment Force and blitzkrieg tactics they force the surrender of the Chilean government (even though out-gunned by the Chilean military).

Immediately after seizing power in Chile and Bolivia, the Argentine government floods both regions with money, jobs and public services. People within the public's favor are quickly promoted to important positions and sent out to further "indoctrinate" the people to their new government and praise what it has to offer them. As the Falklands are virtually deserted by the time they take power, there is no need to do any PR work there.

Militarily, the new and improved Argentine military is dispersed to the northern regions of the country to shore up its borders with Peru, Paraguay and Uruguay. The push prevents destabilizing elements in those countries from affecting the efforts of the Argentine government and prepares for what looks to be further expansion.

Panama

Strategically important to American military planning and to world shipping, Panama's involvement in the **Twilight War** is limited to repair of the Panama Canal following the explosion and sinking of a freighter, an event blamed on Chinese agents. Constitutionally forbidden from maintaining a standing military, Panama's territory is targeted by absolutely no nuclear strikes during the 2012 exchange, although Colombian forces cross the border shortly after the first missiles fly.

El Mirador

In mid 2012, a small group of guerillas in Guatemala begins taking in refugees fleeing north to escape the chaos. After incorporating over 3,000 refugees (more than 50 times the size of the guerilla force), the leader makes a bold move to keep the group together rather than leave the refugees to their own methods. He marches them further north to the site of El Mirador (an ancient Maya site).

They organize and set up a government, a defense force and working farms. They even have teachers and doctors providing education and health care (although minimum at best). By July of 2013, the city numbers about 4100 people.

Other "new cities" do not fare as well as El Mirador, with many being nothing more than groups of people hovered together under the jungle canopy. Disease and tempers are rampant. Dozens of these enclaves collapse under their own stress.

Today, Panama is the host to an American combat engineer unit (and an infantry battalion for protection), directing efforts to keep the Canal operational for what limited shipping is still out there. The country is mostly in chaos, as is much of the world. The loss of the canal is a devastating blow to the economy of the region. While the canal is under repair many people are out of work, not just from the canal itself but from all of the tangent business that either support or live off the canal traffic.

The Panamanian government is actively looking to countries other than the U.S., such as Mexico and Venezuela, for assistance; something not unnoticed by the U.S. presence in the country.

Central America

While most of the countries in Central America escape the blunt of the **Twilight War**, all still bear the scars of it. Early on, many countries view the region's resources as "free for the taking". Many deals signed during the initial onslaught of nuclear war with the Central American countries involve companies and countries that simply cannot pay, but seize the goods none the less. By 2012, most of the businesses in the region shut their doors, unable to pay their employees; government services cease, such as police and health care; and national borders all but evaporate.

For the most part, the conditions in Central America go from third world to no world, almost overnight. Many people travel north into Mexico either looking for work or to fight the American invaders (who many feel abandoned them during this most trying time).

Militants now take over where the government falters. In some cities there are as many different fighting factions as there are last names in the phone book. Each faction now fights over what few resources remain. Some begin to venture out into the jungles to find their own "cities"; starting anew.

AFRICA

The worse case scenario of the **Twilight War** is in Africa. As other countries focus their attention on their own affairs, many simply ignore Africa and her people. The loss and devastation in Africa easily equals or exceeds any other region of the world, yet at the same time several glowing rays of hope emerge from the Forgotten War – Libya, Egypt, South Africa and Côte d'Ivoire (the Ivory Coast).

Egypt & Libya

Egypt and Libya dissolve their border in all but name. Both nations embrace progressive political and religious doctrines, and neither suffers major damage in the War. Seeing no real way to win, both countries decide early on to remain neutral during both the global **Twilight War** and the regional Great Muslim War. Rather than fight their neighbors they decide to strengthen themselves.

In most other nations the infrastructure is falling apart, diseases are rampant, and infighting is prevalent; here the opposite of these conditions exist. With untainted water from the Man-made River Project and thriving economies, the two countries now become trading powerhouses in the Mediterranean and Middle East. One important note is that not only do these countries have trading commodities, but they also possess the only active freighter fleets in the Mediterranean.

In late 2012, both countries offer asylum and citizenship to foreign workers on their soil. This guarantees access to all the services of their host nation, including medicine, food, and defense. With the state of the world, many pragmatists take their offer. Foreign companies also switch their registrations in order to preserve profits and resources.

Both nations also sign a treaty of mutual defense, and with Egypt's acquisition of Israel and its defense force, they are now in a good position to hold to it. While Israeli citizens are given lands near the Libyan border, the majority of IDF units placed strategically along the Suez and the Sinai Peninsula, with a few elite units designated for the protection of the Israeli people. As of July 2013, no Arab nation can cross into the Sinai Peninsula.

The most likely rival for this new polity is what's left of Algeria, where scads of French refugees and expatriates settle after the Russian attack. This newly fueled refugee state looks at the two powerhouses with envious eyes.

South Africa

Spared from any direct attack against its soil, South Africa manages to not only maintain its way of life, but actually makes improvements in several areas thanks to the **Twilight War**.

The lack of nuclear strikes against or anywhere close to South Africa leaves its industry intact. As a provider of weapons before the **Twilight War**, this simple fact allows it to become the new powerhouse in arms dealing. Since 2011, it expands its military industrial complex seven-fold and its export of military arms by an equal amount; one of the reasons the South African Krugerrand is now commonplace.

Utopia

Not much is known about this tiny African nation after the fall of modern civilization. It begins as a company town near the Côte d'Ivoire coast. By the summer of 2013, rumors float to every corner of the world about how Utopia really is a utopia. The current popular stories tout endless supplies of food and water, peace and prosperity, and an almost truly communal atmosphere where no one wants for anything.

Sadly, stories are all they are (for now). Each testimony is always in the form of "a friend of a friend of a friend told me..." with no first hand experiences surfacing. Tales of attempts to reach this utopia begin to surface by mid-2013, but no accounts of success. A South African army private found wandering the jungles near Cameroon was allegedly part of a unit sent to contact the town. Rumor is they had to lock him away in an asylum though; he just kept screaming "NO!"

In a matter of a few years, the average income and GDP of the nation triples. The South African government, being aware of the tenuous nature of their prosperity, invests heavily into the wellbeing and happiness of its people; hoping to thwart any rebellion and strengthen the people's resolve to protect the nation in case the fires of war spread this far south. Hospitals and schools are constructed; the police force is increased and expanded; even the entertainment industry sees government funding.

Although it's not all peaches and cream, fueled by their need for manual labor (for the military industry of course) and tempted by the state of the African interior, the nation claims large parts of the southern section of Africa for itself. Without firing a shot, South Africa now claims everything south of the 20th parallel. This is not to say that there is no resistance to the claim. However, when faced with starvation and imminent peril, many in these regions are quick to change their minds (or at least keep their mouths quiet).

The Rest

The world turns a blind eye to the conflicts in Africa, not purposely but out of necessity and their own self interests. Subsequently, the whole of the region devolves into open war with nation against nation and tribe against tribe; all fighting for food, for space and/or for ethnic superiority.

The global climate changes begin to affect this territory as brutally as the northern hemispheres, causing deserts to grow and fertile lands to shrink. Shrinking livable areas further quicken the pace of regional collapse.

By 2013, many of the tribes are gone, many cities are in ruins, and most nations exist only in the minds of their dictators (whose true power usually only extends the couple of square miles they control due to the sparse and spread out populations). No industry of any note remains and what little technology there was before the collapse has evaporated by now. Conditions deteriorate so badly, that many joke "if the war doesn't get you, the famine will, and if that doesn't get you disease will, and if that doesn't get you..." Usually you're dead before you can hear the end of the quote.

Many cities (and countries) along the African coast (including sections along the Mediterranean coast) collapse into complete devastation and anarchy. Small tribal communities still existing are the closest resemblance to a form of government in this area. Many now serve as bases for the pirate activity resurfacing in the western Mediterranean and Atlantic.

Eastern Africa is in much the same condition as the rest, if not worse. Famine of biblical proportions hits this region, claiming millions of lives. On top of that, warlords increase their strangle hold on the populace with the local governments being unable or unwilling to intervene. Saudi Arabia seizes the country of Djibouti (along with portions of Ethiopia and Eritrea) in an effort to control the Red Sea, thus attempting to force Egypt to compromise on control of this vital shipping route.

OUTLANDS

Even before the war, some areas of the globe are so remote as to be virtually cut off from the rest of mankind. Since the **Twilight War**, the few remaining residents of these far-flung outposts become even more isolated.

Antarctica

The world's southernmost continent was home to several research stations scattered along the Antarctic coast. These facilities hosted between 1000 and 4000 scientists and support staff, depending on the season.

Design Note: The Arithmetic of Extinction

On first glance, a 90% estimated casualty rate over the course of one year seems unimaginable. Short of a pandemic, which we ruled out as not in keeping with the post-nuclear feel of previous editions, nothing should be able to kill six billion people so quickly.

From a setting perspective, a more survivable Last Year wouldn't generate an optimal atmosphere. We wanted a setting in which familiar urban landscapes become hostile frontiers, and small communities of survivors huddle together in the darkness. The world of **Twilight: 2013** is a hollow and empty one for characters who remember what life was like only a year or two before.

Once we decided how bad we wanted things to be, mechanisms for killing nine in ten people were easier than we expected. As we examined recent history, it became clear that most large-scale disasters don't have higher casualty rates because they're local or regional. An earthquake, hurricane, or tsunami can devastate thousands of square kilometers, but the rest of the country – or, if needs be, the rest of the world – can send help, receive refugees, and fund relief and reconstruction efforts. In **Twilight: 2013**, the infrastructure and Communications, Command, Control and Intelligence (C3I) disruption from nuclear attacks and EMP mean that virtually every corner of the globe is thrust into crisis at once. Quite simply, there is no place from which sufficient help can come. Subsequent problems, manageable under normal circumstances, spiral out of control into a proverbial “perfect storm” of humanitarian crises. Given time and leadership, even an isolated community might be able to recover from a nuclear strike. The same community isn't likely to withstand subsequent food shortages, cholera, and descent into mass panic and paranoid fratricide.

Hurricane Katrina was still fresh in our minds when we began writing **Twilight: 2013**, and its lessons deserve careful study. First and foremost, it told us that human nature is to deny impending danger until the last moment. The vast majority of people will not make sufficient preparations for any sort of crisis. Most citizens of developed countries will choose conformity and polite silence over making any sort of public spectacle, and will rely on their governments to provide for them rather than taking responsibility for their own safety. For their part, governments tend to discourage a large degree of self-sufficiency for myriad reasons. These mindsets are not conducive to crisis survival, be it on an individual or a societal level.

In addition, the last two generations have seen a movement away from rural life in virtually every industrialized nation. Thanks to the development of refrigeration, food production has become a centralized industry in which the vast majority of people no longer participate. Personal hygiene without indoor plumbing, trauma medicine, off-road navigation, and most primary production crafts are likewise skills that are as foreign as hunting and farming to most city-dwellers. Without public utilities and readily-available food, most of us simply don't know what to do to keep ourselves alive for a year.

So, by the numbers, what kills the world? Here are our estimates, assuming a global population of 7 billion at the beginning of 2012. GMs should feel free to adjust these numbers based on their own views of Armageddon.

Starvation, dehydration, and exposure: 2.4 billion (34% of prewar population). The single greatest killer during the Last Year is not bullet, blade, fire or atom, but the breakdown of the world's ability to provide sustenance and shelter for its inhabitants. Over a third of humanity die from shortages of the most basic survival necessities.

Public health failure: 2.1 billion (30%). The widespread destruction of public utilities by both conventional warfare and EMP effects lead to a global breakdown in public health and sanitation systems. Cholera, typhoid and other diseases run rampant in both surviving communities and refugee settlements.

Civil disorder: 310 million (4.4%). Panicked desperation results in temporary but intense civil unrest in most heavily-populated areas. Across the globe, citizens cast off the mantle of civilization in favor of whatever actions they feel they need to take to preserve their own lives. Repressed population groups also seize the opportunity to settle old scores, and violent crime flourishes to levels unseen in centuries.

Secondary nuclear strike effects: 250 million (3.8%). Secondary casualties from the nuclear exchanges break down into two groups. The first includes victims of radiation poisoning or related complications such as compromised immune systems. The second is comprised of individuals who receive physical injuries that were immediately survivable but ultimately (after weeks or months) fatal. This total does not include the vastly-increased cancer rate that current survivors will experience over the coming decades.

Self-inflicted: 240 million (3.4%). An astonishing number of people died by their own hands, either to avoid a worse fate or because they aren't psychologically capable of accepting continued existence after the Last Year. Precise causes of death are split evenly among action (deliberate suicide or requests for euthanasia) and inaction (simply lying down and waiting to die). Self-inflicted deaths with religious motivations comprise a significant minority of these totals.

Existing medical conditions: 230 million (3.3%). Modern medicine extends the life spans of millions of people around the globe. In the absence of functioning hospitals and pharmaceutical production, conditions that are otherwise minor annoyances with regular maintenance become terminal in a matter of months. Specific ailments responsible for these deaths range from AIDS and kidney failure to diabetes and asthma. This total also includes age-related deaths at both ends of the spectrum (infant and elderly).

Misadventure and accidents: 210 million (3%). Failures of overstressed technology, errors in judgment and simple human stupidity contribute to a significant number of fatalities. Many of these are survivable with prewar level of trauma care available. An even greater number are the direct result of individuals lacking the basic crisis management skills to get themselves and others through life-threatening situations.

Influenza: 180 million (2.8%). The H5N1 (“bird flu”) pandemic that caused such concern in the early 2000s never materialized on a global scale, though it was responsible for an undetermined number of deaths in Southeast Asia. Instead, the influenza strain that sweeps the globe over the winter of 2012-13 is a mutation of H3N2 (“swine flu”), a relative of the virus that caused the 20th century's Spanish Flu pandemic. Curtailed international transportation prevents outbreaks from becoming much more widespread and severe.

Conventional warfare: 170 million (2.4%). The Last War erupts with such speed that the world's militaries have little opportunity to build their forces up to Cold War levels. At the beginning of 2012, 0.4% of the world's population – some 28 million people – is engaged in some form of military service, including millions of irregular insurgents. As always, the vast majority of war-related casualties are civilians rather than soldiers.

Nuclear strikes: 75 million (1.1%). This figure includes primary casualties: people who are critically injured or instantly killed by the direct blast, thermal, or radiation effects of nuclear detonations. A small amount of this total includes victims who are not exposed to blast effects but killed by the EMP-induced failure of technology; most such casualties die in mass transportation accidents or are reliant on medical life support equipment.

Natural disasters: 2 million (0.3%). Earthquakes, hurricanes, volcanic eruptions, and tsunamis don't stop for the Last Year. However, even without relief efforts that mitigated the death tolls of previous natural disasters, the price exacted by these events pale in comparison to the damage humanity does to itself.



In early 2012, every nation evacuates their Antarctic stations. In multinational facilities, scientists close out research under the watchful eyes of military guardians, often surreptitiously exchanging last bits of data with counterparts officially viewed as hostiles. With a token nod towards future normalization in international relationships, the few permanent structures in Antarctica are left standing, although all useful equipment is stripped and removed.

Today, Antarctica remains devoid of human habitation. The bottom of the world is too remote a destination for refugees or resource exploration.

Pacific Islands

Countless tiny islands scattered across the Pacific Ocean are effectively forgotten in the aftermath of the **Twilight War** – ironic, as the nuclear weapons used in the war's climax descend from weapons tested on some of these islands in previous decades. Lying far from any shipping routes, the inhabitants live mostly as their ancestors did, relying on fishing and limited agriculture.

Guam and its American military installations are spared the war's worst ravages. Andersen Air Force Base is targeted by conventional missile attacks and bombing raids from China, severely damaging the runways and bomber facilities. Loss of life is minimal, as most of the Air Force personnel redeploy to Japan shortly before the attack.

Standing out against a backdrop of despair and destruction, the scattered islands of the Republic of Kiribati survive unscathed. Geographically isolated from the EMP blasts damaging much of the world, Kiribati's communications and power networks remain functional. They become a major power in the region, providing resources, supplies and information to many of the other islands.

Hawaii

Until late in the **Twilight War**, Hawaii continues to enjoy its status as a major naval port for U.S. and allied forces in the Pacific. Once the fleets become entangled in the South Pacific and the mainland is hit with Chinese nukes, the tiny island chain is forced to fend for itself. Although with no extensive industrial or agriculture base, the islands are ill-prepared to do so.

Three months after the last shipments from the mainland (or any other location) arrive, food shortages result in rioting. Lack of supplies causes rapid infrastructure degradation. Overcrowding

leads to rampant disease outbreaks.

Currently, the islands that formerly made up Hawaii declare themselves sovereign territories. Each raises a militia and occasionally raids the others in search of food and supplies. Slavery is a fact of life in the archipelagos as labor becomes a very valuable resource.

LIFE IN 2013

The **Twilight War** reaches every corner of the world on some level. Even those areas not involved in direct conflict are affected. The global connectedness of the last 25 years leads to the unforeseen consequence of what happens to one country also happens to many others.

It seems odd that in all of history the 20th century saw growth at an unparalleled rate. Industry and technology made advances at an exponential rate. In 1944, Germany was still fighting WWII largely from horse drawn vehicles. In 1969 the U.S. landed a man on the moon, and in the 1990's the Internet became a worldwide phenomenon.

In 2011 all of the progress made over the last 100 years is almost entirely erased. In 3 short years, mankind returns to the 1800's in terms of available industry, technology, luxury and even population (and worsens with regard to widespread disease and famine).

All is not lost. With the **Twilight War** grinding to a stand still (due to the major lack of capability to continue it and the collapse of those governments involved) civilian peoples begin to pick up the pieces of their lives and move on. Cities around the globe are bombed into history, while now new ones spring forth. Old ways of doing business disappear and now people without economic degrees from Ivy League schools create whole systems of trade and value. Countries are destroyed, but the people who formed them still survive ... and surviving they are.

TRANSPORTATION

When the EMPs hit Europe, Russia and North America, transportation comes to a screeching halt. Many modern vehicles (post 1970's) rely on computer controlled systems to function,

EMP: Who Turned Out The Lights

On a July night in 1962 the lights went out in Honolulu, and the residents were treated to an aurora light show, rarely seen at such low latitudes. The Starfish Prime nuclear test occurred about 1500 km away, 400 km above Johnston Island. While Hawaiians watched from “rainbow bomb” parties atop tourist hotels, television sets and radios malfunctioned and microwave transmitters burned out. The islands experienced an electromagnetic pulse (EMP) from the nuclear test, and the war planners took notice.

One day fifty years later, the lights go out around the world. This time, however, intentional attacks cause the damage, not the side effects of an experiment. Technological civilization across the northern hemisphere is dealt a possibly mortal blow when the electronic infrastructure is destroyed.

There are two forms of EMP potentially caused by a nuclear explosion. The first is a close range effect only damaging from detonations below about 4 km altitude. This is the result of electrons freed from atoms in the air due to gamma rays close to the explosion. Except for the largest bombs, the area where a damaging EMP occurs is smaller than the area of destruction from blast. Even with the largest bombs, the area of effect is fairly small and will not reach much more than 10 km from ground zero.

The second results from high altitude explosions, above 30 km where the gamma rays travel much farther before liberating electrons from the air, in a kilometers-thick layer extending to the horizon from the blast. In this thinner air the freed electrons travel far enough to spiral as they travel (due to the Earth’s magnetic field), generating a strong electric field over the entire affected area, which is collected by any electrical wiring or other conducting materials with the potential for thousands of volts per meter of conductor. A single bomb detonated above the Dakotas would create a damaging coast to coast EMP in the United States.

This long range effect is the more dangerous. It causes power surges in the electric grid stronger than those caused by lightning strikes, and over much larger areas. Solid state electronics are especially susceptible to this type of EMP. Computer chips in particular are extremely vulnerable, and the more modern the chip, the greater its weakness. The result in the large affected areas, most consumer electronics, computers and nearly anything controlled by electronics (modern automobiles, computer-controlled machine tools, etc.) are rendered inoperable.

But, the situation is not hopeless. While most unshielded electronics in the affected regions are destroyed, ‘electrical’ equipment is not nearly as susceptible to EMP as ‘electronic’ equipment. Generators, power lines and electric motors are not destroyed; the EMP simply doesn’t last long enough to destroy the robust copper wiring, switches and relays. Such equipment can be rehabilitated by bypassing any electronics in their control systems. While these systems may not run as efficiently as before, they will work. If a suitable power source can be found, most power tools will still work without any modifications.

It is also possible to shield or harden electronics against EMP. Hardened electronics include circuitry designed to resist the effects of EMP and are mainly only found in military equipment due to the additional costs involved. Hardened radios, computers and vehicles exist. Shielding prevents the EMP from reaching the electronic circuits in the first place and range from a simple metal container used to store a transistor radio, to a shielded building with specially designed connections, to the power grid and communications nets, air conditioning systems and entrances. Electronic weapon sights, in particular, tend to be well shielded as many owners store their firearms and sights in metal gun safes, shielding the electronics in these sights from the EMP. With the tensions leading to the **Twilight War**, many people store small radios, laptops, and other useful electronic devices in shielded boxes.

One further way exists to recover some technological base: cannibalism. Your late model car may not run because the engine control unit is destroyed by the EMP, but the alternator can easily be salvaged and used as a generator attached to a water wheel, windmill, or lawn mower engine. Also, any electric motor can be similarly adapted as a generator. Pumps do not need to be turned by electric power and can be operated by water, wind or even hand power. There are many ways to adapt equipment, now useless for its intended purpose, for new purposes.

systems vulnerable to EMPs. In the major cities and countries, transportation is the hardest hit area from the wars. Without transportation many other aspects of society wither and die. Without transportation people can no longer commute to work, food cannot be shipped from the farms, emergency medical personnel cannot reach victims, and police officers cannot patrol.

South of the equator, the lack of any EMP effects means that any transportation lost is due to breakdowns from use and lack of repair parts. As the population shrinks though, the sheer number of operating vehicles is plenty. In fact, the second largest export (the largest being food) for many South American countries is automobiles and transportation trucks.

People are ingenious and inventive though. In lieu of more traditional means of transportation, older, forgotten methods resurface along with creative uses of surviving modern technology.

River Travel

The world’s rivers have always been the life blood of society. They provide water for people and plants and the ability to travel easily from one place to the next. The first form of transportation to begin rebuilding is river transit. It requires little more than a vessel, a crew and some cargo, and its ready to use. No roads must

be repaired, no paths must be cleared, and in many cases the ships don’t even need fuel as they are powered by the river’s current.

River transit has always been hampered by falls and rapids. To overcome these natural obstacles, locks and dams were built. In order to rebuild river transportation, the obstacles on the river must be addressed. Some engineers manage to hook up steam engines to get their locks and pumps working. However, many transportation routes again rely on ships to travel as far as they can, off load their supplies for over land transport around the obstacle, and then reload on another ship to continue their journey.

Steam Power

Steam engines use heat to create steam that drives either a piston or rotary mechanism. These engines require both a heat source (usually wood or coal) and water (either recycled or replenished during use). In developed nations, steam driven vehicles (mostly locomotives) are relegated to museum pieces or the occasional historic society. Many of these are coaxed to life and are plying the rail yards once again. In parts of Asia steam locomotives never went out of use though. A few of these models are “confiscated” by invading armies and shipped back to their home countries to rebuild struggling transportation systems.

LPCs

The most common form of transportation in 2013 is the Leather Personnel Carrier (LPC) or Shoe Leather Express (referred to as boots in civilian circles). Manual powered transportation (either from man or beast) is the only option for the common man or woman in 2013. In a fortuitous twist, cobblers, blacksmiths and leatherworkers are now in high demand in many communities.

Nuclear Vessels

While it's true that nuclear powered vessels can ply the seas without the need for conventional fuels, they are essentially viewed as floating power plants. Rather than using them for shipping, combat or other sea going ventures, most of the surviving vessels are relegated to permanent docks and their nuclear power plants connected to the city's power grid in areas hit with EMPs (or lack the fuel to keep the local power plant running). The majority of these are connected to some sort of military station, but a few are connected to civilian centers.

Most nuclear vessels lack two essential requirements to operate normally – manpower and food for said manpower (outside of the nuclear-powered ice breakers, which have small crews). This is another reason why most are being used for alternative activities.

A few vessels, however, are still functioning in their normal capacity, submarines making up the majority of that small category. With their offensive capabilities removed or depleted, nearly all of these operating subs are used for extraction and insertion of military personnel (generally for raiding purposes).

INDUSTRY

The production facilities of all sides are prime targets when the war escalates into its final phases. Nuclear and conventional weapons destroy factories and refineries all over the world.

Facilities that survive the war more or less intact face other problems. Lack of electrical power, raw materials, and trained labor reduces most factories to little more than large buildings with extremely heavy machinery bolted to the floor. In locations where power and labor are still available, whatever authority exists may be investigating the surviving factories and the feasibility of returning them to service – though not necessarily producing the same items as in prewar times.

Some “historic villages” operating as tourist attractions have the potential for conversion to more conventional production, and the staff of such locations, if they survive, are valuable sources of information on early-industrial manufacturing methods and machinery. Water- or animal-powered mills can be put into operation very quickly.

Because of the effects of the EMPs, computer-controlled manufacturing across the northern hemisphere is now extremely limited, if not completely eliminated. The last functional precision-manufacturing facilities in the north are in Scandinavia, Canada, and a few locations in Japan and India. South of the equator, things are significantly better – factories in Australia, South America, and parts of Africa are still operating as best they can with limited supplies of power and raw materials.

Industries that require advanced materials – most synthetic chemicals, for example – are virtually gone in the **Twilight War's** major conflict areas. The near-necessities of pre-War life like consumer electronics, over-the-counter and prescription medicines, and reliable mechanical transportation

are indefinitely out of production throughout much of the world. Items manufactured using petroleum by-products are increasingly scarce – tires and plastic products (especially recyclable ones) are highly sought-after.

Steel and concrete are valuable trade goods for any community able to manufacture them. Repair or replacement of damaged and destroyed structures often requires these two materials in varying amounts. Production of other construction materials, especially brick, is highly valuable to a community able to maintain such an operation.

Decentralized “cottage industries” are the new norm in areas most affected by the **Twilight War's** destruction. Home and school workshops are modified to use animal (or human!) power when electricity or conventional fuels are unavailable. While grossly inefficient compared to prewar standards, small workshops are able to produce some necessary goods, repair and maintain other valuable devices.

COMMUNICATIONS

Throughout much of the northern hemisphere, long-distance communication networks are in shambles. The EMPs generated during the nuclear exchanges wreak havoc on non-military broadcast and receiver devices, and the bombs themselves destroy many of the junctions and routers necessary to maintain reliable service. Radios are prized, so long as power to run them is available. Amateur shortwave (“ham”) radio sets, able to send and receive signals at transcontinental ranges, are often the sole link a community has with the outside world – and in many cases, operators only listen, for fear of revealing the location and relative prosperity of their community.

Broadcast television is mostly a thing of the past, but some fiber-optic-based cable networks may be intact here and there. Landline and cellular telephone systems are in similar shape. Satellite phones are a hit-and-miss proposition – the EMP blasts cripples many of the communications satellites essential to this service.

The Internet still works, but only in places where the physical servers and lines are mostly intact. Although after the EMPs hit Europe, Russia, North America and China the system is a mere shell of what it used to be. For the most part, Australia is the new backbone of the ‘Net, hosting better than 80% of the world's remaining traffic. Localized networks and old style Bulletin Board Systems (BBS) are starting to come online in parts of the northern hemisphere, but a restoration of instant global communication is still many years away.

Mail – actual physical paper-and-ink letters – is the most reliable method of long-distance communication in most of Europe and North America. The remnants of national postal services are still able to deliver mail in these areas, and most cases are awarded armed escort by whatever entity holds power in the region.

For mass communication, newspapers dominate. Some papers are still printed out on massive presses – although at circulation numbers far below prewar levels – but many are produced on hand-cranked mimeograph machines and distributed by hand. As advertising revenue is mostly a thing of the past in devastated areas, local governments subsidize the production of papers to help reestablish ties in surviving communities.

COMMERCE

The collapse of the global economy means the collapse of established methods of trade. Before the war, much of the world's wealth existed only electronically. Individuals, companies, and even entire countries financial reserves were based solely on good

faith and credit from someone else.

In the postwar world, paper currency is valued more for the material itself than the purchasing power it represented before the missiles flew. Likewise, coins made of non-precious metals – nickel and steel are more useful as manufacturing materials than units of trade. Even precious metals are vastly devalued – gold, silver, and platinum are accepted in trade, but their perceived value varies wildly from place to place.

In less-devastated parts of the world, currency can still be used for purchases – the inertia of hundreds of years is not completely eliminated by the end of the old world. Circulating coins made of precious metals – most notably, South African Krugerrands – are afforded the greatest worth, as they comprise both a measurable amount of a valued metal and the perceived value of a nation's economic strength.

Barter is becoming the most common method of trade throughout much of the world – goods and services are exchanged at a rate negotiated between those providing either, or sometimes established by local authority. With some large prewar nations dissolved, local economies establish their own standards of trade and value and provide new currencies distinct from predecessors – but the word “dollar” still carries some degree of weight in the politics forming in what was the United States.

Virtually anything of value can be traded – someone somewhere is looking for whatever it is you have in surplus. The most common trade good now is simple human labor. Muscle power, technical know-how, and other, less-savory services, are traded constantly for food, shelter, or other goods. Renaissance-style guilds spring up to provide protection and training for workers and craftsmen.

FOOD

Current global population estimates range from one to two billion, down from over seven billion just five years ago. While there are many fewer mouths to feed, much of the world's most productive farmland (most noticeably the American Midwest) is unusable, and still-fertile land will suffer reduced yields because of the lack of machinery and fertilizers. With the global disruption in supply and distribution networks, the food that is produced cannot be delivered to the many regions in need.

The years of draught, fire, extreme temperatures and conversion to corn (for biofuel purposes) leaves seed stocks virtually bare in many parts of the world. Stockpiles remaining in the storage facilities still sit there, unable to be delivered to the fields for planting. In the northern hemisphere, the massive “factory farms” of the last century are no longer viable. Around the world, 2013's harvests are expected to be extremely small.

Australia and South America are the overriding exceptions. While war rages throughout those regions as it does elsewhere, the conflicts remain non-nuclear and limited in their destruction, leaving most of the countryside still usable for farming. Global weather patterns also keep the worst of the fallout from reaching the southern hemisphere for some years.

Grains remain the backbone of the world's food supply, with wheat being supplemented by hardier oats. Rice is popular as well, producing high yields per acre once established. Fruits and vegetables are now an entirely regional product – long-distance distribution of tropical and citrus fruits in particular is extremely difficult without refrigeration systems. The smaller organic and “farmer's market”-oriented farms that experienced a renaissance in popularity since the 1960s are likely to grow in importance, and serve as models for farming in the coming years, as they place less importance on large-scale fertilizer use.

RELIGION

As the popular saying goes “*there are no atheists in foxholes.*” With the world in its current shape, it's no surprise that there is a shortage of atheists. Religion in 2013 takes on a different approach than just a few years ago. Religion in people's life is about hope and faith now. Religious experiences mainly focus on ideas and thoughts that lift people's spirits and help them make it one day at a time.

After the collapse of governments and borders, the last remaining refuge of identity for most people is religion. It has become a rallying point for people seeking to keep (or find) their place in the world. Mayors and councilmen are being replaced by priests, ministers, rabbis or imams in many communities. Most manage to keep some resemblance of their old community in tact.

Some religious congregations adopt a more cult-like existence surrounding their “messiah”. These religious cults increase ten fold after the **Twilight War** begins in earnest. Beyond the belief that their leader is the new messiah, all of these cults possess one other quality in common – fanaticism. In areas where these cults form, they are often more dangerous to deal with than highwaymen or enemy soldiers.

The opposite effect also manifests; the anti-religion community. After the nukes hit, some people have trouble reconciling how any benevolent being could ever allow this to happen. Where are mercy, compassion and love? In those areas the first estate becomes the target of fear, anger and outrage. Churches are burned, and the clergy either run out of town or executed for spreading lies and mistrust. These communities are often filled with bitter, angry people who distrust outsiders and hand outs.

In the Middle East, ancient tensions still exist between different sects and religious groups; however, Egypt shows that this doesn't have to be so. Arab, European and Jew manage to build a working and semi-prosperous new society out of the harsh African desert. Other communities around the world, because of the scattering of people and the lack of places to worship, also mix their practices in a sign of unity and forgiveness. Their services now are multi- or non-denominational. It is not uncommon in some parts of the world to see a Buddhist, a Muslim, a Jew and a Christian worshipping, living and working together.

CULTURE

Much of the history and culture of the world is lost by 2013. A great deal of the world's art, music, books, and artifacts are lost, destroyed or misplaced.

In 2012, many cities see the rise of cultural fundamentalists groups. These groups seek to preserve and protect the history and cultural of the world from the savagery of war. Theft is the most common tool in their arsenal, although several groups negotiate with museums and such for the safe retrieval of artifacts and items. Unfortunately quite a few of these cultural caches are themselves lost either through acts of war or the deaths of their new curators.

A few of these cultural *fundie* groups form expeditions seeking to find lost works and items in abandoned cities or rumored lost caches. Along with them, merchants and treasure hunters also crisscross the war-torn countryside looking for items that can bring a nice sum on the open market.

Non-tangible aspects of culture are also affected; trips to the mall, cruising, dating, etc. are all no more. People suffer from some forms of massive psychological trauma - global PTSD and depression. Life is really not significantly more difficult than it was prior to the collapse. People work long hours for little satisfaction, but in 2013 distractions that take people's minds off the rat race are few and far between.

The massive media cultural monster of the last few decades is now in the same category as Nessie and Bigfoot. People are left to create their own heroes, hopes, and rallying points. Entertainment is low-tech with traveling player groups, puppet shows, storytelling and other simple methods of entertaining. In many communities, those who can make people laugh and take their minds off the tragedies around them are just as needed as the doctors or security guards.

URBAN AND SUBURBAN AREAS

Urban areas are zones with dense populations of people and man-made structures. Urban areas are designed (or at least attempt) to take full advantage of space for industrial, commercial, residential and recreational uses. Prior to the **Twilight War**, urban areas allowed people to live a modern life. Therefore the space available for agriculture, livestock and other “raw” materials is at a minimum. Open space is the mainstay for more rural areas where there is room to grow crops and feed animals (and keep their inconveniences from interfering in the enjoyment of modern life). With modern transportation it’s simpler to just ship these items from the farms to people.

As the war builds, shipping and transportation become virtually non-existent. People living in urban cities no longer have access to food and raw materials. In early 2011 in Europe and 2012 in North America, urbanites begin migrating out of their cities either to other cities or the countryside. On top of that, every city (including those not touched directly by war) is also hit by famine and disease. Overall, previous urban areas are now composed of mostly empty buildings.

In North American and Europe, those who stay behind often consolidate (for workforce and security reasons) into decent-sized communities. A city might host up to a dozen or so such communities with no-man zones between. Each one fights for whatever resources it can find, steal or otherwise acquire. With no working sanitation, these no-man zones are often filled with garbage and overrun with rats and other vermin.

In other areas, the populations also consolidate, but rather than form their own mini-cities, the people often flock around government-sponsored resources, such as: water treatment plants, security zones or shipping ports. This not only brings the workforce to the work, but also minimizes the distances to deliver necessary societal needs (clean water, sanitation, etc).

RURAL AREAS

Rural areas are characterized as being sparsely populated and usually with an agricultural background. With large tracts of undeveloped land, the countryside is an ideal place for farming, logging and herding. Many “country” folk can accurately be described as those who live off the land (as opposed to the urban counterparts who live off the megamart).

Unlike urban areas (100% of which change due to the **Twilight War**), country change is often an accident of battle geography. In regions untouched directly by war, life in rural areas in 2013 resembles life prior to 2013. In regions directly hit by war, rural areas are worn down from fighting and over harvesting resources.

Rural areas, due to the small population, are normally last in line for technological improvements and luxuries; therefore, reliance on them is considerably less than in urban areas. When the EMPs hit and commerce slows, the effect on country life is minimal.

Cantonments

Cantonments, by definition, are permanent or temporary military stations. Often, cantonments in times of war house armies during a campaign. Cantonment zones are the surrounding areas and are controlled by a troop cantonment. Cantonments can range in size from the platoon level, all the way to a brigade. Traditionally, even whole armies may canton to an area; however, functional units greater than brigade sizes do not exist (and even those are few and far between) in 2013. The larger the city/area, the larger the military unit that can be cantoned there and conversely the larger the military unit, the larger the secured zone created by the cantonment.

At first, people migrating from the larger cities to the more rural towns are welcomed with hospitality and kindness. But as it soon becomes apparent that they lack basic skills necessary to farm crops or herd livestock, their welcome wears out quickly. Small towns increasingly resist the influx of urbanites and the drain on resources they cause.

NEW COMMUNITIES

The **Twilight War** scatters millions of people across the globe. Many of these are soldiers deployed to war zones, but most are civilians displaced by the causes and effects of the conflict.

Military Cantonments

As the wars rage across the globe and supplies grow scarce, it becomes more difficult to maintain command and control. Many large military units break into smaller, more manageable groups, while others split from their commands and go rogue. As fighting winds down in 2013 (and even as early as the Winter of 2012), most units, even those still loyal to their government or command, setup cantonments wherever they happen to be.

Often these cantonments are based around established communities, towns or villages in the war zones. Wherever military units setup cantonments, they immediately take over as police force and government for the region. They provide protection for those civilians within the cantonments from roving marauders, enemy forces and sometimes from competing towns, while the populace supports the troops with food and other supplies they need to operate.

This relationship between the soldiers and the community can either be voluntary or forced depending on the unit’s disposition and the circumstances surrounding them. Most cantonment zones are a symbiotic relationship between the military and civilian people. Life inside a friendly military cantonment is, for the most part, calm and “normal”. Some military units however, setup dictatorial cantonments and treat those within the area as their own personal slaves rather than partners.

Europe has the most cantonments by far, as almost every town, village, hill, fort and river crossing has some sort of military unit cantoned there. Because the fighting in Europe is carried out by many nationalities and is fought through so many different countries, it is not uncommon for cantonments to contain citizens and soldiers from other nationalities (sometimes even from both sides of the war). The closer the cantonment is to the border between the fighting sides, the more this mixing is prominent.

A cantonment zone in Germany, for instance, might contain Germans, Italians, French, Czechs, Poles, and even Russians (both as refugees and soldiers). Many units, especially those gone rogue, realize that survival is the highest priority. Survival requires

teamwork, even from people you might have been fighting against just months before.

Security is tight inside cantonments. Visitors who do not belong to the governing military of the cantonment (or similar commands) are unwelcome and either shot on sight or arrested as prisoners of war. Traders and trading are welcome from cantonment to cantonment, but merchants from rival factions/nations/etc often find themselves shot and their goods confiscated.

Company Towns

A revision of an old concept, company towns are whole communities (with living quarters, commercial interests, utilities, necessities, hospitals, etc) built near a work site to house workers and their families by the employer.

While Libya is not the first, it is the first country to make them mainstream across its borders. Because of the region's topography and remoteness of the worksites, company towns are a necessity in order to provide an effective workforce on the Man-made River Project. As Libya farms out the work to European and North American companies and grants them huge swathes of land, company towns spring up almost overnight.

Companies setup major "cities" along the Mediterranean coast to handle their shipping interests. In these "cities" lives the workforce with their families. At each of the work sites, smaller "towns" are setup where workers stay while working at the site, periodically heading back into the port cities to be with their families or spend their earnings in the company stores.

With the lure of high wages, guaranteed jobs and no taxation, these company towns grow rapidly in the first years they operate. Many spread beyond their borders but because of their progress, the Libyan government often looks the other way.

Even though Libya leads the way in promoting company towns, the most notable example is Utopia, in Côte d'Ivoire. Utopia is a large city set near the coast by a European manufacturing firm. Taking advantage of the cheap labor and raw materials, they setup over a dozen clothing and finished goods plants.

Once the **Twilight War** begins in earnest, most of the markets for the goods produced in Utopia dry up. Rather than fold up shop and head back to Europe (already tangled in the Franco-Russo conflict), the founders of Utopia decide to turn it into a safe haven for European refugees (rich Europeans that is). Not everyone is allowed in or even told about Utopia accepting refugees; selection is reserved for those who can afford it. However, by 2013, Utopia's population grows to around 10,000 citizens (99% are European).

In general company towns are self sufficient, producing their own food sources and material goods, maintaining their own highly trained security force, etc. and intending to keep what's theirs. Company towns are usually acceptable to trading; however, they rarely allow it to happen inside their perimeter, and their prices are higher than most. Conversely, with limited personnel (unless they open their doors to outsiders) they are often on the lookout for people to contract out "risk" jobs. Whether it is for defense against an imminent threat, to raid a nearby village or even to work the "mines"; company towns can almost always use pawns to do their dirty work.

Refugee Camps

Refugees are generally distrusting of outsiders and have little to offer those who come looking to trade. They do have one commodity in huge demand though, slaves. Slavers regularly raid refugee camps as ungaurded, easy targets. Slavers will use the men for slave labor or fodder, while the women are often sold for pleasure.

Refugee Camps

Around the world, the most common new community in 2013 is refugee camps. Historically, regulated to poor and undeveloped nations, they now become a common sight in both Europe and North America. As people leave cities to escape food shortages, the winter and even war, refugee camps spring up across the countryside.

Communes

Refugee camps are not the only escape for those who lose their homes; communes also welcome refugees. Communes are communities where several individuals or families share the community and its resources equally amongst themselves. Everyone has an equal share and an equal say in the happenings of the community. Once hippies and peaceniks were the main proponents of these communities. Now more and more urbanites witness their usefulness.

Taking a hand-up rather than a hand-out approach, communes not only provide the necessities people need to survive but also a sense of belonging and accomplishment. Among the people of a post **Twilight War** world, those living in communes are the most content and well adjusted of any out there.

Communes in 2013 are generally self-sufficient, providing their own security, growing their own food, and creating their own clothes, furniture, etc. Even though there is not much need for outside help, that isn't to say it's not welcome or used. Communes generally lack sophisticated medicines and luxury items, as well as, heavy muscle against more determined foes and can be some of the best trading locations.

NON-TRADITIONAL COMMUNITIES

The population shift occurring all over the world forces people to get creative in their living arrangements. The lack of mobility and scarce food sources keeps people from flooding the countryside or moving back into the cities. In order to survive, many people turn to their imaginations to carve out new homes in the world, whether the location itself or the construction materials used.

Polar Outposts

In an unlikely move, groups of people close to the poles decide to venture into the Polar Regions to stake out a safe and secure area to live. With a steady supply of food, fur and water, these polar outposts become increasingly popular with people trying to escape the famine, war and pestilence common now.

The most populated polar outpost, New Montreal is located on Ellesmere Island in northern Canada. Founded by a crew of stranded fishermen when their boat runs out of fuel, the outpost grows to a population of just over 200 people. The outpost is run as a true democracy, with every member of the community having an equal say.

Desegregation

Locations and construction materials aren't the only non-traditional aspects of many of the world's newest communities. In war-torn areas, towns and villages once ethnocentric increasingly become desegregated and mix both ethnically and culturally. Migration and invasion are the two most common reasons for this movement of forced diversity. In many parts of the world you'll find people of historically opposed nationalities or people from different social classes working and living side-by-side.

Caves

Caves have become popular shelters for both large and small sized communities. They offer protection from both the elements and marauders; they maintain a year round constant temperature; they can not catch fire; and most contain their own uncontaminated water source.

A group of survivors secures Mammoth Cave and use it as a refugee camp. Located in central Kentucky, the cave system covers over 350 miles of tunnels and passageways. The caverns offer a year round temperature of just over 12 C and an underground drinkable water source. In addition, the surrounding areas are rich with farmable lands and hunting grounds (including large numbers of bison). Over 1000 people now make Mammoth Cave their home. The survivors split into 5 groups populating several locations throughout the caves.

Mammoth cave is not the only cave system housing survivors. However, as the world's largest cave system, it's well organized and the most populated example of modern cave dwelling.

Caravans

While not a location, traveling caravans of people become a commonplace sight along the countryside. Although generally not welcome (due to former stigmas from gypsy culture), these caravans are often allowed to rest outside of towns and villages briefly. While shunned publicly, these caravans regularly bring trade goods and news of the outside world.

A Kurdish caravan consisting of over 200 wagons and trucks and over 500 people makes a bi-monthly circuit through Turkey, Kurdistan, Iran, Iraq and Syria. Trading in weapons, food stuffs and intel, this group is granted free passage by the local territorial powers.

Barges

Along inland rivers, barges are confiscated by both civilians and the military alike to serve as either a home or a mobile command platform. Some of these barge homes are simple bulk coal tenders with tarp roofs, while others are decked out, fully equipped, floating apartments supporting dozens of people.

The Mississippi River in the U.S. southeast hosts over 100 such barges traveling up and down her length. Many barges not only serve as home for hundreds of survivors but double as floating caravans for numerous river towns that have popped up after the collapse.

Cruise Ships

Throughout the coastal cities of the world, countless cruise ships stayed moored during the major fighting of the **Twilight War** due to lack of fuel, passengers and safety. Once the collapse is in full swing, former vacation boats are commandeered by their respective governments. Towed or otherwise piloted to locations along coastal regions and converted to off-shore apartments, they not only disperse the populace but create new cities overnight.

The *Capriccio* is one such cruise ship city, anchored off the coast of Malta by the Italian government. It houses almost 2000 Italian survivors, including crew. Many of her creature comforts no longer work (the pool, casino, etc); however, she provides adequate and safe living space for her 'passengers'.

Floating City

Wake Island, in the south Pacific, becomes the unfortunate last stop for many sea going vessels during the **Twilight War**. Many ran out a fuel while others barely limp into port suffering damage or crew shortages. With a little imagination and hard work, these survivors manage to string their vessels together to

form a floating city just off the island. The floating city begins with five vessels in early 2013, and by the summer grows to over 20 ships and almost 800 survivors.

Part of the flotilla composition is a medical ship from the British navy, two survey ships, a research vessel, a pleasure yacht, one commercial container ship, several fishing vessels (including two Japanese whaling ships) and a few auxiliary service vessels. The shipping containers are unloaded, and used to create apartment-style living quarters on the island.

The Island of Nevis

In addition to the aging Akula the Russians sent to aid the Venezuelans, they also sent an unarmed nuclear-powered ice breaker. The Venezuelans moor the boat off the island of Nevis and use the nuclear power plant on board to power their regional command center (not to mention its water filtration and communications systems). While Nevis isn't the only place siphoning power from nuclear vessels, the other such cities are located in more traditional population centers.



CHAPTER 3

THE REFLEX SYSTEM

Down in the valley, night falls like a headsman's axe. It comes early and suddenly, so I don't tend to get a lot of writing done when we're in the village. Rotating up to the listening post actually is good for me because I get another hour and a half of usable daylight.

The platoon takes a certain proprietary interest in my work. I've never fully understood why. I don't claim to produce Pulitzer material, but they hang on every word of what Sergeant Scott, in a rare loquacious mood, once termed *"the Monk-iad."* So I'm expecting the interruption when Little Jim stands up to look over my shoulder. *"Whatcha workin' on, Monk?"*

I tilt my notebook so the thin afternoon sunlight falls across it. "It's been quiet enough lately that I'm caught up on events, so I figured I'd do this. Just a collection of thoughts on what life's like now. You know... the lessons that we all pick up but never really articulate." Unspoken: lessons for the next generation, because I have to believe someone eventually will read this.

Little Jim peers at my ragged scrawl. *"Two is one and one is none. Carry spares. Everything breaks.' Hell, we all learned that in BCT."*

"You may have, but I had to pick it up once I got here." I grin at him. *"You got one for me?"*

He scratches the ragged beard he's been cultivating of late. *"How about 'never miss a chance to eat, hydrate, sleep, or crap?'"*

Dunivan laughs from across the room. *"Pleasure is the absence of misery, huh? Monk, be sure you get the corollary to that one: 'vomiting is a normal process of a healthy digestive system and your body's way of telling you learn more about wild plants.'"*

Little Jim flips him an obscene hand gesture we've all picked up from the Kurds. *"Remember, 'going stupid places with stupid people to do stupid things makes you stupid, too.' I think that was Farnam. Or maybe Suarez."*

"There's too few people left for unnecessary killin', but some folks still make killin' 'em necessary." Big Jim speaks without turning away from the shack's window. *"Heads up, kids. The sentries have traffic comin' out of Iran."*

I curse, drop my pen, and grab my rifle. So much for uninterrupted writing. Always gotta be something.

The chess board is the world, the pieces are the phenomena of the universe, the rules of the game are what we call the laws of Nature. The player on the other side is always hidden from us. We know that his play is always fair, just, and patient. But we also know, to our cost, that he never overlooks a mistake, or makes the smallest allowance for ignorance.

— Thomas Huxley, A Liberal Education

Welcome to the end of the world. The previous two chapters have discussed the last seven years of history and the state in which the Twilight War and the Collapse have left the planet. Now it's time to get into the meat of this book: the rules that enable you to tell stories in the post-apocalyptic uncertainty of *Twilight: 2013*.

THE REFLEX SYSTEM

The rules that *Twilight: 2013* uses are collectively called the Reflex System. This system is designed for rapid, descriptive play. While some aspects of the game are intricately detailed, our intent is for most of the heavy math to take place during character creation and periodic maintenance, rather than bogging down action scenes. We've written these rules with the assumption that you have some prior experience with roleplaying games – at least enough to understand these basic concepts:

- The concept of a roleplaying game as an attempt at cooperative narration, or at least as a series of problem-solving exercises;
- The roles of game masters (GMs) and players;
- The functions of player characters (PCs) and non-player characters (NPCs);
- The idea that the point of the game should be for everyone involved to have fun.

With that said, here's a quick summary of the basic principles of RPGs that are unique to, or modified for, the Reflex System.

STAGED RULES

Individual play groups often use “house rules” to tune their game systems to a specific preferred level of complexity and realism. To facilitate this, we've written the Reflex System with three stages of rules. This book is written with a default level of **Stage II** in mind. However, scattered throughout the text, sidebars and optional rules sections will highlight ways to simplify or enhance the rules for **Stage I** or **Stage III** complexity. Future supplements will also provide additional focused rule sets for **Stage III** play.

Stage I

Basic. Stage I rules are the minimum necessary to numerically define a character and play a fast-running game. Stage I rules tend to boil fairly complicated events down to simple abstractions. This level of complexity is recommended for introducing novice players to the Reflex System and the world of *Twilight: 2013*.

Stage II

Standard. Stage II rules contain a default level of complexity that strikes a balance between speed of play and realism. The complete Stage II rules set incorporates all of the systems that we consider essential for capturing the realities of survival in a post-apocalyptic environment.

Stage III

Advanced. Stage III rules are written with the hardcore wargamer in mind. Stage III rules provide extra, often gritty, details of various aspects of play. However, Stage III play does tend to require a greater amount of bookkeeping and number-crunching.

DICE

The Reflex System uses three sizes of dice: six-sided, ten-sided, and twenty-sided. The respective shorthand for these is “d6,” “d10,” and “d20.” Many rolls will require you to use multiple dice of the same size and total the results. The notation for these rolls follows the industry standard of putting the number of dice before the die size. For example, “3d6” means “roll three six-sided dice and add each die's result together for the roll's total.”

When you roll a die, the number that comes up on that die is the die result.

If a roll requires the addition or subtraction of a fixed number, the text gives that number immediately after the notation for the dice. For example, “3d6+3” means “roll three d6s, add the results of all the dice together, and add another 3 to the total.”

It's also possible to use two d10s to generate random numbers ranging from 1 to 100. This roll uses one d10 for the tens digit and the other d10 for the ones digit and is called a percentile roll. For ease of use, we recommend rolling d10s of two different colors for percentile rolls, with one designated as the tens digit before the dice hit the table.

Finally, some rolls – typically those involving task resolution – call for you to roll multiple dice of one size and use only the lowest or highest die result. These rolls are noted with an “L” or an “H,” respectively, after the die size.

Example: “3d20L” means “roll three d20s and use only the lowest of the three results.” If such a roll results in the dice coming up 4, 13, and 18, the die result for this roll is that of the lowest die: 4.

TIME

Events in roleplaying games almost never occur at the same speed that they would in real life. A month-long sea journey is best glossed over with a few moments' description, while a gunfight lasting no more than a minute from the participants' perspectives takes an hour or more to play out. Accordingly, the Reflex System uses the following array of conventions to describe timekeeping from both the players' and the characters' perspectives.

Player Time

Session: A session is a single sitting's worth of game play. Most GMs run sessions between three and six hours in length. In general, a single session's play covers enough in-game events to make up a single one-hour episode of a television show. Depending on the pace of events, this could be no more than a few hours of character time (a couple of conversations with NPCs followed by a gunfight), or it could cover a month or more (an extended journey with few detailed events but several sessions of training with various communities).

Operation: An operation is a series of events that forms a complete story, from the initial scenes that set the stage through

the final challenges that the characters face. An operation might last no more than a single session, but is more likely to last several sessions. In general, the events of an operation are roughly equivalent to the events of a complete season of a television show. As with a session, an operation can cover a few days, a few weeks, or a year or more, depending on the pace of events.

Campaign: A campaign is a group's ongoing play experiences, lasting as long as the players and GM focus on the continuing stories of the same group of players. A campaign lasts as long as the group keeps it going. We've heard of campaigns that have run for a decade, but don't feel compelled to meet this record!

Downtime: Downtime is "off-screen" time for the characters. Continuing the television analogy from above, it's when characters repair or acquire new equipment, recover from injuries, work on ongoing projects, and reflect on lessons learned before plunging back into the action. The viewers don't see these events happen; there's little in the way of action or plot development to occupy the audience's attention. When the next episode begins, though, things are different, and the characters are ready for more abuse at the hands of fate. We recommend that characters receive between one week and three months of downtime between operations. A single contiguous amount of downtime is referred to as a stretch of downtime in rules that reference it.

Character Time

Day: The basic unit of time for measuring character progress toward major goals (travel, long-term projects, healing) is a game day. When no large amount of intensive activity is occurring, players and GMs can safely assume that characters are working hard, but not pushing themselves unduly: eight hours of sleep, eight to ten hours of work, and the remainder of each day being consumed by personal maintenance and perhaps a little recreation.

Scene: A scene in the Reflex System is akin to a scene in a television show: it occurs within one specific location and focuses on a single event or series of events that are worthy of more attention than an offhand description. A scene lasts as long as is required for the GM and players to resolve its events, but typically between a few minutes and an hour.

Combat Time

Time in combat requires special attention on the part of the GM and players, even though the precise length of time a firefight requires is usually of minimal interest to the characters caught in it. Many real-world combat veterans report extreme distortion of their perception of time during fights. The Reflex System models this perceptual dissonance via a somewhat abstract method of demarcating time in combat. Combat time is described in more detail in Chapter Five.

Combat Scene: A combat scene is any scene in which combat occurs, and encompasses the events immediately preceding and following the combat as well as the fight itself. At minimum, it includes all exchanges of fire and pauses (see below) in a single combat.

Tick: A tick, like a tick of a clock, is just long enough for a character to perform a single action: shout a warning, squeeze a trigger, or take a furtive glance around the battlefield. Objectively, a tick lasts between a tenth of a second and half a second, but this distinction isn't always important or evident to a character who's in the thick of a firefight.

Exchange of Fire: An exchange of fire is a rapid sequence of events in combat, lasting for enough ticks for the fastest character involved in the combat to do everything his initiative roll gives him time to do (obviously, in the same amount of time, everyone else in the fight also has time to do everything his slower initiative roll lets him do).

Pause: A pause in the action, or pause for short, is a brief lull in combat while all involved parties reload, shout orders, pray, tend to their wounded, sneak up on enemies, or cower in foxholes – in short, do anything except continue to trade attacks. A pause occurs after the end of an exchange of fire in which all participants decide to stop attacking for a moment. It lasts for a variable amount of objective time, typically less than a minute.

UNITS OF MEASUREMENT

The Reflex System uses metric measurements for distance, area, volume, and weight. For players who are more familiar with U.S. customary units, the following equivalencies may be helpful:

Distance	
Metric Unit	U.S. Customary Unit
1 kilometer	0.621 mile or 3,280 feet
1 meter (m)	1.09 yard or 39.4 inches
1 centimeter (cm)	0.394 inches
Area	
Metric Unit	U.S. Customary Unit
1 square kilometer	0.386 square mile or 247 acres
1 square meter	1.20 sq. yards or 10.8 sq. feet
Volume	
Metric Unit	U.S. Customary Unit
1 liter	0.264 gallon or 33.8 fluid ounces
1 cubic meter	35.3 cubic feet
Weight	
Metric Unit	U.S. Customary Unit
1 metric ton	1.10 ton or 2,200 pounds
1 kilogram	2.20 pounds

Table 3a: Units of Measurement

Range

When discussing distances, range is a special case. The difference between visual or ballistic ranges of 5 meters and 10 meters is much more significant than the distance between visual or ballistic ranges of 705 meters and 710 meters. Accordingly, when ranges and related concepts such as ranged attacks come into play, the Reflex System eschews precise distance measurements in favor of broadly descriptive range bands.

The easiest way to envision range bands is as a set of concentric circles with the character at the center. Each range band has an inner and outer boundary. If the distance from the character to a target falls between those two boundaries, the target is within that band. The range bands, from closest to farthest, are:

- **Personal:** Personal range is within arm's reach of a character, or close enough to physically strike with a hand weapon. Characters must be within personal range of one another to engage in physical contact, whether consensual (e.g. first aid) or hostile (e.g. a knife fight).
- **Gunfighting:** Gunfighting range is from just outside arm's reach to 7 meters. According to law enforcement statistics, this is the range within which the vast majority of modern handgun combat occurs.
- **Close Quarters Battle (CQB):** CQB range begins at 7 meters and extends to 25 meters, which makes it the maximum range at which most combat within buildings or large vehicles will occur.
- **Tight:** Tight range is from 25 to 100 meters, the range at which most gunfights occur within cities, jungles, and other outdoor areas that tightly restrict movement and lines of sight. In

the Tight range band and under normal field conditions the human eye will pick a human-sized target out of its surroundings more than 90% of the time.

- **Medium:** The range that most military-scale combats will occur in surroundings with a moderate degree of cover and terrain complications. The Medium range band extends from 100 to 200 meters. This is the practical limit at which the unaided eye can discern significant details of a subject. Under normal field conditions, an average observer will discern a standing human target about 50% of the time at Medium range.

- **Open:** As the name implies, the Open range band encompasses the ranges at which most infantry actions take place in open terrain with minimal contours: 200 to 400 meters. Visual observation normally encounters minimal penalties at these distances. Under normal field conditions, an average observer will discern a standing human target about 15% of the time at Open range.

- **Sniping:** The range band from 400 to 800 meters is the province of long-range weapons. Visual observation can be significantly impaired at these distances. Under normal field conditions, the unaided human eye has less than a 5% chance of detecting standing human targets at Sniping range. Ranged attacks without magnifying optics are effectively impossible.

- **Extreme:** From 800 to 1,600 meters, only the longest-ranged firearms have a chance of hitting man-sized objects. Unaided visual observation is limited to simple shapes and major details, and the naked eye cannot effectively discern a human target.

VALUES AND RATINGS

The Reflex System uses both values and ratings to define various traits. A value is always numeric (e.g. 8), while a rating is always descriptive (e.g. Expert). If a trait has both a value and a rating, the value usually determines the rating.

Some effects can cause a value or a rating to increase or decrease. Values are numeric, so their increases and decreases are purely arithmetic. Ratings are descriptive and most rated traits are presented on a scale. When an effect increases or decreases a rating, the effective rating is moved up or down the scale from the actual rating, as appropriate.

Example: Skills are rated from worst to best as follows: Unskilled, Novice, Competent, Professional, Expert, Master, Legendary. If Erin normally has an Expert rating in a skill and an effect reduces her rating by two levels, her new rating is Competent.

TASK RESOLUTION

Success and failure aren't always certain in a roleplaying game. The Reflex System's task resolution system reflects this fact. When your character attempts an action that isn't guaranteed to succeed or doomed to fail, you make a task check.

When you make a task check, you roll one or more d20s, as determined by the nature of the check (see Attribute Checks and Skill Checks, following). Every task check is rolled against a target number (TN). If the die result is lower than or equal to the TN, your character succeeds at whatever he was attempting to do. If the die result exceeds the TN, he fails.

DEGREES OF DIFFICULTY

All challenges are not created equal. The value of your character's relevant attribute determines the TN for a task of average difficulty, but many tasks will be easier or harder than

average. For such cases, the rules (or the GM's discretion) may dictate a difficulty modifier. This is a number that is added to or subtracted from the TN, depending on the task's relative difficulty:

Difficulty	Modifier
Trivial	+5
Laughable	+4
Everyday	+3
Easy	+2
Simple	+1
Normal	±0
Complex	-1
Challenging	-2
Difficult	-3
Daunting	-4
Impossible	-5 or worse

Table 3b: Difficulty Modifiers

BONUSES AND PENALTIES

The difficulty modifier is the most common means by which a target number can change, but many task checks will be subject to TN modifications from other sources. Both numerical bonuses and penalties can apply to a task's TN. A character can receive both multiple bonuses and multiple penalties to a single task. Bonuses are always expressed as positive numbers (e.g. +3), while penalties are always expressed as negative numbers (e.g. -2).

Some circumstances may increase or reduce a bonus or penalty. Both of these terms always refer to the magnitude of the modifier (or, in mathematical terms, its absolute value). For example, if a bonus is +2 and an effect increases it by 1, it becomes a +3 bonus. Conversely, if a penalty is -2 and an effect increases it by 1, it becomes a -3 penalty.

Neither a bonus nor a penalty can be decreased past zero. A penalty of -2 that is decreased by 5 becomes a penalty of zero, not a bonus of +3.

No single bonus may ever be greater than +5. No such restriction exists on penalties.

Example 1: Justin has a base TN of 8 for a task. Two different sources provide bonuses: one grants a +3 and the other grants a +1. Justin is also subject to a -2 penalty from another effect. $8 + 3 + 1 - 2 = 10$, so Justin's final TN is 10.

Example 2: Keith has a base TN of 6 for a task. Four different sources provide bonuses: one grants a +7, another grants a +3, and the remaining two each grant +2. The +7 bonus decreases to +5 (the maximum possible for any single bonus). $6 + 5 + 3 + 2 + 2 = 18$, so Keith's final TN is 18.

If cumulative bonuses and penalties decrease a task's TN to zero or less, the task automatically fails. On the other hand, a task with a TN of 20 or higher automatically succeeds.

MARGINS

In many cases, the margin by which a task check succeeds or fails is relevant to the magnitude or net effect of the success or failure. A check's margin is equal to the difference between the TN and the die result. If the check succeeded, this is the margin of success (MoS); otherwise, it's the margin of failure (MoF). If the die result exactly equals the TN, then the check is still a success, but the margin of success is zero.



In general, a margin of success of 5 or greater indicates complete and obvious success. Conversely, a margin of failure greater than 5 usually means dismal and unsalvageable failure. Specific cases may supersede these broad guidelines.

Example 1: Keith attempts an attack with a TN of 7. His die result is a 3, so he succeeds with a margin of success of 4. In all attacks, the margin of success is added to the weapon's base Damage value to determine the final amount of damage inflicted. Keith is attacking with a handgun with Damage 3, so his final damage total is 3 + 4, or 7.

Example 2: Pete attempts to seduce the commander of the local military police garrison. This task has a TN of 5. The GM warns Pete that a margin of failure greater than 5 will result in him not just failing to seduce his target, but actively alienating her. Pete rolls a 12. With a margin of failure of 7, not only does he make a poor impression, but he'll be the laughingstock of the entire MP force once the story circulates, and all future social interaction with the commander will suffer a penalty determined by the GM's cruel whim.

Exceptional Success

Many checks require a "lowest of" roll of more than one die. In such a case, whenever multiple dice are lower than or equal to the target number, the check's margin of success is determined using the lowest die. The margin of success is then increased by 2 for each additional die that, taken on its own, would be a success. This models the fact that individuals with greater skills tend to consistently display qualitatively superior performance.

Example: Keith attempts an attack with a TN of 7 and rolls 4d20L. His dice come up 3, 4, 10, and 15. His die result is a 3, so he succeeds with a margin of success of 4. One additional die – the one that came up 4 – would be a success if considered on its own. Therefore, Keith's margin of success is increased by 2, to 6.

ATTRIBUTE CHECKS

You make an attribute check whenever your character attempts an action that directly relies on an innate human quality, rather than leveraging a set of learned or trained capabilities. Specific circumstances call for checks with each attribute, as detailed in the attribute descriptions (see p. 77).

Every attribute check is a 2d20L roll. The base TN of each attribute check is the attribute's value.

Example: Erin has Coordination 8, making her significantly above-average in terms of her innate mastery of spatial relationships and related factors. When she attempts a Coordination check of normal difficulty, she rolls 2d20 against a TN of 8.

SKILL CHECKS

You make a skill check whenever your character attempts an action that falls within the purview of that skill. Specific circumstances call for checks with each skill, as outlined in the skill descriptions (see p. 80).

A skill check involves rolls of a variable number of d20s, depending on your character's rating in that skill. Each task is associated with a single relevant attribute. The base TN of the task check is equal to that attribute's value.

Skill checks are subject to limits on the number of bonuses that your character can receive. His degree of expertise limits how well he can apply the advantages that are at his disposal. No task check may benefit from bonuses from a number of sources greater than the number of dice being rolled. Unfortunately, no such restriction applies to penalties.

Example: An attack with a handgun is a task that relies on the Sidearm skill and the Coordination attribute. In addition to her aforementioned Coordination 8, Erin has a Professional rating in the Sidearm skill. A skill check with a Professional-rated skill is a 3d20L roll. Therefore, whenever Erin makes an attack with a handgun at normal difficulty, she rolls 3d20L against a TN of 8. Each such skill check may receive bonuses from up to three different sources.

In the current situation, four different factors give Erin bonuses. These bonuses are, respectively, +4, +2, +1, and +1 again. Because she can only benefit from three different bonus sources, her TN is increased to (8 + 4 + 2 + 1 =) 15. The last +1 bonus is dropped with no effect.

ACTION TYPES

Simply sitting around and talking doesn't make for a very exciting game experience. Over the course of play, characters will attempt to accomplish various goals. Each such attempt is one action.

All actions don't require the same amount of time or effort. Pulling a trigger takes a fraction of a second; repairing a broken engine can consume hours; planting, raising, and harvesting a food crop is a months-long endeavor. Some actions have only one component thought or motion, while others require the completion of multiple stages for overall success. Accordingly, the Reflex System establishes several different types of actions.

Simple Actions

A simple action has only one step, and, mechanically speaking, requires only one task check to determine success or failure. “Simple” in this case doesn’t necessarily mean “easy;” some simple actions are very difficult. Examples of simple actions include throwing a football, taking an evasive maneuver with a helicopter, firing a gun, delivering a masterful saxophone solo, and recalling a fact from memory. Unless otherwise indicated, any action described in this book is a simple action.

Incremental Actions

An incremental action involves repeated discrete efforts toward a single goal over an extended period of time. Unless otherwise specified, a character can walk away from a partially-completed incremental action and come back to resume his work later. Each incremental action has a period, which is the amount of time required for one task check toward the action’s overall success. In addition, it has a target total, which is the total number of successful task checks required for the overall incremental action to be successful. A task check with a margin of success greater than 5 represents exceptional progress and counts as two successful checks toward this total.

Progress toward completing an incremental action is measured by how many successful task checks have occurred. Examples of incremental actions include conducting psychotherapy, repairing a truck’s engine, and researching an historical event.

Example: The team decides to take over an abandoned police station as its base of operations. Justin is tasked with getting the facility’s emergency generator back in operation. This is an incremental action requiring Electronics skill checks with a period of 1 day and a target total of 5. Justin breaks out his tools and starts working. Over his first three days of work, he makes three task checks and succeeds at all three.

On the next day, a fire breaks out at a nearby farm, and the team has to drop what it’s doing and assist with the emergency. Justin suffers injuries in the process, which degrades his performance. His next two task attempts are dismal failures, and neither one counts as additional progress toward the target total. He decides to wait a week and heal up before continuing the task, leaving it at three-fifths completion (three out of five required successes).

Complications

Various circumstances can modify both simple and incremental actions.

Opposed Actions

An opposed action is one with an intended effect that is directly countered by another character’s action. In most cases, this occurs when one character (the “attacker”) attempts to do something that another character (the “defender”) is actively trying to prevent. When an opposed action occurs, both parties make their rolls and compare their results. If the attacker succeeds and the defender fails, the attempt succeeds. If the attacker fails, then the attempt fails regardless of the defender’s success or failure.

If both parties succeed, the defender’s margin of success is subtracted from the attacker’s margin of success. If the result is still zero or positive, it becomes the action’s final margin of success. However, if the result is negative, it instead becomes the action’s margin of failure.

Both simple and incremental actions can be opposed. In the case of an opposed incremental action, the act of opposing the action requires an amount of time equal to the action’s period.

Task Check Shorthand

This book uses specific shorthand nomenclature for describing task checks.

Attribute checks always give the name of the relevant attribute, followed by the difficulty modifier in parentheses: Resolve (TN –1).

Skill checks give the name of the skill, immediately followed by a parenthetical reference to the appropriate attribute and the difficulty modifier in parentheses: Hand Weapons (CDN, TN +2).

A skill check that requires a qualification (see p. 79) adds a slash and the name of the qualification to the name of the skill: Medicine/Surgery (EDU, TN –6).

In all cases, if no difficulty modifier appears – Education or Longarms (CDN) – assume that the task check occurs at standard difficulty.

Example 1: Pete attempts to bluff his way past a moderately alert border guard. This is a simple action — Pete’s telling an uncomplicated story, and he has time for only a single attempt to fast-talk the guard before his pursuers arrive. The GM decides that Pete must make a Personality-based Persuasion skill check, opposed by the guard’s Personality attribute check. Pete’s margin of success is 11, compared to the guard’s margin of success of 3. Pete succeeds with a final margin of success of 8.

Example 2: The team is engaged in a vicious basketball game. Matt attempts to block Andy’s jump shot. Both players make Muscle checks. Andy succeeds with a margin of success of 2, but Matt also succeeds with a margin of success of 5. Matt’s long arms turn Andy’s success into a failure.

Competing Actions

A competing action is similar to an opposed action, but involves two or more parties striving to be the first or best to achieve the same result.

In a competing simple action, all involved parties make the same task check. The competitor with the greatest margin of success wins.

In a competing incremental action, all involved parties make the same task check. The competitor who reaches the target total first wins. If two or more competitors simultaneously reach the target total, the winner is the one with the greatest margin of success on the last task check.

Supply-Dependent Actions

A supply-dependent action is, as the name suggests, dependent not only upon a successful task check, but upon the expenditure of consumable supplies for its ultimate success. Such an action has a base supply requirement, which is the total amount of supplies that are used up in the process of performing the action. These supplies are used regardless of whether the action succeeds or fails. If your character can’t meet the supply requirement, the action has no chance of success.

If you don’t want to use the base supply requirement (or don’t have enough whole blood, fuel pumps, or lumber to meet it), you can attempt to stretch your available supplies by cutting corners. This involves a voluntary reduction of the check’s supply requirement. For every unit of consumables by which you reduce the supply requirement, the check suffers a cumulative –2 penalty. No other effect can reduce or eliminate this penalty.

Both simple and incremental actions can all be supply-dependent. In the case of an incremental action, each task

check is treated as a separate attempt for the purposes of supply consumption.

Led Actions

A led action occurs when one character (who hopefully has a high rating in the relevant skill) attempts to lead one or more less-skilled comrades through a task. If you want to lead a task, you must declare your intent before making your initial skill check. Make your check with the normal relevant attribute as your TN. However, if your Command skill rating is lower than your rating in the relevant skill, make the check with your Command skill rating.

If you succeed, you may voluntarily reduce your margin of success by any amount, to a minimum MoS of zero. For each point of MoS reduction, you may designate one other character whose skill rating in the relevant skill becomes one level higher. This bonus applies only for the purpose of performing the same task check you just performed. No single character may receive more than one extra level of skill rating for any one task.

Example: The team attempts to sneak across a well-guarded border. As the stealthiest team member, Matt attempts to lead Pete and Keith through the motions of unobserved movement. Normally, stealth in a wilderness environment is a Fieldcraft (AWA) check. Matt has an Expert rating in Fieldcraft, but only a Competent rating in Command. Accordingly, he makes a Command (AWA) check. He succeeds with a margin of success of 5.

Keith has a Novice rating in Fieldcraft, while Pete is completely unskilled. Matt reduces his own margin of success from 5 to 3 to boost each teammate's Fieldcraft rating by one level. Keith and Pete now make their own Fieldcraft (AWA) checks, respectively using Competent and Novice skill ratings.

COMMON MODIFIERS

Although many actions will involve modifiers specific to the task at hand, some basic modifiers are applicable to a wide range of tasks. The following conditions – and the bonuses and penalties they impose – form the basis of the Reflex System's standards for modifiers.

Time

A task's description usually includes the amount of time that it takes a character to perform it. This is a standard rather than a hard-and-fast rule. Characters may pace themselves in order to measure twice and cut once, or they may risk shoddy work in the interest of expediency. Taking more or less time than the standard applies the following modifiers:

Time Adjustment	Modifier
20x standard	+5
10x standard	+4
5x standard	+3
2x standard	+2
1.5x standard	+1
3/4 standard	-2
2/3 standard	-3
1/2 standard	-4
1/3 standard	-5
1/4 standard	-6

Table 3c: Time Modifiers

Note: The modifiers given here do not apply to actions performed in combat. Tactical and operational actions always take the same amount of time, as detailed in Chapter Five.

Equipment

Man is a tool-using animal. The default difficulty of any action assumes that a character has at least basic equipment suited to the task at hand. Characters with access to more precise, capable, or powerful tools receive bonuses, while those making do with inadequate resources suffer penalties. The following table illustrates this with examples of equipment appropriate to two tasks that are regrettably common in *Twilight: 2013*: providing first aid for a serious injury and repairing a truck engine.

In many cases, facilities require electrical power, compressed air, or other modern services for all equipment to function. A facility without such resources provides only half its normal bonus.

Assistance

It's hard to find good help after the end of the world. Surgical nurses are in short supply to assist the few surviving trauma surgeons, and not many network engineers can call on interns to run cable and test circuits. Default difficulties and times assume that a character is attempting a task alone. Extra hands and brains can provide significant benefits. When determining bonuses for assistance, all assistants collectively count as one source. However, a task check may benefit from a maximum number of assistants equal to the number of dice rolled for the check.

Skilled Assistance

For tasks that demand technical proficiency or advanced education, helpers must be trained in the same skill that is being used for the task check. The bonus each helper provides depends on his level of skill relative to that of the character performing (or leading) the task:

Relative Skill Rating	Bonus
Same or higher	+3
One level lower	+2
Two levels lower	+1
Three or more levels lower	±0
Unskilled, regardless of relative rating	-1

Table 3d: Skill Assistance Modifiers

In addition, the base time for the task is divided by half the total number of characters undertaking it.

Example: Candace (Expert rating in Medicine) attempts to remove a bullet from Justin's chest. Candace will be rolling 4d20L for this surgical procedure, so she can benefit from up to four helpers. Four helpers are available: Pete (Professional), Erin (Competent), Simon (Novice), and Matt (Unskilled).

Pete's rating is one level below Candace's, so he would provide a +2 bonus. Simon's is two levels lower, so he would provide a +1 bonus. Erin's skill is three levels lower, so she would provide no bonus to the check, but her presence might still help to reduce the total time required for the task. Matt's Unskilled rating makes him an unlikely assistant, but if Candace thinks she can successfully perform the procedure with him in the way, she might accept the penalty for his "help" and let him assist as a learning experience (see p. 198 for rules on learning experiences and how they allow characters to improve skills).

Modifier	Equipment Grade	Medicine Example	Mechanics Example
+5	world-class facility	Level IV trauma center	manufacturer's test lab
+4	specialized facility	emergency room	dealership's service shop
+3	basic facility	typical doctor's office	neighborhood garage
+2	mobile shop	ambulance	roadside service truck
+1	professional tools	EMT or squad medic kit	mechanic's tool chest
±0	basic tools	individual first aid kit	basic toolkit
-1	minimal tools	alcohol swabs, sterile gauze	multi-tool, wire, duct tape
-3	improvised/found tools	whiskey, torn shirt	sharp rocks, scrap metal
-5	none	prayer	bare hands

Table 3e: Equipment Modifiers

Strong Backs and Weak Minds

For tasks that just require extra hands to lift and carry, helpers must simply be in sufficient physical condition to accomplish the labor. For light labor (e.g. basketweaving, foraging), this means no physical attribute lower than 3 and no wounds or illness greater than Moderate. For heavy labor (e.g. building fortifications, harvesting crops), this means no physical attribute lower than 5 and no wounds or illness greater than Slight. Whether a given task is light or heavy labor is left to the GM's discretion, but the suggested rule of thumb is that any task that would cause an average adult to raise a sweat or feel sore afterwards is heavy labor. In either case, each helper provides a cumulative +1 bonus.

Visual Range

Visual observation and ranged combat are limited by the capabilities of the human eye. The greater the distance between an object and observer, the harder it is for the observer to notice, identify, examine, or attack it. The Reflex System models the effects of distance by imposing a visual range penalty on all vision-dependent actions (including ranged attacks) that involve a subject located beyond Gunfighting range. This penalty begins as a -1 in the CQB range band and doubles with each successive band:

Range Band	Visual Range Penalty
Personal	none
Gunfighting (to 7m)	none
CQB (7-25m)	-1
Tight (25-100m)	-2
Medium (100-200m)	-4
Open (200-400m)	-8
Sniping (400-800m)	-16
Extreme (800-1,600m)	-32

Table 3f: Visual Range Modifiers

These penalties assume normal daytime lighting and clear air. Adverse lighting and atmospheric conditions can further penalize visual observation by increasing the effective visual range to a target. For example, if an effect increases the effective visual range by two range bands, then an observer looking at an object in the Medium range band suffers penalties as if the target was in the Sniping range band. Conversely, vision-enhancing equipment can reduce the apparent range to an object, decreasing penalties (see p. 237 and p. 258).

Target Size

Various studies have shown that it's virtually impossible for the unaided human eye to pick out a man-sized target at ranges beyond 400 meters. However, larger objects are visible (though not necessarily in great detail) as much longer ranges, while

smaller objects may be imperceptible until they come much closer. Accordingly, a target that's much larger or smaller than a normal human is considered to be closer or farther, respectively, for the purposes of visual range see the following table:

Human Size Equivalence	Effective Range
1/4 (cat, rifle)	2 bands farther
1/2 (dog, child)	1 band farther
2x (horse, passenger car)	1 band closer
4x (elephant, tank)	2 bands closer
8x (small house)	3 bands closer

Table 3g: Size Modifiers

Environmental Conditions

Illumination

Characters require proper light levels for any task dependent on vision. When the ambient light in a situation is too low or too intense, all such tasks suffer penalties, as described in the following lighting conditions. From brightest to darkest, lighting conditions are as follows:

- **Blinding:** Too much light can be as bad as not enough light. Blinding light is sufficiently intense to cause pain, and can lead to eye injury if viewed for more than a few minutes (GM's discretion). Examples include direct views of the sun, full sunlight reflected on snow, a welding torch, and the ubiquitous nuclear fireball. Lesser light sources such as parachute flares or smaller explosions are also considered blinding if a character's eyes are adapted to darker-than-adequate lighting conditions from at least three minutes of exposure. Blinding light increases effective visual range by two range bands. At the GM's discretion, it also inflicts a -4 penalty on other task checks.

- **Excessive:** Excessive light is present when the level of illumination causes viewers to squint or shield their eyes in order to see clearly. Examples include the sun viewed through heavy cloud cover or precipitation, partial sunlight reflected on snow, and flashlights or headlights shining directly into the viewer's eyes. Excessive light increases effective visual range by one range band. At the GM's discretion, it also inflicts a -2 penalty on other task checks.

- **Adequate:** The default lighting condition is illumination ranging from sunlight on a clear summer day to indoor residential lighting from conventional electric bulbs. Adequate light inflicts no penalties.

- **Dim:** Dim illumination provides enough light for a character to navigate unimpeded and perform most common tasks, but fine visual discernment is difficult. Examples of dim lighting conditions include dawn or twilight, an indoor area with emergency or maintenance lights, a scene lit only by sporadic fires, a movie theatre in the middle of a film, and a clear night with a full

GM Hint: Lighting

In most circumstances, the lighting conditions at the target's location determine the penalties, if any, that apply to an action. For example, let's say that a character is sitting in a darkened forest (minimal light), observing an enemy a few dozen meters away in a well-lit cabin (adequate light). If the character shoots at the enemy, he shouldn't suffer any increase in effective visual range because his target (the enemy) is perfectly well-lit for his purposes. However, if he realizes his rifle has a loose stock and pulls out his toolkit to make adjustments, the target of the repair attempt (the rifle) is in minimal lighting because it's with him, and a penalty should apply for working in the dark.

moon and no overhead cover. Dim light increases effective visual range by one range band. At the GM's discretion, it also inflicts a -2 penalty on other task checks.

- **Minimal:** In minimal illumination, the human eye is incapable of discerning most colors, and only vague outlines of shapes are immediately visible. Examples of minimal illumination include a cloudy night, the light from a single candle in a large room, and an airliner cabin with only the emergency lights on the floor. Minimal light increases effective visual range by two range bands. At the GM's discretion, it also inflicts a -4 penalty on other task checks.

- **None:** Complete darkness – any enclosed space with no illumination – inflicts automatic failure on any task check reliant on vision. If a character can accomplish a task solely by touch (GM's discretion), any related task check still suffers a -5 penalty, and the task takes three times as long as normal if it isn't an instant action. These penalties may be mitigated or eliminated (again at the GM's discretion) if the character has previously trained to perform that specific task without visual guidance. We strongly recommend that the GM disallow any sudden revelations that the character "knew how to do it all along" – such training should be previously established through character history or roleplaying.

- **Chaotic:** Chaotic illumination occurs when lighting conditions are rapidly shifting between dark and normal to bright, which can be disorienting for those unaccustomed to it. This typically occurs in situations where light sources are constantly strobing: a firefight, or a crime scene lit by the flashing light bars of emergency vehicles. Chaotic lighting increases effective visual range by one range band in addition to any penalties imposed by dim or minimal lighting. A character with a Coolness Under Fire of 6 or greater ignores this effect.

Atmospheric Conditions

The human eye evolved to work in clear air. Substances falling through it or floating in it can significantly reduce visual acuity.

- **Precipitation:** Mist, light drizzle, or snow flurries increase effective visual range by one range band. Steady rain or snowfall increase it by two range bands. A heavy downpour or blizzard increases it by three range bands.

- **Fog:** Morning haze increases effective visual range by one range band. Light or patchy fog increase it by two range bands. Dense fog increases it by four range bands.

- **Sand/Dust/Smoke:** Airborne particulate matter isn't technically precipitation, but it imposes penalties in a similar manner. Light particulates (i.e. occasional windblown swirls, campfire smoke) increase effective visual range by one range band. Steady particulates (i.e. strong windblown sheets, structure or forest fire smoke) increase it by two range bands. Dense particulates (i.e. dust storms, burning tires, smoke grenades or generators) increase it by three range bands.

Wind

Strong winds affect all airborne objects, both projectiles and vehicles. Exceptionally high wind speeds can also affect the ability of personnel and ground vehicles to move safely. From lightest to strongest, wind conditions are as follows.

- **Mild:** Calm air and mild wind (up to 39 km/hr or Beaufort 0-5) have no game effect.

- **Moderate:** Moderate wind (40-62 km/hr or Beaufort 6-7) is enough to raise large waves and whips their crests into foam, make trees move, turn umbrellas inside-out, make wires and cables whistle, and raise clouds of blowing sand or dust. Ranged attacks suffer a -1 penalty at distances past optimum range, as do skill checks involving fine manipulation. Control checks with ground vehicles suffer a -1 penalty, while those with aircraft and watercraft suffer a -2.

- **Strong:** Strong wind (63-87 km/hr or Beaufort 8-9) can raise 3-meter waves, break small branches from trees, strip exterior fixtures from buildings, and impede personal movement. All penalties from moderate wind are increased by 1. In addition, a character standing upright moves as if he had a slight leg injury.

- **Major Storm:** Winds severe enough to be classified as storm force (over 88 km/hr or Beaufort 10+) inflict increased or additional penalties at the GM's discretion. Such weather events are likely to be major plot points in and of themselves, inflicting devastation over a wide area.

Temperature Extremes

Humans – and, in most cases, the equipment they design – operate best at temperatures between 5 and 25 degrees Celsius (41 to 77 degrees Fahrenheit). Outside this range, unprotected individuals begin to risk temperature-related injuries over hours or even minutes of activity, and fatigue (see p. 172) accrues at an accelerated rate. Machinery fares no better, suffering degradation of function and even losing structural integrity. Lubricants break down or congeal, battery fluids freeze, metals and plastics lose structural integrity, and increased resistance impedes normal function in electronics. From highest to lowest, the possible temperature ranges in a normal terrestrial environment are:

- **Extremely Hot:** Temperatures in excess of 35°C (95°F) are extremely hot. In extremely hot temperatures, sleep and rest provide only half their normal benefit, characters require 2 additional liters of water per day, all light work counts as heavy work for purposes of fatigue, and heavy work's fatigue effects are doubled. In addition, the Maintenance requirements of all equipment are increased by 100%.

- **Hot:** Conditions between 25°C and 35°C (77°F to 95°F) are considered hot for game purposes. In hot temperatures, characters require 1 additional liter of water per day, and heavy work's fatigue effects are increased by 50%. In addition, the Maintenance requirements of all equipment are increased by 50%.

- **Mild:** The temperature range between 5°C and 25°C (41°F to 77°F) is nominal for both characters and equipment. No penalties apply to activity in mild temperatures.

- **Cold:** Between -10°C and 5°C (14°F to 41°F), characters are operating in cold conditions. In cold conditions, rest provides only half its normal benefit, characters require 125% of their normal food intake, and heavy work's fatigue effects are increased by 50%. In addition, the Maintenance requirements of all equipment are increased by 50%.

- **Extremely Cold:** Temperatures below -10°C (14°F) are extremely cold. Sleep is considered inactivity, and inactivity is considered light work. The fatigue effects of heavy work are increased by 50%. In addition, the body's increased need to burn calories for warmth increases food requirements to 150% of normal. Finally, the Maintenance requirements of all equipment are increased by 100%.



Noise

A certain amount of background noise is inescapable in most situations, and it's a condition under which most individuals can function with no problem. However, characters tend to expose themselves to painfully loud noises on a regular basis, with the possibility of both permanent and temporary hearing loss.

Note that in the case of all of the following penalties to Awareness-based task checks, the rules assume that hearing is only one component of the character's total situational awareness. These penalties are doubled for any task that is exclusively hearing-based, such as listening to a conversation through a wall or identifying a firearm's caliber by the noise of a single shot. If this generates a penalty worse than -5, the task is impossible because the ambient noise level is too high for clear perception.

From quietest to loudest, ambient noise levels and their effects are:

- **Dead Silence:** When the loudest audible noise is under 25 decibels (i.e. whispering, human breathing, insect wings), dead silence exists. A character with normal hearing can literally hear a pin drop in these conditions. Dead silence provides a +1 bonus to all Awareness-based task checks that rely on hearing. In addition, it also provides a +1 bonus to all tasks requiring prolonged concentration (GM's discretion, but most extended tasks based on Cognition or Education should qualify).

- **Quiet:** Quiet background noise includes soft conversation, normal calm or breezy wind conditions, or the sounds of a deserted forest or city street at night. In such circumstances, ambient noise ranges from 25 to 50 decibels. Quiet is considered the default noise level and has no game effect.

- **Distracting:** Noise levels from 50 to 80 decibels are considered distracting. These are present in busy city streets, moderate to strong winds, crowded restaurants, the interior of normal passenger vehicles, and a gunfight involving only suppressed pistol-caliber firearms. Distracting noise levels aren't harmful, but do interfere with perception and concentration, inflicting a -1 penalty on relevant checks (as per Dead Silence).

- **Loud:** Loud noise ranges from 80 to 105 decibels. Sources of loud noise include factory machinery, large and restless crowds, gale-force or stronger winds, normal home stereo systems at maximum volume, and the operating noises of motorcycles and heavy vehicles. Prolonged exposure to loud noise levels can cause hearing loss, but at this stage this is a roleplaying rather than mechanical effect. Mechanically speaking, the penalties inflicted by loud noise levels rise to -2. These penalties are persistent even after the ambient noise level drops, being reduced by 1 for every 10 minutes of lesser noise.

- **Industrial:** Noise of 105 to 130 decibels is considered industrial-strength. Jackhammers, heavily-customized car stereo systems, rock concerts, screaming mobs, air raid sirens, and suppressed low-caliber rifle fire all generate industrial noise. Noise in this range is actively painful to characters without hearing protection, and every encounter with this level of noise can cause incremental hearing loss. The penalty inflicted by industrial noise levels is -3 and is persistent, being reduced by 1 for every 30 minutes of lesser noise.

In addition, whenever your character suffers prolonged exposure to industrial noise, make a Fitness (TN +5) check. If the check fails, the character permanently receives the Reduced Acuity (Hearing) disadvantage at 1 point (if he has the Increased Acuity [Hearing] advantage, its value is reduced by 1; if he already has Reduced Acuity [Hearing] at 1 point, no further damage is accrued).

- **Deafening:** When noise levels exceed 130 decibels, permanent hearing loss and other physiological effects are likely to occur. Explosions, unsuppressed gunfire, and jet engines are among the few mechanisms that can generate deafening noise. The

penalty inflicted by deafening noise levels is -4 and is persistent, being reduced by 1 for every 1d6 hours of lesser noise.

In addition, whenever your character suffers prolonged exposure to deafening noise, make a Fitness (TN +5) check. If this fails, the character suffers hearing loss as described at the industrial noise level. If the character already has the Reduced Acuity (Hearing) disadvantage at 1 point, its value is increased to 2 points.

CHARACTER TRAITS

Like most RPGs, the Reflex System is a mathematical model of reality. As such, it simplifies and quantifies many aspects of the real world for ease of play. Characters are no exception – very few people walk around with IQ test results and medical charts tattooed on their foreheads. The traits presented in the following sections define each character's basic capabilities in game terms.

ATTRIBUTES

Every human has certain innate capabilities: movement, thought, social interaction, and so forth. The Reflex System defines and quantifies these universal qualities with ten attributes. Four attributes each describe the physical and mental aspects of a character, while the last two define the character's psychological and physiological responses to combat.

Each attribute has a value between 1 and 15. In general, 1 is the lowest possible level of capability that an adult human can have and still function. 6 is human average. 10 is the upper limit of innate development. Values above 10 are reserved for individuals who have deliberately worked for years to cultivate specific traits.

Zero Attribute Values

Any living, functioning human has at least minimal strength in each attribute. Consequently, a character who has a value of 0 in any attribute is dead, catatonic, paralyzed from the neck up, or otherwise not suitable for continued play.

Awareness (AWA)

The Reflex System assumes that every character has normal sensory acuity. Awareness is a relative measure of the degree to which the character actually pays attention to and understands what those senses are telling him. A character with low Awareness is unperceptive, lost inside his own head, or just plain clueless. A character with high Awareness is keyed in to subtle clues and details whose significance is lost on most people.

Awareness in Skill Checks: Awareness modifies skill checks that require characters to be aware of their environments or to notice subtle details. Typically, this will involve searches, investigations, and other tests of physical perceptiveness and sensory acuity.

Awareness Attribute Checks: Awareness checks establish a character's attention to detail and danger in particular situations. As such, an Awareness check is appropriate for noticing physical cues that may alert the character to a clue or an ambush.

Coordination (CDN)

As its name suggests, Coordination measures a character's hand-eye coordination and kinesthetic sense. It also represents his fine motor skills and his innate understanding of two- and three-dimensional movement. A character with high Coordination is light-fingered and precise, while a character with low Coordination tends to drop things and inflicts a lot of superficial damage on his car.

Coordination in Skill Checks: Most tasks relying on the character's capacity for precise physical action will apply his Coordination modifier. This includes virtually all attacks in combat, as well as delicate repair work and vehicular operation.

Coordination Attribute Checks: Coordination checks are appropriate for actions that involve movement and physical precision not directly connected to any skill, such as catching and throwing objects.

Fitness (FIT)

Fitness measures the character's endurance and the strength of his immune system. A character with high Fitness is energetic and in good health, while one with low Fitness tires quickly and falls ill frequently. In play, Fitness determines a character's resistance to physical injury, carrying capacity, resistance to disease and environmental hazards, healing rate, and sustained overland movement speed.

Fitness in Skill Checks: Fitness is an appropriate attribute to apply to any task that involves the sustained use of a physically demanding skill over an extended period of time. Manual labor is a prime example, as is energy-intensive movement such as climbing or swimming.

Fitness Attribute Checks: Fitness rarely comes into play for direct use. It's hard to take an action by being fit – this is more of a passive quality in most circumstances. Displaying pure physical endurance and resisting infections are examples of Fitness checks.

Muscle (MUS)

Muscle defines the aspects of a character's musculoskeletal system, including physical strength, muscle tone, and flexibility. In play, Muscle affects a character's resistance to physical injury, carrying capacity, throwing range, and combat movement speed.

Muscle in Skill Checks: Muscle comes into play for all actions that require overall short-term physical exertion. Most full-body motion relies on Muscle, including personal movement in all dimensions and both armed and unarmed close combat.

Muscle Attribute Checks: A Muscle check is appropriate when the task at hand relies solely on peak strength or full-body motion unrelated to a skill. Breaking open a padlock, wriggling through a narrow drainpipe, and lifting a car off an accident victim all call for Muscle checks. In addition, avoidance of many sources of passive damage calls for Muscle checks.

Cognition (COG)

Cognition describes the character's capacity for logical reasoning, abstract thought, and creativity. A character's Cognition roughly relates to his I.Q., though this is not always a direct equivalence. Typically, though, a character's Cognition value directly translates to what most people consider his level of intelligence or cunning.

Cognition in Skill Checks: Intensive analysis and creative inspiration are naturally reliant on Cognition. This includes intellectual tasks like hacking a computer system, diagnosing a mechanical malfunction, and extemporaneously composing poetry.

Cognition Attribute Checks: Cognition represents creativity and analytical capability. Accordingly, any attempt to figure something out without benefit of any special training is a good candidate for a Cognition check.

Education (EDU)

Education measures the extent of the character's learning as defined by modern education standards of the early 21st century. A character's Education value indirectly relates to a specific amount of completed study – a character can be assumed to benefit from a

number of years of formal schooling equal to twice his Education. Note that the listed equivalencies aren't hard requirements, but rather guidelines. A self-made bibliophile is perfectly capable of educating himself to a high Education value, even if he's never set foot on a college campus.

Note that Education is limited in scope. When making an attribute check, you normally roll 2d20L. This applies to Education checks – but only for subjects that modern primary and secondary schools consider “general education.” This includes mathematics up to calculus, basic physical science (e.g. biology, chemistry, physics, and earth sciences), literature in the national language, and an overview of national and world history and culture. For a more specialized subject, you roll 2d20H, the same roll made for an unskilled skill check. This penalty can be mitigated by degrees, which are described below.

Education in Skill Checks: Education affects any skill check that requires the character to remember factual information or to put learned theory into practice. Most intensive medical and technical tasks fall under this classification, as do large-scale administrative efforts.

Education Attribute Checks: An Education attribute check is called for when a character attempts pure theoretical or laboratory work. Designing a skyscraper, drafting a constitution, and researching historical events are all tasks appropriate for Education checks. In addition, any recall of general knowledge that doesn't fall under the domain of a skill is a function of an Education check.

Degrees

The Education attribute could arguably encompass knowledge of every realm of human endeavor. In practice, a character can't be an expert on every conceivable subject simply by virtue of an astronomical Education value. Higher education, particularly at the post-secondary level, tends to be narrowly-focused in order to produce specialists rather than generalists.

The Reflex System addresses this dichotomy through degrees. For every point of Education above 6, a character receives one degree. Each degree represents a particular field of study on which the character has focused for several years. These degrees may roughly correspond to actual university courses of study, though they don't have to. A character who has a degree as per game mechanics terms doesn't necessarily have a diploma in the same subject. A degree can be the result of intensive professional training in a subject that no university teaches, but it also can be a consequence of decades of personal experience.

A character may acquire multiple degrees in the same subject. For example, a former judge with Education 11 could have three degrees in law and two in political science.

Degrees in Play

Degrees have two mechanical functions. The first is to allow more effective use of the character's Education value. If a character has a degree that is directly relevant to the subject of an Education attribute check, you make the attribute check normally, rolling 2d20L. For each additional degree of direct relevance, add one extra die. For each degree that is indirectly or tangentially relevant, add a cumulative +1 bonus.

Example: Colin has Education 10, with two degrees in law and one each in creative writing and drama. He happens to find himself appointed to draft the constitution of an independent Balkan state that's coming out of five years of martial law. The GM rules that this requires an Education attribute check. Colin's two law degrees are directly relevant to the task at hand – he's creating the primary legal basis for the new nation's government. His creative writing degree isn't precisely appropriate here, but it will help him put his thoughts on paper in a clear and unambiguous style, so the GM admits that it's indirectly relevant. Theatre...

GM Hint: Degree Relevance

Some players will construct all manner of elaborate justifications for why their characters' degrees are directly relevant to some tasks. “Why, yes, my doctor has three degrees in organic chemistry, and explosives involve chemistry, so he should get full bonuses from those degrees when he attempts to disarm this bomb!”

Remember: it's okay to say “no.” Our recommended rule of thumb is that if a player has to spend more than one sentence justifying why a degree is relevant, it probably isn't.

not so much. With two directly relevant degrees and one indirectly relevant one, Colin rolls a 3d20L Education check with a +1 bonus.

The other function of degrees is to enhance appropriate skill checks. When you make a skill check that primarily involves social interaction or mental recall and analysis rather than physical activity, you receive a cumulative bonus based on the number of degrees the character possesses that are relevant to the task. Directly relevant degrees each provide a +2 bonus, while indirectly relevant ones each provide a +1 bonus. As usual, the total cumulative bonus from degrees cannot exceed +5. Degrees never provide bonuses to physical actions.

Sample Degrees: Aeronautical Engineering, Agriculture, Anthropology, Archaeology, Astronomy, Biology, Business Administration, Chemistry, Civil Engineering, Computer Science, Creative Writing, Cultural Trivia (by culture), Drama, Economics, Education, Electrical Engineering, Emergency Management, Geology, History (by time period, culture, or geographic area), Journalism, Law, Library Science, Linguistics, Literature (by culture or language), Materials Science, Mathematics, Medicine (by area of specialty), Mechanical Engineering, Meteorology, Military Science, Oceanography, Philosophy, Physics, Political Science, Sociology.

Personality (PER)

Personality encompasses a character's capacity for social interaction and empathy. A character with high Personality is magnetic, charismatic, and conscious of the feelings of others, whereas one with low Personality is uninteresting, rude, or terse. Personality is a two-way street, measuring not only the character's ability to affect others but also his sensitivity to subtle social cues.

Personality in Skill Checks: As the attribute that governs a character's socialization, most attempts at interpersonal relations rely on Personality.

Personality Attribute Checks: The social skills (see p. 80) encompass most human interactions. Personality itself comes into play when the character is simply “being himself” and socializing without a specific agenda. It also serves as the social counterpart to Awareness, and is used when a character may be able to pick up cues from another individual's demeanor, turns of phrase, or unconscious behavior. This same function of interpersonal dynamics makes Personality the attribute that opposes all social attempts at deception.

Resolve (RES)

Resolve defines a character's psychological stability and mental endurance. A character with high Resolve is driven, focused, and self-confident, but one with low Resolve is unmotivated and easily swayed or distracted. In play, Resolve determines a character's resistance to psychological trauma and ability to cling to life when critically injured.

Stage I: CUF and OODA

Most of the rules that rely on CUF and OODA don't exist under the simplified Stage I rules. Accordingly, neither do these attributes. If a remaining Stage I rule does call for the use of one of these attributes, substitute Resolve for CUF and Awareness for OODA.

Resolve in Skill Checks: Resolve applies to actions that require protracted attention in the face of sheer boredom. It's also relevant to social interaction that involves displays of dedication or aggression, such as intimidation or persuasive speaking.

Resolve Attribute Checks: Resolve is used when the character's willpower is the dominant determining factor in a situation. This includes resistance to social interaction designed to change the character's behavior, as well as recovery from major injuries.

Coolness Under Fire (CUF)

Coolness Under Fire represents a character's capacity to override his basic mammalian survival instincts. This comes from a combination of trained reflex, self-control, and willingness to accept injury as a consequence of action. To a certain extent, Coolness Under Fire can be considered a "courage attribute," though it only addresses the limited subset of courage in the face of immediate physical danger (moral rectitude and similar forms of courage are roleplaying decisions or functions of Resolve). A character with a high CUF can unflinchingly face threats that freeze less stalwart comrades in their tracks or send them scurrying for cover.

CUF in Skill Checks: CUF is never applied to skill checks, except in limited circumstances dictated by specific combat rules.

CUF Attribute Checks: A CUF check determines the character's ability to resist fear of death or injury. Accordingly, CUF checks occur only in specific circumstances determined by combat events – see Chapter Five.

Observe-Orient-Decide-Act (OODA)

Observe-Orient-Decide-Act determines how quickly a character can react to sudden, unexpected events, usually violent ones. This primarily stems from mental flexibility, but physical reflex speed is also a consideration. A character with a high OODA can respond to a threat at the drop of a proverbial hat while counterparts with lower OODA are still standing slack-jawed.

OODA in Skill Checks: OODA is never applied to skill checks, except in limited circumstances dictated by specific combat rules.

OODA Attribute Checks: As with CUF, OODA checks occur only in specific circumstances determined by combat conditions, as described in Chapter Five. The most common use of OODA is to determine the speed with which a character acts in combat.

SKILLS

In addition to the innate qualities that attributes portray, a character also learns certain specific capabilities throughout the course of his life. The Reflex System represents this practical experience in performing various tasks with skills.

Each skill has a value, which is a numerical representation of a character's total experience in using it (each point of skill value roughly corresponds to one year of steady work toward improvement). At the beginning of the character creation process, a character has a value of 0 in every skill. Each skill also has a rating, which is derived from its value as per the following table. The skill's rating determines the number of dice that you roll when

making task checks with that skill:

Value	Rating (Dice Rolled)
64+	Legendary (6d20L)
32-63	Master (5d20L)
16-31	Expert (4d20L)
8-15	Professional (3d20L)
4-7	Competent (2d20L)
1-3	Novice (1d20)
0	Unskilled (2d20H)

Table 3h: Skill Ratings

Qualifications

Many skills encompass broad areas of human endeavor. In the case of some of these skills, it is not realistic to assume that a character who is trained in the basics of the skill, even to a high degree of proficiency, is familiar with all possible nuances of the skill. Qualifications represent the borders or fringe cases of a skill. In a case where a base skill allows a limited range of actions, a qualification expands the ways in which a character can apply that skill. For example, not all doctors are thoracic surgeons, so the base Medicine skill does not include surgical techniques. However, a character with the Medicine/Surgery qualification is qualified to perform such invasive procedures.

Some skill checks require any character that attempts them to have one (or, very rarely, more) qualification for optimum results. It is possible, albeit difficult and often dangerous, to attempt a task without possessing a qualification that it requires. If a character attempts any such task without all required qualifications, his effective rating in the skill is reduced by three levels (a penalty equal to that inflicted by a serious wound).

Example: Erin and Shane both have Expert ratings in Medicine. However, Erin also has the Medicine/Surgery qualification, while Shane does not. If presented with a task that requires Medicine/Surgery, Erin applies her normal skill rating, but Shane attempts the roll as if he only had a Novice skill rating.

With the GM's approval, a character may acquire a qualification of the player's own devising in order to represent unusual proficiency with a rare or unusual aspect of a skill that normally would fall outside common modernly-practiced knowledge. Such qualifications should be limited in scope and utility. We caution the GM to be wary of players who request combat-useful custom qualifications for non-combat skills (i.e. Animal Husbandry/War Elephants, Construction/Medieval Siege Engines, Electronics/Particle Beam Weapons).

Cascade Skills

Several skills are designated as cascade skills. These skills encompass a wide variety of unrelated tasks. A character must acquire a cascade skill separately for each specific task or area of endeavor. For example, the Perform cascade skill governs attempts to entertain and inform. A character might have the Perform (Acting), Perform (Drums), and Perform (Guitar) skills, and would be a skilled actor, drummer, and guitarist; however, none of his Perform cascades would be of use if he attempted to start a career as an opera singer.

The lists of specific cascades presented with each cascade skill are illustrative, not exhaustive. Players should feel free to ask the GM about new and unique cascades that fit their character concepts. However, the GM should feel equally free to veto any cascades that are too narrowly-focused, too widely-focused, too unbalancing for combat purposes, or generally inappropriate for the game.

Skill List

Agriculture
Animal Husbandry
Aquatics (Qualification: SCUBA)
Archery
Artillery (Qualification: Guided)
Artisan (Cascade)
Aviation (Qualifications: Heavy, Performance, Rotary, Remote)
Climbing
Command
Computing (Qualification: Programming)
Construction (Qualification: Demolition)
Deception
Driving (Qualifications: Heavy, Motorcycle, Remote, Tracked)
Electronics
Fieldcraft
Forensics (Qualification: Forgery)
Freefall (Qualification: Tactical)
Gunnery (Qualification: Guided)
Hand-to-Hand (Qualification: Grappling)
Hand Weapons (Qualification: Grappling)
Instruction
Intimidation
Language (Cascade)
Longarm
Mechanics (Qualifications: Aviation, Industrial, Machinist, Nautical)
Medicine (Qualifications: Surgery, Veterinary)
Mounts (Qualification: Teamster)
Performance (Cascade)
Persuasion (Qualification: Psychiatry)
Seamanship (Qualifications: Remote, Sailing, Submersible)
Security
Sidearm
Special Equipment (Cascade)
Special Vehicle (Cascade; Qualification: Remote)
Streetcraft
Support Weapons (Qualification: Guided)
Tactics

Social Skills

The category of “social skills” includes Command, Deception, Instruction, Intimidation, Performance, and Persuasion. All of these skills, to one degree or another, deal with interpersonal relations. In many situations, a character can apply more than one of these skills to achieve the same end result. The difference in such a case is in the method used. For example, if a character wants to induce a witness to keep silent, he could use Command (appealing to her sense of duty and respect for authority), Deception (confusing her understanding of the situation), Intimidation (frightening her into silence), or Persuasion (bribing her or otherwise convincing her that staying quiet will be advantageous for her). Depending on the target and the situation, some approaches will work better than others. The GM is the final arbiter on how a given NPC will react to one method of social interaction over another.

Skill Descriptions

Agriculture

One of the oldest skills and one of the most basic to human survival, Agriculture deals with the raising of crops for sustenance and raw materials. Planting, tending, harvesting, storage, and

basic preparation for use all fall under this skill. Agriculture also encompasses the use and maintenance of associated farm machinery, such as threshers and cultivators.

Typical Actions: Assessing the condition of crops, soil, or agricultural facilities is a simple action (AWA). Tending crops is an incremental action (COG) with a period measured in weeks; usually, the total amount of time available for this action is limited by the local growing season. Harvesting crops is an incremental action (FIT for manual labor, CDN with mechanical assistance).

Animal Husbandry

Almost as old as Agriculture, Animal Husbandry involves the care, feeding, and breeding of living creatures for food or work. This skill also includes basic practical knowledge of veterinary medicine, though anything more complicated than minor illness or slight wounds requires the Medicine/Veterinary qualification.

Typical Actions: Assessing the condition and value of an animal is a simple action (AWA). Breeding, raising, and tending animals are all incremental actions (COG) with periods measured in weeks or months, depending on how rapidly the animals in question mature. Slaughtering and butchering an animal for food or other products is a simple action (MUS).

Aquatics

This skill encompasses a set of related capabilities for maneuvering on and in the water, including both swimming and the handling of small watercraft (anything 20 meters or less in length). A character skilled in Aquatics is also versed in survival in open water.

Typical Actions: Staying afloat and moving on the surface of the water is a simple action (MUS). A character's maximum swimming speed in meters per tick is equal to the number of dice he rolls for Aquatics tasks (so a character with a Professional rating swims at 3 meters per tick). Maneuvering a watercraft is a simple action (MUS for manually- and wind-powered craft, CDN for motorized ones). Fishing is a simple action (RES).

SCUBA Qualification: This qualification represents training in the use of underwater breathing gear for dives down to about 50 meters. Swimming with SCUBA gear is similar to ordinary swimming: a simple action (MUS). Recharging and maintaining SCUBA gear is a simple action (COG).

Archery

A skilled archer is capable of using and maintaining bows and crossbows, as well as creating ammunition for them. Creating a new bow or crossbow is a function of the Artisan (Bowyer) cascade.

Typical Actions: Making arrows or bolts from raw materials is a simple action (COG). Attacks are detailed in Chapter Six.

Artillery

Artillery governs the use and maintenance of indirect-fire modern weapons, including rockets, howitzers, and mortars. The basic skill provides proficiency only with “dumb” or unguided munitions.

Typical Actions: Attacks with artillery weapons are detailed in Chapter Six. Performing maintenance or repairs on an artillery piece is a simple action (COG). Calling for or adjusting fire as a forward observer is a simple action (COG).

Guided Qualification: This qualification represents additional training in the targeting and use of advanced guided munitions. All uses of Artillery with this qualification are the same as those of the basic skill.

Artisan (Cascade)

Artisan covers a wide variety of skill sets related to the creation of works of physical or literary beauty and of simple functional objects. Many Artisan cascades are archaic and were largely replaced by mass production in the pre-Last War world,

but their remaining practitioners are now in high demand after centuries of decline. At the GM's discretion, a Artisan cascade may cover a specific sub-set of the Mechanics skill, such as gunsmithing or machining.

Typical Actions: Creating a functional object or work of art is either an instant or incremental action, depending on the item's complexity (variable attributes, depending on the nature of the act of creation). Appraising an item is a simple action (EDU), as is critiquing a work of art (COG).

Sample Cascades: Basketry, Blacksmithing, Bowery, Brewing, Carpentry, Cinematography, Fiction Writing, Gem Cutting, Glassblowing, Glasscutting, Gunsmithing, Knitting, Leatherworking, Locksmithing, Machining, Painting, Photography, Poetry, Sculpture, Silversmithing, Tailoring, Videography, Watchsmithing, Welding, Woodcarving.

Aviation

This skill governs all actions related to powered flight. The basic Aviation skill enables the character to pilot all light airplanes (subsonic passenger or cargo craft possessing fixed wings and no more than two engines). Various qualifications, in the most literal sense, indicate that the pilot is type-qualified on more complex airframes. In addition, Aviation covers air navigation and basic preventive maintenance, though any heavy maintenance or repair work requires the Mechanics/Aviation qualification.

Typical Actions: Maneuvering an aircraft is a simple action (CDN). Preflight inspections and preventive maintenance are both simple actions (respectively AWA and COG).

Heavy Qualification: This qualification represents additional training on heavy and multi-engine fixed-wing aircraft (those possessing more than two engines). All uses of Aviation with this qualification are the same as those of the basic skill.

Performance Qualification: This qualification represents additional training on aerobatic jets and combat aircraft. All uses of Aviation with this qualification are the same as those of the basic skill.

Rotary Qualification: This qualification represents additional training on helicopters. All uses of Aviation with this qualification are the same as those of the basic skill.

Remote Qualification: This qualification represents additional training on Unmanned Aerial Vehicles (UAVs), enabling remote operation of all aircraft that the character could normally fly. All uses of Aviation with this qualification are the same as those of the basic skill.

Climbing

Climbing encompasses all attempts to ascend and descend surfaces or solid objects, including trees, ropes, cargo nets, rock walls, and so forth. In addition, a character skilled in Climbing knows how to rig and maintain harnesses, ropes, and other climbing gear, including improvising temporary gear from available materials.

Typical Actions: Ascending or descending is a simple action (MUS). A character's maximum ascent speed is equal to half the number of dice he rolls for Climbing tasks (so a character with a Professional rating ascends at 2 meters per tick). A character's maximum descent speed is equal to the number of dice he rolls for Climbing tasks, plus his Muscle attribute value. Rigging climbing equipment is a simple action (COG).

Command

The art of issuing orders that social or organizational subordinates (and, on occasion, superiors) will obey is the essence of Command. This skill also includes the ability to efficiently organize groups and delegate individual parts of the total group effort.



Typical Actions: Organizing a large-scale effort is an incremental action that occurs in conjunction with all the other actions involved with the effort (PER or EDU, depending on whether the work is primarily physical or intellectual). Inspiring an audience to adopt a certain course of action through leadership and example is a simple action (PER). Rallying a panicked ally is a simple action (RES). In addition, leadership of a large-scale project involving dozens of participants is dependent on Command (see sidebar).

Computing

A character skilled in Computing knows how to work with computer systems to make them function as designed. This includes the use of all modern methods of input: mouse and keyboard interaction, touch-screens, voice recognition, retinal tracking, and gesture recognition. With the diverse array of operating systems and applications on the market in the early 2010s, Computing enables a character not only to use familiar systems, but also to intuit the manner in which unfamiliar ones operate. Additionally, this skill includes a basic familiarity with computer hardware and its installation and maintenance.

Typical Actions: Using an application is an instant or incremental action (EDU), depending on the complexity of the task the character wants to accomplish. Hacking a secure system is an incremental action (COG). Setting up, breaking down, and maintaining computer hardware are all simple actions. Setting up a network is an incremental action (COG) requiring one successful check per computer on the network. Falsifying electronic data is an incremental action (COG). Creating a mathematical code is an incremental action (EDU). Discovering falsified data and breaking a code are likewise incremental actions (respectively, COG and EDU), each of which has a target total equal to the number of successful checks that the original forger or encoder made.

Programming Qualification: This qualification represents formal or informal training in the creation and modification of software. It includes a working knowledge of a handful of modern programming languages, as well as general design theory. Additional Computing tasks possible with this qualification include reprogramming existing applications and creating new ones, both incremental actions (COG).

Construction

The creation, maintenance, repair, and destruction of structures all fall under Construction. This skill encompasses related tasks that fall under both civil engineering and combat engineering professions (the purely academic aspects of civil engineering are functions of Education).

Typical Actions: Assessing the physical condition of a structure, including its load-bearing ability, suitability as shelter, potential for salvage after demolition, and value for concealment or cover, is a simple action (AWA). Building a structure from plans is an incremental action (MUS for physical labor, CDN for mechanized labor). Improvising a temporary structure is an incremental action (MUS for physical labor, CDN for mechanized labor). Safely demolishing a structure to salvage raw materials is an incremental action (MUS for physical labor, CDN for mechanized labor).

Demolition Qualification: This qualification represents specific training in the use of explosives. Rigging charges to demolish a specific structure is a simple action (COG). Creating an improvised explosive device (IED) is a simple action (CDN). Disabling a charge or defusing an IED is a simple action (COG), or an incremental action (RES) if the item is booby-trapped. Creating new explosive material from raw chemicals is a function of the Education attribute and appropriate degrees.

Major Projects

Some jobs are outside the capabilities of a small team of dedicated and capable characters. Significant works such as building bridges, conducting statewide elections, and treating epidemics require the concerted efforts of scores, if not hundreds or thousands, of characters. The Reflex System abstracts such efforts as major projects, which require both practical knowledge of the task's details and effective high-level leadership. Under most circumstances, major projects will be incremental actions.

A major project is any task which involves a large group of NPCs working toward the same general goal over an extended period of time. Major projects depend heavily on effective leadership. The maximum number of participants that a leader can supervise is equal to the sum of his Personality attribute value and the number of dice he rolls for Command skill checks, multiplied by 5.

Example: Ed takes charge of a village's inhabitants to organize rapid construction of the community's fortifications. Ed has Personality 8 and an Expert Command rating (4 dice). Ed can supervise up to 60 $([8+4] \times 5)$ workers.

The ultimate success of a major project is determined by the leader's ability to organize his subordinates. Without coherent leadership, dedicated individuals may enjoy individual success, but the effort as a whole will fail due to a lack of coordination. For maximum effectiveness, a leader must be able to both lead people and understand the task at hand. Therefore, the player makes a task check for a major task with either Command or the skill most relevant to the work at hand, whichever has a lower rating. This check gains a bonus equal to the number of dice the player would roll for a skill check with the higher-rated skill.

Knowledgeable subordinates can significantly contribute to the success of a major task. The task check also receives a bonus equal to the number of dice that an average worker on the task would roll for a skill check with the relevant skill.

Example: The fortification effort depends primarily on Construction. Ed has an Expert rating in Command but only a Competent rating in Construction. He'll use Construction to make the skill check for the project, receiving a +4 bonus for the four dice he normally rolls for Command checks. In addition, Ed's workforce has an average Competent rating in Construction, so Ed receives another +2 bonus from them.

Design Note: Major Projects

The major project mechanics are intended to provide a quick-and-dirty way for characters to engage in the stereotypical dramatic montage of a small group of leaders organizing a large body of followers prior to a climactic showdown of some sort. Truly massive efforts – such as those which will have to take place to rebuild the shattered world of *Twilight: 2013* – require hundreds or thousands of personnel and months or years of work, placing them effectively outside the scope of most campaigns. Typical players aren't likely to enjoy rolling out the reconstruction of a government bureaucracy.

Deception

All attempts to intentionally distort the truth for any purpose other than entertainment fall under Deception (entertainment assumes a willing audience and is a function of various cascades of the Performance skill).

Typical Actions: Telling a single lie or set of lies is a simple action (PER). Maintaining an extended lie, such as a cover identity, is an incremental action (RES). Most attempts at Deception are opposed by the audience's Personality attribute, as recognizing a lie is a basic function of empathy and interpersonal relations. However, a skilled bullshit artist may use a Deception (PER) skill check in place of a Personality check to determine if someone else is lying to him.

Driving

Driving involves the use of most ground vehicles. The basic Driving skill enables the character to drive most light passenger and cargo vehicles (those with 4 to 10 wheels and up to 10 meters in length). Various qualifications indicate that the driver is also capable of controlling more complex or esoteric types of vehicles. In addition, Driving covers basic preventive maintenance, though any heavy maintenance or repair work requires the Mechanics skill.

Typical Actions: Maneuvering a ground vehicle is a simple action (CDN). Preventive maintenance and general inspections are both simple actions (respectively COG and AWA).

Heavy Qualification: This qualification represents additional training on heavy wheeled vehicles, roughly corresponding to those requiring a commercial driver's license. This includes buses, heavy trucks, and articulated vehicles (e.g. tractor-trailer rigs), as well as wheeled armored fighting vehicles (AFVs). All uses of Driving with this qualification are the same as those of the basic skill.

Motorcycle Qualification: This qualification represents additional training on motorcycles and similar vehicles (e.g. snowmobiles). All uses of Driving with this qualification are the same as those of the basic skill.

Remote Qualification: This qualification represents additional training on Unmanned Ground Vehicles (UGVs), enabling remote operation of all ground vehicles that the character could normally drive. All uses of Driving with this qualification are the same as those of the basic skill.

Tracked Qualification: This qualification represents additional training on tracked vehicles such as construction equipment and AFVs. All uses of Driving with this qualification are the same as those of the basic skill.

Electronics

The repair, maintenance, and modification of electrical and electronic device falls under this skill.

Typical Actions: Maintenance of an electronic device is a simple action (COG). Repair of a damaged electronic device is an incremental action (COG), as is building a new device from loose components.

Fieldcraft

Fieldcraft encompasses basic wilderness survival skills: overland navigation, finding or building shelter, avoiding terrain hazards, locating and purifying water, foraging for food, fishing (also an Aquatics task), searching for abandoned equipment or supplies, and interpreting wild animal behavior. In addition, this skill also governs attempts to avoid detection in a wilderness or deserted urban environment (stealth in a populated area is a function of Streetcraft).

Typical Actions: Stealthy movement is a simple action (AWA). Camouflaging a position or a stationary structure, vehicle, or character is also a simple action (AWA). Most survival- and scrounging-related applications of Fieldcraft are detailed in Chapter Six.

Forensics

More properly termed "forensic science," Forensics is the practical application of several disparate sciences and investigative techniques for the purpose of discovering past events through physical evidence. Graphology (handwriting analysis), fingerprinting, photo and audio interpretation, and ballistic analysis are all tasks governed by Forensics. This skill also includes a practical knowledge of the laws regarding evidence collection and analysis in the society in which the character received training in this skill. Forensics does not include detailed knowledge of how to perform autopsies (a function of the Medicine/Surgery qualification) or conduct interviews (a task for various social skills).

Typical Actions: Gathering physical evidence from a crime scene or other location is an incremental action (AWA). Analyzing and interpreting evidence once it's gathered is an incremental action (EDU). Conducting an intensive search of a small area for a single specific item is a simple action (AWA).

Forgery Qualification: This qualification represents knowledge of the techniques for counterfeiting documents, currency, or works of art. Creating any such item is an incremental action (EDU).

Freefall

This skill defines a character's ability to maneuver himself in the absence of apparent gravity, most commonly when skydiving. It also covers the use of parachutes to end a freefall experience in a survivable fashion, as well as the maintenance and preparation of parachutes and related equipment. The basic Freefall skill covers standard parachute jumps from altitudes between 300 and 4,000 meters. It also deals with maneuvering personal aircraft such as hang gliders and ultralights, whose aerodynamic characteristics are similar to those of a parachutist.

Typical Actions: Packing a chute for a jump is a simple action (COG). Making a successful jump from a standard altitude is a simple action (MUS if the character can see, RES if he's relying on instruments).

Tactical Qualification: This qualification enables the character to make jumps from altitudes above 4,000 meters in relative safety, using both high-altitude/low-opening (HALO) and high-altitude/high-opening (HAHO) techniques. In addition, the character can make jumps from altitudes below 300 meters with at least some chance of survival (cumulative -1 penalty for every 30 meters below 300). Finally, the character knows how to rig vehicles and cargo pallets for parachute drops, making a separate simple action (COG) for each item to be dropped.

Gunnery

Gunnery governs the use and maintenance of direct-fire weapons that the operator does not use in a hands-on mode. In most cases, this involves vehicle-mounted weapons such as a tank's main gun or a strike fighter's under-wing rocket pods, but it also covers towed antitank and antiaircraft guns. The basic skill provides proficiency only with "dumb" or unguided munitions.

Typical Actions: Attacks with vehicle-mounted and similar weapons are detailed in Chapter Six. Performing maintenance or repairs on one is a simple action (COG).

Guided Qualification: This qualification represents additional training in the targeting and use of advanced guided munitions, such as anti-tank guided missiles (ATGMs) and torpedoes. All uses of Gunnery with this qualification are the same as those of the basic skill.

Hand-to-Hand

Hand-to-Hand is unarmed combat: punches, kicks, elbow jabs, headbutts, bites, fingernail rakes and gouges, and any other means of inflicting personal injury without benefit of tools. This skill encompasses a wide variety of martial arts, as well as general street-learned mayhem. Specific styles are a matter of description rather than mechanics.

Typical Actions: As per Chapter Five.

Grappling Qualification: The character has additional specialized training in bare-handed grappling maneuvers intended to exert control over an opponent's freedom of movement.

Hand Weapons

This skill covers the use of tools designed for close combat, as well as the improvisational application of anything else that one character can use to club, stab, slash, or impale another. As with Hand-to-Hand, specific schools or techniques are descriptive rather than mechanical in nature.

Typical Actions: As per Chapter Five.

Grappling Qualification: The character has additional specialized training in armed grappling maneuvers intended to exert control over an opponent's freedom of movement.

Instruction

Instruction governs attempts to teach a skill or qualification to another character, as well as coaching another character in efforts to improve an attribute or otherwise gain additional knowledge or training. If the character is a professional educator, Instruction also provides formal knowledge of learning theory and different instructional techniques.

Typical Actions: Training another character is detailed in Chapter Six.

Intimidation

The character's capacity for gaining social dominance and eliciting compliance through implicit or explicit threats is determined by his Intimidation rating. In almost all cases, use of Intimidation is considered "negative social interaction," and can have long-term consequences on the character's relationship with his subject.

Typical Actions: Threatening someone is a simple action (MUS for physical displays, RES for verbal threats), opposed by the subject's Resolve.

Language (Cascade)

Each Language cascade is a separate language in which the character has some degree of literacy or proficiency. These may be current languages (e.g. English, Spanish), dead languages (e.g. Ancient Egyptian, Latin), or even non-auditory modes of communication (e.g. lip reading, American Sign Language). Limited hand sign vocabularies developed for a specific context are functions of the closest appropriate skill (e.g. Tactics for military tactical signals, Streetcraft for gang signs).

The character's degree of fluency is determined by his skill rating. A Novice rating allows pidgin communication with short, declarative sentences. A Competent rating enables the character to carry on a normal conversation in the language, so long as the topic doesn't involve specialized technical fields. A Professional rating gives the character an elevated vocabulary and, if the language is not his native tongue, allows him to speak idiomatically with a native accent. Higher ratings indicate greater degrees of formal linguistic study and/or native-like familiarity.

Typical Actions: In most cases, communication doesn't require a skill check, unless the subject matter's complexity exceeds the character's fluency. In such an event, a simple action (COG) is required. Attempting to pass as a native speaker requires a simple action (PER), opposed by the listener's Awareness (if a native speaker) or equivalent skill check (if not a native speaker; PER). If the character doesn't speak the same language as his listener, but both characters have languages with common linguistic ancestry, a simple action (COG) is required for each party. Creating or breaking a linguistic code (as opposed to a mathematical cipher) is an incremental action (EDU).

Sample Cascades: Any spoken or sign language, subject to the GM's approval.

Longarm

Longarm governs marksmanship with any firearm designed for two-handed shoulder-fired operation. For game purposes, this includes all rifles, shotguns, submachine guns, and squad automatic weapons. It also encompasses basic maintenance on such weapons, though any detailed repair or modification requires Mechanics or Artisan (Gunsmithing).

Typical Actions: Attacks with firearms are detailed in Chapter Five. Maintaining a firearm is a simple action (COG).

Mechanics

The Mechanics skill covers the maintenance and repair of all mechanical equipment. The basic skill covers all commonly-available items that can be maintained with normal hand tools and have a level of complexity equal to or less than that of an internal combustion engine. Qualifications expand this expertise to other specialized types of mechanical equipment.

Typical Actions: Evaluating damage or diagnosing a malfunction is a simple action (AWA). Repairing damage or a malfunction is an incremental action (CDN for small items, MUS for large equipment).

Aviation Qualification: This qualification represents additional training in aircraft engines, airframes, and associated mechanisms.

Industrial Qualification: This qualification represents additional training in large-scale fixed installations, such as climate control systems, elevators, and other "physical plant" equipment, as well as heavy factory or cargo-handling machinery.

Machinist Qualification: This qualification enables the character to create new mechanical parts, given appropriate tools and raw materials.

Nautical Qualification: This qualification represents additional training in ship propulsion and steering systems and other technologies unique to naval architecture.

Medicine

The diagnosis and treatment of injuries and illness are the province of Medicine. The basic skill encompasses first aid, extended care, and the capabilities common to a skilled emergency medic or a doctor in general practice. More specific capabilities come with additional qualifications.

Typical Actions: Treating injuries and illnesses is detailed in Chapters Five and Six. Conducting a cursory inspection of a dead body is a simple action (AWA).

Surgery Qualification: This qualification represents training in surgical procedures, enabling the character to perform surgery as detailed in Chapter Six. Additionally, the character can conduct autopsies as an incremental action (EDU).

Veterinary Qualification: This qualification represents education in veterinary medicine, enabling the character to treat injuries and illnesses in animals using the same game mechanics that apply to human patients. At the GM's discretion, a character who is primarily a veterinarian may receive this qualification for free, but may not use the Medicine skill on human patients without an equivalent "Non-Veterinary" qualification.

Mounts

This skill includes the care, feeding, training, and riding of animals. At the GM's discretion, a penalty of up to -4 may apply if a character tries to use this skill with an animal not native to his culture of origin (for example, a Montana native attempting to ride an elephant). This skill also includes basic practical knowledge of veterinary medicine, though anything more complicated than minor illness or slight wounds requires the Medicine/Veterinary qualification.

Typical Actions: Maneuvering a mount is a simple action (MUS). Training a mount is an incremental action (RES).

Teamster Qualification: This qualification represents

experience in the training and control of draft animals pulling vehicles such as wagons or buggies. Maneuvering such a conveyance is a simple action (CDN).

Performance (Cascade)

This skill describes a character's capacity to deliver an entertaining or informative performance, whether live or recorded. Each cascade represents a separate performing art, instrument, or genre.

Typical Actions: Performing is either an instant or incremental action, depending on the performance's duration and complexity (variable attributes, depending on the nature of the act, but typically MUS for physical performances, PER for verbal ones, and RES for musical ones). Critiquing or evaluating someone else's performance is a simple action (EDU).

Sample Cascades: Ballet, Broadcast News, Ceremonial Drill, Comedy Acting, Country and Western Singing, Disguise (opposed by an observer's Awareness if used outside an entertainment context), Dramatic Acting, Guitar, Opera, Pantomime, Public Address, Rap, Saxophone, Stand-Up Comedy, Stunts, Torture.

Persuasion

Persuasion governs acts of sweet reason – in other words, attempts to convince another individual that a different perspective or course of action is in his own best interest.

Typical Actions: Ordinary one-way persuasion is a simple action (PER) opposed by the target's Resolve attribute. However, a skilled salesman may use a Persuasion (RES) skill check in place of a Resolve check to recognize and ignore a persuasive argument. Mutual persuasive attempts, including debate and barter, are simple contested actions (PER). Gathering rumors on the street is a simple action (PER).

Psychiatry Qualification: This qualification represents expertise in psychology and psychiatry, enabling the character to diagnose and treat psychological trauma and mental illness (as detailed in Chapter Six).

Seamanship

Seamanship measures a character's skill in controlling large water vessels. The basic skill allows the use of motorized surface vessels larger than 20 meters in length (smaller vessels fall under Aquatics). Various qualifications indicate that the seaman is also capable of controlling more complex or esoteric types of craft. In addition, Seamanship grants the ability to find specific compartments or resources on board a vessel which may have more interior volume than a small town.

Typical Actions: Maneuvering a ship is a simple action (COG). Searching for supplies and equipment within a large vessel is a scrounging task, as detailed in Chapter Six.

Remote Qualification: This qualification represents additional training on unmanned seagoing and submersible vehicles (USVs), enabling remote operation of all large watercraft that the character could normally pilot. All uses of Seamanship with this qualification are the same as those of the basic skill.

Sailing Qualification: This qualification grants familiarity with the operation of sailing ships, including a great deal of obscure nautical terminology that can be used to confuse or impress the uninitiated. All uses of Seamanship with this qualification are the same as those of the basic skill.

Submersible Qualification: This qualification enables the character to control submarines. All uses of Seamanship with this qualification are the same as those of the basic skill, except that maneuvering a submarine is a simple action (COG).

Security

All attempts to install, bypass, or disable the mechanisms that restrict physical access to a place or item fall under this skill. Simple padlocks, electronic keypads, retinal scanners, handcuffs,

pressure pads, and automobile ignitions are all considered security mechanisms.

Typical Actions: Installing a security system is either an instant or incremental action (COG), depending on the complexity and size of the system. Bypassing or disabling a security system is an incremental action (CDN for mechanical systems, COG for electronic ones).

Sidearm

Sidearm governs marksmanship with any firearm designed for one-handed operation, including all handguns and machine pistols. It also encompasses basic maintenance on such weapons, though any detailed repair or modification requires Mechanics or Artisan (Gunsmithing).

Typical Actions: Attacks with firearms are detailed in Chapter Five. Maintaining a firearm is a simple action (COG).

Special Equipment (Cascade)

This skill is a catch-all cascade for specialized technological knowledge that doesn't readily fall under any other skill. Each cascade of Special Equipment encompasses the operation and basic maintenance of a separate type of device. If you so desire, a cascade is allowed to encompass equipment that more properly belongs to another skill. For example, Special Equipment (Medical Diagnostic Instruments) could also be considered a function of Medicine, as such implements are directly related to common medical procedures. However, a character derives no special benefit from having a Special Equipment cascade that is a subset of another skill. The GM has final approval over all Special Equipment cascades.

Typical Actions: GM's discretion, depending on the equipment in question.

Sample Cascades: Astronomy Instruments, Blast Furnaces, Chemical Plants, Commercial Radio Transmitters, Deep-Space Radar, Firefighting Gear, Intercontinental Ballistic Missiles, Medical Diagnostic Instruments, Military Communication Gear, Mining Equipment, Nuclear Power Plants, Oil Drilling Platforms, Television Broadcast Equipment.

Special Vehicle (Cascade)

This skill is a catch-all for specialized or unique vehicles whose operation doesn't readily fall under any other skill. Each cascade of Special Vehicle encompasses the operation and basic maintenance of a separate type of vehicle. The GM has final approval over all cascades of this skill.

Typical Actions: Maneuvers will be the most typical action for which this skill is used. As with all other vehicular maneuvers, these are simple actions (attributes dependent on the specific vehicle type, but most likely CDN).

Sample Cascades: Apollo Capsule, Caspian Sea Monster, Hot-Air Balloon, Hovercraft, Space Shuttle, Train, Zeppelin.

Remote Qualification: This qualification represents additional training on the vehicle covered by the cascade for which the qualification was purchased, enabling the character to remotely operate it. This qualification must be purchased separate for each cascade to which it applies.

Streetcraft

Streetcraft is a working knowledge of the ways in which urban areas are laid out and how their infrastructures and societies function. Navigation in unfamiliar cities falls under this skill, as does a general intuition for where a specific sort of place (e.g. game store, pizza parlor, hospital, Territorial Army armory) is likely to be located. In a deserted urban area, Streetcraft enables the character to scavenge food, water, shelter, and supplies. In a populated urban area, Streetcraft is used to avoid detection or evade pursuit.

Typical Actions: Stealthy movement through a crowd is a

simple action (PER), as is stealthy movement through an urban or suburban area (AWA). Street navigation is a simple action (AWA). Most survival- and scrounging-related applications of Streetcraft are detailed in Chapter Six.

Support Weapons

Support Weapons enables the character to use man-portable direct-fire heavy weapons, including grenade launchers, medium and heavy machine guns, flamethrowers, and rocket launchers. The basic skill provides proficiency only with “dumb” or unguided munitions.

Typical Actions: Attacks with support weapons are detailed in Chapter Five. Performing maintenance or repairs on one is a simple action (COG).

Guided Qualification: This qualification represents additional training in the targeting and use of advanced guided munitions, such as ATGMs and shoulder-fired surface-to-air missiles (SAMs). All uses of Support Weapons with this qualification are the same as those of the basic skill.

Tactics

The study of combat above an individual scale, up to roughly battalion-sized engagements (e.g. several hundred combatants on each side), is the focus of Tactics. While it does include a certain degree of theoretical knowledge of military science, Tactics primarily deals with a practical understanding of the correct actions to take (and the correct orders to give subordinates) before and during a specific combat situation. In addition, this skill is used for general military tasks that are common to virtually every uniformed serviceman, such as emplacing directional mines, digging fighting positions, and following the rules and customs of military courtesy. Characters who are not professional soldiers are still likely to pick up this sort of thing in the course of their studies, at least in an academic sense.

Typical Actions: Analyzing a battle as it unfolds, or determining the correct response to a given tactical situation, is a simple action (AWA if the character is involved in the fight, EDU for a textbook or sand table exercise). Determining the intentions of an enemy commander from available intelligence is a simple action (COG) opposed by the enemy’s own Tactics check (COG). Calling for or adjusting fire as a forward observer is a simple action (COG, also possible with the Artillery skill). Using tactical hand signals to communicate non-verbally is a simple action (COG). Ambushes are detailed in Chapter Five.

RANK

Militaries, law enforcement agencies, and some intelligence services use a hierarchy of rank to determine each member’s responsibilities and relative authority over other personnel. For the purposes of the Reflex System, the Rank trait is relevant mainly during character creation, as it determines the opportunities and resources available to a character through his position within this hierarchy. After the end of the world, Rank becomes much less relevant, as anyone can pin stars on his collar and style himself a general. Some play groups, particularly those with a strong military focus, may choose for their characters to recognize their pre-Collapse ranks among themselves, but this is not mandatory.

For game purposes, Rank comes from five different sources:

- Enlisted Military
- Commissioned Military
- Local Police
- National Police
- Espionage

As a character trait, Rank has a value and, in most cases, a rating. A character in a life path phase that grants Rank begins with a Rank value of 1. Unless otherwise specified, a character may have Rank from only one source at a time. If he receives Rank from another source, his Rank value resets to 1. Rank has a maximum value of 7 in all cases except Enlisted Military, which has a maximum value of 8.

Example: Max is an experienced police officer with Rank 4. He decides on a career change, resigning from his department and becoming a federal law enforcement agent. Max loses his existing Police Rank 4 and gains National Police Rank 1.

The following table depicts the Rank values and ratings for American military branches and police. Military aficionados will note that the high end of the commissioned military scale and the low end of the enlisted military scale have been compressed somewhat. In practice, we don’t expect to see many flag-grade officers running around the post-apocalyptic wasteland, and the lowest enlisted ranks are typically reserved for individuals with less training and experience than a starting PC.

LOCAL POLICE RANK

Value	Title
7	Chief
6	Superintendent
5	Captain
4	Lieutenant
3	Sergeant
2	Senior Police Officer
1	Police Officer

Table 3i: Local Police Ranks

National law enforcement agencies and intelligence agencies do not have titles directly linked to their rank structures. Characters with Rank from such sources have only a Rank value, not a rating.

SURVIVAL POINTS

The world of Twilight: 2013 is a harsh and unforgiving one. Most of the planet’s population died in the events of the last three years. Those who remain had some natural advantage, be it skill, preparation, or blind luck. Survival points (SPs) represent this latter quality, giving players a last-ditch mechanism with which to mitigate the impact of unfavorable die rolls.

At character creation, a new PC enters play with his maximum possible number of SPs. This maximum is dependent on his age, as discussed in the character creation rules (see p. 90).



<i>Commissioned Military Rank</i>				
Value	Air Force Title	Army Title	Marine Corps Title	Navy Title
7	General	General	General	Admiral
6	Colonel	Colonel	Colonel	Captain
5	Lieutenant Colonel	Lieutenant Colonel	Lieutenant Colonel	Commander
4	Major	Major	Major	Lieutenant Commander
3	Captain	Captain	Captain	Lieutenant
2	First Lieutenant	First Lieutenant	First Lieutenant	Lieutenant Junior Grade
1	Second Lieutenant	Second Lieutenant	Second Lieutenant	Ensign
<i>Enlisted Military Rank</i>				
Value	Air Force Title	Army Title	Marine Corps Title	Navy Title
8	Chief Master Sergeant	Sergeant Major	Sergeant Major	Master Chief Petty Officer
7	Senior Master Sergeant	Master Sergeant	Master Sergeant	Senior Chief Petty Officer
6	Master Sergeant	Sergeant 1st Class	Gunnery Sergeant	Chief Petty Officer
5	Technical Sergeant	Staff Sergeant	Staff Sergeant	Petty Officer 1st Class
4	Staff Sergeant	Sergeant	Sergeant	Petty Officer 2nd Class
3	Senior Airman	Specialist	Corporal	Petty Officer 3rd Class
2	Airman 1st Class	Private 1st Class	Lance Corporal	Seaman
1	Airman	Private	Private 1st Class	Seaman Apprentice

Table 3j: Military Ranks

USING SPS

You may spend one or more SPS for various effects:

Mitigate Injury

At the time your character suffers an injury (physical or psychological), you may spend one or more SPS. Each SP reduces the severity of injury to one hit location by one stage. For example, if your character suffers a serious wound to his left arm and a critical wound to his head, you may spend a total of 5 SPS to reduce both of these to slight wounds. This expenditure must occur when the injury occurs – it cannot be used retroactively to heal injuries previously suffered.

The GM may disallow this use of SPS in any situation in which no remotely plausible amount of luck will save a character from certain death. Likewise, if your character has willingly engaged in an act of self-sacrifice, you can't use SPS to escape the consequences of such a decision.

Boost Check

After making any task check, you may spend one or more SPS to add a +4 bonus to the check for each SP spent. Each SP spent in this manner counts as a separate bonus source, and normal skill rating limits on maximum separate bonuses still apply. Thus, if you make a check using a skill with a Professional rating, you can spend a maximum of 3 SPS to gain a trio of +4 bonuses.

Ignore Fatigue and Wound Penalties

Before making any task check, you may spend one SP to remove the effect of all of your character's fatigue and wound penalties from that check. Alternately, you may spend one SP at the beginning of a movement action to remove the effect of all of your character's fatigue wound penalties from that movement (other penalties such as encumbrance still apply).

Aid Treatment

After anyone makes a Medicine skill check involving treatment of your character, you may spend one or more SPS to add a +4 bonus to the check for each SP spent. Each SP spent in this manner counts as a separate bonus source, and normal skill rating limits on maximum separate bonuses still apply. This is the only instance in which you may spend SPS to affect the action of another player's character.

Reduce Threat Level

At any time, you may spend one or more SPS to reduce your character's threat level (see p. 160). Each SP spent lowers your character's threat level by 2 for the remainder of the scene.

EARNING SPS

You earn SPS during play for heroic or entertaining contributions to the game, either in or out of character. At the beginning of the campaign, the GM should choose one or more of the following guidelines for awarding SPS, depending on which player behavior he wants to reward. At no time may any character have more SPS than his age-limited maximum number.

Crisis Survival

At the conclusion of any combat scene in which any opponent used lethal force, each involved character earns one SP. The GM may extend this award to other scenes that did not involve combat but in which the PCs faced equally lethal threats.

Heroism

At the conclusion of any combat (or equivalently dangerous) scene in which a PC displayed conspicuous gallantry, that character earns one SP. "Conspicuous gallantry" is a relative term, given the heroics in which some players have their characters engage on a weekly basis. To avoid "SP inflation," we recommend setting the bar just below the level of heroism displayed by most Medal of Honor or Victoria Cross winners.

Entertainment

The point of the game is entertainment (at least, we hope you aren't using the Reflex System for business purposes). Accordingly, if a player manages to evoke an emotional reaction from the entire group through masterful roleplaying, that player earns one SP. Dramatic and inspiring monologues, in-character historical anecdotes, and poignant death scenes are all appropriate – in short, if the group collectively laughs, cries, or holds its breath, the player probably deserves an SP.

The GM may choose to withhold such awards in situations where the player, though technically playing his character as defined, is actively disruptive to the group as a whole. Asshattery should not be rewarded.

Design Note: SPs

Survival points are intended as a device for heroism and drama rather than stark realism. Their use can significantly change the tone of a game by allowing characters to succeed against implausible odds and survive extreme threats. Some players and GMs may find them antithetical to the harsh and unforgiving nature of the post-apocalyptic genre. Therefore, while SPs are not a Stage III rule, all participants should agree on their use.

If the GM chooses to use SPs, he should be aware that they can be a valuable commodity in a metagame sense. Accordingly, if he wants to reward specific player behavior, he should feel free to announce SP rewards (or implicit punishments) for actions that the basic guidelines don't cover. If some players have a habit of showing up 15 minutes late for every session, it's perfectly acceptable to announce that everyone who's at the table on time will receive an extra SP at the beginning of the session.

Story Contribution

If a player makes a significant contribution to the story, he earns one SP. Such contributions can come in many forms. In general, if the player makes a dazzling intuitive leap or displays a degree of fiendish creativity that results in a major plot development, he probably deserves an SP. This is especially true if the player accidentally takes a plot in a direction that, in the GM's private opinion, was better than what he originally had scripted...

As above, the GM may choose to withhold such awards for actions that technically create progress but are disruptive or otherwise detract from the group's enjoyment of the game.

Character Before Numbers

If a player deliberately puts his character at a numeric disadvantage for the sake of roleplaying or image, he earns one SP. This should be a fairly significant sacrifice that has no benefit in game mechanics. A character who takes off his body armor to dig ditches in tropical heat is gaining a mechanical benefit by avoiding increased fatigue accrual, so he shouldn't receive an SP. Conversely, a character who refuses to wear a helmet at any time because it rumples his perfect hair is putting himself at additional risk, so he may deserve an SP.

NPCs AND SPs

Standard NPCs (see p. 311) do not begin with SPs and cannot earn them.

Each star NPC (see p. 314) begins with the maximum amount of SPs allowed for his age. The GM may spend a star NPC's SPs for any of the same effects that a player may spend his PC's SPs. In addition, the GM may spend a star NPC's SPs to provide any standard NPC under the star NPC's direct command with an equivalent benefit. The star NPC must be present in the scene for the GM to use his SPs in this latter manner.

A star NPC receives one SP every time a PC in the same scene with him receives one.



CHAPTER 4

SURVIVORS

I know everyone in the platoon, but my assignment is with Third Squad. I rode with them on the nightmare that was the Kirkuk evacuation. After, when the captain was consolidating the survivors of what used to be a company, I thought he was gonna kick me out. But he just looked at me, shook his head, and told Sergeant Scott that the old rules on embeds were out the door and he'd better make sure I knew how to shoot.

So. Staff Sergeant Edward Scott. Six feet three inches of laconic Chicago beef, with only a slight limp to show that he had to re-learn how to walk after his HMMWV rolled into a canal in '03. Along with the PT, he picked up a Master's in Art History because he was bored with all the bed rest. He's got a downright scary ability to just look at someone and read his mind. I hate it when he does that.

His second is Sergeant Sharon Kim. Like me, she's a New Yorker. Unlike me, she had a sister in the Towers on 9/11. She went MP because it was the best way to get around the Army's prohibitions on women in ground combat. She's all delicate and fine-boned and still looks about sixteen if you can get her to laugh. When the Pasdaran overran us last fall, she beat two of them to death with an entrenching tool.

The platoon's real medic is over in First Squad, but Tom Dunivan is just as good, as far as I'm concerned. So what if he was a veterinary technician for bomb dogs? I think Sergeant Kim is the only one of us he hasn't saved at least once. Someday, I'll get him to tell me just how he lost those two fingertips.

Every squad has to have a sphinx. Ours is Vince Streeter. We picked him up on the third night of the Kirkuk fiasco. He claims to have been a cook in the RAF, but I've tasted the atrocity he claims is stew, and I don't know a lot of cooks who can rig demolitions. Sergeant Scott says the patch on his shoulder is RAF Regiment, which raises more questions than it answers.

"Big Jim" Yaudas and Marcelo *"Little Jim"* Jimenez are inseparable. They've been in the same squad since their first day of Basic. Hollywood could not have cast a more perfect buddy movie. Big Jim's from backwoods Wisconsin and Little Jim grew up in Miami. They rag each other constantly, but there's never any edge to it. When the sergeants have that crawly-back-of-the-neck feeling, they put the Jims on point. If they shut up, the shit's about to hit the fan.

Our local guide and interpreter is Adela Qasim. She's an Iraqi-born Kurd whose family's had an on-again off-again CIA connection for two decades now. Seems like she has a cousin in every village for a hundred miles around, and they typically get more done for us than the national "authorities" do.

The Jims won't let me forget Demon. She's a dirty white raggedy dog-thing that their old platoon adopted before things came apart. When we can spare fuel for the Stryker, she rides on top like it's just a big pickup truck.

Then there's me. The captain says he keeps me around because I was a ham radio operator and can push a soldering iron, but I still like to pretend I'm a war correspondent. B.A. Journalism, NYU '06, for whatever that's worth. It got me over here, blogging the war on embedded-monkey.com when we still had an Internet. Now I'm down to paper and pens and a dozen rolls of 35mm film in a rusty ammo can. I'm a big-time newsman, baby.

A human being should be able to change a diaper, plan an invasion, butcher a hog, conn a ship, design a building, write a sonnet, balance accounts, build a wall, set a bone, comfort the dying, take orders, give orders, cooperate, act alone, solve equations, analyze a new problem, pitch manure, program a computer, cook a tasty meal, fight efficiently, die gallantly. Specialization is for insects.
— Robert A. Heinlein, *Time Enough for Love*

Every story needs a hero – or at least a protagonist. This chapter builds on the basic systems and character traits introduced in Chapter Three, providing step-by-step instructions for the creation of player characters in the Reflex System.

CHARACTER CREATION

Character creation in the Reflex System takes you from a rough initial concept of the character you want to play to a fully-detailed profile of the character's capabilities and personal history. This process has five basic steps, as outlined in the adjacent sidebar. A character creation worksheet is located in the appendix (see p. 331).

Stage II Character Creation Summary

Step Zero: Generate a character concept.

Step One: Generate starting attribute values.

Step Two: Select background skills.

Step Three: Pass through life path phases until done. For each:

- 3a. Check desired phase's prerequisites.
- 3b. Spend professional skill points (as granted by phase) for professional skills or attributes.
- 3c. Spend personal skill points (usually one per year; some phases modify) for personal skills or attributes.
- 3d. If 30+ years old at end of phase, check for aging effects.
- 3e. If phase grants Rank, check for promotion.

Step Four: Apply Last Year life path phase.

- 4a. Check desired phase's prerequisites.
- 4b. Spend professional skill points (as granted by phase) for professional skills or attributes.
- 4c. Accrue rads.
- 4d. If phase is Twilight Warfare, check for promotion.
- 4e. Gain equipment dice for team equipment.

Step Five: Calculate derived values.

- 5a. Wound thresholds.
- 5b. Fatigue thresholds.
- 5c. Movement speeds.
- 5d. Encumbrance thresholds.
- 5e. Nutritional requirements.
- 5f. Contacts.
- 5g. Survival Points (if option is in use).

Step Six: Gear up (see Chapter Seven).

- 6a. Select personal equipment as determined by encumbrance limit.
- 6b. Pool equipment dice with other players and roll for team equipment.

Stage III Character Creation Summary

Step Zero: Generate a character concept.

Step One: Generate starting attribute values.

Step Two: Select background skills.

- 2a. Buy advantages and acquire disadvantages.

Step Three: Pass through life path phases until done. For each:

- 3a. Check desired phase's prerequisites.
- 3b. Spend professional skill points (as granted by phase) for professional skills or attributes.
- 3c. Spend personal skill points (usually one per year; some phases modify) for personal skills or attributes.
- 3d. Buy advantages and acquire disadvantages, if allowed.
- 3e. If 30+ years old at end of phase, check for aging effects.
- 3f. If phase grants Rank, check for promotion.
- 3g. If phase allows, and if desired, roll on the Hazardous Duty Table.

Step Four: Apply Last Year life path phase.

- 4a. Check desired phase's prerequisites.
- 4b. Spend professional skill points (as granted by phase) for professional skills or attributes.
- 4c. Accrue rads.
- 4d. If phase is Twilight Warfare, check for promotion.
- 4e. Gain equipment dice for team equipment.

Step Five: Calculate derived values.

- 5a. Wound thresholds.
- 5b. Fatigue thresholds.
- 5c. Movement speeds.
- 5d. Physique.
- 5e. Encumbrance thresholds.
- 5f. Nutritional requirements.
- 5g. Contacts.
- 5h. Survival Points (if option is in use).

Step Six: Form a team (if option is in use).

Step Seven: Gear up (see Chapter Seven).

- 7a. Select personal equipment as determined by encumbrance limit.
- 7b. Pool equipment dice with other players and roll for team equipment.

STEP ZERO: CHARACTER CONCEPT

While you can to jump right into the mechanics of building your character, taking a few minutes to scribble some notes on the intended final result can be helpful in later decision-making. Answers to the following questions may be particularly useful:

- What's your general character concept? How would this character's peers describe him in a sentence or two? What should he be capable of doing at the beginning of play? A character's capabilities depend on the life path phases you select, which in turn model the personal and professional choices that he has made throughout his history. Accordingly, you may want to flip through the following pages and pick out a few appealing phases that provide most of the skills that you want your character to have.

- What's your character's background? Character creation begins in your character's 18th year and follows his progress through his entire adult life up to the start of play. The first choices you make will define your character as he stands on the cusp of maturity, and will determine his future options.

- How old is your character? If you're familiar with **Twilight: 2000 2.2**, you'll note that the Reflex System has no random mechanic for determining when the character's life path is over and the Twilight War begins. The character's age is entirely up to you (subject to your GM's preferences and the rules for death through advanced age). Older characters accrue more skill points over their lifetimes, but suffer attribute deterioration from aging and are less able to improve their skills through experience once play begins.

- How did your character survive the Last Year? If you're playing in the default setting of **Twilight: 2013** (as described in Chapters One and Two), 75% to 90% of the human race has died in the past year. What qualities set your character apart from the now-silent masses and made him a survivor? What choices, compromises, and sacrifices did he make in order to keep himself alive through the Last Year? How do these weigh on him now?

- What sort of campaign does your GM have in mind? Most GMs have at least some expectations regarding the stories they want to tell. It's best for all involved parties if the characters somehow fit into this campaign concept. If the game is intended to focus on the post-war rebuilding of Paris, it won't have much room for a bloody-handed Chechen separatist who doesn't speak a word of French.

- What are the other players' character concepts? Team play is important, especially for a post-apocalyptic environment in which the characters can't count on outside resources. An entire team of heavily-armed veteran infantrymen can overcome most combat challenges, but without medical support, they're likely to lose limbs when relatively minor injuries become infected. To ensure that everyone designs a character with at least some necessary capabilities, you and your fellow players may find it helpful to collectively discuss the needs of the team.

STEP ONE: ATTRIBUTES

Every character has ten attributes. The recommended method of generating starting values for the first eight – the mental and physical attributes – is random. These initial values represent your character's luck in the genetic lottery, as well as his pre-adult development. Various life path phases will give you the opportunity to increase selected attributes later in the character creation process.

Design Note: **Attribute Minimums**

Many life path phases require minimum attribute values. 98-pound weaklings don't get into special operations units, nor do dunces succeed in graduate school. You may wish to take a quick look through the life path phases (see p. 97) to see what minimum values your character will need. Some life path phases provide the opportunity to raise attribute values – particularly institutes of higher learning, which can raise Education. However, if possible, you should get most minimum attribute values out of the way now.

Roll 2d6–1 seven times, recording each die result. Then allocate the seven results as you see fit among Awareness, Cognition, Coordination, Fitness, Muscle, Personality, and Resolve.

If the total of these seven values is less than 40, add points as you see fit to bring the total up to 40. You may not increase any attribute above 8 in this manner.

Assign a default value of 6 to Education to represent a high school diploma or the equivalent. You may voluntarily remove up to 5 points from Education, applying each removed point to another attribute. You may not increase any attribute above 10 in this manner.

Alternate Attribute Generation

If you want a little more control over your character, you may eschew random attribute generation in favor of point allocation. Start with a pool of 52 attribute points and distribute them as you see fit between the four physical and four mental attributes, with at least one point in each. At this stage of character creation, Education cannot have a value higher than 6 and no other attribute can exceed 10.

This point pool produces a character of regular capability, just slightly better than the statistical average for random generation. If the GM so desires, he may mandate a different point allocation. We recommend 48 points for green characters, 56 points for experienced ones, 60 points for veterans, and 65 points as an elite upper limit.

Starting CUF and OODA

Your character's initial CUF value is equal to one-half his Resolve. His initial OODA value is equal to one-half his Awareness. Once these starting values are established, they increase (and decrease) independently of Resolve and Awareness.

STEP TWO: BACKGROUND SKILLS

Before starting your character's life path, you must choose his *background skills*. These skill choices describe his experiences prior to adulthood (age 18). Distribute (9 + Cognition) skill points among the following skills, with no more than 3 points in any skill except each chosen Language cascade.

You must allocate at least 3 points to one Language cascade. All points placed in any Language cascade count double during this step (and only this step). Any Language cascade receiving at least 3 points (doubled to 6) is a native language (see p. 84).

If you wish, you may purchase any of the listed qualifications for 3 points each. No other qualifications are available during this step.

Agriculture	Hand-to-Hand/Grappling
Animal Husbandry	Hand Weapons/Grappling
Aquatics/SCUBA	Instruction
Archery	Intimidation
Artisan (any cascade)	Language (any cascade)
Aviation	Longarm
Climbing	Mechanics
Command	Medicine
Computing/Programming	Mounts
Construction	Performance (any cascade)
Deception	Persuasion
Driving/Heavy, /Motorcycle	Security
Electronics	Sidearm
Fieldcraft	Streetcraft

STEP THREE: LIFE PATH

No character springs fully-formed into being in mid-2013. A lifetime of experiences combines to make him what he is. The Reflex System models this through a *life path* character creation system that walks you through your character's life a few years at a time, gradually improving his capabilities at the same time that you act as his biographer.

The character's life path after his 18th birthday is divided into *phases*. Each phase describes a particular activity to which he dedicates one or more years of his life. From the character's perspective, the act of entering a life path phase represents career change or other major turning point in his life. Accordingly, some sort of logical progression between phases may help you in describing your character's history.

It's perfectly acceptable for a character to pass through the same life path phase multiple times. In the real world, many people stay in the same career (though not necessarily with the same employer) for decades. Unless otherwise stated in an individual life path phase's description, a character may repeat any phase indefinitely, so long as he continues to satisfy its prerequisites. Your character continues to gain the benefits of a phase in each pass through it.

Life path phases (see p. 97) have several traits which describe their effects on a character who enters them. The remainder of this section describes these traits.

Prerequisites

When selecting a life path phase, you must first determine if your character is qualified to enter it. Schools have entrance exams, and many professions require some sort of training, experience, or native capability before a new hire can start on the job. Appropriate life path phases represent this with requirements which the character must meet to enter the phase for the first time. The most common prerequisites are minimum attribute values and skill values. Some phases may have additional special requirements, such as a minimum or maximum age, a lack of specific physical handicaps, or one or more appropriate degrees from the Education attribute.

Unless noted as "entry only", prerequisites also govern a character's ability to repeat a phase once he's entered it. If some effect (i.e. age or occupational hazard) impacts a character so that he no longer meets a phase's prerequisites, he may not repeat that phase again after applying the roll's effects.

Two prerequisites serve as shorthand for an array of disqualifying factors. "No handicaps" indicates that the character must have at least normal sensory acuity and must not suffer from any medical conditions that prevent normal athletic activity. "Good moral character" means that the character must not have a criminal record, nor may he have any psychological condition that affects his ability to function in normal society.

Length

Some life path phases take longer than others. This is the phase's length in years. Add this value to the character's age after each pass through the phase.

Benefits

These are the benefits that the character derives from this phase. The most common benefits are skill points. The skills listed in each phase's Benefits trait are called *professional skills* to differentiate them from *personal skills* (see following). When a phase grants skill points, you may allocate these points among any of the phase's professional skills, subject to any special limitations in that phase.



You may purchase any available qualifications for the phase's professional skills at a cost of 3 skill points per qualification. Available qualifications are listed next to each appropriate professional skill. For example, "Driving/Heavy, /Tracked" indicates that the character may acquire the Driving/Heavy or Driving/Tracked qualification (but not the Driving/Motorcycle or Driving/Remote qualification).

Personal Skills

Most occupations leave a character enough free time for some hobbies or other personal development pursuits. The life path system reflects this with *personal skill points*, which are additional skill points on top of the professional skill points provided by the phase itself. Unless otherwise specified in the phase's Special Rules entry, each year of a life path phase provides 1 personal skill point (for example, a phase that lasts 4 years provides 4 personal skill points). You may not use personal skill points to raise any skill above a value of 15. You may spend personal skill points on any skill *except* Artillery, Gunnery, Special Equipment, Special Vehicle, and Support Weapons. Any restrictions on spending a phase's professional skill points do not apply to personal skill points.

In addition, you may spend 5 personal skill points to increase any attribute by 1. If necessary, you may "save up" personal skill points over multiple phases to make such a purchase. You may not raise Education above 7 in this manner, nor any other attribute above 9.

Attributes

Many phases involve work that naturally develops a character's innate capabilities. A phase's Attributes trait lists any attributes that, during that phase, you can increase with professional skill points. You may spend 4 professional skill points to raise one

listed attribute by 1 point (6 points if the new value is over 10). You can make this expenditure for one or more listed attributes, but you may not increase any attribute by more than 1 point per pass through a phase.

Age

The aging process is rarely graceful. Once past their prime, characters begin to suffer gradual deterioration of their capabilities. The mind isn't the first thing to go, but we don't remember what is.

Whenever a character reaches or exceeds a *threshold age* during a phase, you must make one or more aging rolls against the possibility of attribute loss. The following table defines threshold ages. Roll 1d10 for each attribute. Your character loses 1 point in each attribute for which the corresponding die result is *less than or equal to* the listed number.

If your character reached more than one threshold age during a single phase, use the greatest threshold for all aging rolls. For example, if your character turned 93 during a 4-year phase, he reached the 93, 92, 91, and 90 thresholds. You would roll for aging effects using the row for age 93.

Age	AWA	CDN	COG	EDU	FIT	MUS	PER
30	—	1	—	—	—	—	—
35	—	2	—	—	—	1	—
40	1	3	—	—	—	2	—
45	2	4	—	—	—	3	—
50	3	5	—	—	1	4	—
55	4	6	—	—	2	5	—
60	5	7	1	—	3	6	—
65	6	8	2	—	4	7	—
70	7	9	3	—	5	8	1
75	8	10	4	—	6	9	2
80	9	10	5	1	7	10	3
84	10	10	6	2	8	10	4
87	10	10	7	3	9	10	5
89	10	10	8	4	10	10	6
90	10	10	9	5	10	10	7
91	10	10	10	6	10	10	8
92	10	10	10	7	10	10	9
93	10	10	10	8	10	10	10
94	10	10	10	9	10	10	10
95+	10	10	10	10	10	10	10

Table 4a: Age Affects

Example: At the end of his current phase, Rudy is 57. The phase was 4 years long; Rudy went from age 53 to age 57 during that time, crossing the age 55 threshold. The 55-year-old age threshold indicates that Rudy has a chance to lose Awareness (4 or less), Coordination (6 or less), Fitness (2 or less), and Muscle (5 or less). Rudy's player rolls 8 for Awareness, 5 for Coordination, 2 for Fitness, and 7 for Muscle. Rudy's Coordination and Fitness each decrease by 1.

Rudy's next phase is 2 years long. Over these 2 years, Rudy ages from 57 to 59. He didn't cross the next age threshold – 60 – during this phase, so no aging rolls are required.

Death and Taxes

If your character's value in any attribute becomes 0 as a result of aging, he dies. You must start the character creation process over. Perhaps you should not have tried to make a 132-year-old Navy SEAL.

Special Rules

Some life path phases have effects that don't fall into the standard categories. If a phase has any such effects, they appear in its Special Rules entry.

Promotion

At the end of every phase that can grant Rank but doesn't provide a fixed Rank value, you must determine whether your character earns a promotion. This requires an attribute check with a penalty equal to 2 plus your character's current Rank. The attribute used depends on the type of Rank your character has:

Rank Type	Attribute
Commissioned Military	Personality
Enlisted Military	Resolve *
Local Police	Cognition
National Police	Education
Espionage	highest mental attribute

* Substitute Cognition if the character is in the Engineering, Intelligence, Medical, or Support arm.

Table 4b: Rank Test Attributes

With success, the character's Rank value increases by 1. With failure, it stays the same. Some life path phase benefits may affect promotion checks.

Example: Ed is serving in the Infantry arm and has Enlisted Military Rank 3. At the end of his current phase, he must succeed in a Resolve check (TN –5) to be promoted to Rank 4.

Enlistment and Commissioning

Military rank structures are divided between *commissioned* and *enlisted* personnel. Commissioned officers serve in command roles, while enlisted men and women perform the basic tasks of the force. Enlisted personnel of higher Rank (sergeants or the naval equivalents) are referred to as *non-commissioned officers* (NCOs) and usually have supervisory duties over lower-ranking enlisted troops.

According to both theory and military law, any commissioned officer outranks any enlisted individual, regardless of their relative Rank values. In practice, a high-ranking NCO is likely to have years more practical experience, and a low-ranking officer understands that his sergeant's "suggestions" can make or break his career.

A commissioned character cannot become enlisted; any offense grave enough to strip him of his commission would also result in discharge from the military, if not imprisonment or execution. However, an enlisted character can attain a commission if he meets the prerequisites. In such an event, he loses his previous Military Enlisted Military Rank value and begins with a new Military Commissioned Military Rank value as dictated by the manner in which he earns his commission. In military slang, such commissioned officers are known as *mustangs*.

As a character advances through military ranks, he receives varying levels of leadership training. A character with Commissioned Military Rank 1+ adds Command and Instruction to the list of professional skills for all military phases. A character with Enlisted Military Rank 4+ adds Command, Instruction, and Intimidation.

STEP FOUR: THE LAST YEAR

A character's regular life path phases follow his life up to the beginning of the Last Year: mid-2012, give or take a few months. After completing his final regular life path phase, he must then spend a single year in one of the Last Year life path phases (see p. 119).

The Last Year phase is similar to a normal life path phase, but has two additional traits. *Rads* indicates how much of a lifetime radiation dose the character accrues during the nuclear exchanges of the Last Year. *Equipment Dice* determines how much group equipment the character was able to acquire (through whatever means) during the Last Year. Chapter Seven contains rules for acquiring group equipment with equipment dice (see p. 201).

STEP FIVE: DERIVED VALUES

A character's attributes at the beginning of play determine several of his other traits. This step of character creation involves the calculations necessary to arrive at these *derived values*.

Wound Thresholds

Any given source of physical harm has a chance of inflicting injury ranging from insignificant to lethal, based on the amount of energy it delivers and the skill or luck with which it's placed. A character's *wound thresholds* determine how much damage an attack (or accident) must do in order to inflict an injury of a given severity.

A character's *base wound threshold* is equal to one-quarter the sum of 10, his Muscle value, and double his Fitness value – or, in mathematical terms, $(10 + \text{MUS} + [2 \times \text{FIT}]) / 4$. A character has six distinct body locations, each of which can sustain injury independently. Wound thresholds are calculated differently for these locations, as follows:

Location	Slight	Moderate	Serious	Critical
Head	1	base / 2	base	base x 1.5
Torso	1	base	base x 2	base x 3
Limbs	1	base	base x 1.5	base x 2

Table 4c: Wound Thresholds

Example: Pete has Fitness 6 and Muscle 9. This makes his base wound threshold 8 $([10 + 6 + 6 + 9] / 4)$. Pete's head has wound thresholds of slight 1, moderate 4, serious 8, and critical 12. His torso has wound thresholds of slight 1, moderate 8, serious 16, and critical 24. Each of his arms and legs has wound thresholds of slight 1, moderate 8, serious 12, and critical 16.

Fatigue Thresholds

As with injury, the Reflex System measures fatigue in stages. A character's fatigue thresholds are calculated as follows, with each threshold representing a number of hours of hard work (see p. 172).

Fatigue Threshold	Value
Slight	Fitness / 2
Moderate	Fitness
Serious	Fitness + (Resolve / 2)
Critical	Fitness + Resolve

Table 4d: Fatigue Thresholds

Stage I: Wound Thresholds

Under Stage I rules, a character does not have separate body locations that can sustain injury independently. For the sake of speed, his total degree of bodily harm is aggregated. If Stage I rules are in use, each character has a single set of wound thresholds equal to those that his torso would have in Stage II+ play.

Example: Pete has Fitness 6 and Muscle 9, which makes his base wound threshold 8. Pete has a slight wound threshold of 1, a moderate wound threshold of 8, a serious wound threshold of 16, and a critical wound threshold of 24.

Example: Pete has Fitness 6 and Resolve 4. He has a slight fatigue threshold of 3, a moderate fatigue threshold of 6, a serious fatigue threshold of 8, and a critical fatigue threshold of 10.

Movement Speeds

All characters don't move at the same pace; physical fitness has a significant impact on movement speed. Speed in combat is regulated by the Muscle attribute, while Fitness governs travel speed. A character's speeds for various modes of movement are calculated as follows:

Speed	Value
Sprint	10 + (Muscle / 2) meters per action
Run	8 + (Muscle / 3) meters per action
Trot	6 + (Muscle / 4) meters per action
Walk	4 meters per action
Stagger	2 meters per action
Crawl	1 meter per action
Travel Speed	3 + (Fitness / 3) kilometers per hour

Table 4e: Movement Speeds

Example: Pete has Muscle 9 and Fitness 6. In combat, he sprints at $(10 + 4.5)$ 15 meters per action, runs at $(8 + 3)$ 11 meters per action, and trots at $(6 + 2.25)$ 8 meters per action. When traveling, he moves at $(3 + 2)$ 5 kilometers per hour.

Physique

Even after the Last Year, everyone's physical form isn't equal. Some characters have the metabolisms of weasels, while others will always be carrying ten extra kilos unless they're starving to death. Build, height, and weight are all descriptive factors under Stage I and II rules. If you want them to have direct game effects, use the Stage III character creation options (see sidebar). Otherwise, choose a height and weight that fit your mental image of the character.

Carrying Capacity

The amount of weight a character can carry and still fight or move is dependent on his physical characteristics. Encumbrance (see p. 206) depends on more than just carried weight, but the Reflex System does define four thresholds for a character's load.

- **Combat Load:** A character's combat load is the threshold weight above which he begins to suffer slight but noticeable degradation of physical performance. This is equal to 10 kg plus the character's Muscle.

Stage III Option: Physique

For game purposes, characters come in four basic “body styles.” Choose one:

- **Slight** characters seem incapable of gaining excess weight, regardless of how much they eat. This isn’t a concern for most people in 2013, but Slight individuals are the most likely to be close to their prewar weights. Intense physical conditioning will put enough muscle mass on any character to raise his body weight out of this category, so a Slight character may not have Muscle or Fitness in excess of 10.

- **Average** characters are what was known as “height-weight proportionate” in prewar diet literature and personals ads. This is what most cultures consider a normal, healthy build for characters who aren’t dedicated athletes.

- **Large** characters have slow metabolisms and tend to accumulate excess weight whenever they’re receiving more than the bare minimum of nutrition. Despite the privations of the Last Year, many Large characters are still in circulation, though all but the most grotesquely obese now look solid rather than soft. A Large build simply can’t withstand intense endurance conditioning, so no character with Fitness of 12 or higher can be Large.

- **Athletic** characters have highly efficient metabolisms, making them stronger and more resilient than would otherwise be suggested by their size. They’re heavier and stronger than they look because of their higher-than-average muscle density, but this saddles them with correspondingly higher nutritional requirements. An Athletic build assumes that a character has made a certain investment in physical conditioning. A character must have a total Fitness and Muscle of 16 or higher, with neither attribute below 5, to be Athletic.

Height

To randomly determine a character’s height, roll 4d20 and add 138 for a male or 120 for a female. Then divide the total by 100. The result is the character’s height in meters. Alternately, choose a height for the character that falls within reasonable limits. The average height of an adult human is 1.8m for a male or 1.62m for a female, with a range of plus or minus about 0.4m.

Weight

A character’s weight is a factor of his body proportions – in other words, his height and build. To determine weight in kilograms, multiply the character’s height by itself, then by a factor dependent on his build:

Build	Multiplier
Large	27
Athletic	21
Average	19
Slight	14

- **March Load:** A character’s march load is the threshold above which his ability to maneuver in a crisis situation is significantly degraded – in other words, the weight with which he can march but not fight well. This is equal to 11 kg plus the character’s Muscle and Fitness.

Example: Pete has a Large build. A 4d20 roll of 53 makes him a little above average height at $([138 + 53] / 100)$ 1.91 meters tall. This gives him a weight of $(1.91 \times 1.91 \times 27)$ 98 kilograms.

GM Hint: Physique

The system shown here may give characters lower weights than would be expected for the same heights and builds in modern American society. This is intentional. **Twilight: 2013** assumes that everyone has endured a year of, at best, short rations, and most of the excess weight has been pared off by malnutrition and increased levels of activity. For play in a setting that hasn’t gone through the Last Year, increase the weight multipliers to 30, 23, 21, and 16.

From a game mechanics perspective, weight and build have a direct impact on carrying capacity, with Athletic characters receiving the most benefit because of their greater muscle density. The offsetting factor for this is their higher caloric requirement. If you choose to simplify your game by not tracking food consumption, this gives Athletic characters an unbalanced numerical advantage, which may disgruntle some players whose characters are coming up short on encumbrance. Therefore, we recommend making everyone Average if food supplies aren’t a factor in your games.

Stage III Option: Carrying Capacity

- **Combat Load:** A character’s combat load is the threshold weight above which he begins to suffer noticeable degradation of physical performance. Multiply his weight by a percentage equal to $(20 + \text{Muscle})$. If he has an Athletic build, increase this percentage to $(26 + \text{Muscle})$.

- **March Load:** A character’s march load is the threshold above which his ability to maneuver in a crisis situation is significantly degraded – in other words, the weight with which he can march but not fight well. Multiply his weight by a percentage equal to $(26 + \text{Muscle} + \text{Fitness})$. If he has an Athletic build, increase this percentage to $(35 + \text{Muscle} + \text{Fitness})$.

- **Emergency Load:** A character carrying his emergency load or more is limited to short-term physical exertion. Multiply his weight by a percentage equal to $(55 + \text{Muscle} + \text{Fitness} + \text{Resolve})$. If he has an Athletic build, increase this percentage to $(72 + \text{Muscle} + \text{Fitness} + \text{Resolve})$.

- **Damaging Load:** A character lifting weight equal to or in excess of this value will automatically suffer injury. Double his emergency load threshold.

Example: Pete has a Large build, weighs 98 kilograms, and has Muscle 9, Fitness 6, and Resolve 5. His combat load threshold is equal to 29% of his weight, or 28 kilograms. His march load threshold is equal to 41% of his weight, or 40 kilograms. His emergency load threshold is equal to 75% of his weight, or 74 kilograms. His damaging load threshold is equal to twice his emergency load threshold, or 148 kilograms.

- **Emergency Load:** A character carrying his emergency load or more is limited to short-term physical exertion. This is equal to 21 kg plus the character’s $(\text{Muscle} \times 2)$, Fitness, and Resolve.

Stage III Option: Nutritional Requirements

To determine a character's daily caloric requirement, multiply weight by 10, then add 1,200 for a male character or 900 for a female character. If a character has an Athletic build, increase this requirement by 25%. For the sake of sanity, it's fine to round off to the nearest multiple of 100.

Example: Pete has a Large build and weighs 98 kilograms. He requires $(98 \times 10) + 1,200$ 2,180 calories a day, rounded to 2,200.

• **Damaging Load:** A character lifting weight equal to or in excess of this value will automatically suffer injury. This is equal to twice his emergency load threshold.

Example: Pete has Muscle 9, Fitness 6, and Resolve 5. His combat load threshold is equal to $10 + 9$, or 19 kg. His march load threshold is equal to $11 + 9 + 6$, or 26 kg. His emergency load threshold is equal to $21 + (9 \times 2) + 6 + 5$, or 50 kg. His damaging load threshold is equal to 2×50 , or 100 kg.

Nutritional Requirements

After the Last Year, no one takes a steady and plentiful food supply for granted. Nutrition is a topic of concern for every survivor. A character receiving insufficient rations will suffer fatigue, followed by attribute reduction and eventual death. The rate at which a character starves depends on physical condition, age, and gender.

A character's base starvation threshold - the length of time he can go without food and avoid attribute reduction - depends on his age:

Age	Starvation Threshold
Under 20	6 days
20-29	7 days
30-34	8 days
35-39	9 days
40-44	10 days
45-49	9 days
50-59	8 days
60-64	7 days
65-69	6 days
70-74	5 days
75+	4 days

Table 4g: Starvation Thresholds

Reduce the threshold by 1 day for every physical attribute with a value between 8 and 11, and by 2 for every physical attribute with a value of 12 or greater. This cannot reduce the threshold below 3 days. Finally, for a female character, multiply the threshold by 1.2.

For Stage III, if a character has an athletic build, multiply the threshold by 0.75.

Contacts

No one lived in a vacuum prior to the Twilight War. All but the most unfortunate and isolated of characters has a list of friends and acquaintances upon whom he can call for help of various forms. The Reflex System considers such NPCs to be *contacts*.

Every character has a base number of contacts equal to his Personality value, plus one for every full 10 years of age. For every pass through a military combat arm phase, subtract one contact. Military characters tend to have other military personnel as most of their contacts, many of whom are likely to be dead by mid-2013. For this purpose, the Insurgency and PMC phases are considered to be military combat arm phases.

Each contact must be classified in one of four categories:

• **Information:** An information contact has access to either specialized knowledge in a narrowly-focused area of interest or cursory knowledge of a wide variety of topics. Many information contacts are still actively in the business of gathering data in their chosen field, which requires them to have access to some sort of personal or electronic network.

• **Reinforcement:** A reinforcement contact has at least some combat skill and is willing to directly assist the character in a fight. Reinforcement contacts tend to have some existing bond of shared experience with the character that makes them willing to risk life and limb on his behalf, but some may just be bloody-minded mercenaries. A character may have a maximum number of reinforcement contacts equal to his CUF - 3.

• **Service:** A service contact knows a skill which he is willing to apply for the character's benefit. This may be a rare specialty or a common but highly-valued capability. Service contacts often are capable of acting as instructors, though they aren't automatically inclined to take on short-term apprentices.

• **Trade:** A trade contact is willing to provide the character with material help, usually in the form of a loan, low-priced sale, or outright gift of supplies or equipment. This requires most trade contacts to be materially wealthy in some form, or at least to know where the best deals can be found or where the supply caches are buried.

In addition, each contact also must be assigned a quality rating. Roll 1d20 for each contact:

Die Roll	Contact Quality
1-4	Green
5-11	Regular
12-16	Experienced
17-19	Veteran
20	Elite

Table 4h: Contacts

For now, this is all that needs to be done with contacts. Opportunities will arise during play to further define these contacts and call upon them for assistance (see p. 314).

Example: Aaron has Personality 9 and is 28 years old, which gives him a base of 11 contacts. His brief post-college career as a bass guitarist involved one pass through the Entertainment phase, which granted him one additional contact. However, he subsequently spent several years in the Army, making three passes through various infantry careers. This makes his total number of contacts 9.

With CUF 6, Aaron can have up to 3 reinforcement contacts. He

decides to take the maximum number allowed, then spread his remaining contacts evenly across the other three categories. After he rolls for each contact's quality rating, Aaron's contact list looks like this:

- 2 Information (1 experienced, 1 veteran)
- 3 Reinforcement (1 green, 2 regular)
- 2 Service (2 experienced)
- 2 Trade (2 veteran)

Survival Points

As discussed in Chapter Three (see p. 67), Survival Points are an optional rule for ensuring character longevity. If your group is using this rule, your character's maximum survival point pool (i.e. the maximum number of SPs he may have in reserve at any one time) is determined by his age, as per the following table:

Age	Max SPs
18 or younger	12
19	11
20-21	10
22-24	9
25-28	8
29-33	7
34-39	6
40-46	5
47+	4

Table 4i: Survival Points

CIVILIAN LIFE PATH PHASES

EDUCATION PHASES

Many careers require some measure of higher education for success, if not for entry. The following life path phases represent dedicated study at an institute of higher learning.

Graduate University

After completing undergraduate studies, characters who want an advanced degree must enter graduate school (otherwise known as postgraduate or research school).

Prerequisites: Attributes: Cognition 8+, Education 8+.

Length: 2 years.

Benefits: Professional skill points equal to Cognition, no more than 3 points in any one skill.

- Agriculture
- Animal Husbandry
- Command
- Construction
- Computing/Programming
- Forensics
- Instruction
- Language (any cascade)
- Performance (any cascade)
- Persuasion
- Tactics

Attributes: Cognition, Education, Personality, Resolve.

Special Rules: None.

Design Note: Higher Education

Many Education life path phases are arranged as per the American model of higher education. A character's Education attribute value is roughly equal to half the number of years of formal schooling he's received. However, the Education phases through which he passes determine his adult educational history. The following are suggestions for representing certain degree programs:

- Associate degree: one pass through Undergraduate University.
- Bachelor's degree: two passes through Undergraduate University or one pass through Service Academy.
- Master's degree: bachelor's degree followed by one pass through Graduate University.
- Doctorate: master's degree followed by one or more additional passes through Graduate University.
- Doctor of Medicine (M.D.): bachelor's degree followed by one pass through Medical School.
- *Juris Doctor* (J.D.): bachelor's degree followed by one pass through Law School.

GMs should feel free to modify these models for characters coming from other nations' educational systems.

Law School

Prospective lawyers must complete a specialized graduate study program to prepare themselves for legal careers.

Prerequisites: Attributes: Cognition 8+, Education 8+, Resolve 8+.

Length: 3 years.

Benefits: Increase Education by 1.

Gain 2 skill points in Deception, 2 skill points in Persuasion, and 1 skill point in any one of the character's native Language cascades. In addition, (gain Cognition - 3) points of professional skills, no more than 4 total in any one skill.

- Computing
- Deception
- Forensics
- Instruction
- Intimidation
- Language (any cascade)
- Performance (Public Speaking)
- Persuasion

Attributes: Cognition, Personality, Resolve.

Special Rules: Law School grants only 1 personal skill point. In addition, a character may only make one pass through this phase.

Medical School

Becoming a doctor requires years of intensive study. An undergraduate education is only the first step. Medical school consumes at least another four years of a student's life. The first two years require more classroom work, while the latter two years involve hands-on clinical study in a teaching hospital.

Prerequisites: Attributes: Cognition 8+, Education 8+, Resolve 8+. Degrees: 2 in anatomy, biology, chemistry, or related fields of study.

Length: 4 years.

Undergraduate Officer Training

A character may elect to enter military officer training during his undergraduate career via the American Reserve Officer Training Corps or another nation's analogous program. For each pass through the Undergraduate University phase, the character loses 1 professional skill point and 1 personal skill point. In exchange, he receives 1 point each in Command and Tactics.

Upon completion of two passes through Undergraduate University, the character automatically gains Commissioned Military Rank 1 and the training package for his chosen branch of service (see p. 109). He *must* spend the next 4 years in his branch of service unless he becomes unable to meet the prerequisites of any phase in that branch.

The character's second pass through Undergraduate University counts as military service for purposes of entering the Twilight Warfare phase.

Benefits: Increase Education by 1.

Gain 5 points in Medicine, plus professional skill points equal to 2 + Cognition. No more than 6 total points in any one skill, except Medicine, which may be receive up to 8 total.

- Command
- Computing
- Instruction
- Intimidation
- Medicine/Surgery, /Veterinary
- Persuasion/Psychiatry
- Special Equipment (any medicine-related cascade)

Attributes: Cognition, Resolve.

Special Rules: Medical school grants only 2 personal skill points. A character may only make one pass through this phase.

Trade School

More focused than an undergraduate university, a trade school teaches specific technical skills with a minimum of attention to general education.

Prerequisites: Attributes: Cognition 5+, Education 6+.

Length: 2 years.

Benefits: Gain (2 + Cognition) points of professional skills. One skill may receive up to 5 points; no other may receive more than 3.

- Aviation/Heavy, /Rotary
- Computing/Programming
- Driving/Heavy, /Tracked
- Electronics
- Instruction
- Mechanics/Aviation, /Industrial, /Machinist
- Medicine/Veterinary
- Seamanship
- Security
- Special Equipment (any cascade)
- Special Vehicle (any cascade)

Attributes: Coordination, Cognition, Education.

Special Rules: None.

Undergraduate University

Any character's higher education begins in undergraduate university. Baccalaureate degrees are required for many modern jobs, as well as for continued education past this level.

Prerequisites: Attributes: Cognition 5+, Education 6 to 7. A character with Education higher than 7 has earned a baccalaureate degree and must pursue higher education options.

Length: 2 years.

Benefits: (2 + Cognition) points of professional skills, no more than 3 total points in any one skill.

- Agriculture
- Animal Husbandry
- Artisan (any cascade)
- Aviation/Heavy, /Rotary
- Computing/Programming
- Construction
- Electronics
- Forensics
- Instruction
- Language (any cascade)
- Performance (any cascade)
- Persuasion

Attributes: Cognition, Education, Personality, Resolve.

Special Rules: None.

CIVILIAN OCCUPATION PHASES

Big Business

Administrators and managers are a necessary part – sometimes a necessary evil – of any large enterprise. This phase represents professional experience in a variety of related corporate fields.

Prerequisites: Attributes: Cognition 6+, Education 7+. Degrees: 1+ in business administration, economics, management, or a related field.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 5 total in any one skill.

- Command
- Computing/Programming
- Deception
- Intimidation
- Language (any cascade)
- Persuasion

Attributes: Cognition, Education, Personality, Resolve.

Special Rules: None.



Civil Aviation

Tens of thousands of aircraft took to the skies each day before the Twilight War, even in the face of increasing global conflict and rising fuel prices. This phase represents professional piloting careers in all areas of civil aviation, from heavy air transport to tourist charters.

Prerequisites: Attributes: Awareness 8+, Coordination 8+. Skills: Aviation 4+ points. Special: no criminal record.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 5 total in any one skill. At least 3 points must be assigned to Aviation.

- Aviation/Heavy, /Performance, /Remote, /Rotary
- Command
- Computing
- Electronics
- Freefall
- Instruction
- Mechanics/Aviation
- Special Vehicle (any aircraft-related cascade)/Remote

Attributes: Awareness, Coordination.

Special Rules: None.

Diplomacy

The beginning of the third millennium was a chaotic time for the world's hard-pressed diplomatic community. As crisis after crisis erupted with no end in sight, diplomats were often the parties held responsible for the results of events beyond their control.

Prerequisites: Attributes: Cognition 7+, Education 8+, Personality 8+. Skills: Deception 6+ points, Persuasion 6+ points. Special: no criminal record.

Length: 3 years.

Benefits: At the beginning of each pass through this phase, roll 1d10: if the result is 1-6, this phase is a foreign posting. Otherwise, it's a domestic posting. Subtract 2 from the roll if the previous phase was a foreign posting.

A domestic posting grants 13 points of professional skills, no more than 5 total in any one skill. At least 3 points must be assigned to either Deception or Persuasion.

A foreign posting grants 14 points of professional skills, no more than 5 total in any one skill. At least 3 points must be assigned to Language (any cascade), and at least 3 points must be assigned to either Deception or Persuasion.

- Command
- Deception
- Instruction
- Intimidation
- Language (any cascade)
- Performance (any cascade)
- Persuasion
- Streetcraft

Attributes: Cognition, Education, Personality, Resolve.

Special Rules: For every pass through this phase, gain one additional contact during Step Five.

Emergency Services

Essential to maintaining any industrialized society, emergency workers around the world experienced a particularly heavy attrition rate during the events leading up to the Collapse. This phase represents emergency medical personnel, firefighters, and other similarly-skilled rescue workers and emergency managers.

Prerequisites: Attributes: all physical attributes 6+, Cognition 5+, Resolve 6+. Skills: 3+ points in Medicine. Special: good moral character.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 5 total

in any one skill. At least 2 points must be assigned to Medicine.

- Aquatics/SCUBA
- Climbing
- Command
- Computing
- Construction
- Driving/Heavy
- Fieldcraft/Tracking
- Forensics
- Hand Weapons
- Medicine
- Special Equipment (any cascade)
- Streetcraft

Attributes: Awareness, Coordination, Fitness, Muscle, Resolve, CUF, OODA.

Special Rules: None.

Engineering

Manual labor alone isn't enough to build and maintain an aircraft or a city. Skilled professionals are required to plan, oversee, and execute all forms of modern large-scale manufacturing and construction. This phase encompasses a wide array of engineering specialties, from architecture to aeronautical engineering to mining.

Prerequisites: Attributes: Cognition 6+, Education 8+. Skills or degrees: 8+ points in Construction or 2+ degrees in a relevant field.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 6 total in any one skill.

- Climbing
- Computing
- Construction/Demolition
- Driving/Heavy, /Tracked, /Remote
- Electronics
- Mechanics/Aviation, /Industrial, /Nautical
- Special Equipment (any cascade)
- Special Vehicle (any cascade)/Remote

Attributes: Coordination, Fitness, Muscle, Cognition, Education.

Special Rules: None.

Entertainment

All but the most starkly ascetic cultures acknowledge the value of recreation. Professional entertainers have widely-varying skill sets, but all are somehow involved in crafting experiences for the benefit of an audience.

Prerequisites: Attributes: Personality 9+. Skills: 6+ points in either Deception or Performance (any cascade).

Length: 4 years.

Benefits: 15 points of professional skills, no more than 6 total in any one skill.

- Artisan (any cascade)
- Command
- Deception
- Intimidation
- Language (any cascade)
- Performance (any cascade)
- Persuasion
- Streetcraft

Attributes: Coordination, Fitness, Personality.

Special Rules: For every pass through this phase, gain one additional contact during Step Five.

Farming

Prehistoric agriculture allowed the population growth that fueled the rise of the first great empires and has been a necessary underpinning of every subsequent civilization.

Prerequisites: None.

Length: 4 years.

Benefits: 14 points of professional skills, no more than 6 total in any one skill. At least 3 points must be assigned to either Agriculture or Animal Husbandry.

- Agriculture
- Animal Husbandry
- Aquatics
- Archery
- Artisan (any cascade)
- Climbing
- Driving/Heavy, /Motorcycle
- Fieldcraft
- Instruction
- Longarm
- Mechanics
- Mounts/Teamster
- Special Equipment (any cascade)

Attributes: Awareness, Coordination, Fitness, Muscle.

Special Rules: None.

Industrial Labor

Even the most advanced information societies still need strong backs and basic mechanical skills. This phase is suitable for factory and construction workers, as well as other individuals whose primary tasks involve extended physical labor.

Prerequisites: Attributes: Fitness 6+, Muscle 6+.

Length: 4 years.

Benefits: 14 points of professional skills, no more than 5 total in any one skill

- Climbing
- Construction
- Driving/Heavy, /Tracked
- Mechanics/Industrial, /Machinist
- Special Equipment (any cascade)
- Special Vehicle (any cascade)

Attributes: Coordination, Fitness, Muscle.

Special Rules: Industrial Labor grants 6 personal skill points.

Information Technology

From programmers to system administrators, information technologists were in high demand until the day in 2012 when electromagnetic pulses ended the computer age. Experience in this field is nigh-valueless in the short term, but most organized reconstruction efforts will eventually have need of someone who can coax war-ravaged networks back to life.

Prerequisites: Attributes: Cognition 6+, Education 7+. Skills: 6+ points in either Electronics or Computing.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 6 total in any one skill.

- Computing/Programming
- Electronics
- Mechanics
- Security
- Special Equipment (any cascade)

Attributes: Awareness, Cognition, Education.

Special Rules: None.

Journalism

From dispassionate observers to partisan commentators, the members of the Fourth Estate held an undeniable power over the public at the dawn of the 21st century. This phase encompasses all forms of news reporting, from broadcast radio to blogging.

Prerequisites: Attributes: Cognition 5+, Education 7+, Personality 7+. Skills: 6+ points in either Deception, Instruction, Performance (any appropriate cascade), or Persuasion.

Length: 4 years.

Benefits: 17 points of professional skills, no more than 6 total in any one skill. At least 3 points must be assigned to one of this phase's prerequisite skills.

- Artisan (any cascade)
- Command
- Computing
- Deception
- Electronics
- Forensics/Forgery
- Instruction
- Intimidation
- Language (any cascade)
- Performance (any cascade)
- Persuasion
- Special Equipment (any cascade)
- Streetcraft

Attributes: Awareness, Cognition, Education, Personality, OODA.

Special Rules: For every pass through this phase, gain one additional contact during Step Five.

Legal Practice

Although standards varied widely, most nations at least ostensibly subscribed to the rule of law in some form. This phase is primarily designed to represent experience as an attorney but can also represent work in similar fields such as the legislative branch of government.

Prerequisites: Attributes: Cognition 8+, Education 9+. Skills: 8+ points each in Deception and Persuasion. Degrees: 3 in law or related fields.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 5 total in any one skill.

- Command
- Computing
- Deception
- Forensics
- Instruction
- Intimidation
- Language (any cascade)
- Performance (Public Speaking)
- Persuasion

Attributes: Awareness, Cognition, Education, Personality, Resolve.

Special Rules: None.

Medical Practice

Health care is one of the few professions which is even more lucrative after the Collapse than it was before. The medical field of 2013 is radically different from that of a year ago, but demand for skilled doctors is universal.

Prerequisites: Attributes: Cognition 8+, Education 9+. Skills: Medicine 8+ points *or* Persuasion/Psychiatry 5+ points. Degrees: 3 in anatomy, biology, chemistry, medicine, or related fields of study.

Length: 4 years.



Benefits: 14 points of professional skills, no more than 6 total in any one skill. At least 2 points must be assigned to Medicine (or Persuasion, if the character has the /Psychiatry qualification).

- Command
- Computing
- Deception
- Forensics
- Instruction
- Intimidation
- Medicine/Surgery, /Veterinary
- Persuasion/Psychiatry
- Special Equipment (any cascade)

Attributes: Cognition, Education, Resolve, OODA.

Special Rules: Medical Practice grants no personal skill points on the first pass (this is the character's residency). Each subsequent pass grants 6 personal skill points.

Nursing

Within their areas of specialty, nurses are every bit as capable as the doctors alongside whom they worked. No longer simply physicians' assistants and adjuncts, many are now the leading medical practitioners of their communities.

Prerequisites: Attributes: Cognition 6+, Education 7+. Skills: Medicine 6+ points.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 6 total in any one skill.

- Animal Husbandry
- Command
- Computing
- Deception
- Instruction
- Intimidation
- Medicine/Surgery, /Veterinary
- Persuasion/Psychiatry
- Special Equipment (any cascade)

Attributes: Awareness, Cognition, Education, Personality, Resolve, OODA.

Special Rules: None.

Office Work

A vast array of office jobs is available. Most of them exist mainly to move and process information.

Prerequisites: Attributes: Cognition 4+, Education 6+.

Length: 5 years.

Benefits: 15 points of professional skills, no more than 5 total in any one skill.

- Command
- Computing/Programming
- Deception
- Instruction
- Intimidation
- Persuasion
- Special Equipment (any cascade)

Attributes: Cognition, Education.

Special Rules: Office Work grants 8 personal skill points.

Outdoorsmanship

Increasing urbanization in the latter half of the 20th century led to a rapid decline in the number of people who made their livings in remote areas of the globe. However, the few who remained in such professions were uniquely well-suited to surviving the Last Year. This phase is suitable for character types including backcountry guides, poachers, ski instructors, field researchers, and the occasional host of a nature show. With appropriate skill selection, it can also represent individuals from non-technological cultures.

Prerequisites: Attributes: Fitness 8+, Muscle 7+. Skills: 3+ points in Fieldcraft.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 5 total in any one skill. At least 3 points must be assigned to Fieldcraft.

- Animal Husbandry
- Aquatics/SCUBA
- Archery
- Artisan (any cascade)
- Climbing
- Driving/Motorcycle
- Fieldcraft
- Freefall
- Language (any cascade)

- Longarm
- Medicine
- Mounts/Teamster
- Seamanship/Sailing

Attributes: Awareness, Coordination, Fitness, Muscle, CUF, OODA.

Special Rules: After every pass through this phase, roll 1d10. On a result of 1-3, gain one additional equipment die during the Last Year.

Politics

At its most basic level, politics has always been the process by which scarce resources – most significantly, money and time – have been allocated. This field represents direct involvement in such processes at any level of government, from local to national.

Prerequisites: Attributes: Cognition 5+, Personality 9+. Skills: a total of at least 18 points between Deception, Persuasion, and Intimidation.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 5 total in any one skill.

- Command
- Deception
- Instruction
- Intimidation
- Performance (any cascade)
- Persuasion

Attributes: Education, Personality, Resolve.

Special Rules: For every pass through this phase, gain one additional contact during Step Five.

Religion

Virtually every faith has a structure of religious leaders trained to provide instruction and guidance to its members. This phase represents theologians of all religions.

Prerequisites: Attributes: Cognition 6+, Education 8+, Personality 7+, Resolve 6+. Skills: 6+ points each in Instruction and Persuasion.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 6 total in any one skill.

- Command
- Instruction
- Intimidation
- Language (any cascade)
- Medicine
- Performance (any cascade)
- Persuasion/Psychiatry

Attributes: Awareness, Cognition, Education, Personality, Resolve.

Special Rules: Religion grants 6 personal skill points. For every pass through this phase, gain one additional contact during Step Five.

Service Industry

Modern economies require a small army of entry-level sales and customer service personnel to keep businesses operating.

Prerequisites: Attributes: Cognition 5+, Education 4+.

Length: 5 years.

Benefits: 13 points of professional skills, no more than 6 total in any one skill.

- Computing
- Deception
- Driving
- Mechanics



- Persuasion
- Special Equipment (any cascade)
- Streetcraft

Attributes: Fitness, Muscle.

Special Rules: Service Industry grants 10 personal skill points.

Sports

Professional athletes are among the most physically gifted individuals on the planet. The most successful are adept at self-promotion in addition to their physical prowess – or at least have hired advisors who are.

Prerequisites: Attributes: no physical attribute below 4, with all four physical attributes totaling at least 25; Resolve 7+. Special: no handicaps.

Length: 3 years.

Benefits: 14 points of professional skills, no more than 6 total in any one skill.

- Aquatics
- Archery
- Climbing
- Command
- Driving/Motorcycle
- Hand-to-Hand/Grappling
- Hand Weapons/Grappling
- Instruction
- Intimidation
- Performance (any cascade)
- Persuasion

Attributes: Awareness, Coordination, Fitness, Muscle, Personality, Resolve, CUF, OODA.

Special Rules: None.

Teaching

Instruction in all forms of knowledge is a continual need for any industrial or information society. Careers encompassed by this phase run the gamut from elementary education to postdoctoral studies.

Prerequisites: Attributes: Cognition 5+, Education 7+. Skills: 6+ points in Instruction.

Length: 4 years.

Benefits: 14 points of professional skills, no more than 6 total in any one skill. At least 3 points must be allocated to Instruction.

- Agriculture
- Animal Husbandry
- Artisan (any cascade)
- Computing/Programming
- Construction
- Electronics
- Instruction
- Intimidation
- Language (any cascade)
- Mechanics
- Performance (any cascade)
- Persuasion

At the GM's discretion, any skill directly related to one of the character's degrees may also be a professional skill for this phase.

Attributes: Cognition, Education, Personality.

Special Rules: Teaching provides 6 personal skill points..

Technical Trade

Many technical specialists earn a living with their hands and hard-won skills despite a lack of formal education. After the Collapse, such individuals, already accustomed to improvisation and low-budget fixes, are often more capable of keeping technology working than their ivory tower counterparts.

Prerequisites: Attributes: Cognition 5+, Education 5+. Skills: 4+ points in one of the following: Artisan (any cascade), Electronics, Mechanics, Security.

Length: 4 years.

Benefits: 14 points of professional skills, no more than 5 total in any one skill. At least 2 points per pass must be placed in one of this phase's prerequisite skills.

- Artisan (any cascade)
- Computing/Programming
- Driving
- Electronics
- Instruction
- Mechanics/Aviation, /Industrial, /Machinist
- Security
- Special Equipment (any cascade)

Attributes: Awareness, Coordination, Cognition, Education.

Special Rules: Technical Trade grants 6 personal skill points.

Transportation

Global commerce relies on dozens of different modes of transport. This phase encompasses occupations ranging from truck driving to merchant marine service.

Prerequisites: Attributes: Awareness, Cognition, Coordination, and Fitness all 5+.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 6 total in any one skill. At least 4 points must be placed in either Driving, Seamanship, or Special Vehicle (any cascade).

- Aquatics
- Driving/Heavy, /Motorcycle, /Tracked
- Electronics
- Mechanics/Aviation, /Nautical
- Seamanship
- Special Equipment (any cascade)
- Special Vehicle (any cascade)
- Streetcraft

Attributes: Awareness, Coordination, Fitness, Muscle.

Special Rules: None.

NON-PAYING ACTIVITY PHASES

Exile

Even before the worldwide disruption of the Twilight War, millions of people across the globe were already fleeing natural disasters or wars, living in refugee camps, or otherwise displaced or homeless.

Prerequisites: None.

Length: 2 years.

Benefits: 6 points of professional skills, no more than 2 total in any one skill.

- Agriculture
- Animal Husbandry
- Aquatics
- Artisan (any cascade)
- Climbing
- Deception
- Fieldcraft
- Persuasion
- Streetcraft

Attributes: Awareness, Coordination, Fitness, Muscle, Resolve.

Special Rules: None.

High Life

Some fortunate individuals are wealthy enough to avoid all further semblance of work.

Prerequisites: None.

Length: 2 years.

Benefits: 4 points of professional skills, no more than 2 total in any one skill.

- Aquatics/SCUBA
- Artisan (any cascade)
- Computing
- Deception
- Driving/Motorcycle
- Mounts
- Instruction
- Language (any cascade)
- Performance (any cascade)
- Persuasion

Attributes: Coordination, Fitness, Muscle, Personality.

Special Rules: High Life grants 4 personal skill points. For every pass through this phase, gain one additional contact during Step Five.

Homemaking

Traditional nuclear families have only one partner who holds a job outside the home. This phase represents the activities of the other half. It can also be used to represent retirement.

Prerequisites: None.

Length: 5 years.

Benefits: 12 points of professional skills, no more than 5 total in any one skill.

- Agriculture
- Animal Husbandry
- Artisan (any cascade)
- Command
- Deception
- Driving
- Instruction
- Intimidation
- Medicine
- Persuasion

Attributes: None.

Special Rules: Homemaking grants 8 personal skill points.

Slacking

Slackers across the industrialized world seek the opportunity to do nothing without having already attained retirement age or wealth beyond avarice.

Prerequisites: None.

Length: 2 years.

Benefits: 4 points of professional skills, no more than 2 total in any one skill

- Artisan (any cascade)
- Climbing
- Computing
- Deception
- Driving/Motorcycle
- Fieldcraft
- Mechanics
- Performance (any cascade)
- Persuasion
- Streetcraft

Attributes: None.

Special Rules: Slacking grants 4 personal skill points. These points may not be spent to increase attributes.

CRIMINAL PURSUIT PHASES

Petty Crime

Street-level criminals are a dime bag a dozen.

Prerequisites: None.

Length: 3 years.

Benefits: 6 points of professional skills, no more than 4 total in any one skill.

- Climbing
- Deception
- Driving
- Forensics/Forgery
- Hand-to-Hand
- Hand Weapons
- Intimidation
- Performance (Disguise)
- Persuasion
- Security
- Sidearm
- Streetcraft

Attributes: Awareness, Coordination, Fitness, Muscle.

Special Rules: Petty crime grants 6 personal skill points.

At the end of this phase, make a COG check. With failure, the character's next phase must be Prison with a length of 1d3 years (or the Last Year).

Organized Crime

Sometimes, illegal operations are run more like businesses than criminal enterprises. Organized crime associations tend to be highly disciplined and focused on long-term profit.

Prerequisites: Attributes: Resolve 7+. Special: Must have spent at least 5 years in a combination of one or more other phases from the Criminal Pursuits category.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 5 total in any one skill.

- Command
- Computing
- Deception
- Driving/Heavy
- Forensics/Forgery
- Hand-to-Hand
- Hand Weapons
- Intimidation
- Language (any cascade)
- Longarm
- Performance (Disguise)
- Persuasion
- Security
- Sidearm
- Streetcraft

Attributes: Awareness, Coordination, Fitness, Muscle, Cognition, Resolve, CUF, OODA.

Special Rules: At the end of this phase, make a COG check. With failure, the character's next phase must be Prison with a length of 1d6 years (or the Last Year).

Prison

Eventually, the odds catch up with even the most seasoned criminal.

Prerequisites: None.

Length: Special, as indicated by random roll upon entry. Every time a character enters this phase, the base Length provided by the roll is increased by the number of previous passes through this phase (e.g. a character on his third pass through Prison spends 2 more years in this phase than the roll indicates).

Benefits: 3 points per year of professional skills, no more than 1 per year total in any one skill.

- Artisan (any cascade)
- Construction
- Deception
- Forensics/Forgery
- Hand-to-Hand
- Hand Weapons
- Intimidation
- Language (any cascade)
- Mechanics
- Performance (Disguise)
- Persuasion
- Security
- Streetcraft

Attributes: Awareness, Coordination, Education, Fitness, Muscle, Resolve, CUF, OODA.

Special Rules: Prison grants no personal skill points.

Violent Crime

Many criminals have the potential to engage in occasional violence. This phase represents those for whom it's a primary activity: bank robbers, drug cartel enforcers, inner-city gangs, and the like.

Prerequisites: None.

Length: 2 years.

Benefits: 6 points of professional skills, no more than 3 total in any one skill.

- Driving
- Hand-to-Hand
- Hand Weapons
- Intimidation
- Language (any cascade)
- Longarm
- Persuasion
- Sidearm
- Streetcraft
- Tactics

Attributes: Coordination, Fitness, Muscle, CUF, OODA.

Special Rules: At the end of this phase, make a COG check.

With failure, the character's next phase must be Prison with a length of 1d10 years (or the Last Year).

White-Collar Crime

As technology became more sophisticated, so did some criminals. White-collar crime includes both technologically sophisticated illegal activity conducted on a freelance basis and formal industrial espionage.

Prerequisites: Attributes: Cognition 8+, Resolve 8+. Skills and degrees: 6+ skill points in Computing or 2+ degrees in business administration, economics, or a related field.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 5 total in any one skill

- Computing/Programming
- Deception
- Forensics/Forgery
- Intimidation
- Performance (Disguise)
- Persuasion
- Security

Attributes: Cognition, Education, Personality, Resolve.

Special Rules: At the end of this phase, make a COG check. With failure, the character's next phase must be Prison with a length of 1d6 years (or the Last Year).

ESPIONAGE PHASES

Intelligence Analysis

Espionage operations generate immeasurable volumes of raw data. It's the job of intelligence analysts to separate the critical from the irrelevant and refine the "take" into usable information.

Prerequisites: Attributes: Awareness 8+, Cognition 8+, Education 8+, Resolve 7+. Special: good moral character.

Length: 4 years.

Benefits: 18 points of professional skills, no more than 6 total in any one skill.

- Artisan (any cascade)
- Command
- Computing
- Deception
- Forensics
- Instruction
- Language (any cascade)

Espionage Training Package

A training package is an intensive course of study designed to bring a new recruit up to speed on the core skills of a certain profession. Because this introductory training is designed for novices, a character who already has points in a skill receives only *half* the points (rounded down) that the package normally provides for that skill.

Skill Points: Deception 3, Hand-to-Hand 1, Language (any cascade) 3, Persuasion 3, Sidearm 1, Streetcraft 3.

Attributes: +1 to the character's lowest mental attribute.

- Persuasion

Attributes: Awareness, Cognition, Education, Resolve.

Special Rules: None.

Intelligence Support

Intelligence support personnel are the supply chain and lifeline of any espionage agent in the field. From forging identity documents to devising elaborate gadgets, these technicians give spies the tools to do their jobs.

Prerequisites: Attributes: Cognition 8+, Education 8+, Resolve 7+. Skills: 12+ points in one of the following: Artisan (any appropriate cascade), Computing, Forensics, Mechanics. Special: good moral character.

Length: 4 years.

Benefits: 18 points of professional skills, no more than 6 total in any one skill. At least 4 points must be placed one of this phase's prerequisite skills.

- Artisan (any cascade)
- Computing/Programming
- Driving/Heavy, /Motorcycle, /Remote, /Tracked
- Electronics
- Forensics/Forgery
- Language (any cascade)
- Mechanics/Aviation
- Performance (Disguise)
- Security
- Special Equipment (any cascade)
- Special Vehicle (any cascade)/Remote

Attributes: Awareness, Coordination, Cognition, Education, Resolve.

Special Rules: None.

Tradecraft

Human observation is the oldest means of intelligence-gathering, and still the most reliable in many cases.

Prerequisites: Attributes: All physical 5+, all mental 9+. Special: no handicaps, good moral character.

Length: 2 years.

Benefits: The first time a character enters this phase, gain the Espionage training package, Espionage Rank 1, and 2 professional skill points. For each subsequent pass through this phase, gain 12 professional skill points. No more than 4 total points per pass may be placed in any one professional skill.

- Artisan (any cascade)
- Command
- Computing
- Deception
- Forensics/Forgery
- Hand-to-Hand/Grappling
- Hand Weapons
- Instruction
- Intimidation

- Language (any cascade)
- Longarm
- Performance (any cascade)
- Persuasion
- Security
- Sidearm
- Special Equipment (any cascade)
- Streetcraft

Attributes: Any.

Special Rules: Tradecraft grants no personal skill points.

After every pass through this phase, roll 1d10. On a result of 1-5, gain one additional equipment die during the Last Year.

LAW ENFORCEMENT OCCUPATION PHASES

Criminal Investigation

Modern criminal law relies heavily on scientific analysis and proof of the validity of evidence. This phase represents a variety of fields including behavioral analysis, forensic anthropology, and crime scene investigation.

Prerequisites: Attributes: Awareness 8+, Cognition 8+, Education 8+. Skills: 6+ points in Forensics. Special: good moral character.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 6 total in any one skill.

- Artisan (any cascade)
- Computing
- Forensics/Forgery
- Instruction
- Mechanics
- Medicine
- Persuasion/Psychiatry
- Security
- Special Equipment (any cascade)

Attributes: Awareness, Cognition, Education.

Special Rules: None.

Local Police

As crime rates rose and the threat of terrorism blossomed in the years immediately preceding the Collapse, police departments found themselves stretched thinner than ever before. When events came to a head, many cops faced the hard choice between their duties as sworn officers and their responsibilities to their families.

Prerequisites: Age: 21 to 36. Attributes: all physical attributes 7+, Education 6+, Resolve 6+. Special: no handicaps, good moral character.

Law Enforcement Training Package

A training package is an intensive course of study designed to bring a new recruit up to speed on the core skills of a certain profession. Because this introductory training is designed for novices, a character who already has points in a skill receives only *half* the points (rounded down) that the package normally provides for that skill.

Skill Points: Driving 2, Forensics 1, Hand-to-Hand 3, Hand Weapons 3, Intimidation 3, Longarm 1, Persuasion 1, Sidearm 3.

Attributes: +1 each to CUF and OODA.

Length: 3 years.

Benefits: The first time a character enters this phase, gain the Law Enforcement training package, Local Police Rank 1, and 2 points of professional skills. For each subsequent pass through this phase, gain 13 points of professional skills. No more than 6 points per phase may be placed in any professional skill:

- Command
- Driving/Motorcycle
- Forensics
- Hand-to-Hand/Grappling
- Hand Weapons/Grappling
- Intimidation
- Longarm
- Medicine
- Persuasion
- Sidearm
- Streetcraft
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle, Resolve, CUF, OODA.

Special Rules: None.

National Police

In addition to state and local forces, every nation maintains one or more national police forces that investigate federal crimes and handle counter-espionage duties. In the early 21st century, counter-terrorism was added to the list of responsibilities.

Prerequisites: Age: 23 to 36. Attributes: all physical attributes 6+, Cognition 7+, Education 8+, Personality 7+, Resolve 8+. Special: no handicaps, good moral character.

Length: 3 years.

Benefits: The first time a character enters this phase, gain the Law Enforcement training package, National Police Rank 1, and 4 skill points. For each subsequent pass through this phase, gain 14 skill points. No more than 6 points per phase may be placed in any professional skill:

- Command
- Computing,
- Deception
- Driving
- Forensics/Forgery
- Hand-to-Hand/Grappling
- Hand Weapons/Grappling
- Instruction
- Intimidation
- Language (any cascade)
- Longarm
- Performance (Disguise)
- Persuasion
- Sidearm
- Special Equipment (any cascade)
- Streetcraft
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle, Cognition, Personality, Resolve, CUF, OODA.

Special Rules: None.

PARAMILITARY PHASES

Executive Protection

The combination of a volatile political climate and international business made private security a growth industry in the early 21st century.



Prerequisites: Attributes: Awareness 8+, Coordination 8+, Fitness 7+, Muscle 8+. Skills: 6+ points each in Hand-to-Hand, Sidearm, and Driving.

Length: 3 years.

Benefits: 14 points of professional skills, no more than 6 total in any one skill.

- Aquatics/SCUBA
- Command
- Deception
- Driving
- Fieldcraft
- Hand-to-Hand/Grappling
- Hand Weapons/Grappling
- Instruction
- Intimidation
- Language (any cascade)
- Longarm
- Medicine
- Persuasion
- Security
- Sidearm
- Streetcraft
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle, Resolve, CUF, OODA.

Special Rules: A character who enters Twilight Warfare from this phase receives equipment dice as if he had Rank equal to half his AWA value.

Insurgency

One man's terrorist is another man's freedom fighter. The two decades before the Collapse saw an unprecedented number of brushfire wars, regional conflicts, and terrorist incidents.

Prerequisites: Attributes: Resolve 8+.

Length: 2 years.

Benefits: 7 points of professional skills, no more than 3 total in any one skill.

- Aquatics
- Climbing
- Command
- Construction/Demolition
- Deception
- Driving/Motorcycle, /Heavy, /Tracked
- Fieldcraft
- Gunnery/Guided
- Hand-to-Hand
- Hand Weapons
- Instruction
- Intimidation
- Longarm
- Medicine
- Mounts/Teamster
- Performance (Disguise)
- Sidearm
- Streetcraft
- Support Weapons/Guided
- Tactics

Attributes: Coordination, Fitness, Muscle, Resolve, CUF, OODA.

Special Rules: After every pass through this phase, roll 1d10. On a result of 1-4, gain one additional equipment die during the Last Year.

If you are using the Stage III Hazardous Duty rules, this phase *requires* a roll on the Hazardous Duty Table (see p. 130). In addition, every pass through this phase requires a COG check; with failure, the character is captured and his next phase must be Prison for 1d20 years (or the Last Year).

A character who enters Twilight Warfare from this phase receives equipment dice as if he had Rank equal to half his COG value.

PMC

As nations reduced the size of their standing armies following the end of the Cold War, private military contractors – PMCs, or, more simply, mercenaries – came into vogue as supplementary or deniable forces. Millions of former military and intelligence personnel found that their skills were still marketable, even if their parent nations no longer needed their services. By the time of the Collapse, every major conflict in the world involved PMCs in both combat and support roles.

Prerequisites: Attributes: all physical attributes 6+. Skills: 6+ points in either Longarm or Tactics.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 6 total in any one skill.

- Aquatics/SCUBA
- Artillery
- Aviation/Heavy, /Rotary
- Climbing
- Command
- Computing
- Construction/Demolition
- Driving/Heavy, /Motorcycle, /Tracked
- Electronics
- Fieldcraft
- Freefall
- Gunnery/Guided
- Hand-to-Hand
- Hand Weapons
- Instruction
- Intimidation
- Language (any cascade)
- Longarm
- Mechanics/Aviation
- Medicine
- Persuasion
- Sidearm
- Special Equipment (any cascade)
- Streetcraft
- Support Weapons/Guided
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle, Resolve, CUF, OODA.

Special Rules: A character who enters Twilight Warfare from this phase receives equipment dice as if he had Rank equal to half his COG value.

Survivalist

As conditions worsened globally in the years leading up to the Collapse, survivalist movements underwent a resurgence around the world. Thousands of groups moved to remote locations and begin stockpiling supplies in preparation for the apocalypse. For once, they were right.

Prerequisites: None.

Length: 2 years.

Benefits: 6 points of professional skills, no more than 3 total in any one skill.

- Agriculture
- Animal Husbandry
- Aquatics
- Archery
- Artisan (any cascade)
- Climbing
- Construction
- Driving/Heavy, /Motorcycle, /Tracked
- Electronics
- Fieldcraft
- Hand-to-Hand
- Hand Weapons
- Instruction
- Intimidation
- Longarm
- Mechanics/Machinist
- Medicine/Veterinary
- Mounts/Teamster
- Sidearm

Attributes: Awareness, Coordination, Fitness, Muscle, CUF, OODA.

Special Rules: During every pass through this phase, roll 1d6. On a result of 6, the phase grants a criminal record, as the character is on government watch lists for questionable political beliefs.

For every pass through this phase before the Last Year, gain one additional equipment die during the Last Year.

Instead of taking a Last Year phase, you may choose to make a final pass through this phase. This pass has a Length of 1 year and provides no personal skill points. The character receives 1d6 x 1d6 rads and equipment dice equal to his COG (plus the aforementioned bonus).

MILITARY LIFE PATH PHASES

Twilight: 2013 provides more details for playing civilian survivors of the Twilight War than previous editions did. With that being said, we do recognize that this is a game about the aftermath of World War III, and that many player groups will want to focus on military or ex-military personnel. Accordingly, creation of military characters involves a few more details for the sake of verisimilitude.

Signing Up

Military careers, and the life path phases that represent them, have a few special considerations. First, simply entering the military has certain prerequisites, above and beyond any prerequisites for specific phases. *All military phases* are considered to have the following prerequisites:

- Attributes: all physical 5+, Cognition 4+, Education 6+, Resolve 4+.
- Special: no handicaps, good moral character.
- Age: Maximum 55.

In addition, no one joins the military and jumps right into a job. Militaries turn civilians into soldiers (and sailors, airmen, and marines) via an intensive training program that teaches recruits not only how to do military jobs, but how to think and act with a military mindset. Before a character enters *any other* military life path phase, he must complete one of the following phases:

- Military Indoctrination military education phase (see p. 110).
- Direct Commission military education phase (see p. 109).
- Service Academy military education phase (see p. 110).
- OCS military education phase (see p. 110).
- Undergraduate University education phase with the Undergraduate Officer Training option (2 passes; see p. 98).

Branches of Service

A nation's military is divided into multiple *branches of service*, each of which has its own bureaucracy, customs, regulations, and purpose for existence. The default character creation rules in this book use the American model of four branches of service: Army (land forces), Navy (naval forces), Air Force (aerospace forces), and Marine Corps (rapid-deployment combined arms). When a character first joins the military, he must choose one branch of service to enter. As long as he remains in military service, he may only choose military life path phases which exist within that branch, as shown in each military phase's Branch of Service trait.

Arms of Service

Each branch of service is further subdivided into *arms of service*, which are different general occupations within that branch. Individual life path phases are classified under arms of service – for example, the infantry arm includes the Assault Infantry, Light Infantry, and Naval Infantry phases, all of which are different variations on the same basic job of marching from place to place and killing people.

A character may move between phases in the same arm without penalty. If he moves into a phase in a different arm, his next promotion check suffers a –2 penalty.

In most militaries, arms of service are divided into combat and noncombat arms. For game purposes, the following arms are considered combat arms: Armor, Artillery, Aviation, Engineering (only combat engineers), Infantry, Medicine (only combat medics), Naval, and Special Operations. In practice, anyone in uniform saw combat during the Twilight War, regardless of whether or not he was drawing combat pay.

The Last Year

The Twilight War involved virtually every military on the planet. Any character in a military phase who does not enter the Twilight Warfare phase for the Last War is assumed to be a deserter. He loses all benefits of Rank and may be subject to social and legal penalties if his status becomes known to loyal members of his former military.

MILITARY EDUCATION PHASES

Direct Commission

A small percentage of commissioned officers enter service directly from civilian professions which are in high demand in the military. These officers serve in non-combat roles and receive abbreviated officer training before beginning their new uniformed jobs.

Prerequisites: Age: 17 to 35. In addition, select one of the following options:

- **Chaplain:** Character must have completed at least one pass through the Religion civilian profession phase (see p. 102).
- **Doctor:** Character must have completed the Medical School education phase (see p. 97).
- **Lawyer:** Character must have completed the Law School education phase (see p. 97).
- **Nurse:** Character must have completed at least one pass

through the Nursing civilian profession phase (see p. 101).

Branches of Service: All.

Length: 1 year.

Benefits: Gain 2 points in Command. In addition, gain further benefits dependent on the option selected for this phase's prerequisite:

- **Chaplain:** Gain 2 points in Persuasion. Gain Commissioned Military Rank 2, or Commissioned Military Rank 3 if the character has completed at least 3 passes through the Religion phase.
- **Doctor:** Gain 2 points in Medicine. Gain Commissioned Military Rank 3.
- **Lawyer:** Gain 2 points in Persuasion. Gain Commissioned Military Rank 3.
- **Nurse:** Gain 1 point each in Medicine and Persuasion. Gain Commissioned Military Rank 2.

Attributes: None.

Special Rules: Unless the character later completes either the Basic Training or OCS phase, the only military phase he may enter corresponds to the option he selected for this phase's prerequisites and benefits: Chaplaincy for chaplains, Medical Corps for doctors, Legal Corps for lawyers, or Nursing Corps for nurses.

Military Training Packages

A training package is an intensive course of study designed to bring a new recruit up to speed on the core skills of a certain profession. Because this introductory training is designed for novices, a character who already has points in a skill receives only *half* the points (rounded down) that the package normally provides for that skill.

Air Force

Skill Points: Climbing 2, Computing 1, Hand-to-Hand 1, Longarm 2, Medicine 1, Sidearm 1.

Attributes: +1 to the lowest of Fitness, Muscle, or Resolve, only if the attribute's current value is 5 or less. In addition, +1 to CUF. Finally, +1 to Education, only if its current value is 7 or less.

Army

Skill Points: Climbing 2, Fieldcraft 2, Hand-to-Hand 2, Hand Weapons 2, Longarm 2, Medicine 1, Sidearm 1, Support Weapons 1.

Attributes: +1 to the lowest of Fitness, Muscle, or Resolve, only if the attribute's current value is 5 or less. In addition, +1 each to CUF and OODA.

Marine Corps

Skill Points: Aquatics 2, Climbing 2, Fieldcraft 1, Hand-to-Hand 2, Hand Weapons 1, Longarm 3, Medicine 1, Sidearm 1, Support Weapons 2.

Attributes: +1 to the lowest of Fitness, Muscle, or Resolve, only if the attribute's current value is 5 or less. In addition, +1 each to CUF and OODA.

Navy

Skill Points: Aquatics 2, Climbing 2, Hand-to-Hand 1, Longarm 1, Medicine 1, Seamanship 2, Sidearm 2, Special Equipment (Shipboard Systems) 2.

Attributes: +1 to the lowest of Fitness, Muscle, or Resolve, only if the attribute's current value is 5 or less. In addition, +1 each to CUF and OODA.

Flight School

Before putting prospective pilots in charge of multi-million-dollar aircraft, militaries send their candidates through an intensive program that includes training for not only flight but ground survival.

Prerequisites: Attributes: Awareness 8+, Cognition 8+, Coordination 8+, Fitness 7+. Special: Commissioned Military Rank 1+.

Branches of Service: All.

Length: 1 year.

Benefits: Gain 4 points in Aviation, 1 point in Fieldcraft, and one of the following options:

- **Bomber/Transport:** Aviation/Heavy qualification and 1 point in Freefall.
- **Fighter:** Aviation/Performance qualification and 1 point in Freefall.
- **Helicopter:** Aviation/Rotary qualification and 1 point in Gunnery.

Attributes: None.

Special Rules: Flight School provides no personal skill points.

The character's life path next phase must be in the Aviation arm of service (or the Last Year).

Military Indoctrination

Whether it's known as "basic training," "boot camp," "recruit training," or another name, all militaries have a formal indoctrination program for incoming enlisted personnel. This phase is the most common means by which characters enter military professions.

Prerequisites: Age: 17 to 35. Special: The character must not yet have received the training package for his selected branch of service. This is an introductory phase for all characters who are entering the military as enlisted personnel.

Branches of Service: All.

Length: 1 year.

Benefits: Gain the training package for the character's selected branch of service and Enlisted Military Rank 1. Select one of the following arms of service and gain the listed benefits:

- **Armor:** 1 point each in Driving and Gunnery and either the Driving/Heavy or Driving/Tracked qualification.
- **Artillery:** 3 points in either Artillery or Gunnery.
- **Aviation:** 3 points distributed between Electronics and Mechanics.
- **Engineering:** 3 points in Construction.
- **Infantry:** 1 point each in Fieldcraft, Longarm, and Tactics.
- **Intelligence:** 3 points in either Computing, Electronics, or Language (any cascade).
- **Medical:** 3 points in Medicine.
- **Naval:** 1 point each in Aquatics, Mechanics, and Seamanship.
- **Special Operations:** 1 point each in Climbing, Fieldcraft, and Longarm.
- **Support:** 3 points in either Electronics, Driving, or Mechanics.

Attributes: None.

Special Rules: Military Indoctrination provides no personal skill points.

The character's next life path phase must be a military phase in the arm of service corresponding to the option he selected for this phase's benefits (or the Last Year). If he does not meet the prerequisites for any phase in the appropriate arm of service, he

must enter a phase in either the Infantry or Support arms, and his next promotion check suffers a -2 penalty.

Officer Candidate School

Prospective officers who don't enter the military through undergraduate officer training or a military academy must undergo leadership training through Officer Candidate School. OCS rarely lasts a full year, but this phase's length also includes additional training depending on the newly-minted officer's next expected assignment.

Prerequisites: Attributes: Cognition 8+, Education 8+, Personality 6+, Resolve 7+. Age: 17 to 35.

Length: 1 year.

Benefits: If the character has not yet received this branch of service's training package, gain that package, as well as 1 point in Command.

Gain Commissioned Military Rank 1.

Select one of the following arms of service and gain the listed benefits:

- **Armor:** 1 point each in Gunnery and Tactics, plus either the Driving/Heavy or Driving/Tracked qualification.
- **Artillery:** 2 points in either Artillery or Gunnery, plus 1 point in Tactics.
- **Aviation:** +1 Awareness or 3 points distributed between Electronics and Mechanics. Next phase may be Flight School if the character satisfies all prerequisites.
- **Engineering:** 3 points in Construction.
- **Infantry:** 2 points in Tactics and 1 point in Fieldcraft.
- **Intelligence:** 3 points in either Computing, Electronics, or Language (any cascade).
- **Medical:** 1 point each in Instruction, Medicine, and Persuasion.
- **Naval:** 1 point each in Aquatics, Seamanship, and Tactics.
- **Support:** 1 point each in Instruction, Intimidation, and Persuasion.

Attributes: None.

Special Rules: Officer Candidate School provides no personal skill points.

The character's next life path phase must be a military phase in the arm of service corresponding to the option he selected for this phase's benefits (or the Last Year). If he does not meet the prerequisites for any phase in the appropriate arm of service, he must enter a phase in the Support arm, and his next promotion check suffers a -2 penalty.

Service Academy

Militaries around the world operate their own undergraduate universities to give prospective officers both academic and martial education. These service academies admit only the very best of prospective applicants.

Prerequisites: Age: 18 to 23. Attributes: all physical attributes 6+; Cognition 8+, Education 6+, Personality 6+, Resolve 9+. Special: no handicaps, good moral character.

Length: 4 years.

Benefits: Select the branch of service that the character intends to enter and gain the training package for that branch of service.

Increase Education by 1, to a maximum of 8.

Gain 2 points in Command, plus points of professional skills equal to Cognition, no more than 6 total in any one skill. In addition to the following skills, all skills in the appropriate training package are considered professional skills for this phase.



- Aquatics
- Construction
- Command
- Computing/Programming
- Electronics
- Fieldcraft
- Freefall
- Hand Weapons
- Mounts
- Instruction
- Language (any cascade)
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle, Cognition, Education, Resolve.

Special Rules: A service academy grants only 2 personal skill points. In addition, a character may make only one pass through this phase. Finally, upon completing this phase, he receives Commissioned Military Rank 1 and all future promotion checks receive a +1 bonus.

Staff College

In addition to service academies, many national militaries also operate their own institutes of higher learning to further the education of their senior officers and those of allied nations.

Prerequisites: Attributes: Cognition 9+, Education 8+. Special: Commissioned Military Rank 4+.

Length: 2 years.

Benefits: Gain points of professional skills equal to Cognition, no more than 3 points total in any one skill:

- Command
- Deception
- Instruction
- Language (any cascade)
- Persuasion

- Tactics

Attributes: Cognition, Education.

Special Rules: This phase is considered to be in the same arm of service as the character's last and next phases. All future promotion checks receive a +1 bonus.

ARMOR ARM PHASES

Armored Reconnaissance

Armored recon serves as the forward scouting screen of any major ground offensive. These units are often the first to make contact with the enemy, relying on speed and cunning rather than firepower to survive in the face of heavy hostile fire.

Prerequisites: Attributes: Awareness 8+, Fitness 7+. Gender: Male. If character is commissioned, Rank may not exceed 3.

Branches of Service: Army, Marine Corps.

Length: 2 years.

Benefits: 8 points of professional skills, no more than 4 total in any one skill.

- Driving/Heavy, /Tracked
- Electronics
- Fieldcraft
- Gunnery/Guided
- Longarm
- Mechanics
- Sidearm
- Support Weapons
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle, CUF, OODA.

Special Rules: None.

Heavy Armor

The heavy striking arm of any land combat force is its tanks. Armor crews are trained to survive in the heaviest fighting – so long as they have their vehicles wrapped around them.

Prerequisites: Attributes: Fitness 7+, Muscle 8+. Gender: Male. If character is commissioned, Rank may not exceed 4.

Branches of Service: Army, Marine Corps.

Length: 2 years.

Benefits: 8 points of professional skills, no more than 4 total in any one skill.

- Driving/Tracked, /Remote
- Electronics
- Fieldcraft
- Gunnery
- Mechanics
- Sidearm
- Support Weapons
- Tactics

Attributes: Coordination, Fitness, Muscle, CUF, OODA.

Special Rules: None.

ARTILLERY ARM PHASES

Air Defense Artillery (ADA)

Air power has been recognized as a major factor on the modern battlefield for decades, and ground forces have continually sought new ways to protect themselves from it without relying on friendly air support. From shoulder-fired SAMs to theater ballistic missile defenses, ADA crews earned their pay during the Twilight War.

Prerequisites: Attributes: Cognition 6+. If character is commissioned, Rank may not exceed 4.

Branches of Service: Army, Marine Corps, Navy.

Length: 3 years.

Benefits: 11 points of professional skills, no more than 6 total in any one skill.

- Computing
- Electronics
- Gunnery/Guided
- Mechanics
- Support Weapons/Guided
- Tactics
- Driving/Tracked/Remote
- Driving/Heavy, /Remote

Attributes: Cognition, OODA.

Special Rules: None.

Field Artillery

For centuries, the “King of Battle” has been credited with the majority of kills in conventional ground warfare. This phase depicts the “redlegs” who actually man the guns.

Prerequisites: Attributes: Fitness 8+ and Muscle 9+. Gender: Male. If character is commissioned, Rank may not exceed 4.

Branches of Service: Army, Marine Corps.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 6 total in any one skill.

- Artillery/Guided
- Computing
- Driving/Tracked
- Gunnery/Guided
- Mechanics
- Tactics

Attributes: Fitness, Muscle, CUF, OODA.

Special Rules: None.

Forward Observer

In addition to directing artillery missions, forward observers also liaise with attack aircraft and other support assets. Depending on the military in question, forward observers may be specialists in this field, or may be cross-trained from artillery or aviation duties.

Prerequisites: Attributes: Awareness 8+, Cognition 7+, Coordination 6+, Fitness 6+. Gender: Male. If character is commissioned, Rank may not exceed 3.

Branches of Service: Any.

Length: 2 years.

Benefits: 9 points of professional skills, no more than 3 total in any one skill. At least 2 points must be placed in Tactics.

- Artillery/Guided
- Computing
- Driving/Tracked
- Electronics
- Fieldcraft
- Longarm
- Tactics

Attributes: Awareness, Cognition, CUF, OODA.

Special Rules: None.

AVIATION ARM PHASES

Aircrew

Large aircraft require more crew members than just pilots and navigators. Both officers and enlisted personnel serve in a variety of capacities, from loadmasters to radar operators.

Prerequisites: If character is commissioned, Rank may not exceed 6.

Branches of Service: All.

Length: 3 years.

Benefits: 11 points of professional skills, no more than 6 total in any one skill.

- Aviation/Heavy, Rotary
- Computing
- Electronics
- Fieldcraft
- Mechanics/Aviation
- Special Equipment (any cascade)
- Support Weapons

Attributes: Awareness, Cognition, Education, CUF, OODA.

Special Rules: None.

Combat Aviation

Combat aviation duty has some of the highest entrance standards in any military. Potential pilots must be exceptional specimens in all respects if they're going to be entrusted with multi-million-dollar combat aircraft.

Prerequisites: Attributes: Awareness 9+, Cognition 8+, Coordination 10+, Fitness 8+. Special: Commissioned Military Rank 1 to 6. Previous Phase: Flight School.

Branches of Service: All.

Length: 2 years.

Benefits: 11 points of professional skills, no more than 4 total in any one skill. At least 3 points must be placed in Aviation.

- Aviation/Heavy, /Performance, /Remote, Rotary
- Computing
- Fieldcraft
- Freefall
- Gunnery/Guided
- Mechanics/Aviation
- Sidearm

- Special Equipment (any cascade)
- Tactics

Attributes: Awareness, Coordination, Fitness, Cognition, CUF, OODA.

Special Rules: None.

Support Aviation

Transport, medevac, and other logistical duties aren't as glamorous as combat air operations, but they're just as essential to any modern military undertaking. Pilots in this field had marginally better chances of surviving the Twilight War than did their counterparts in combat units.

Prerequisites: Attributes: Awareness 8+, Cognition 8+, Coordination 8+, Fitness 7+. Special: Commissioned Military Rank 1 to 6. Previous Phase: Flight School.

Branches of Service: All.

Length: 3 years.

Benefits: 15 points of professional skills, no more than 6 total in any one skill. At least 3 points must be placed in Aviation.

- Aviation/Heavy, /Remote, /Rotary
- Computing
- Fieldcraft
- Freefall
- Instruction
- Mechanics/Aviation
- Sidearm
- Special Equipment (any cascade)

Attributes: Awareness, Coordination, Fitness, Cognition, CUF, OODA.

Special Rules: None.

ENGINEERING ARM PHASES

Civil Engineering

Military civil engineers perform much the same work as their civilian counterparts. In the decade before the Twilight War, civil engineering units were at the forefront of many disaster relief and humanitarian aid missions around the world.

Prerequisites: Attributes: Cognition 6+. If character is commissioned, Rank may not exceed 6.

Branches of Service: All.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 8 total in any one skill.

- Aquatics/SCUBA
- Climbing
- Computing
- Construction/Demolition
- Driving/Heavy, /Remote, /Tracked
- Instruction
- Language (any cascade)
- Mechanics
- Special Equipment (any cascade)
- Special Vehicle (any cascade)
- Streetcraft

Attributes: Coordination, Fitness, Muscle, Cognition, Education.

Special Rules: None.

Combat Engineering

Far more than just "blowing stuff up," combat engineering encompasses almost as many construction tasks as civil engineering. The primary difference is that combat engineers

usually are required to do their jobs faster – and while under fire.

Prerequisites: Attributes: Fitness 7+, Muscle 8+. Gender: Male. If character is commissioned, Rank may not exceed 4.

Branches of Service: All.

Length: 2 years.

Benefits: 8 points of professional skills, no more than 4 total in any one skill.

- Aquatics/SCUBA
- Climbing
- Construction/Demolition
- Driving/Heavy, /Remote, /Tracked
- Gunnery
- Mechanics
- Sidearm
- Special Equipment (any cascade)
- Special Vehicle (any cascade)/Remote
- Support Weapons

Attributes: Coordination, Fitness, Muscle, Cognition, CUF, OODA.

Special Rules: None.

INFANTRY ARM PHASES

Assault Infantry

Assault infantry units are trained and equipped for rapid deployment, including heliborne and airborne assaults. Their typical assignments involve rapid strikes on critical targets, though many units are tasked with a wide variety of other missions.

Prerequisites: Attributes: Awareness 6+, Coordination 7+, Fitness 8+, Muscle 8+, Resolve 7+. Gender: Male. If character is commissioned, Rank may not exceed 6.

Branches of Service: Army, Marine Corps.

Length: 2 years.

Benefits: 9 points of professional skills, no more than 4 total in any one skill.

- Aquatics
- Climbing
- Driving
- Fieldcraft
- Freefall/Tactical
- Hand-to-Hand/Grappling
- Hand Weapons
- Longarm
- Medicine
- Sidearm
- Support Weapons/Guided
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle, CUF, OODA.

Special Rules: None.

Light Infantry

Most modern infantry formations travel with a wide variety of heavy equipment, from armored personnel carriers to field artillery. Light infantry units eschew this support in favor of minimal equipment, either to gain increased mobility or as a result of budgetary limitations.

Prerequisites: Attributes: Fitness 7+, Muscle 7+. Gender: Male. If character is commissioned, Rank may not exceed 6.

Branches of Service: Army.

Length: 2 years.

Benefits: 8 points of professional skills, no more than 4 total in any one skill.

- Aquatics



- Climbing
- Driving/Heavy, /Tracked
- Fieldcraft
- Hand-to-Hand
- Hand Weapons
- Longarm
- Sidearm
- Streetcraft
- Support Weapons/Guided
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle, CUF, OODA.

Special Rules: None.

Military Police

In principle, military police provide basic law enforcement functions within military communities and internal security for rear areas. In practice, they're often called upon to function much like other infantry forces, particularly during urban fighting.

Prerequisites: If character is commissioned, Rank may not exceed 6.

Branches of Service: All.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 6

total in any one skill.

- Driving
- Fieldcraft
- Forensics
- Hand-to-Hand/Grappling
- Hand Weapons/Grappling
- Intimidation
- Language (any cascade)
- Longarm
- Persuasion
- Sidearm
- Streetcraft
- Support Weapons
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle; CUF, OODA.

Special Rules: None.

Naval Infantry

Naval infantry forces are trained for amphibious warfare, though they're often called upon to serve in the same capacity as assault or light infantry.

Prerequisites: Attributes: Fitness 8+, Muscle 8+. Gender: Male. If character is commissioned, Rank may not exceed 6.

Branches of Service: Marine Corps, Navy.

Length: 2 years.

Benefits: 8 points of professional skills, no more than 4 total in any one skill.

- Aquatics/SCUBA
- Climbing
- Driving/Tracked
- Fieldcraft
- Hand-to-Hand
- Hand Weapons
- Longarm
- Seamanship
- Sidearm
- Streetcraft
- Support Weapons/Guided
- Tactics

Attributes: Coordination, Fitness, Muscle, CUF, OODA.

Special Rules: None.

INTELLIGENCE ARM PHASES

Analysis

Although national espionage agencies exist, most militaries have their own needs for intelligence and prefer to cultivate their own personnel in this field.

Prerequisites: Attributes: Awareness 7+, Cognition 7+, Education 8+. If character is commissioned, Rank may not exceed 6.

Branches of Service: All.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 5 total in any one skill. At least 2 points must be placed in Forensics.

- Command
- Computing
- Fieldcraft
- Forensics
- Instruction
- Language (any cascade)
- Streetcraft
- Tactics

Attributes: Awareness, Cognition, Education.
Special Rules: None.

Human Intelligence

Rather than traditional spycraft, this phase primarily represents skill in gathering information through interviews and interrogations. Military HUMINT specialists rarely go undercover for long periods of time, preferring to run networks of locally-recruited informants.

Prerequisites: Attributes: Awareness 6+, Cognition 7+, Personality 8+. If character is commissioned, Rank may not exceed 6.

Branches of Service: All.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 6 total in any one skill. At least 3 points must be placed in Language (any one cascade).

- Command
- Computing
- Deception
- Fieldcraft
- Instruction
- Intimidation
- Language (any cascade)
- Performance (any cascade)
- Persuasion
- Streetcraft
- Tactics

Attributes: Awareness, Cognition, Personality.

Special Rules: None.

Technical Intelligence

Most militaries' primary means of information-gathering are technological. This phase includes work with satellite imagery, signals intercepts, analysis of captured equipment, and other technical or physical intelligence sources.

Prerequisites: Attributes: Awareness 8+, Cognition 7+, Education 7+. If character is commissioned, Rank may not exceed 6.

Branches of Service: All.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 6 total in any one skill. At least 4 points must be allocated between Computing and Special Equipment (any cascade).

- Computing/Programming
- Deception
- Electronics
- Language (any cascade)
- Special Equipment (any cascade)
- Tactics

Attributes: Awareness, Cognition, Education.

Special Rules: None.

MEDICAL ARM PHASES

Combat Medicine

In theory, medical personnel are guaranteed sanctity on the battlefield under international treaties. In practice, most learn quickly that random attacks don't recognize red crosses, and their job is as much "combat" as it is "medicine." Characters in this phase usually serve within or alongside front-line units.

Prerequisites: Attributes: Cognition 7+. Special: Enlisted personnel only; may not be a commissioned officer.

Branches of Service: Air Force, Army, Navy.

Length: 2 years.

Benefits: 8 points of professional skills, no more than 4 total in any one skill. At least 2 points must be placed in Medicine.

- Command
- Deception
- Driving
- Fieldcraft
- Instruction
- Longarm
- Medicine
- Persuasion
- Sidearm
- Special Equipment (any cascade)
- Streetcraft

Attributes: Coordination, Fitness, Cognition, Education, CUF, OODA.

Special Rules: None.

Medical Corps

Medical practice in the military closely resembles that of civilian life, but centers around trauma medicine and force protection.

Prerequisites: Special: Commissioned Military Rank 1 to 6. Previous Phase: Medical School.

Branches of Service: Air Force, Army, Navy.

Length: 4 years.

Benefits: 18 points of professional skills, no more than 8 total in any one skill. At least 4 points must be placed in Medicine (or Persuasion, if the character has the /Psychiatry cascade).

- Command
- Computing
- Deception
- Instruction
- Intimidation
- Medicine/Surgery, /Veterinary
- Persuasion/Psychiatry
- Special Equipment (any cascade)

Attributes: Cognition, Education, Resolve, OODA.

Special Rules: None.

Nursing Corps

As with military doctors, military nurses do much the same jobs as their civilian counterparts, but tend toward certain focused fields of specialty.

Prerequisites: Attributes: Cognition 7+, Education: 7+. Skills: 6+ points in Medicine. Special: Commissioned Military Rank 1 to 4.

Branches of Service: Air Force, Army, Navy.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 8 total in any one skill. At least 3 points must be placed in Medicine.

- Animal Husbandry
- Command
- Computing
- Deception
- Instruction
- Intimidation
- Medicine/Surgery, /Veterinary
- Persuasion
- Special Equipment (any cascade)

Attributes: Awareness, Cognition, Education, Personality, Resolve, OODA.

Special Rules: None.



NAVAL ARM PHASES

Small Craft

"Brown-water navies" focus on riverine and coastal operations rather than missions on the high seas. Many small craft crews operate alongside naval infantry and other forces, providing transportation and fire support during amphibious and counter-insurgency operations.

Prerequisites: Attributes: Coordination 7+, Fitness 7+. If character is commissioned, Rank may not exceed 3.

Branches of Service: Marine Corps, Navy.

Length: 2 years.

Benefits: 8 points of professional skills, no more than 4 total in any one skill. At least 2 points must be placed in either Aquatics or Special Vehicle (Hovercraft).

- Aquatics
- Artillery
- Gunnery/Guided
- Longarm
- Mechanics/Nautical
- Seamanship
- Special Vehicle (Hovercraft)
- Support Weapons
- Tactics

Attributes: Coordination, Fitness, Muscle, CUF, OODA.

Special Rules: None.

Submarine Warfare

Submarine service is often a world unto itself, with crews going weeks or even months without seeing the sun. Up until the

Twilight War, submarine fleets were considered the most effective components of many militaries' nuclear deterrent forces. The brief but vicious spasm of underwater battles in late 2012 proved that most nations were willing to use these weapons if they were in danger of being lost. Most submarine crews who survived the war were fortunate enough to be on land at the time the missiles flew.

Prerequisites: Attributes: Cognition 8+. Gender: Male. If character is commissioned, Rank may not exceed 6.

Branches of Service: Navy.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 6 total in any one skill.

- Computing
- Electronics
- Gunnery/Guided
- Mechanics/Industrial, /Nautical
- Seamanship/Remote, /Submersible
- Special Equipment (any cascade)
- Tactics

Attributes: Cognition, Education, Resolve, CUF.

Special Rules: None.

Surface Warfare

This phase represents the most visible and archetypal form of naval service. A wide variety of specialties fall under this heading, as operating modern combat vessels requires a vast array of technical skills.

Prerequisites: If character is commissioned, Rank may not exceed 6.

Branches of Service: Navy.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 6 total in any one skill.

- Aquatics
- Artillery/Guided
- Climbing
- Computing
- Electronics
- Gunnery/Guided
- Mechanics/Industrial, /Machinist, Nautical
- Seamanship/Remote, /Sailing
- Special Equipment (any cascade)
- Tactics

Attributes: Fitness, Cognition, Education, CUF.

Special Rules: None.

SPECIAL OPERATIONS ARM PHASES

CSAR

Combat Search and Rescue (CSAR) personnel, as the name suggests, earn their pay saving lives. In peacetime, the only change in their duties is the lack of hostile fire.

Prerequisites: Attributes: Awareness 8+, Cognition 8+, Coordination 8+, Fitness 10+, Muscle 9+, Resolve 10+. Gender: Male. Special: Enlisted personnel only; may not be commissioned. Previous Phase: Special Operations Training with the Medicine option.

Branches of Service: All.

Length: 2 years.

Benefits: 12 points of professional skills, no more than 4 total in any one skill. At least 2 points must be allocated to Medicine.

- Aquatics/SCUBA
- Aviation/Rotary
- Climbing
- Driving
- Fieldcraft
- Freefall/Tactical
- Hand-to-Hand
- Longarm
- Medicine/Surgery
- Persuasion
- Sidearm
- Support Weapons
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle, Cognition, Education, Resolve, CUF, OODA.

Special Rules: CSAR provides no personal skill points.

If you are using the Stage III Hazardous Duty rules (see p. 130), this phase *requires* a roll on the Hazardous Duty Table.

Elite Infantry

The archetypal special operations forces, elite infantry receive the hardest, most dangerous assignments, from deep reconnaissance to insurgent training and liaising to counter-terrorist raids. Casualty rates in the Twilight War were disproportionately high among these units, with many teams wiped out to the last man. This phase can generically represent a wide array of units, from the U.S. Marine Corps' Force Reconnaissance and the French Army's 13th Parachute Dragoon Regiment to the Iranian Quds Force and the Canadian JTF2

Prerequisites: Attributes: Awareness 8+, Cognition 8+, Coordination 8+, Fitness 10+, Muscle 9+, Resolve 10+. Gender: Male. Previous Phase: Special Operations Training. If character is commissioned, Rank may not exceed 6.

Branches of Service: All.

Length: 2 years.

Benefits: 12 points of professional skills, no more than 4 total in any one skill.

- Aquatics/SCUBA
- Climbing
- Command
- Construction/Demolition
- Deception
- Driving
- Electronics
- Fieldcraft
- Freefall/Tactical
- Hand-to-Hand/Grappling
- Hand Weapons
- Instruction
- Intimidation
- Language (any cascade)
- Longarm
- Medicine/Surgery
- Persuasion
- Security
- Sidearm
- Special Equipment (any cascade)
- Streetcraft
- Support Weapons/Guided
- Tactics

Attributes: Any *except* Personality.

Special Rules: Elite Infantry provides no personal skill points.

If you are using the Stage III Hazardous Duty rules (see p. 130), this phase *requires* a roll on the Hazardous Duty Table.

Special Operations Training

Characters attempting to enter the grueling world of special operations must first complete an intensive training course specific to the unit they want to join. This phase is a generic representation of many specialized units' induction processes.

Prerequisites: Attributes: Awareness 8+, Cognition 8+, Coordination 8+, Fitness 10+, Muscle 9+, Resolve 10+. Gender: Male. If character is commissioned, Rank may not exceed 3.

Length: 1 year.

Benefits: 2 points each in Aquatics, Fieldcraft, Freefall, and Tactics, plus the Aquatics/SCUBA qualification.

Additionally, select *one* of the following options:

- **Assault:** 2 points each in Longarm and Support Weapons.
- **Command:** 2 points in Command and +1 OODA.
- **Communications:** 2 points each in Electronics and Special Equipment (any appropriate cascade).
- **Engineering:** either 4 points in Construction or 1 point in Construction and the Demolition qualification.
- **Intelligence:** 2 points in Instruction and 3 points in Language (any cascade).
- **Medicine:** 4 points in Medicine.
- **Reconnaissance:** 2 points each in Fieldcraft and in Streetcraft.

Attributes: None.

Special Rules: Special Operations Training provides no personal skill points.

Gain a +1 bonus to the next promotion check. A character entering this phase from the Infantry arm does not suffer the standard promotion check penalty for switching arms of service.

The character's next phase must be a military phase in the Special Operations arm of service (or the Last Year).

If you are using the Stage III Hazardous Duty rules (see p.

130), this phase *requires* a roll on the Hazardous Duty Table.

STAFF PHASES

Unlike most other military phases, staff phases don't represent assignment to a specific arm of the military. Rather, a staff assignment means that a character is serving as part of the command group of a unit within a specific arm. For instance, a character who enters a staff phase from the armor arm is assumed to be part of the command structure of an armor unit, and is still considered to be part of the armor arm for promotion and other purposes.

General Staff

Once an officer attains flag rank – general or admiral, or the equivalent – his days of field operations are effectively over. Characters in a general staff phase have responsibility for entire bases, fleets, or divisions, or are direct assistants to those who do.

Prerequisites: Commissioned Military Rank 6+ or Enlisted Military Rank 5+.

Branches of Service: All.

Length: 3 years.

Benefits: 12 points of professional skills, no more than 6 total in any one skill.

- Deception
- Instruction
- Intimidation
- Language (any cascade)
- Persuasion
- Tactics

Attributes: Cognition, Education, Personality, Resolve.

Special Rules: None.

Unit Staff

A unit staff role places a character on the staff of the commander of a ship, squadron, battalion or regiment, or similarly-sized unit. The character is likely to still be involved in operations to a limited extent, particularly during the final years prior to the Collapse, but the majority of his time will be devoted to planning and coordinating the actions of others.

Prerequisites: Enlisted Military Rank 4+ or Commissioned Military Rank 4+.

Branches of Service: All.

Length: 2 years.

Benefits: 8 points of professional skills, no more than 3 total in any one skill. Up to half of these points may be placed in the professional skills of the character's most recent non-staff military phase.

- Computing
- Intimidation
- Language (any cascade)
- Persuasion
- Special Equipment (any appropriate cascade)
- Tactics

Attributes: Cognition, Education, Personality, Resolve.

Special Rules: The character's promotion check at the end of this phase receives a +1 bonus.

SUPPORT ARM PHASES

Administration

At times, a modern military seems like a massive bureaucracy with fighting capabilities tacked on as an afterthought.

Prerequisites: None.

Branches of Service: All.

Length: 4 years.

Benefits: 12 points of professional skills, no more than 8 total in any one skill.

- Command
- Computing
- Deception
- Instruction
- Intimidation
- Language (any cascade)
- Persuasion

Attributes: Cognition, Education.

Special Rules: None.

Chaplaincy

The military has no less need of spiritual services than does any other segment of society. All military chaplains are both ordained religious leaders and commissioned officers, assisted by enlisted lay personnel.

Prerequisites: Special: Character must either have completed the Direct Commission phase with the Chaplain option or be enlisted. If character is commissioned, Rank may not exceed 6.

Branches of Service: Air Force, Army, Navy.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 8 total in any one skill.

- Command
- Computing
- Instruction
- Intimidation
- Language (any cascade)
- Medicine
- Performance (any cascade)
- Persuasion/Psychiatry

Attributes: Awareness, Cognition, Education, Personality, Resolve.

Special Rules: None.

Legal Corps

Military justice is often radically different from both civil and criminal law. Lawyers serving in the military are trained not only in their own forces' legal codes, but in international treaties and laws of conflict.

Prerequisites: Special: Character must either have completed the Direct Commission phase with the Lawyer option or be enlisted. If character is commissioned, Rank may not exceed 6.

Branches of Service: All.

Length: 4 years.

Benefits: 16 points of professional skills, no more than 8 total in any one skill.

- Command
- Computing
- Deception
- Forensics
- Instruction
- Intimidation
- Language (any cascade)
- Performance (Public Speaking)
- Persuasion

Attributes: Awareness, Cognition, Education, Personality, Resolve.

Special Rules: None.

Military Reserves

Many countries maintain reserve forces of former military personnel. These reservists typically train for several weeks a year and can be called back into service as needed to bolster standing military strength (for American characters, this category covers both actual reservists and National Guardsmen).

In game terms, any character who spends at least two years in military service may become a reservist upon entering any non-military phase. A reservist must spend at least half of his personal skill points per phase on professional skills from his most recent military phase (these may include skills normally prohibited as personal skills). This represents ongoing training intended to keep the reservist's skills at least somewhat fresh.

A reservist retains the military Rank (either enlisted or commissioned) that he had upon exiting active duty. This Rank remains even if the character gains another form of Rank through law enforcement or espionage work. At the end of every non-military phase, a reservist makes a promotion check with a -3 penalty. A character may only remain a reservist as long as he meets the prerequisites for his most recent military phase.

A reservist may return to active duty at any time, entering any military phase from the same branch as his last military phase, so long as he meets its prerequisites. In character history terms, this can represent either a choice to return to active duty or an involuntary call-up or activation.

In similar vein, a reservist may always choose Twilight Warfare for his Last Year phase. In such an event, he uses his most recent military phase when determining his professional skill list for the Last Year. In addition, he selects starting equipment as a military character of his current rank, rather than as a civilian.

Maintenance

Militaries make use of a dizzying array of specialized equipment, and someone has to keep all of it working.

Prerequisites: If character is commissioned, Rank may not exceed 4.

Branches of Service: All.

Length: 4 years.

Benefits: 12 points of professional skills, no more than 8 total in any one skill.

- Computing
- Driving/Heavy, /Tracked
- Electronics
- Instruction
- Mechanics/Aviation, /Industrial, /Machinist, /Nautical
- Persuasion
- Seamanship
- Special Equipment (any cascade)

Attributes: Awareness, Coordination, Cognition, Education.

Special Rules: None.

Transport

Any military action requires a vast transportation effort to move personnel and supplies where they need to be.

Prerequisites: If character is commissioned, Rank may not exceed 4.

Branches of Service: All.

Length: 4 years.

Benefits: 12 points of professional skills, no more than 8 total in any one skill.

- Driving/Heavy, /Tracked
- Fieldcraft

- Mechanics
- Persuasion
- Seamanship
- Streetcraft
- Support Weapons

Attributes: Awareness, Coordination, Fitness, Muscle.

Special Rules: None.

THE LAST YEAR

The period of mid-2012 to mid-2013 irrevocably and drastically affected every human being on the planet. Economies collapsed, supplies of basic resources withered, scattered local wars merged into a global nuclear conflict, and nine-tenths of humanity died. In such an environment, no one was able to continue his previous life uninterrupted. Accordingly, every character must spend the final year of his life path in one of the following five Last Year phases.

The character's last previous phase (i.e. what he was doing in 2011-2012) determines which Last Year phases he can enter by default. Some other options, such as military reserve status (see sidebar, p. 119), can allow additional choices as well.

No character gains personal skill points during the Last Year. Survival trumps hobbies.

Displacement

Food shortages, epidemics, conventional warfare, and nuclear strikes forced millions of people to flee their homes. Many died in the process, either on the road to expected safe havens or upon arrival in equally devastated areas. Characters who experience this phase are among the lucky few who fled and survived.

Prerequisites: None.

Benefits: (3 + Fitness) professional skill points, no more than 3 in any one skill:

- Aquatics
- Climbing
- Deception
- Fieldcraft
- Hand-to-Hand
- Hand Weapons
- Mounts
- Language (any cascade)
- Persuasion
- Streetcraft

Attributes: Awareness, Coordination, Fitness, Muscle, Resolve, CUF, OODA.

Rads: 1d10 x 1d10.

Equipment Dice: Base of 1. Make a Resolve check; if successful, add the margin of success in additional equipment dice.

Irregular Warfare

With the breakdown of all levels of government services, many communities turned to their own citizens to provide mutual defense from both external and internal threats. Citizens' militias sprang up across the world, armed with either personally-owned weapons or surplus military equipment acquired through questionable means. Regrettably, they found ample opposition in an equal number of armed groups with no particular agendas beyond survival and exploitation of the Collapse.

Prerequisites: Attributes: all physical attributes 4+. Skills: 4+ points in any one ranged weapon skill (Archery, Artillery, Gunnery, Longarm, Sidearm, or Support Weapons).



Benefits: (3 + Awareness) professional skill points, no more than 3 in any one skill:

- Archery
- Climbing
- Fieldcraft
- Hand-to-Hand
- Hand Weapons
- Mounts
- Longarm
- Medicine
- Sidearm
- Streetcraft
- Tactics

Attributes: Awareness, Coordination, Fitness, Muscle, Resolve, CUF, OODA.

Rads: 1d10 x 1d20.

Equipment Dice: Base of 3. Make a CUF check; if successful, add the margin of success in additional equipment dice.

Rural Survival

The war's impact was the most pronounced in large population centers. Rural areas, with more distributed populations and a greater capacity for basic self-sustenance, were still impacted, but didn't fall as hard or as far as the cities. Rural survivor communities tended to consolidate their available resources for mutual benefit, but required everyone to pull his own weight.

Prerequisites: Skills: 6+ points in Agriculture, Animal Husbandry, or Fieldcraft.

Benefits: Gain (3 + Fitness) professional skill points, no more than 3 in any one skill:

- Agriculture
- Animal Husbandry
- Aquatics
- Archery
- Artisan (any cascade)
- Fieldcraft
- Mounts
- Longarm
- Mechanics
- Medicine
- Persuasion

Attributes: Awareness, Coordination, Fitness, Muscle, Resolve, CUF, OODA.

Rads: 1d10 x 1d6.

Equipment Dice: Base of 2. Make a Fieldcraft (COG) check; if successful, add the margin of success in additional equipment dice.

Twilight Warfare

Every national military on the planet was engaged in combat operations during the final phase of the Twilight War. Many became involved in conflicts over resources and territory, but even the most insular nations were forced to deploy troops for internal security or defend their borders against swarms of refugees. Most police forces, stretched to the breaking point, also had to militarize to maintain order within their jurisdictions.

Prerequisites: Character's last previous phase must have been a law enforcement, espionage, paramilitary, or military phase.

Benefits: (3 + Resolve) professional skill points, no more than 3 in any one skill. These may be allocated to any skill on the professional skill list for the character's last previous phase, or any of the following skills:

- Fieldcraft
- Hand-to-Hand
- Hand Weapons

- Longarm
- Sidearm

If the character is a member of a national military, make a normal promotion check.

Attributes: Awareness, Coordination, Fitness, Muscle, Resolve, CUF, OODA.

Rads: Roll a number of d10 equal to the character's CUF + OODA.

Equipment Dice: Base equal to Rank. Make a Personality check; if successful, add the margin of success in additional equipment dice.

Urban Survival

The nuclear exchanges destroyed surprisingly few cities, but supply chain collapses and civil disorder wreaked equally complete destruction on the rest. Despite the considerable hazards involved in such decisions, many city-dwellers chose to stay in their homes rather than flee to ephemeral refuge elsewhere. The ones who survived were those best able to adapt to the changes in their once-familiar environments.

Prerequisites: Skills: 6+ points in Streetcraft.

Benefits: (3 + Cognition) professional skill points, no more than 3 in any one skill:

- Climbing
- Deception
- Hand-to-Hand
- Hand Weapons
- Intimidation
- Persuasion
- Security
- Sidearm
- Streetcraft

Attributes: Awareness, Coordination, Fitness, Muscle, Resolve, CUF, OODA.

Rads: 1d20 x 1d20.

Equipment Dice: Base of 2. Make a Streetcraft (COG) check; if successful, add the margin of success in additional equipment dice.

STAGE III CHARACTER CREATION OPTIONS

Some groups may want to create characters with additional levels of complexity. The following alternate rules provide several options along these lines.

ADVANTAGES AND DISADVANTAGES

The basic traits of attributes and skills serve to define every character's capabilities. However, some players may wish to add additional detail that has concrete reflections in game mechanics. *Advantages* and *disadvantages* serve this purpose, enabling players to further customize their characters. Advantages provide benefits and disadvantages represent drawbacks, though some in each category may provide mixed blessings.

Acquiring Advantages and Disadvantages

Each advantage has a cost, while each disadvantage has a value, both given in skill points. During character creation, you may acquire both advantages and disadvantages at the same time you select your character's background skills. To acquire an

advantage, pay its cost out of your character's pool of background skill points. To acquire a disadvantage, add its value to the same pool. The maximum total value of disadvantages your character may have is equal to 4 + RES (if you really want, you may select additional disadvantages over this total, but they don't provide any more skill points).

Unless otherwise specified, a character may only have each advantage or disadvantage once. Some advantages and disadvantages have variable costs or values, indicating a range of effects depending on the option selected. In addition, some have prerequisites, which a character must satisfy in order to receive them.

It's also possible to receive advantages and disadvantages through rolls on the Hazardous Duty Table (see p. 130). You do not pay or receive skill points for advantages and disadvantages acquired in this manner. Likewise, those received during play – for example, physical disadvantages incurred as a result of critical injuries – also are “freebies.”

In all cases, common sense should apply. A character with no legs should receive no further penalty – and no additional points – from a missing foot.

Personal Advantages

These advantages affect a character's basic attributes and skills.

Advanced Student

Cost: 4 points

Prerequisite: EDU 6

Through superior intelligence, diligence, or private schooling, the character's primary education was far superior to the norm (though at the expense of some practical skills). Increase his Education to 7.

Aptitude

Cost: 3 points

When selecting this advantage, apply it to a single attribute. The character makes better use of some of his native capabilities. When making attribute checks with the selected attribute, you roll 3d20L rather than the usual 2d20L.

A character may have this advantage for up to three different attributes. The cost of this advantage cumulatively increases by 1 for each additional instance.

Direction Sense

Cost: 2 points

The character has an unerring sense of his current location and orientation. All attempts at navigation receive a +3 bonus. In addition, with a successful COG check, the character may retrace all his movements within the last 24 hours, so long as he was conscious for them.

Extra Attribute Point

Cost: 6 points

Increase one of the character's attributes by 1, to a maximum of 10. No attribute may receive this benefit more than once, and it may not be applied to Education (see the Advanced Student advantage).

Fast Learner

Cost: 2, 4, or 6 points

For every 2 points invested in this advantage, the character's chance to gain a skill point from a learning experience (see p. 198) is increased by 5%.

Home Territory

Cost: 1 to 3 points

Special: A character may pay professional skill points to acquire

or improve this advantage during any life path phase whose professional skill list includes Fieldcraft or Streetcraft. The character has intimate knowledge of a specific geographic area, having either grown up there or lived there for at least a decade. This may be a single city, a small rural community and its surrounding county, or a wilderness area up to 10,000 square kilometers. While the character is in this territory, all tasks related to detailed knowledge of the area receive a bonus equal to the point value of this advantage. This includes (but is not limited to) all attempts at foraging, scavenging, and navigation. A character may have this advantage for a maximum number of areas equal to his age divided by 10.

Natural Talent

Cost: 3 points

When selecting this advantage, apply it to a single skill. The character has an intuitive grasp of the skill's principles. Mechanically, this translates into accelerated learning. The character's rating in this skill progresses with lower skill values, as follows:

Value	Rating (Dice Rolled)
48+	Legendary (6d20L)
24-47	Master (5d20L)
12-23	Expert (4d20L)
6-11	Professional (3d20L)
3-5	Competent (2d20L)
1-2	Novice (1d20)
0	Unskilled (2d20H)

Table 4j: Natural Talent

A character may have this advantage for up to three different skills. The cost of this advantage cumulatively increases by 1 for each additional instance. If purchased for a cascade skill, it applies to all cascades. If purchased *only* for a single cascade, it costs 1 point less.

Polymath

Cost: 4 points

Prerequisite: COG 7+

The character excels in academia. For every point of EDU which normally grants a degree, the character receives two degrees. EDU in excess of the character's COG does not provide this benefit. Thus, a character with COG 9 receives two degrees for every point of EDU through 9, and one degree for every additional point of EDU.

Prodigy

Cost: 1 to 4 points

Prerequisite: COG 10+

The character goes beyond precocious to certifiable genius status. Reduce his age at the beginning of his life path by the point value of this advantage.

Survivor

Cost: 4, 8, or 12 points

Through luck or cunning, the character has displayed a remarkable propensity for coming out of the toughest spots. For every 4 points invested in this advantage, increase the character's starting *and* maximum survival points by 1.

Throwing Arm

Cost: 1, 3, or 6 points

Prerequisite: CDN and MUS each 6+.

It's all in the wrist. For every level of this advantage, roll an additional d20 when making attribute checks for attacks with thrown weapons.

Physical Advantages

The following advantages deal with ways in which the character's physical capabilities or medical conditions deviate from the basic standards that his physical attributes describe.

Ambidexterity

Cost: 3 points

The character has invested a significant amount of time and effort in training to use his naturally non-dominant hand for one particular task, such as writing, flying, shooting, or knife fighting. When selecting this advantage, choose one skill. For purposes of the selected skill, the character may consider both hands to be dominant (see p. 163).

A character may have this advantage for up to three different skills. The cost of this advantage cumulatively increases by 1 for each additional instance. If purchased for a cascade skill, it applies to *all* cascades of that skill.

Ducked and Covered

Cost: 1 to 5 points

Special: A character may pay professional skill points to acquire or improve this advantage during his Last Year phase.

The character enjoyed significant protection from radiation during the nuclear exchanges. Reduce his starting rads by 2d10H per point invested in this advantage.

Fleet of Foot

Cost: 2, 4, or 6 points

Whether he's running away from the fight or to it, the character is exceptionally fast. For every 2 points invested in this advantage, increase the character's trot, run, and sprint speeds by 1 meter per second.

Indefatigable

Cost: 1 or 4 points

The character's raw endurance far exceeds that which his physique should allow. When calculating his fatigue thresholds, increase his Fitness by the number of points invested in this advantage.

Mule

Cost: 3 or 6 points

No matter the terrain, the character just keeps on trudging at the same pace. For every 3 points invested in this advantage, add 1 kilometer per hour to the character's travel movement speed.

Pack Horse

Cost: 1 to 5 points

Thanks to a burly physique or powerlifting training, the character can carry staggering loads. For every point invested in this advantage, add 1 kg to the character's combat load, 2 kg to his march load, and 3 kg to his emergency load.

Quick Healer

Cost: 3 points

The character's body repairs itself faster than normal (perhaps due to years of practice). His healing factor (see p. 173) is increased by 1.

Tough as Nails

Cost: 3 or 6 points

A Herculean physique or enduring will enables the character to shrug off injuries that would stop a lesser man in his tracks. For every 3 points invested in this advantage, the character's base wound threshold is increased by 1.

Sensory Advantages

These advantages affect the way in which the character perceives the world. Many are directly linked to the Awareness attribute.

Acute Hearing

Cost: 2 or 4 points

For every 2 points invested in this advantage, the character receives a cumulative +1 bonus to all Awareness-based checks that rely predominantly on hearing.

Eagle Eyes

Cost: 4 points

The character's distance vision is better than 20/20. His limit of visual range is increased by one range band. This bonus is not cumulative with any provided by vision devices such as binoculars and telescopic sights.

Light Sleeper

Cost: 2 points

The character sleeps with one ear cocked for approaching footsteps. Instead of the normal -5 penalty for being asleep, AWA checks only suffer a -1 penalty. In addition, the character suffers no initiative penalty when awakened into combat.

Social Advantages

These describe variations in the character's capacity for interpersonal relationships.

Acclaimed

Cost: 1 to 5 points

This advantage may only be selected if the optional reputation rules (see p. 326) are in use.

For every point invested in this advantage, gain 1 point of Renown. Then select one reputation aspect (Force, Skill, Integrity, Service, or Luck). Roll 2d6H, gaining the die result as positive reputation in that aspect.

Anonymity

Cost: 1 to 3 points.

Prerequisite: May not have Beauty or Repugnance.

This advantage may only be selected if the optional reputation rules (see p. 326) are in use.

The character has cultivated a talent for not being noticed – or blamed. Whenever he is subject to a reputation change – positive or negative – roll 1d6. If the die result is less than or equal to the number of points invested in this advantage, the reputation change does not take effect.

Beauty

Cost: 2, 4, or 7 points

The character has a significant amount of raw physical appeal. Depending on the number of points invested in this advantage, he gains either a +1, +2, or +3 bonus to all social interaction with individuals whose sexual preferences include his gender. This only applies to face-to-face interaction – Beauty must be beheld to have its expected impact.

Design Note:

Don't You Know Who I Am?

Due to space limitations, we've chosen to eliminate most advantage and disadvantages that are dependent on a character existing within a functioning modern society. Wealth, mass media recognition, official status, and other such considerations are largely irrelevant in a post-apocalyptic environment, except as memories of happier times. The advantages and disadvantages presented here are those which directly affect a character's own capabilities, have bearing on life paths, or define the reputation he's earned since the end of the world.

Extra Contacts

Cost: 1 to 5 points

Due to family ties, a well-traveled upbringing, or maturity beyond his years, the character has a particularly wide network of acquaintances. For each point invested in this advantage, he begins play with one extra contact.

Personal Disadvantages

These disadvantages affect a character's basic attributes and skills.

Can't Swim

Value: 1 point

Through an exceptionally low body fat percentage or just plain incompetence, the character never learned to swim. Regardless of the character's Aquatics skill rating, he makes all skill checks related to swimming as if he were Unskilled. He has an effective swimming speed of zero – it's all he can do just to stay afloat. In addition, if he is in a naval or marine branch of military service for any nation, he suffers a -1 penalty on all promotion checks.

The GM should disallow this disadvantage for campaigns set in environments where this is unlikely to be a life-threatening handicap.

Illiterate

Value: 1 point

Prerequisite: EDU 5 or less

Through a learning disability or lack of education, the character can't read. In addition to the obvious effects, his EDU may never exceed the higher of 5 or his COG.

Ineptitude

Value: 2 points

When selecting this disadvantage, apply it to a single attribute. The character may be gifted, but he has difficulty exploiting those gifts to their fullest potential. When making attribute checks with the selected attribute, all rolls are 1d20 rather than the usual 2d20L. This has no effect on skill checks with this attribute.

A character may have this disadvantage for up to three different attributes. The value of this disadvantage cumulatively increases by 1 for each additional instance.

Slow Learner

Value: 1, 2, or 3 points

For every point received from this disadvantage, the character's chance to gain a skill point from a learning experience (see p. 198) is reduced by 10%.

Technophobe

Value: 1 or 2 points

"If it was good enough for the (insert previous generation or culture here), it's good enough for me." The character mistrusts all high technology. All task checks to use, modify, or repair technology that originated after the mid-1990s suffer a -3 penalty. For 2 points, this extends to anything electronic or electrical that's more sophisticated than a flashlight. Prior to the Collapse, this disadvantage was found almost exclusively in retirement homes and certain religious sects. However, areas hit hard by EMP have seen a resurgence in such viewpoints, even among formerly technologically-literate people.

Physical Disadvantages

The following disadvantages deal with ways in which the character's physical capabilities or medical conditions deviate from the basic standards that his physical attributes describe.

Adrenaline Crash

Value: 3 points

Coming down from the effects of adrenaline is particularly hard on the character. At the end of combat, he suffers a –3 penalty to all checks. This penalty decreases by 1 for every 5 minutes. If another combat scene begins during this time, a successful Fitness (TN +1) check allows the character to ignore this penalty for the duration of the combat.

Compromised Immune System

Value: 1 to 5 points

Radiation, chemical exposure, or infection has resulted in the character's immune system functioning below normal levels. All checks to resist infection or disease suffer a penalty equal to the point value of this disadvantage. In addition, the character's healing factor (see p. 173) is reduced by the same amount. A zero or negative healing factor of zero indicates that the character does not heal *at all* at his current level of medical care and living conditions.

For an additional 2 points, this disadvantage is contagious through contact with the character's bodily fluids. Any such contact requires a FIT check; failure results in the victim acquiring this disadvantage within 1d10 months.

Fragile

Value: 2, 4, or 6 points

The character is frailer than his size suggests. For every 2 points invested in this advantage, the character's base wound threshold is reduced by 1.

Irradiated

Value: 1 to 5 points

Special: A character may receive additional professional skill points to acquire or increase this disadvantage during his Last Year phase.

The character suffered significantly more radiation exposure than most survivors of the Twilight War. Increase his starting rads by 2d20H for every point received from this disadvantage.

Maintenance Condition

Value: 2 or 5 points

The character has a medical condition that requires constant upkeep. For 2 points, maintenance consists of a daily regimen of hard-to-find drugs such as insulin or immune boosters. For 5 points, it's dependent on daily treatment with specialized medical equipment like a dialysis machine.

For every day that the character goes without treatment, the player must make a Fitness check (TN +2). With failure, the character suffers a slight virtual torso wound. Every subsequent failed check increases the wound's severity by one level. If the wound's severity increases above critical, the character becomes comatose and dies within 1d10 days. Three straight days of treatment reduce the wound's severity by one level.

At the GM's discretion, another penalty of equivalent severity (and eventually fatal consequences) may replace the automatic wound that this disadvantage inflicts.

Missing Arm

Value: 7 or 8 points

The character has suffered an amputation at the upper arm or shoulder. This disadvantage is worth 8 points for the character's dominant hand or 7 points for his non-dominant hand. See the rules for handedness (see p. 163) for the effects of acting with only one hand. Any hit location roll that indicates a hit on the missing arm is treated as a miss. The character may not be fitted with a medical prosthesis, as insufficient bone and muscle remains.

Missing Digit

Value: 1 or 3 points

The character has lost a toe or finger. Note that it's possible to lose a lesser digit without suffering any ill effects; with this disadvantage,

the character suffers in-game penalties. For 1 point, a lost toe inflicts a –1 penalty on all attribute and skill checks that primarily involve balance. Alternately, a lost finger inflicts a –1 penalty on all attribute and skill checks that rely on fine manipulation, including ranged attacks (if the character is missing his trigger finger, it's assumed that he now pulls a trigger with his middle finger).

For 3 points, the character is missing a thumb. All attribute and skill checks that rely on manual dexterity suffer a –2 penalty, increased to –4 for those requiring fine manipulation. Additionally, the lack of an opposable digit means that the character has difficulty grasping objects; all appropriate tactical actions, such as Ready/Stow Item, take double the normal time.

Missing Foot

Value: 3 points

The character has suffered an amputation at ankle or shin level. He has a permanent virtual moderate injury to the appropriate leg. This virtual injury does not affect medical procedures performed on him. Any hit location roll that indicates a hit on the missing foot is treated as a miss.

If the character has a fitted medical prosthesis, he moves as if uninjured and performs all other actions as if the virtual injury were slight. Any hit location roll that indicates a hit on the missing foot is a hit on the prosthesis.

Missing Hand

Value: 4 or 5 points

The character has suffered an amputation at the wrist, forearm, or elbow. This disadvantage is worth 5 points for the character's dominant hand or 4 points for his non-dominant hand. See the rules for handedness (see p. 163) for the effects of acting with only one hand. Any hit location roll that indicates a hit on the missing hand is treated as a miss.

If the character has a fitted medical prosthesis, he may perform actions that don't require heavy lifting or rapid fine motor control, suffering a –2 penalty. Attacks still suffer the normal penalties, as prosthetic hands are not designed for the rough treatment of combat. Attacks with crude prostheses such as hook hands are handled according to the whim of the GM. Any hit location roll that indicates a hit on the missing hand is a hit on the prosthesis.

Missing Leg

Value: 5 points

The character has suffered an amputation at knee or thigh level. He has a permanent virtual serious injury to the appropriate leg. This virtual injury does not affect medical procedures performed on him. Any hit location roll that indicates a hit on the missing leg is treated as a miss.

If the character has a fitted medical prosthesis, he moves as if the virtual injury was slight and performs all other actions as if the virtual injury was moderate. Any hit location roll that indicates a hit on the missing leg is a hit on the prosthesis (which suffers the normal effects of damage to an object - see p. 154).

Motion Sickness

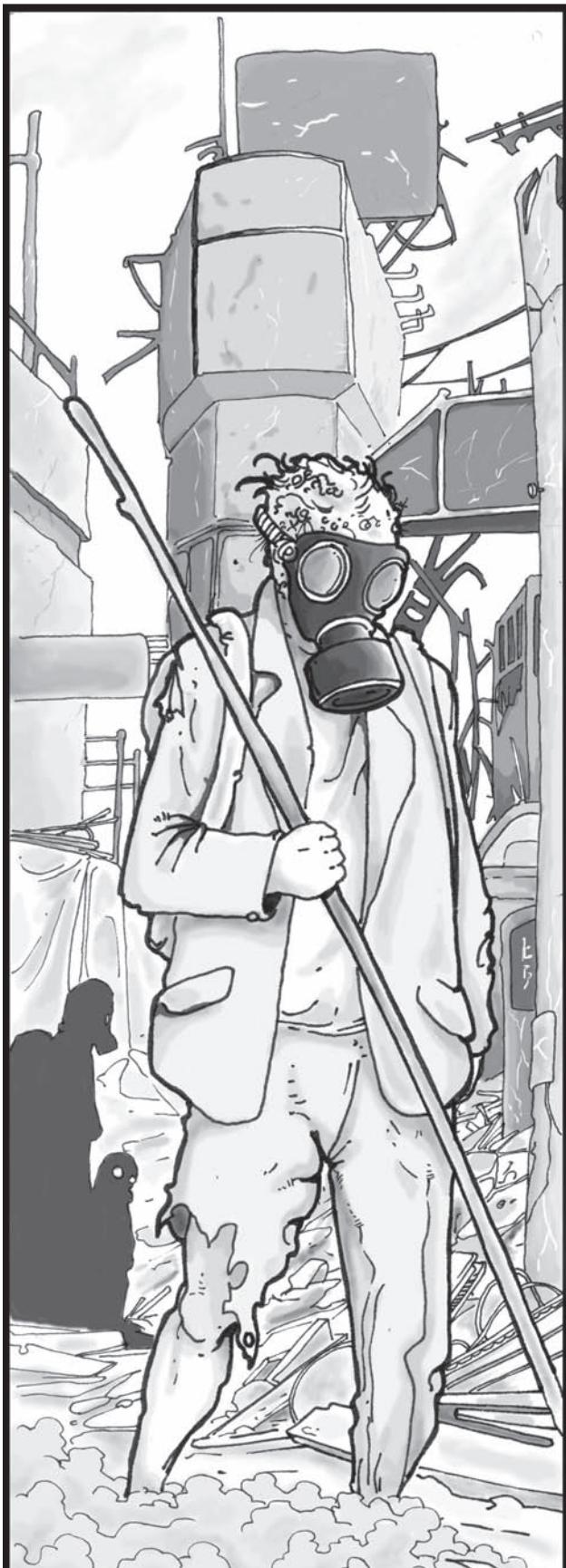
Value: 1 point

The character is susceptible to motion sickness. Riding in a vehicle as a passenger is considered light work instead of inactivity. Travel over particularly rough terrain, including high seas or stormy skies, is considered heavy work.

Mute

Value: 3 or 4 points

The character is incapable of speech. He only can make inarticulate noises. While sufficient for croaking a warning, all attempts at verbal communication automatically fail. For 4 points, he can't even make significant noise – nothing comes out but a faint respiratory hiss.



Design Note: Mental Health

Character psychology is always a touchy subject in roleplaying games because of the potential to interfere with a player's preferred manner of running his character. For this reason, most of the psychological advantages and disadvantages have mechanical effects limited to conditional bonuses and penalties, rather than dictating or forbidding certain actions. We've tried to stay away from delusions, Multiple Personality Disorder, and other maladies that tend to degenerate into "wacky fun time with the mentally ill" when placed in the hands of certain players.

Roleplaying out the external manifestations of these maladies is left to your discretion. We all know people who never let on what they're feeling and those who wear their hearts on their sleeves; it's safe to assume that PCs span a similarly wide range of expressiveness.

Short-Winded

Value: 1 to 3 points

The character's mind may be willing, but his flesh is weak. His physical endurance is less than his general constitution would suggest. When calculating his fatigue thresholds, reduce his fitness by 1 + the number of points received from this disadvantage.

Terminal

Value: 5 points

The character has an incurable medical condition that *will* eventually kill him. After 1d10 months of game time, he receives a permanent virtual slight wound to the torso. After every additional month, there is a 50% chance that this condition increases in severity by one level. When the condition reaches critical severity, the character dies after an additional 3d10 days.

Psychological Disadvantages

After the Collapse, no one is well-adjusted by prewar standards. These disadvantages depict the unique vagaries of the character's mind.

Addiction

Value: 1 to 5 points

The character is dependent on some mood- or biochemistry-altering substance. For every full day he goes without his fix, he suffers a cumulative -1 penalty to all checks, up to a maximum penalty equal to the value of this disadvantage. Suggested maximum values for this disadvantage vary depending on the substance in question: 1 point for caffeine or tobacco, 2 points for marijuana or mild hallucinogens, 3 points for alcohol, and 4+ points for hard drugs.

A character may have this advantage for up to three different substances. The value of this advantage cumulatively decreases by 1 for each additional instance (i.e. a second addiction with a maximum -3 penalty is worth only 2 points).

Amnesia

Value: 7 points

The character has lost his memory of a significant portion of his personal history. While he still retains all attributes and skills, his personal history and sense of identity are gone. The character begins play with no contacts and only half the normal number of degrees for his EDU value. In addition, he may not have any advantages or disadvantages related to personal history, such as Home Territory.

A particularly sadistic GM should feel free to offer the player additional skill points. If the player accepts, the GM should select appropriate disadvantages of which neither the player nor the character is aware until their effects appear in play, such as Compromised Immune System or Nemesis. Disadvantages selected in this manner should be restricted to those that a character could not discover through self-examination.

Antisocial Personality Disorder

Value: 2 or 3 points

The character has a limited or nonexistent capacity for empathy. For 2 points, all attempts at positive social interaction occur as if he had a slight virtual head injury.

For 3 points, the character is clinically psychopathic. All attempts at positive social interaction occur as if he had a moderate virtual head injury. In addition, the character never receives any benefit from being a member of a team. However, he suffers no psychological damage from acts committed against animals or other humans. In a post-apocalyptic environment, this often makes psychopathic behavior a survival trait...

Ascetic

Value: 1 point

Prerequisite: may not be Materialistic

The character is loftily unconcerned with material goods (or just obsessed with the idea of entropy). He derives no familiarity benefits from personal gear.

Aversion

Value: 1 point

The character finds something particularly unnerving or repugnant. When in the presence of the subject of his aversion, he suffers a -2 penalty to all actions. A successful RES check eliminates this penalty for one scene.

During combat, the above penalties are replaced with a 2d6L roll. The result is the number of threat conditions that the object of the phobia applies to the character's threat level as long as it is present.

The GM should ensure that the subject of the aversion is likely to appear on a semi-regular basis. Players should be penalized for selecting inappropriate or improbable aversions. Appropriate aversions include anything that is also appropriate for the Phobia disadvantage.

Berserk

Value: 2 points

Sometimes, the character snaps. At the beginning of combat, you must make a RES check. If this check fails, the character enters a berserk rage for the remainder of combat. Additionally, you must make a RES check whenever an increase in the character's threat level sets it to a value that equals or exceeds his CUF (see p. 159).

While berserk, the character is immune to all morale effects. He must take every opportunity to attack. He may not retreat or move to cover unless such a maneuver places him closer to a new target. While using ranged weapons, he may only make snap shots. If he runs out of ammunition or otherwise cannot effectively use a ranged weapon, he must move to within Personal range of nearest enemy at his best possible speed and engage in close combat. He may not hold at the end of an exchange of fire. He ignores all penalties from slight wounds.

Code

Value: 3 points

Prerequisite: RES 6+

Special: A character may acquire this disadvantage during any appropriate life path phase.

In the post-Collapse world, lofty ideals are a liability, and most people pay no more than lip service to their professed beliefs.

However, this character clings to a certain set of moral values, which you must define during character creation. Whenever the character violates his Code (through action or inaction), he suffers psychological damage with a TN modifier of -2 (or worse, at the GM's discretion, for particularly heinous acts).

As a side benefit, any attempt to induce the character to take an action that violates his Code suffers a -5 penalty. At the GM's discretion, a character who is known to follow a certain Code may receive a bonus to social interaction in situations where his integrity is a factor.

A character may have multiple Codes. A second Code that complements the first has only a 1-point value, while a second Code with conflicting tenets is still worth 3 points. The GM has final approval over all Codes; to receive points from this disadvantage, the belief structure must actually impose some constraints on the character's actions. Some appropriate sample Codes include:

Buddhist Faith

The character follows the teachings of the Buddha and attempts to adhere to the tenets of the Eightfold Path and the five Buddhist precepts. He must:

- Not steal.
- Not engage in adultery, rape, or other sexual misconduct.
- Speak only unadorned truth.
- Avoid use of alcohol or other mind-altering substances.
- Not kill or injure living beings, except for survival (e.g. food or self-defense).

Modern moderate interpretations of the five precepts state that the prohibition on killing does not extend to acts of self-defense, nor to preemptive destruction of evil in order to protect a greater good. For an additional 1 point, this code extends to all killing, even in defense of self or others or to prevent atrocities.

Islamic Faith

The character is a devout Muslim and observes the Five Pillars of Sunni Islam or the closely-overlapping eight practices of the Shi'a sect. He must:

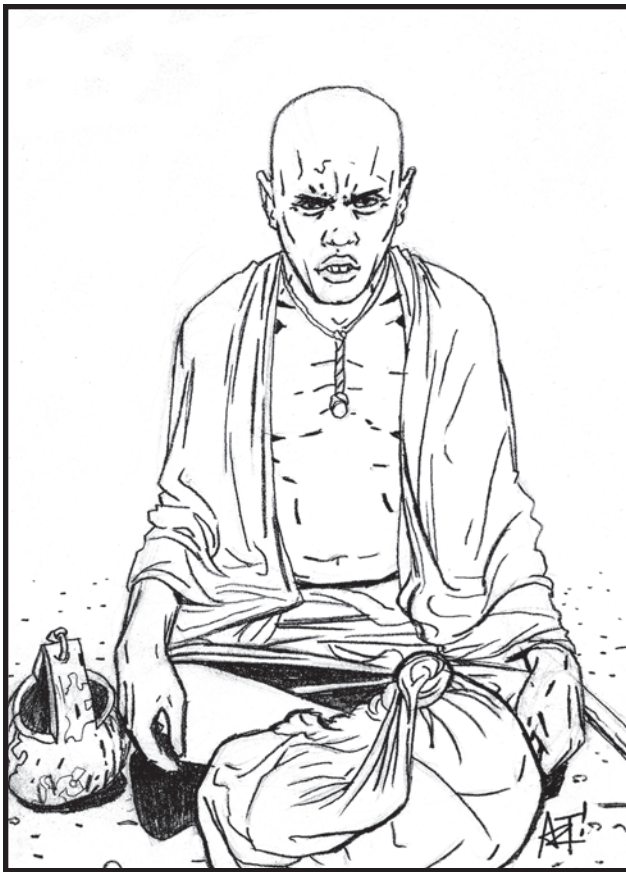
- Acknowledge the existence of Allah and not worship any other god.
- Pray facing toward Mecca five times a day (except in the case of an emergency in which prayer is unfeasible).
- Fast between dawn and sunset during the month of Ramadan (except in the case of medical necessity or, again, exigencies such as battle).
- Provide charity to the needy by sharing excess material wealth.

In addition, the character is expected to adhere to *Sharia* (Islamic law) and the general ethical principles of Islam, and to encourage others to do likewise.

Judeo-Christian Faith

The character is a devout Jew or Christian and observes the Ten Commandments and the associated teachings of his sect. He must:

- Acknowledge the existence of God and not worship any other god.
- Never use the name of God or other religious language in a blasphemous or inappropriate manner.
- Not commit murder, theft, adultery, or kidnapping.
- Fulfill all obligations to his parents.
- Not swear false oath or give false testimony.



The moderate interpretation of the prohibition on murder only forbids killing innocents or noncombatants; attackers or enemy troops bring justifiable violence upon themselves. For an additional 1 point, this prohibition extends to all killing, even in defense of self or others.

Law of War

The character is a military professional or student of military affairs and is committed to the established international accords governing warfare. He must:

- Accept surrender, except in the case of an enemy that is proven to have previously engaged in false surrender.
- Treat prisoners of war humanely, in accordance with the Geneva Convention.
- Never attack noncombatants, including military medical or religious personnel.
- Never take hostages.
- Never destroy civilian structures or property for any reason other than immediate military necessity.
- Never fight while under a sign of neutrality (e.g. a white flag) or while designated as a noncombatant (e.g. identified as a medic).
- Never attack humans with weapons that will cause unnecessary suffering, including incendiaries or weapons of mass destruction.

Medical Ethics

The character observes the Hippocratic Oath or a similar set of values common to healers. A character with this code must:

Design Note: Code and Faith

The subject of religion is a touchy one, particularly in the context of a global war whose root causes at least partially sprang from religious extremism. The sample religious codes presented here are not intended as editorial comments on the validity (or lack thereof) of any particular faith. Players designing characters with religious codes are encouraged to first do their research, then write codes that are appropriate to the characters they want to play and respectful to real-world religions. No, this isn't the right game for you to play a Jedi.

- Render all possible medical assistance to any injured or ill individual, regardless of enemy status.
- Attempt to educate any willing student of medicine.
- Place the welfare of patients above other factors, such as personal comfort, wealth, or tactical considerations.

For an additional 1 point, the character's Code has an additional prohibition (possibly religious) against euthanasia and abortion.

Tribal Ethics

As civilization fell apart during the Last Year, many small survivor communities became increasingly insular, divorcing themselves from the greater body of humanity. In many cases, this isolationism occurred in conjunction with a rediscovery of tribal (sometimes referred to as "primitive communist") societal structures. A character with tribal ethics recognizes himself as part of a tribe – a discrete community of about 150 people or less, within which he is currently living. He must:

- Never seriously injure or kill another member of the tribe (superficial injuries are acceptable and may be a valid method of dispute resolution).
- Never commit rape, torture, or equally personal violations against another member of the tribe.
- Never take action that causes material harm to the tribe as a whole.
- Regularly work for the benefit of the tribe as a whole.
- Not withhold any significant property for personal use, save for those items which are essential to his primary responsibilities within the tribe.
- Obey all commands of tribal leaders.

Note that post-apocalyptic neo-tribalism does not necessarily mandate a non-technological lifestyle. Many neo-tribal communities steadfastly cling to as much advanced technology as they can maintain, scavenge, or loot.

Warrior Code

The character subscribes to a relatively primitive ethos that idealizes the profession of arms (and, in many cultures, evolved to protect those cultures from their warriors). While outsiders view this code as both quixotic and anachronistic, variations of it appear in military and police circles around the world. A character with this code must:

- Defend all noncombatants from any unlawful attack.
- Never harm a noncombatant or innocent.
- Accept surrender, except in the case of an enemy that is proven to have previously engaged in false surrender.
- Never break a freely-given oath.
- Attempt to educate any willing martial student.

Flashbacks

Value: 2 points

The character is plagued with recurring vivid memories of a previous traumatic event (or an experience with hallucinogens). Whenever the character is subject to a successful ambush or is otherwise surprised, the player must make a RES check. With failure, the character experiences a flashback and may not act during the first exchange of fire.

Hyperarousal

Value: 1 point

The character's fight-or-flight responses are keyed up far past a healthy level. This can result in messy misunderstandings. Whenever the character is subject to a successful ambush or is otherwise surprised, the player must make an OODA check. With failure, the character's first tactical actions must be to ready his fastest weapon (unless he already has a weapon readied) and make a snap shot or snap strike on the most obvious target. He doesn't have time to determine whether or not the target is actually a threat – if an ally spotted an ambush and fired first, the character must attack that ally.

Impatient

Value: 1 point

Prerequisite: May not be Methodical.

"Hurry up already." The character insists on accomplishing things as quickly as possible. A successful RES check is required for him to take more time than the standard for any task. This does not apply to tactical actions.

Insomnia

Value: 1 point

The character has difficulty going to sleep or staying asleep for more than a few minutes. Every four consecutive hours of sleep only have a 50% chance of reducing his fatigue level unless he is under the effect of sedatives (or has drunk himself into a stupor). This is classified as a psychological, rather than physical, disadvantage because most cases of insomnia are psychological or neurological in origin.

Materialistic

Value: 1 point

Prerequisite: May not be Ascetic.

The character develops an irrational attachment to material possessions, perhaps even at the expense of human empathy. Whenever a piece of his personal equipment is destroyed, he suffers psychological damage at standard TN. This does not apply to consumables that are expended through normal causes.

Methodical

Value: 1 point

Prerequisite: May not be Impatient.

"Don't rush me." The character insists on taking the time to do everything right. A successful RES check is required for him to take less time than the standard for any task. This does not apply to tactical actions.

Phobia

Value: 3 points

The character has an irrational fear of an object or condition. When the subject of the phobia is present, the character suffers from a virtual slight head injury. In addition, the player must succeed in a RES check for the character to approach the object or risk the condition. Actually coming in physical contact with the object or experiencing the condition requires another RES (TN -3) check; if this check fails, the character suffers psychological damage at standard TN.

Post-Traumatic Stress Disorder

Post-traumatic stress disorder (PTSD) is a psychological condition brought on by traumatic experiences, usually involving a high degree of physical danger (such as, say, a nuclear war...). In 2013, recent events make it likely that many characters will exhibit at least some symptoms of PTSD. Rather than classifying it as a discrete psychological disadvantage, we've chosen to describe the most common effects as separate disadvantages, all of which also can have causes other than PTSD. A character with PTSD is likely to have one or more of the following: Aversion, Flashbacks, Hyperarousal, Insomnia, Phobia, or Suicidal Tendencies.

During combat, the above penalties are replaced with a 2d6H roll. The result is the number of threat conditions that the object of the phobia applies to the character's threat level as long as it is present. The GM should ensure that the subject of the phobia is likely to appear on a semi-regular basis. Players should be penalized for selecting inappropriate or improbable phobias. Appropriate phobias include *acrophobia* (heights), *algophobia* (pain), *aquaphobia* (water), *arachnophobia* (spiders), *autophobia* (being alone), *aviophobia* (flying), *claustrophobia* (confined spaces), *cynophobia* (dogs and other canines), *entomophobia* (insects), *glossophobia* (public speaking), *gymnophobia* (nudity), *heliophobia* (sunlight), *hemophobia* (blood), *herpetophobia* (reptiles), *hippophobia* (horses), *hoplophobia* (weapons), *ligyrophobia* (loud noises), *mysophobia* (dirt or germs), *necrophobia* (death or corpses), *nosophobia* (disease), *nyctophobia* (darkness), *ophidiophobia* (snakes), *pyrophobia* (fire), *radiophobia* (radiation), and *trypanophobia* (needles or injections). **Coulrophobia (fear of clowns) really shouldn't be allowed.**

Suicidal Tendencies

Value: 5 points

The character is weary of living, convinced of his guilt and worthlessness, or otherwise intent on ending his own existence. After any scene in which the character suffers moderate or worse psychological damage, the player must succeed in a RES (TN -2) check. If this check fails, the character makes an attempt on his own life, using the highest-rated appropriate skill. A marksman may try to shoot himself, while a doctor is more likely to overdose on sedatives.

On the plus side, the character's desire to die strengthens his ability to face down immediate threats. His CUF is considered 2 higher for the purpose of morale and self-preservation (see p. 161).

Unstable

Value: 1 to 5 points

Your character is more susceptible than normal to stress – not entirely unexpected in the current environment. You suffer a penalty on all psychological damage resistance checks equal to the point value of this disadvantage.

Sensory Disadvantages

These disadvantages affect the way in which the character perceives the world. Many are directly linked to the Awareness attribute.

Blind

Value: 8 points

The character is completely blind in both eyes and automatically fails all AWA attribute checks that require vision. At the GM's discretion, other tasks that require vision either automatically fail or suffer a -5 penalty.

Deaf

Value: 6 points

The character is completely deaf and automatically fails all AWA attribute checks that require hearing. At the GM's discretion, other tasks that require hearing (including social interaction) either automatically fail or suffer a -5 penalty. A successful Language (PER) skill check with a non-verbal cascade (i.e. American Sign Language, Lip Reading) eliminates this penalty.

Farsighted

Value: 1 to 4 points

The character has poor short-range vision. For every point received from this disadvantage, he suffers a cumulative -1 penalty to all vision-dependent attribute and skill checks that involve a target or subject within the Personal and Gunfighting range bands. Corrective lenses reduce this penalty by 2, but combat tends to be rough on such equipment. Whenever the character suffers a head hit, roll 1d6. On a result of 5, his glasses are knocked off or he loses a contact, but he can salvage the wayward item after the end of combat. On a result of 6, the glasses or contacts are destroyed. The penalty inflicted by this disadvantage does not apply to attacks.

Hard of Hearing

Value: 1 to 4 points

For every point received from this disadvantage, the character suffers a cumulative -1 penalty to all Awareness-based checks that rely predominantly on hearing. A hearing aid reduces this penalty by 2, but combat tends to be rough on such equipment. Whenever the character suffers a head hit, roll 1d6. On a result of 5, his hearing aid is knocked off, but he can salvage the wayward item after the end of combat. On a result of 6, the hearing aid is destroyed. Also note that hearing aids are battery-dependent.

Nearsighted

Value: 2, 4, 6, or 8 points

The character has poor distance vision. For every 2 points received from this disadvantage, his limit of visual range is reduced by one range band. Corrective lenses eliminate up to two range bands worth of penalty, but combat tends to be rough on such equipment. Whenever the character suffers a head hit, roll 1d6. On a result of 5, his glasses are knocked off or he loses a contact, but he can salvage the wayward item after the end of combat. On a result of 6, the glasses or contacts are destroyed.

This disadvantage's penalty does not apply if the character is using a magnifying device such as binoculars or a telescopic rifle sight for long-range observation. For ranged attacks, telescopic sights negate this penalty *only* in the case of aimed shots.

One Eye

Value: 4 points

It's all fun and games until someone loses an eye. All actions that rely on depth perception or a wide field of view, including AWA checks, vehicular maneuvers, and most ranged attacks, suffer from the effects of a slight virtual head injury. In addition, the character's peripheral vision is halved, and all close combat attacks on him receive a +2 bonus.

The slight virtual head injury is eliminated if the character is using a display or sighting device that compresses the field of view to two dimensions or only permits the use of one eye. Typically, this applies only to video displays and weapon sights.

Social Disadvantages

These describe variations in the character's capacity for interpersonal relationships.

Nemesis

Value: 2 points

A nemesis is similar to a contact, but with a reversed polarity. Rather than being willing to help the character, he's driven to do the character harm at any opportunity, thanks to shared personal history. The GM decides when a nemesis shows up to cause complications for the character, but the best opportunity is a failed attempt to activate a contact.

Each nemesis should be designed as a star NPC with capabilities slightly superior to those of the character. If multiple PCs have the same nemesis, the nemesis should be appropriately powerful, capable of bringing significant military, economic, or political force to bear on his enemies. The GM is strongly advised to use this disadvantage as a source of recurring frustration for the character rather than allowing the nemesis to be blown away in his first five minutes of screen time.

A character may have two Nemeses for a total of 3 points.

Reduced Contacts

Value: 1 to 4 points

The character isn't particularly good at making friends. His number of starting contacts is reduced by 1 plus this disadvantage's value. If this causes him to begin play with a negative number of contacts, each negative contact is considered a nemesis, as per the eponymous disadvantage.

Repugnance

Value: 1, 3, or 5 points

The character is physically repulsive by most standards of physical appeal. Depending on the number of points received from this disadvantage, he receives either a -1, -2, or -3 bonus to all social interaction. This penalty is reduced by 1 for subjects whose sexual preferences don't include the character's gender. This only applies to face-to-face interaction - no one is ugly on the Internet. It does not apply to other PCs, contacts, nemeses, or any other character who knows the repugnant character well.

Reveled

Value: 1 to 5 points

This disadvantage may only be selected if the optional reputation rules (see p. 326) are in use.

For every point acquired from this disadvantage, gain 1d3 points of Renown. Then select one reputation aspect (Force, Skill, Integrity, Service, or Luck). Roll 2d10H, gaining the die result as negative reputation in that aspect.

HAZARDOUS DUTY

Certain life path phases involve a high degree of risk to one's person. At the end of any criminal, law enforcement, paramilitary, or military phase, or any pass through Service Academy, Civil Aviation, Emergency Services, or Tradecraft, you may increase your character's OODA or CUF by 1. Each time you choose to do so, you also must roll on the following Hazardous Duty Table. The roll you make depends on the degree of danger that your character is willing to endure: 2d6+14 for Acceptable danger, 2d10+10 for Significant hazards, or 2d20 for Extreme peril. The table is designed so that higher degrees of danger have potentially better payoffs. However, the risks are commensurately greater as well. Extreme peril involves a significant risk of a character being crippled before play begins. You have been warned.

The Hazardous Duty Table is intended for use with advantages and disadvantages (see the previous section). If your play group is using the optional survival point rules (see p. 86), you may *permanently* reduce your character's maximum SP value by 1 to ignore or re-roll any one result on the Hazardous Duty Table. If you re-roll, you must accept the outcome of the second roll.

Roll	Effect
2	The chain of command is decimated, but you take charge to save the day. Gain +1 CUF, +1 OODA, the Natural Talent advantage for either Command or Tactics, and two contacts of any type. At any time in the future, the character may ignore all prerequisites for one phase: Officer Candidate School for an enlisted military character, Staff College for a commissioned military character, or either Graduate University, Law School, or Undergraduate University for any other character. Alternately, you may give up this next benefit in exchange for automatically succeeding at your promotion check for the current phase.
3	The stories are exaggerated. You didn't <i>really</i> kill that fifteenth enemy with a grapefruit spoon after you ran out of ammo. Gain +1 CUF, +1 OODA, +1 MUS, and 1 skill point in Hand Weapons.
4	They'll be talking about that shot for years. Gain +1 CUF, +1 CDN, and 1 skill point in any one ranged weapon skill (Archery, Artillery, Gunnery, Longarm, Sidearm, or Support Weapons).
5	The evac flight was overloaded, so you volunteered to stay behind and sneak out of the country on foot. Gain 1 skill point each in Fieldcraft, Language (any cascade), Longarm, Medicine, and Tactics.
6	Your testimony exonerates a colleague who was accused of capital crimes. Gain +1 RES and a reinforcement contact.
7	Extended deployment in some of the world's worst mountains left you in great shape, but with a new appreciation for elevators. Gain +1 to the lower of FIT or MUS, 1 skill point in Climbing, and one level of the Mule advantage.
8	You're the only survivor who knows where the supply cache was buried. During your Last Year phase, gain two additional equipment dice.
9	Who knew an embedded reporter could be good for something besides stopping stray bullets? Gain +1 OODA, a grateful information contact whose life you saved, and 1 skill point in a news media-related Artisan or Performance cascade.
10	Next time, you'll remember to check your six. Gain +1 AWA and 1 skill point in either Fieldcraft or Streetcraft.
11	One fight without the use of your good hand was enough for you. Gain the Ambidexterity advantage for your choice of Hand Weapons or Sidearm, along with 1 skill point in the same skill.
12	Keen eyes and fast responses prevent a disaster. Gain 1 skill point in Tactics, plus either +1 CUF or +1 OODA.
13	God looks after children and fools, and you were old enough to sign up for this job. Gain one stage of the Survivor advantage, a religious Code disadvantage, and +1 OODA.
14	"Oh, man. And I was getting short. Four more weeks and out." Your character's current assignment is extended. Add one year to this phase's length, gain 5 professional skill points, and roll on this table again at the same level of danger.
15	Your new partner lacks opposable thumbs. Gain 2 skill points in either Animal Husbandry or Mounts. When gearing up, you may spend one equipment die to begin play with your choice of an attack dog or a cavalry-trained mount.
16	Well, it looked good on film. Gain 1 additional contact through positive media coverage.
17	Getting there fast is important; so is getting there intact. Gain 1 skill point in any one appropriate vehicle operation skill (Aquatics, Aviation, Driving, Freefall, Seamanship, or Special Vehicle [any cascade]).
18	Meet interesting people and interrogate them. Gain 1 skill point in any Language cascade.
19	On-the-job first aid training somehow is sufficient – this time. Gain 1 skill point in Medicine.
20-23	Nothing of note happens. Your character emerges from this phase unscathed.
24	Your character is accused of displaying poor judgment or professional ethics in a crisis situation. Add one year of administrative leave and desk duty to this phase's length. You decide whether or not the charges were substantiated.
25	Well, it could have been worse. The character is slightly injured, receiving a 1-point physical or sensory disadvantage of your choice.
26	Next time, remember to duck. Add one year of hospitalization and therapy to this phase's length. The character receives a 1-point physical, psychological, or sensory disadvantage of your choice.
27	A close friend goes home in a box. The character gains 1 skill point in Performance (Ceremonial Drill) from the funeral but loses one contact.
28	We <i>told</i> you to duck. Add one year of hospitalization and therapy to this phase's length. Your character receives a 2-point physical, psychological, or sensory disadvantage of your choice.
29	That's gonna leave a mark. The character gains one stage of the Repugnance disadvantage.
30	At least it wasn't your head. Roll 1d6 and gain a disadvantage: 1-2 Missing Foot, 2-4 Missing Hand, 5 Missing Leg, 6 Missing Arm. For hands and arms, roll randomly again to determine whether the dominant or off side takes the hit.
31	Your heroism was not universally appreciated. Gain the Nemesis disadvantage.
32	Well, you got him to talk. Gain 1 skill point in either Intimidation or Artisan (Torture), along with a criminal record. If your character is a commissioned military officer or already has a criminal record, this instead results in arrest; next phase must be Prison (or the Last Year). Re-roll this result if the character has a Code disadvantage that forbids such conduct.
33	Freezing in the middle of the action gets a friend killed – and everyone knows whose fault it is. Your character loses one contact and may not continue in any military, law enforcement, or emergency services profession.
34	Escape & Evasion training paid off, but part of the jungle will always be with you – and vice versa. Gain 1 skill point in Fieldcraft, but reduce FIT by 1.
35	Explosives in confined spaces are <i>not</i> your friend. Gain a 2-point Hard of Hearing disadvantage and 1d6 additional points of physical or sensory disadvantages of your choice.
36	Standing watch on the "special weapons" results in accidental exposure. Gain 1d10 x 1d10 rads.
37	You're still not sure what was in those drums, but the neurologists consider you a case study. Your choice: reduce CDN by 1 or take the Terminal disadvantage.
38	Surviving a massacre isn't easy, and neither are the memories. Your character's RES is reduced by 1 and he acquires the Flashbacks disadvantage. In addition, he may not continue in any military, law enforcement, or emergency services profession.
39	You don't know what happened. Gain the Amnesia disadvantage, then decide how old you want your character to be when play begins. Give your work thus far to the GM, who will fill in the remaining years.
40	Captured! Select a total of 8 points of physical, psychological, and/or sensory disadvantages of your choice, and reduce your character's FIT by 1. Next phase must be 1d6 years of Prison as a POW or hostage (or the Last Year).

Table 4k: Hazardous Duty



Note: The Hazardous Duty table is written with a bias toward military-related events. If a non-military character receives a result that's thematically inappropriate, it's perfectly acceptable to change the description of the event and select different benefits or penalties of an equivalent point value.

TEAMS

Throughout this book, the word *team* universally refers to the player characters and any NPCs who regularly work or serve alongside them. However, a team isn't always just a collection of individuals — in the real world, a so-called team that functions as such will struggle to succeed at many tasks. This section provides optional rules for treating a group of PCs as a team in the literal sense: multiple people synergistically working toward common goals.

FORMING A TEAM

The process of forming a team is superficially similar to that of creating a character. Like a character, a team has certain traits with either descriptive ratings or numeric values. A team record sheet, which provides a convenient place to record these, is found in the appendix (see p. 331).

Any team is composed of one leader plus one or more additional characters, so the first step in team formation is to select a leader and team members. To be an effective team leader, a character needs high mental attribute values and a high Command skill rating. A team can have a maximum number of members (not including the leader) equal to the leader's Personality value. This includes both PC and NPC members.

Chain of Command

The military principle of the *chain of command* establishes a clear hierarchy of leadership for every member of a unit. Each soldier knows who his immediate superior is and who his own direct subordinates are. The chain of command also establishes an order of succession for unit leadership. If a unit's leader is killed or otherwise taken out of action, his most senior subordinate begins acting as the new leader, hopefully with minimal disruption. Players should establish a chain of command for their characters' team to ensure a smooth transition in the event that the team leader becomes incapacitated during play (see Losing Integration in the following section for why this is important).

INTEGRATION

The Integration trait is a numeric measure of how thoroughly the team has trained together and how well its members collectively act in unison. A team's Integration value determines what benefits its members receive from teamwork. Integration has a minimum value of 1 and a maximum value of 10. If some effect reduces a group's Integration to 0, its members are insufficiently coordinated (and trusting of one another) to be able to act cooperatively in any crisis situation, and they gain none of the benefits described in the following rules.

To gain Integration 1, a prospective team must engage in at least 40 hours of training together within the span of one week. Other high-stress experiences, such as surviving a protracted emergency in a post-apocalyptic environment, can also fill this requirement. The GM may decide that the team's shared experiences prior to the beginning of play are sufficient to provide

them with Integration 1 (or greater, depending on the depth of mutual history between the characters).

Improving Integration

A team builds mutual trust and support through shared experiences. Integration improves through the accrual of improvement points (IPs), which can be thought of as fractional points of Integration. Each of the following experiences provides the team with 1 IP:

- Surviving a combat scene in which no team member died or sustained a critical injury.
- Living in close proximity for one month.
- Spending at least 40 hours training together within the span of one week.

At the GM's discretion, roleplaying can also provide IPs if a scene focuses on the team coming together in dramatically appropriate fashion. Such opportunities include team recreational events, participation in ceremonies such as graduations or weddings, and completion of significant goals that a majority of team members shared.

When the team accrues 10 IPs, its Integration value increases by 1 during the next period of downtime. The accrued IPs for Integration reset to zero and the process begins again.

Losing Integration

A team's Integration suffers when it experiences significant setbacks, suffers betrayal from within, or attempts to bring a new member up to speed. Each of the events listed in the following table removes 1 point of Integration at the end of the scene in which the event occurred. The team leader can prevent this loss with a successful Command (RES, modifiers given below) skill check.



Design Note: Teams

Most RPGs use “team,” “party,” or similar nomenclature to collectively refer to the group of characters that includes the PCs and their closest NPC allies. In most cases, however, actual teamwork receives little more than lip service. Any veteran GM can tell horror stories of alleged teams that were little more than loose collections of independent-minded individuals, not working together so much as coincidentally acting in the same place at the same time. This behavior usually stems from players’ desire to exercise full control over their PCs’ actions, rather than “letting someone else play their characters.”

The team rules in this section are intended to model the benefits that come from an individual subordinating himself to the leadership of another person or the collective guidance of a small group. In other words, we’re offering players numerical advantages in actual teamwork to offset the perceived loss of control in taking orders from another player. As is always the case with advanced rules presented throughout this book, this is entirely optional. A loose group of lone wolves is perfectly capable of effective action.

Although **Twilight: 2013** has less of an exclusive military focus than previous editions, we’ve chosen to model teamwork in a manner that will be familiar to anyone with actual service experience. However, the qualities of integration, mutual support, and hierarchical organization that the team rules address are not exclusive to military forces. Any small group that trains to act with coordinated effort in the face of a crisis – trauma surgeons, political spin doctors, firefighters, basketball players – has a similar structure. Function dictates form.

TEAM ORDERS

When a team encounters a high-stress situation, it looks to its leader for instructions on how to react. Mechanically speaking, these instructions are *team orders*. A team’s leader can issue team orders both in and out of combat.

Combat Orders

The Reflex System doesn’t assume that all teams are formed for paramilitary purposes, but, roleplaying games being what they are, most teams will find themselves in combat on a fairly regular basis. Accordingly, one of the most common uses of team orders is to increase the combat efficiency of team members.

In combat, the leader may issue orders as an operational action. This requires a Command (AWA) skill check. The leader’s player must describe the orders that his character is issuing. These orders may be as detailed or as general as the player desires, so long as they describe a specific course of action for each target character. Target characters must be able to communicate with the leader in order to receive and act upon their orders. The leader may include himself in the orders – in such an event, he knows what he’s going to do, but he’s providing the rest of his team with verbal confirmation of the task he’s assigning himself.

If the Command check succeeds, every target character gains a bonus equal to *half* the team’s Integration value to all actions he takes to further those orders. In addition, he gains an equivalent bonus to all future initiative checks and his CUF value is increased by the same amount. These bonuses remain in effect until combat ends, the leader issues new orders, or a team member breaks formation (see following).

GM Hint: Team Orders

Given the often vast discrepancies between the capabilities of players and their PCs, your group may wind up with a team leader whose player has absolutely no sense of small unit infantry tactics. Unless you're using the Reflex System as an instructional tool in a military academy, we strongly suggest that you cut such a player a fair amount of slack. Before the character issues a team order, allow the player to solicit advice from more experienced players as to which orders to give to minimize PCs' chances of dying poorly. If no one has any good ideas, a Tactics (EDU, TN +1) skill check is appropriate for determining how well the *character* understands the situation. While a firefight is no place for democracy, the characters in it may have years of experience that allow them to make split-second decisions. Most players have no such live-fire experience, regardless of how much time they've spent in front of their PlayStations.

Setbacks and failures...	
Event	Command Modifier
Loss in a non-combat competition against favorable odds	-2
Loss in a non-combat competition against even odds	-1
Loss in a non-combat competition against unfavorable odds	±0
Loss in combat against inferior forces	-2
Loss in combat against equal forces	-1
Loss in combat against superior forces	±0
Casualties and other personnel losses...	
Event	Command Modifier
Team member removed bureaucratically (transferred out)	+2
Team member removed legally (jailed)	+1
Team member captured	±0
Team member suffers a critical injury	+1
Team member suffers critical psychological damage	±0
Team member dies	±0
Team member disappears mysteriously	±0
Affected member was team leader	-1
Per each previous casualty during same event	-1
Internal strife...	
Event	Command Modifier
Verbal confrontation	+2
Physical confrontation without lethal threat	+1
Physical confrontation with lethal threat	±0
Team member moderately injures another	-1
Team member seriously injures another	-2
Team member critically injures another	-3
Team member kills another	-5
Team leader was victim but successfully defended himself	-1
Team leader was victim and failed to defend himself	-2
Team leader was responsible	-3
Addition of new members...	
Event	Command Modifier
New team member joins	±0
Per additional member who joined within the past month	-1
New member is team's new leader	-5

Table 41: Command Modifiers

Breaking Formation

A character *breaks formation* when, while acting under team orders, he takes an action that doesn't conform to those orders. From an in-character perspective, team orders serve to unite the team and inform each member as to each other member's responsibilities and intentions. If a team member deviates from the expected pattern, his teammates are left scrambling to take up the slack or otherwise compensate for his departure from the plan.

Mechanically speaking, as soon as a character breaks formation, he loses all benefits provided by team orders. In addition, *every other* team member who is still acting under team orders must make a CUF check. With success, that team member suffers no ill effects. With failure, his current initiative value is reduced by his margin of failure and he no longer receives any bonuses from the team order.

Reaction Drills

A team may have a maximum number of *reaction drills* equal to its Integration value. A reaction drill is a set of preassigned combat orders designated as the team's actions in, or responses to, a specific event, such as a team member suffering a critical wound in combat or the team's most skilled combatants entering a barricaded room. To eliminate disagreements during play, players should at least discuss each of the team's defined reaction drills with the GM, preferably committing them to writing. From an in-character perspective, a team establishes reaction drills through repeated training; mechanically, this training occurs as a function of raising Integration.

A reaction drill is similar to a team order, but the team has rehearsed it ahead of time. Every character knows what his assignment is without having to wait for the leader to assess the situation and issue his orders. Accordingly, as soon as the reaction drill's triggering event occurs, every team member whose role is defined in the reaction drill is assumed to be operating under successful team orders, without the team leader having to take an operational action to actually issue an order.

Non-Combat Orders

A team leader can also issue orders outside of combat to facilitate a more efficient division of tasks when the team engages in a single task or set of related tasks. Issuing non-combat orders requires one minute per recipient, as well as a Command (COG) skill check. As with combat orders, the leader's player must describe the orders that his character is issuing.

When a team is operating under non-combat orders, every target character gains a bonus equal to *half* the team's Integration value to all actions he takes to further those orders. In addition, each such task has its required time reduced by 5% per point of Integration. These benefits last for a maximum number of hours equal to the team leader's margin of success on the Command check.

MUTUAL LOYALTY AND SUPPORT

One other benefit a team provides is mutual understanding and psychological support. This fosters clearer communication, and even when a character is away from his teammates, the bond of mutual trust can be a significant comfort. This manifests in the following ways:

- Whenever a team member is subject to an outside influence that may cause him to betray the team or forsake his duty to it, he may make a 2d20L check, using the team's Integration as his base TN. If this check succeeds, the outside influence fails to induce the

desired behavior, even if the character already failed any relevant opposed check.

- Whenever a team member suffers psychological damage, he may choose to make his resistance check using the team's Integration as his base TN and the team leader's Command rating for his dice pool.

- All attempts at therapy within the team (i.e. both therapist and patient are team members) receive a bonus equal to *half* the team's Integration value. This applies to both physical therapy and psychotherapy (see p. 183).

- All attempts at training within the team (i.e. both instructor and student are team members) receive a bonus equal to *half* the team's Integration value.

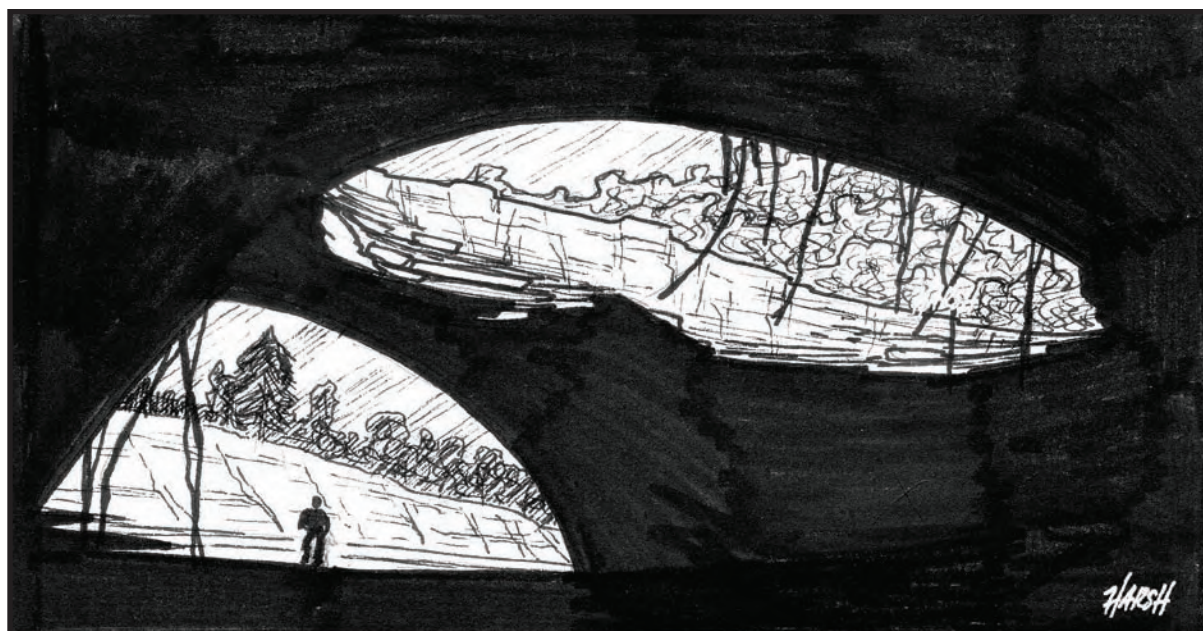
the team's Integration value. If the team's Integration is reduced below the number of SPs currently in the team pool, any excess team SPs are lost.

At the beginning of a session or during any period of downtime, any team member's player may donate some or all of his character's SPs to the pool. At the GM's discretion, an SP award may go to the team pool rather than to an individual team member if the award is in response to the actions of the team rather than one individual character.

During play, the team SP pool falls under the control of the team leader. He may spend team SPs on behalf of any team member, PC or NPC, with whom he has voice or visual contact. The effect of any SP spent in this manner is the same as if the beneficiary's player had spent the SP himself.

TEAM SURVIVAL POINTS

If the optional survival point rules (see p. 86) are in use, the team gains access to its own collective pool of SPs. This pool begins empty and may contain a maximum number of SPs equal to



CHAPTER 5

COMBAT

Everyone handles a firefight differently. Streeter is a machine: no wasted motion, just perfectly efficient killing. Sergeant Kim goes on luck, aggression, and mobility – she doesn't wear armor, and she'll just dump her pack and move like a weasel on speed. The Jims spend ammo like it was water, but they do get results. Me? I don't remember any of my fights. They're just confused blurs. Except the first one.

I'd never touched a gun before I got to Iraq. I got some range time with the soldiers I was covering, but the Army had strict rules about embeds being total noncombatants. I wore armor and a helmet, but I didn't carry anything more dangerous than a camera for two years.

Kirkuk changed that. I was riding with Sergeant Scott when our HMMWV took an RPG to the engine. He bailed out, dragging his unconscious driver with one hand and shooting with the other. I just scampered along in his wake because staying in a stationary, smoking HMMWV seemed like a bad idea.

He went straight for the nearest shop – this was before we actually got out of the city – kicked in the front door and charged right in. Later, he told me he was just looking for cover, but, as his luck usually goes, he chose the building that the guys running the ambush were using as a command post. So when he went through the door, he was face to face with seven pissed-off Pasdaran. He emptied his pistol into the first two, kicked a third in the wedding tackle, and then went down in a flurry of skinny arms and legs as the rest saw a great opportunity for a hostage and dogpiled him.

I was just standing there, more or less petrified, when one of the Iranians extracted himself from the group hug and saw me. We both looked at the ground, saw the AK-47 that someone had dropped, and dove for it. I beat him by about a millisecond and heard his nose break on the crown of my skull.

I was wrestling around on the floor with this guy who's about half my size but twice as strong, and neither of us had control of the gun. Someone got a thumb inside the trigger guard – and that's when we found out the safety was off. Thirty rounds, full auto, straight into the whole pile of guys on Sergeant Scott. All I had time to think was oh, crap, I just killed – and then a size 12 combat boot kicked the Iranian off me.

So I looked up and Sergeant Scott was standing over me, covered in blood. I mean, hair, teeth, and eyeballs all over the place. His armor had two smoking craters where tracers went through Iranians to get to him. If I thought I was a dead man before, I was certain now. But he just looked at me and said, *"Monk, what the hell were you waiting for?"*

This is the law: The purpose of fighting is to win. There is no possible victory in defense. The sword is more important than the shield and skill is more important than either. The final weapon is the brain. All else is supplemental.
— John Steinbeck, *The Law*

The best way to win a fight is to avoid being in the fight in the first place. However, in **Twilight: 2013**, few characters have this option. The events of the Twilight War and the Collapse have stripped away the veneer of civilized behavior from all but the luckiest and most sheltered of survivors, and virtually every living human on the planet has had to fight for his life at least once. Given the level of desperation and resource scarcity in the post-nuclear world, it's safe to say that the war is not yet done with any character, even if he wants to be done with it. This chapter provides rules for the final option: combat.

SURVIVAL PSYCHOLOGY AND PHYSIOLOGY

A lethal fight is a terrifying, confusing, chaotic environment, regardless of the number of participants or the level of technology they're employing in their attempts to kill one another. A fighter who stops to think about his next move will die at the hands of one who takes immediate action. The Reflex System's combat rules attempt to replicate this imprecision, uncertainty, and immediacy, hopefully while providing enough detail to satisfy most players. Before addressing these rules, however, it's worth taking a little time to discuss the effect of combat on a character who experiences it.

In the modern world, very few individuals have a natural aptitude for survival. The human mind works by constantly creating internal models of the way it believes the world to be, based on a lifetime's cumulative experience. Situations experienced more often provide more data, which allows more accurate mental models. In turn, this enables the mind to more accurately predict upcoming events and decide on appropriate actions in familiar circumstances. The problem with sudden, unexpected events is that the mind is unprepared for them due to a lack of prior experience. This causes its mental models to break down. This difference between expectation and reality gets people killed on a daily basis because they can't decide how to react to sudden threats, whether they come in the form of hurricanes, earthquakes, traffic hazards, or angry men with guns.

In addition to the set of problems that an unprepared mind can cause in combat, the human body has its own set of survival imperatives. Despite being tool-using omnivores with millennia of experience in killing each other, we still see ourselves as prey on some primal level. The conspiracy of our bodies and our subconscious minds dictates certain behavior in the face of lethal danger: freeze to avoid notice, flee if chased, and fight inelegantly and brutally if cornered. "Fight or flight" is an oversimplification of this glandular and subconscious set of responses, but it's not inaccurate.

When something triggers the physiological set of threat responses, the body takes steps to prepare itself for immediate physical exertion and trauma. Glands dump hormones into the bloodstream to enhance strength and speed. Capillaries in the extremities constrict, forcing blood out of the arms and legs to prevent excessive blood loss from trauma. This preparation comes with a price, however. Hormones interfere with rational decision-making ability, and lowered blood supply to the extremities means loss of fine motor control. As if that weren't enough, the parts of the brain that handle sensory input often block out information

that isn't relevant to the immediate threat. Tunnel vision, temporary deafness, and complete obliviousness to pain are all normal experiences.

This narrowing of perception and focusing of capability tends to distort overall awareness of the environment in a survival situation. Time perception is wholly unreliable – a firefight can be over before a combatant has a chance to consciously realize that he's fighting for his life, or can seem to play out in excruciating slow-motion. Memory is rarely reliable when it comes to precise details or sequences of events.

All of these factors combine to make combat a confusing and chaotic environment for anyone involved in it. The Reflex System represents this by emphasizing events *as the characters perceive them*, rather than focusing primarily on numerical factors like precise time and distance that are obvious only to outside observers (players and GMs).

THE COMBAT ATTRIBUTES

The eight core attributes model a character's innate qualities under normal circumstances. However, as noted above, the ability to act quickly and decisively in the face of an immediate lethal threat isn't common to all people. Some studies indicate that no more than 10% of the human population is psychologically capable of maintaining full function in such a situation. In the world of **Twilight: 2013**, a large portion of the other 90% is already dead, but this doesn't automatically indicate that every survivor is a natural-born killer. The two "combat psychology" attributes, Coolness Under Fire (CUF) and Observe-Orient-Decide-Act (OODA), model a character's psychological and physiological capacity for decision and action in combat.

Coolness Under Fire

Coolness Under Fire is a game mechanic representing a character's capacity to override his basic mammalian survival instincts. This comes from a combination of trained reflex, self-control, and willingness to accept injury as a consequence of action. To a certain extent, CUF can be considered a "courage attribute," though it only addresses the limited subset of courage in the face of immediate physical danger (moral rectitude and similar forms of courage are roleplaying decisions or functions of Resolve).

Some events or environmental conditions can make it highly desirable for a combatant to do nothing more than seek cover and try to remain unnoticed. No one *wants* to stare into a mushroom cloud as it boils skyward over his head or charge uphill into automatic weapons fire. That sort of thing tends to engage the "freeze" and "flee" responses discussed earlier. CUF enables a character to act, and to continue acting, when confronted with such threats, despite the perfectly reasonable desire to get the hell out of the fight. A higher CUF value enables a character to override his survival responses and keep going in the face of more extreme or immediate threats.

Observe-Orient-Decide-Act

The Observe-Orient-Decide-Act loop was first described by Colonel John Boyd, a U.S. Air Force military strategist. Boyd theorized the OODA loop as a model for the decision-making process that all organisms (and organizations) use, composed of four interrelated cycles:

- **Observe:** Receive direct sensory information about a situation (“Some guys wearing civilian clothes and carrying assault rifles are standing over there.”).
- **Orient:** Match incoming information with known facts to ascertain what’s happening (“AK-47s and no uniforms means they’re probably enemy irregular forces.”).
- **Decide:** Select or create an appropriate response to the situation (“Eliminate the threat before they can eliminate me. I need to take cover and open fire.”).
- **Act:** Execute the response and observe the result, continuing the loop (Bang!).

Although Boyd originally described the OODA loop as a training tool for fighter pilots, it’s not unique to combat. Anyone reading this book goes through OODA loops thousands of times a day in response to normal circumstances. Driving is an excellent example: every driver observes the action of other vehicles and the environment, draws conclusions about the flow of traffic, decides which control inputs to give his vehicle, and acts accordingly. A novice driver is still working through parts of his OODA loops consciously – he has to think for a moment about how to work the clutch or whether his speed is appropriate. A driver who’s distracted by a conversation on a cellular phone doesn’t process his driving-related OODA loops as quickly because he’s diverting part of his mental capacity to other OODA loops (the ones related to conversation or the use of the phone’s controls).

Experience with any given situation allows an individual to cycle through his OODA loop faster when dealing with that situation. Combat is no different, and for the vast majority of people, it’s an unfamiliar environment, with literally hundreds of new sensory inputs that have to be analyzed. Like a novice driver, a novice combatant has to devote conscious thought to each action, while a veteran can orient on familiar observations and react to them without having to stop to figure out what they mean. The OODA attribute represents a character’s mental reflex speed in combat, and provides a relative measurement of his capacity for a rapid OODA loop. A higher OODA value enables a character to act more swiftly and to recognize and adapt to unexpected changes in a combat situation.

THE FLOW OF COMBAT

The ebb and flow of battle rarely generates a constant, sustained barrage of fire. Instead, brief bursts of intense activity punctuate stressful and ominous silences. The Reflex System represents this fluctuation with *exchanges of fire* and *pauses*.

The actions that a character can take during combat are divided into two categories. *Tactical actions* are simple and swift, requiring no more than a few seconds to execute. They occur during exchanges of fire. *Operational actions* are more complex, requiring up to a minute to perform, and usually occur during pauses. Individual tactical and operational actions are described on pages 139 and 141, respectively.

STARTING COMBAT

Starting a fight is easy: hit somebody.

To be less flippant, combat begins when any participant initiates a physical action to which any other participant wants to respond immediately. This doesn’t have to be combat in the most literal sense of lethal attacks occurring. If two characters are racing to grab the last piece of fried chicken from a picnic bench a few meters away, resolution of the conflicting physical efforts can occur in combat time. Conversely, an attack doesn’t automatically

UNITS OF COMBAT TIME

The following measurements of combat time are duplicated from Chapter Three as a reminder:

Combat Scene: A *combat scene* is any scene in which combat occurs, and encompasses the events immediately preceding and following the combat as well as the fight itself. At minimum, it includes all exchanges of fire and pauses (see below) in a single combat.

Tick: A *tick*, like a tick of a clock, is just long enough for a character to perform a single action: shout a warning, squeeze a trigger, or take a furtive glance around the battlefield. Objectively, a tick lasts between a tenth of a second and half a second, but this distinction isn’t always important or evident to a character who’s in the thick of a firefight.

Exchange of Fire: An *exchange of fire* is a rapid sequence of events in combat, lasting for enough ticks for the fastest character involved in the combat to do everything his initiative roll gives him time to do (obviously, in the same amount of time, everyone else in the fight also has time to do everything *his* slower initiative roll lets him do). In objective time, an exchange of fire rarely lasts more than ten seconds.

Pause: A pause in the action, or *pause* for short, is a brief lull in combat while all involved parties reload, shout orders, pray, tend to their wounded, sneak up on enemies, or cower in foxholes – in short, do anything except continue to trade attacks. A pause occurs after the end of an exchange of fire in which all participants decide to stop attacking for a moment. It lasts for a variable amount of objective time, typically less than a minute.

initiate combat. If one character punches another in the face, but the victim doesn’t respond and all the witnesses just stand around watching, that’s not combat. As the saying goes, it takes two to tango.

Combat always begins with an exchange of fire, never with a pause.

EXCHANGES OF FIRE

At the beginning of an exchange of fire, every participant in the combat receives a *base initiative* value determined by his current encumbrance (see p. 206 for rules on determining a character’s encumbrance level):

Encumbrance	Base Initiative
Overloaded	5
Heavily encumbered	7
Moderately encumbered	9
Lightly encumbered	12
Unencumbered	15

Table 5a: Encumbrance Initiative Modifiers

Then make an OODA check (the *initiative* check). If the check fails, the character’s base initiative doesn’t change. If it succeeds, add *twice* the margin of success to his base initiative value. The result is the character’s *starting initiative value* – the tick on which he begins his first action.

Once initiative is determined, the exchange of fire starts on the tick equal to the highest initiative of any participant. As all characters execute actions, the current tick counts down toward zero. The exchange of fire ends after the end of Tick 1.

Example: Ed is in the middle of the day's march when his team comes under attack. He has OODA 8 and, at the beginning of combat, is heavily encumbered. He succeeds at his OODA check with a margin of success of 6. He'll begin acting on Tick 19 (his base initiative of 7 for heavy encumbrance, plus twice his MoS).

Ed has the highest starting initiative of anyone involved in the combat, so the exchange of fire begins on Tick 19, when he begins his first action. During the first exchange of fire, Ed ditches his pack and other extraneous gear, bringing his encumbrance level down to moderate.

At the beginning of the second exchange of fire, Ed fails his OODA check. He'll begin acting on Tick 9 (his base initiative for moderate encumbrance).

Performing Tactical Actions

Every tactical action has a *tick cost*. This is the number of ticks required for a character to perform it. A character may perform a tactical action on the tick equal to his current initiative. When this occurs, subtract the action's tick cost from the character's current initiative value. A character may not take an action whose tick cost would reduce his initiative below zero, except for the Wait action.

Example: Ed's starting initiative value is 19, so his first action occurs on Tick 19. He attacks with the weapon that's already in his hands. This action has a tick cost of 5. Ed's initiative becomes $(19 - 5 =) 14$, so his next action will occur on Tick 14.

Multiple characters will often have the opportunity to act on the same tick. For the purposes of timing and preemption, all actions that occur on the same tick are assumed to occur and take effect simultaneously. This means that if two characters fire at each other on the same tick and both attacks succeed, both characters are hit at the same instant.

Ending an Exchange of Fire

At the end of an exchange of fire, all participants in the combat have the option to *press* or *hold*. If all involved parties choose to hold, a pause begins. If any participant chooses to press, a new exchange of fire begins immediately. Every combatant who presses at the end of an exchange of fire increases his base initiative value in the next exchange of fire by 5.

Remember that a character who is broken (see p. 159) *must* hold. His self-preservation drive prevents him from pressing for continued hostilities.

PAUSES

A pause is a lull in combat when no one is making attacks. This isn't to say that combat is over, just that bullets aren't flying at that particular moment. During a pause, each character may perform one operational action. Operational actions are declared and resolved in descending order of CUF (i.e. the character with the highest CUF goes first).

Ending a Pause

After every character's operational action is resolved, each participant must again choose whether to press or hold, with the same effects as previously described. However, having an enemy just a few meters away is stressful, and someone's nerve will break eventually. Any combatant who chooses to hold must succeed in a CUF check with a penalty equal to the number of pauses that have occurred since the last exchange of fire. If he fails this check, his "hold" choice becomes "press," and he does not receive the normal bonus to initiative for pressing.

GM Hint: The Fog of War

One of the greatest impediments to running a smooth, fast, and dramatic combat scene is player omniscience. Many players tend to be miserly with their characters' health, which is intrinsically an admirable trait. However, when taken to extremes, insistence on knowing every detail of a combat scene before declaring an action can bog down play and frustrate all involved parties.

To keep things moving at a decent pace, we recommend a carefully-calibrated amount of brutal realism. No one who's involved in a firefight has the luxury of putting the action on pause and looking around to carefully measure distances or pick targets. From a game perspective, the OODA attribute represents a character's ability to handle such decision-making instantly. If a player is waffling, stalling, or asking too many questions about trivial details, ask him to make an OODA check. If he fails, his character's next action is Wait, representing the character freezing in indecision for a moment.

Alternately, the Assess action is ideal for allowing the player to ask a few questions about the combatants and terrain. If the player is asking about things that aren't immediately obvious, it's perfectly reasonable to refuse to answer them until the character Assesses and the player makes the associated Awareness check. This represents the character taking a moment to *consciously* observe and analyze, as opposed to the *reflexive* analysis that occurs with an OODA check. If you go this route, we recommend limiting the number of questions to the margin of success on the check.

GM Hint: Press or Hold?

For best effect, the press/hold decision should be a double-blind one. Choosing whether to fight or back off is a gamble, especially if a side isn't sure of its opponents' capabilities. To model this uncertainty, the GM and the players may want write down their decisions on scrap paper and reveal them simultaneously.

Combat isn't a place for a democracy. If players squabble about what decision to make at the end of an exchange of fire, the GM is encouraged to declare that the PCs collectively choose "hold," with any negative repercussions that may occur. After all, they're paying more attention to their argument than to the enemy. Conversely, if the team rules (see p. 131) are in use, the GM may require the team leader to make the press/hold decision for the whole team. This is a good voluntary option even for groups who aren't using the team rules.

GM Hint: Ending Combat

There's a tendency in gaming to consider an encounter over only when all combatants on one side are dead. In our opinion, this is a holdover from fantasy games (and, later, computer games) whose rules systems require "stepped on" kills for characters to receive treasure and experience rewards. In real combat, few fights end in a complete massacre of the losers unless the winners apply overwhelming force or are determined to make a point. Most forces either surrender or flee after receiving a sufficient critical mass of casualties to cause a large-scale failure of morale.

In play, keeping this effect in mind (and applying the morale rules in the manner they're intended to be used) can help limit the duration of combat scenes. Once victory is obvious, it's not always fun to grind out another six or eight exchanges of fire just to finish off that last enemy. In addition, from a roleplaying perspective, a group that earns a reputation for not wiping out defeated opponents or executing prisoners is less likely to itself undergo a total party kill (TPK) if it loses a fight. Live PCs can always break out of prison; dead PCs can't break out of shallow graves.

ENDING COMBAT

Combat ends when only one side has participants in the fight who are capable of continuing combat and willing to do so. This doesn't necessarily mean that everyone else is dead. It's possible for participants in a fight to bug out, leaving the field to the other side (see p. 142 for the Withdraw operational action). Characters can also refuse to make initiative rolls. A combatant who takes this action has effectively surrendered. He must remain inactive during the subsequent exchange of fire, having left himself at the mercy of his opponents.

TACTICAL ACTIONS

Tactical actions are those that a character takes while he's in the thick of the fight and bullets are flying. Most tactical actions occur according to a character's trained reflexes. They are relatively simple physical motions intended to either maintain his fighting capability or neutralize his opponents. Few tactical actions last longer than a couple of seconds of objective time.

Activate/Deactivate Equipment

Many pieces of equipment are too complex for instant use in the middle of a gunfight, but items with simple on/off switches can be activated or deactivated.

Tick Cost: 1 tick.

Assess

A character may pause to take a look around the battlefield and make detailed observations. This allows the player to make an Awareness check to notice significant details about the current situation or to retry a previously-failed Awareness check (for example, to locate a camouflaged sniper).

Tick Cost: Minimum of 1 tick. The player may voluntarily add up to 5 additional ticks to this cost. Each additional tick provides a cumulative +1 bonus to the Awareness check.

Attack

An attack is the archetypal tactical action, and the one that is likely to be most commonly seen in combat scenes. Each weapon, including the unaugmented human body, is capable of three types of attacks (see p. 142).

Tick Cost: As per the weapon and attack type used.

Block

A block is a defensive action unique to close combat (see p. 149 for rules on deflecting attacks with this action).

Tick Cost: 1 tick plus the Blind Strike Speed of the weapon used for the block.

Change Stance

For game purposes, a character can be in one of four basic stances: standing, kneeling, sitting, or prone. Each of these stances has certain effects, as described in the Stances sidebar.

Tick Cost: 2 ticks to assume a lower stance (standing to kneeling/sitting, or kneeling/sitting to prone). 4 ticks to assume a higher stance (prone to kneeling/sitting, or kneeling/sitting to standing).

Communicate (Simple)

A gunfight isn't the right place for a soliloquy or dialogue. Characters don't have the freedom to converse when the bullets are flying – remember, one exchange of fire lasts only a few seconds.

Stances

The human body is capable of assuming a virtually infinite number of positions, but for the purposes of combat in the Reflex System, only four have distinct mechanical effects. Lower stances reduce a character's ability to move, but also minimize his target profile.

Standing is the default posture of a human. Unless otherwise stated, a character is assumed to be standing. A standing character is the standard target for all attacks and can move without restriction.

Kneeling may enable the character to make more effective use of cover. It applies the following effects:

- -1 penalty to all ranged attacks targeting the character
- +1 bonus to all close combat attacks targeting the character
- movement restricted to walking or staggering
- movement penalties to actions doubled
- +1 Muscle for purposes of resisting Recoil

Sitting is rarely a good option in combat, but characters who are operating vehicles or caught by surprise may have no choice. This stance applies the following effects:

- character may not move
- if not in a vehicle or mounted, character is considered a stationary target (see p. 143)
- +2 Muscle for purposes of resisting Recoil

A *prone* character has an even smaller target profile than one who is kneeling, but his mobility is severely constrained. Being prone applies the following effects:

- increase effective visual range by one range band for all ranged attacks and visual observation targeting the character
- +2 bonus to all close combat attacks targeting the character
- movement restricted to crawling
- all ranged attacks the character makes at targets to his sides or rear have their tick costs doubled
- double the character's Muscle for purposes of resisting Recoil

A character can get out a simple message such as "Watch the door!" or "Get your hands up!" but that's about it. More complex communication must wait for a pause.

Tick Cost: 1 tick for a single syllable ("Stop!"), 3 ticks for a short phrase ("Drop the weapon!"), or 5 ticks for a moderately eloquent sentence ("Get on the ground now or I will shoot you in the face!"). If the communication requires the character to use a device's controls (i.e. press a "transmit" button on a radio), add 1 tick.

Ditch Item

A character holding something may want to free his hands for other tasks, or he may suddenly need to divest himself of a piece of equipment that's become dangerous. A character who *ditches* an item removes it from his person and lets it fall within Personal range of himself. No task check is normally required to ditch an item. Under extenuating circumstances such as drowning or being on fire, the GM may require a Coordination check.

A character also can ditch an article of clothing (including body armor), a backpack, or a set of load-bearing equipment.



However, all of these items are secured to his body by design, so removal in a matter of seconds tends to occur with panicked brute force – the typical reaction to, say, finding one’s pants on fire. A character ditching a garment, backpack, or set of load-bearing equipment (LBE) has a flat 50% chance of damaging it in the process. Military-issue backpacks and LBE usually include quick-release buckles which allow rapid removal without this hazard.

Tick Cost: If the character is holding the item, this action has a tick cost of 0 – no appreciable time is required to just open a hand and let gravity take over. If the item is connected to the character, this action requires half the time normally required to ready it. Ditching a garment, backpack, or LBE takes the remainder of the exchange of fire (3 ticks for quick-release buckles).

Move

Unless a character is behind cover, staying stationary is a good way to die. Movement as a tactical action is covered in detail in the following Tactical Movement section.

Tick Cost: 5 ticks.

Ready/Stow Item

A character must have a weapon or other item in his hands and properly configured before he can use it. A character can only ready an item that is immediately accessible on his body or within Personal range. No task check is required to ready an item unless its related rules specifically call for one. Stowing is the exact opposite of readying: returning an item to on-body or nearby storage.

Tick Cost: Equal to the item’s Bulk (minimum 1). If the item is in a closed or secured container, such as a zippered pocket or a holster with a retention strap, add 1 tick. If the character has to

extract item from a cluttered or tightly-packed container, add 1d10 ticks. If the character is attempting to ready or stow a two-handed item with only one hand, double the total tick cost.

If the item is a weapon and the character has an Unskilled rating with the skill relevant to its use, all Ready/Stow Item actions have *twice* the normal tick cost.

Reload

Many fights will last long enough for characters to empty their guns. Reloading replenishes a weapon’s ammunition supply. If the weapon in question is fed from a detachable magazine, one action completely reloads it, locking in a new magazine. If it’s fed from an internal magazine or cylinder, reloading loads 3 rounds of ammo.

Support weapons take a little longer to reload. If a weapon is belt-fed, two actions are required to reload it. If it’s a heavy weapon, two actions load 1 round of ammo.

Tick Cost: Equal to the weapon’s Bulk (minimum 1). If the character has to dig the fresh ammo out of deep storage such as the bottom of a backpack, add time as if he were readying it (see previous). If the character is “topping off” – ejecting a partially-empty magazine or belt and replacing it with a full one – and wants to retain the partial load for later use rather than just dropping it, add 2 ticks.

If the character has an Unskilled rating with the skill relevant to the weapon’s use, all Reload actions have *three times* the normal tick cost.

Wait

A character doesn’t have to act on every tick. The “wait” action is a mechanism to enable a character to delay for a moment

before doing something else. Note that this action is deliberately designed to prevent most characters from waiting one tick at a time so as to have improbably low response times to unexpected events. Characters with slow OODA loops take a few more fractions of a second to catch up with changes in the tactical situation.

Tick Cost: Dependent on the character's OODA value:

OODA	Cost
15	1 tick
13-14	2 ticks
10-12	3 ticks
7-9	4 ticks
4-6	5 ticks
1-3	6 ticks

Table 5b: OODA Cost

TACTICAL MOVEMENT

Movement during an exchange of fire is considered an action, and each Move action always has a tick cost of 5 ticks. However, tactical movement is not exclusive. Whenever a player declares that his character is taking a Move action, he may also declare another tactical action with a tick cost of 5 or less that the character will execute during that movement. This second action is declared on the same tick as the character's Move action and is resolved normally. A character cannot change stance while moving, but any other action is valid, subject to the GM's discretion.

Characters may move at various speeds, depending on their physical condition. The following movement rates, listed from fastest to slowest, each have their own restrictions and their own effects on the character's ability to act while using them. The distance a character moves at a given speed is dependent on his physical attributes, as per the character creation rules (see p. 94).

- **Sprint:** A sprinting character must be unencumbered and may not have any leg injuries. A sprinting character suffers a -5 penalty on any action requiring fine motor control (for game purposes, ranged attacks require fine motor control, as do most other Coordination-based actions, but close combat attacks do not). However, his speed inflicts a -3 penalty to all ranged attacks made against him.

- **Run:** A character may run so long as he has no leg injury worse than slight and is not more than lightly encumbered. A running character suffers a -3 penalty on any action requiring fine motor control. However, his speed inflicts a -2 penalty to all ranged attacks made against him.

- **Trot:** A character may trot if he has no leg injury worse than slight and is not more than moderately encumbered (combat loaded). A trotting character suffers a -2 penalty on any action requiring fine motor control. However, his speed inflicts a -1 penalty to all ranged attacks made against him.

- **Walk:** A character with a moderate leg injury or heavy encumbrance is limited to walking speed. A walking character suffers a -1 penalty on any action requiring fine motor control.

- **Stagger:** A character with a serious leg injury, one who is kneeling, or one who is overloaded is limited to staggering. A staggering character suffers a -1 penalty on any action requiring fine motor control.

- **Crawl:** The last resort of those who must move or die but who cannot stand up – or those who need to stay low to avoid

hazards. A prone character or one with a critical leg injury may only crawl. When crawling, a character suffers a -4 penalty on any action requiring fine motor control.

In addition to covering distance, a character may also use the Move action to enter or exit a vehicle or to mount or dismount from an animal. One Move action is required to mount or dismount a motorcycle or similar open vehicle or to dismount from an animal. Two Move actions allow the character to enter or exit a normal passenger or cargo vehicle or to mount an animal. Three move actions are required to enter or exit a combat vehicle or other conveyance with limited access.

OPERATIONAL ACTIONS

Operational actions are those that a character takes to prepare for the next set of tactical actions in one way or another. These can also be considered “support actions,” as they contribute indirectly, rather than directly, to a favorable outcome of the combat. Each operational action lasts between 20 and 60 seconds. In other words, an operational action lasts as long as the pause in which it occurs.

In the case of all operational actions, common sense should dictate the limits of what a character can accomplish in less than a minute. Literal interpretation of the following rules may be subject to abuse from unscrupulous or clueless players. The GM is fully within his rights to prevent a character from reloading 16 separate handguns with a single Reset Weapons action, even if he technically can carry all of them at once.

Communicate (Complex)

Common sense dictates that characters can engage in casual chatter while performing other operational actions. This action represents dialogue that requires a character's full attention, as well as any interaction that requires a social skill check. Yelling across the street to negotiate with the enemy commander, making a radio call for an air strike, and issuing team orders (see p. 132) are all examples of complex communication.

Don/Doff Clothing

Removing clothing with extreme haste falls under the Ditch Item tactical action. Doing so with more care takes a bit more time, as does getting dressed. A single Don/Doff Clothing action allows a character to put on or remove *one* of the following:

- backpack
- body armor
- complete set of cold-weather outerwear
- complete set of normal clothing (pants, shirt, footwear, gloves)
- load-bearing equipment (LBE)

Putting on miscellaneous accessories such as eye protection, a hat or helmet, a wristwatch, or a wedding ring is incidental to this action.

Field Repair

If a piece of equipment or a vehicle system is disabled (p. 154 and p. 279, respectively), a character with direct physical access to it may attempt emergency repairs. This requires an appropriate skill check – usually Mechanics or Electronics. As with all efforts to enact repairs, this check suffers a penalty equal to the item's or vehicle's current Wear value. If the action succeeds, the item or system regains working condition for a number of exchanges of

fire and pauses equal to the margin of success (minimum 1). After this time expires, the temporary repairs fail and the device reverts to disabled status.

Keep Watch

Simply holding position and keeping an eye on the enemy can be invaluable. If a character chooses to keep watch during the pause, the player may make an Awareness check to determine what the other side is doing during the pause. Success makes the character aware of the actions of one or more enemies whose actions are taking place within the character's line of sight, at the GM's discretion. In addition, this Awareness check opposes any Set Hasty Ambush or Withdraw actions that opponents attempt during the pause.

Render Aid

As a single operational action, a character may make one attempt to stabilize a wounded character who's bleeding out or resuscitate one who's just died (see p. 173 for rules on medical procedures).

Reset Weapons

A character who tends to his weapons during a pause has time to do a bit more than a hasty magazine change. This action allows a character to fully reload *all* of his personal weapons and, if necessary, a single crew-served weapon that he's helping to manage. In addition, the character clears any jams, misfeeds, or other malfunctions that don't actually require repair work, and returns items to holsters or sheaths as desired.

Set Hasty Ambush

While total surprise is impossible during a pause — after all, the enemy knows that there's a fight going on — it is possible for a character to conceal his intentions enough to throw off an opponent's expectations. This requires a Tactics (AWA) skill check. With success, the character receives a bonus on his next initiative check equal to the margin of success (minimum bonus +1), *if* the current pause is immediately followed by an exchange of fire.

If an opponent performs a Keep Watch action during the same pause that a character performs a Set Hasty Ambush action, the result of the opponent's Awareness check opposes the result of this Tactics check. If multiple opponents are Keeping Watch, the best Awareness check result is applied.

Use Equipment

This operational action is a catch-all for the performance of mechanical or electronic tasks that are simple enough to accomplish in a minute or less. In many cases, a task check is required for success, depending on the precise action. Picking a lock, changing a circuit board, hot-wiring a truck, extinguishing a small fire, taking a navigational reading, and copying a computer database are all examples of things a character might need to do during a pause. This action also encompasses weapon-related actions that aren't technically attacks, such as setting up a tripod-mounted machine gun or emplacing a demolition charge.

Withdraw

A character who simply wants to leave the fight may attempt to disengage, preferably under cover. This requires either a Fieldcraft (AWA) or Streetcraft (AWA) skill check, depending on whether the combat is occurring in a wilderness area or a settled area. In addition, the character must be able to move at walking speed or faster (characters limited to staggering or crawling cannot withdraw). With success, the character gets away cleanly and is no longer involved in the combat. With failure, the enemy has the

option of initiating pursuit.

If an opponent performs a Keep Watch action during the same pause that a character performs a Withdraw action, the result of the opponent's Awareness check opposes the result of this Tactics check. If multiple opponents are Keeping Watch, the best Fieldcraft/Streetcraft check result is applied.

OPERATIONAL ACTIONS IN PLACE OF TACTICAL ACTIONS

Sometimes, a character can't wait for the bullets to stop flying before applying first aid to a fallen friend or calling for extraction. At the GM's discretion, if a character is in a relatively safe position (typically behind some form of hard cover) and is not panicked at the beginning of an exchange of fire, the player may give up his initiative roll. Instead of tactical actions, the character takes a single operational action, which is declared at the beginning of the exchange of fire and resolved at the end of it. If the character suffers any injury or becomes panicked at any point during the exchange of fire, he fails to complete the operational action. Any skill check necessary for the operational action suffers a -3 penalty.

MOVEMENT DURING PAUSES

A character may move at any speed up to his best possible one during a pause. This is a "free" effect, not an operational action. Assume that the total amount of distance a character can cover is equal to 10 times the amount of distance he can cover with a Move tactical action at the equivalent rate (e.g. a walking character covers up to 40 meters during a pause).

Movement during a pause does not inflict a penalty on other actions. It is assumed that the character has time to complete his movement before beginning his operational action.

ATTACKS

The Reflex System defines two basic types of attacks: *ranged attacks* and *close combat attacks*. Each of these attack types is detailed in its own subsection (see p. 145 and p. 149, respectively). This section addresses the basic rules governing all attacks.

MAKING AN ATTACK

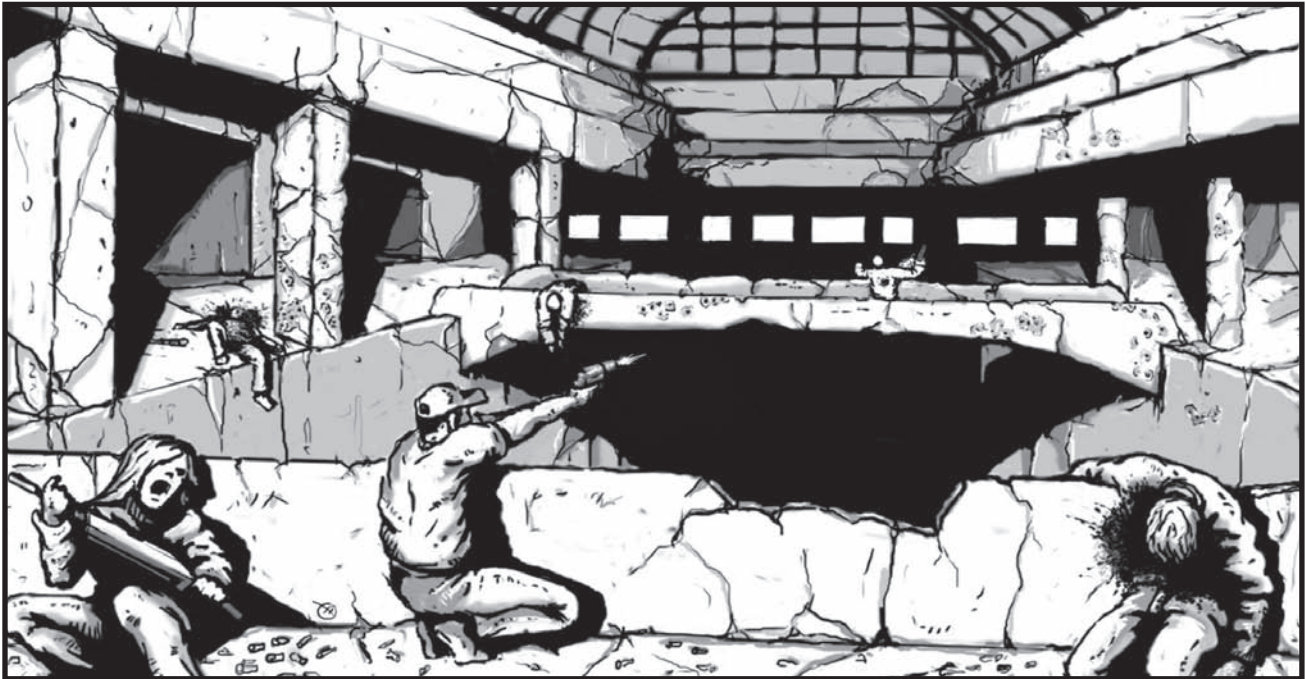
To make an attack, a character uses the Attack tactical action. Both ranged and close combat attacks have three different variations which balance speed and accuracy in different ways. Every attack is made with the skill appropriate to the weapon in use (with the exception of throwing, which is a basic human athletic capability). The three types of attacks are:

Blind Strikes and Hip Shots

A *blind strike* is a rapid, reflexive strike that favors speed over power or accuracy, while a *hip shot* is a quick "spray and pray" attack. A blind strike or hip shot is the fastest type of attack, but it suffers a penalty equal to the weapon's Bulk (minimum penalty -2, even for Bulk 1 or 0 weapons). No effect may ever reduce the tick cost of a blind strike or hip shot below 1.

Snap Strikes and Snap Shots

A *snap strike* is a close combat attack with at least some degree of proficiency and muscle memory behind it. A *snap shot*



is a fast, reflexive shot using the weapon's sights. These are the middle ground of attacks, neither particularly fast nor excessively accurate. No bonuses or penalties apply to snap strikes and snap shots; they are the default attack type. No effect may ever reduce the tick cost of a snap strike or snap shot below 1.

Calculated Strikes and Aimed Shots

With a *calculated strike*, the attacker carefully times his strike to meet an opening in the target's defenses. Likewise, a character making an *aimed shot* pauses for a second in the midst of combat to steady his weapon and concentrate on the mechanics of his attack. After all other penalty reduction effects are calculated, the total penalties applied to a calculated strike or aimed shot are halved. No effect may ever reduce the tick cost of a calculated strike or aimed shot below 3.

In addition, an aimed shot does not suffer from recoil effects (see p. 147).

Attack Speeds

If all attacks occurred at the same speed, no rational player would ever choose for a character to employ anything but a calculated strike or aimed shot. However, as previously mentioned, speed is the factor against which the relative accuracy of the three attack types is balanced. Every weapon has a Speed trait which provides three values in ascending order. These are respectively the tick costs for these three attack types.

Example: Matt's AK-47 has Speed 3/5/7. A hip shot with it costs 3 ticks, a snap shot costs 5 ticks, and an aimed shot costs 7 ticks. The rifle has Bulk 3, so a hip shot incurs a -3 penalty.

COMPLICATIONS

Several factors can make attacks easier or more difficult.

Visibility

Both ranged and close combat attacks require the attacker

to be able to see the target. Any penalties to visual tasks apply to attacks. The basic Reflex System rules (see p. 74) describe the limit of visual range and conditions that can reduce it. Note that certain equipment, such as night-vision gear, can negate some visual penalties.

Moving Targets

Any attack is an attempt to bring two objects – the target and the projectile or weapon – into contact. Coordinating such an action is more difficult when both are in motion. A moving target inflicts penalties on all attacks, depending on its speed relative to the attacker:

Character Movement	
Target Speed	Penalty
Sprint	-3
Run	-2
Trot	-1
Vehicle Movement	
Target Speed	Penalty
Above 2x Safe Speed	-3
Above Safe Speed	-2
above ½ Safe Speed	-1
½ Safe Speed or less	±0

Table 5c: Movement Penalties

Note that although most vehicles move at speeds much higher than those of which characters are capable, their motion is also more predictable. Few vehicles are capable of altering their vectors as readily as living beings.

Easy Targets

The Reflex System assumes that combat is a two-sided affair and that all participants are actively trying to avoid incoming attacks, either actively (dodging) or passively (using cover and concealment). If a target is unaware that he is about to be attacked

and is therefore not engaged in any such defensive measures, any attack on him receives a +4 bonus. For game purposes, any character who has not yet made an initiative check in the current combat scene is considered to be unaware, as is one who is unconscious. Likewise, all stationary inanimate objects are also “unaware” targets – in more than one sense – and attacks on them receive an equivalent bonus.

A target who is aware he’s being attacked but who lacks freedom of movement is still an easy target, albeit not *as* easy. Attacks on such an individual receive a +2 bonus. This bonus also applies to attacks on a target who can’t perceive his attacker’s location (for example, due to blindness or camouflage).

HIT LOCATION

If an attack succeeds, the next step is to determine which part of the target’s body it strikes. This requires a roll of two d6 of different colors (to eliminate confusion) on the hit location table, using one die result for horizontal placement and the other for vertical placement:

Die Roll	1-2	3-4	5-6
1	left hand/wrist	head/neck	right hand/wrist
2	left elbow/forearm	upper chest	right elbow/forearm
3	left shoulder/upper arm	center chest	right shoulder/upper arm
4	left hip/thigh	center chest	right hip/thigh
5	left knee/lower leg	upper abdomen	right knee/lower leg
6	left ankle/foot	lower abdomen	right ankle/foot

Table 5d: Hit Location

Example: *Ed makes a successful attack against an enemy infantryman. He rolls an orange d6 for lateral placement and a green d6 for vertical placement. Respectively, the die results are a 6 and a 2. Ed’s attack strikes his target in the right forearm.*

Called Attacks

Basic marksmanship training teaches novice shooters to aim for the target’s center of mass to maximize hit potential. The hit location table reflects this, with a torso hit being the greatest probability. In some situations, however, attackers will want to target specific parts of a victim in order to avoid armor or cover, to effect a disarm, or to maximize the chances of the target’s survival or death. This requires a *called attack*.

The attacker must designate an attack as called when he declares the attack action, before making his skill check to determine if he hits or misses. A called attack is declared against one of the six hit locations: head, torso, or a limb. If the attack succeeds, the attacker doesn’t roll for hit location as normal – instead, the attack automatically strikes the declared location. If the attack fails, it completely misses the target as normal.

Under normal circumstances, every attack is governed by a fixed attribute. A called attack is governed by the *lower* of the normal attribute or the attacker’s Coolness Under Fire. In addition, called attacks to specific locations have additional effects:

GM Hint: Determining Cover

Some players may try to argue that their characters are receiving highly improbable cover benefits. Remember that a certain level of exposure is necessary if a character wants to make effective attacks. At minimum, he has to be able to see his target and point the weapon at it, which requires his head and weapon arm to be exposed. Two-handed weapons require exposure of both arms, and human anatomy usually requires that part of the upper torso also be exposed in such a situation.

Also remember that cover is highly subjective relative to an attacker’s position. For example, a tree isn’t wraparound cover – it only provides full protection from attacks originating within a narrow arc. An attacker can reduce or negate this benefit by moving around the tree to attack from a more favorable angle.

Don’t be afraid to pause the combat scene for a quick demonstration of cover. Feel free to ask players to stand up from the table and use furniture, doorways, or other players (with consent!) to demonstrate how their characters are using cover. A laser pointer or foam dart gun can be a useful tool in demonstrating exposure from various angles. Tempting though it may be at times, you should never use real weapons for such demonstrations.

- **Head:** A called attack to the head suffers a –4 penalty. If it succeeds, however, its total damage is increased by 2.
- **Limb:** A called attack to an arm or leg suffers a –2 penalty. If it succeeds, however, its total damage is increased by 1.
- **Torso:** A called attack to the torso suffers a –1 penalty.

COVER

Smart combatants don’t stand upright in the open while bullets are flying – they seek *cover*. For game purposes, cover is defined as any solid object that occupies space between an attacker and a target. Whenever a successful attack occurs against a target that is behind cover, it has a chance of striking the cover rather than the intended target.

Rather than attempt to comprehensively define all possible arrangements of cover, the Reflex System takes a common-sense approach. Any cover provides as much coverage as the players and GM agree upon (in the case of disputes, the GM is, as always, the final authority). When a character under cover sustains an attack, the attacker rolls for hit location as normal. If the indicated location is determined to be behind cover, the cover functions as armor (see p. 152) for that hit location.

Example: *Leslie kneels behind a stone wall and levels her G36 to fire on an enemy squad. Because she has to use both hands to operate the rifle, she has to expose her arms and head. Everything below shoulder level is considered to be behind cover from an attacker on the far side of the wall.*

Immediately after Leslie takes cover, an enemy successfully attacks her. The GM rolls for hit location and receives an “upper abdomen” result. Because Leslie is under cover below the shoulders, the bullet strikes the stone wall before it gets to her. The wall has Armor 6, so damage against Leslie’s torso is resolved with the benefit of this armor value.

If a target is completely behind cover relative to a given character, then that character can’t see the target and therefore can’t declare attacks against it. However, any such situation cuts both ways – the target can’t see the would-be attacker either. At the GM’s discretion, an attack against a target under total cover is possible *if and only if* the attacker knows the target’s position to

within a meter (for example, the target has just taken refuge behind the only tree in view). Even if the GM allows such an attack, it still suffers a –5 penalty.

Typical Armor Values

The following table provides Armor values for some of the most common items that characters might use for cover. Fractional values are considered zero unless a weapon's Penetration raises them to 1 or higher.

Building Materials	
Cover	Armor
Hasty earthen wall (500mm)	2
Sandbag (250mm)	5
Wooden plank (50mm)	1
Sheetrock interior wall	1/2
Plywood interior door	1/2
Wood exterior door	2
Brick wall (100mm)	3
Steel security door	3
Timber wall (200mm)	4
Stone wall (300mm)	6
Cinder block wall (300mm)	9
Reinforced concrete wall (250mm)	10
Stone wall (600mm)	12
Natural Obstacles	
Cover	Armor
Sapling (100mm)	2
Small tree (300mm)	6
Mature tree (600mm)	12
Miscellaneous Items	
Cover	Armor
Human body	1/2 Fitness
Computer	1/4
Mattress	1/4
Furniture, modern composite	1
Furniture, antique wooden	2
200-liter steel barrel, empty	1
200-liter steel barrel, full	13
Industrial machinery	4 to 20

Table 5e: Cover Armor Values

The samples above obviously don't begin to cover all possible scenery and obstacles. The following values are provided for GMs to calculate the Armor value of a given piece of cover based on its predominant construction. For the sake of convenience, this table provides both the millimeters of cover necessary to provide an Armor value of 1 and a factor by which to multiply the cover's thickness to determine Armor.

Material	mm per Armor 1	Multiplier
Advanced ceramic composite armor	2.5	0.4
Steel armor plate	5	0.2
Sheet steel	6	0.16
Reinforced concrete	25	0.04
Concrete, brick	35	0.03
Stone, packed dirt, wood, liquid	50	0.02
Fiberglass	150	0.007
Loose dirt	250	0.004

Table 5f: Material Armor Values

Vehicles as Cover

Vehicles deserve special consideration when used as cover because they are complex and valuable systems in their own right. In many cases, damage to a vehicle will be as important as damage to the characters within or behind it (see p. 279). However, if the vehicle is unimportant to the story – for example, already a burned-out wreck – the following guidelines apply.

Unarmored vehicle bodies have no magical capacity for stopping incoming fire, while armored ones perform exactly as usual. If a character suffers a direct attack while inside a vehicle, apply the vehicle's Armor normally. If he suffers a direct attack while outside a vehicle and using it as cover, also apply the vehicle's traits normally. However, if the attack passes completely through the vehicle – for example, it enters the driver's door and exits the passenger's door – double the Armor value. If the character is using the vehicle's engine for cover, rather than simply hiding behind a body panel, add 12 to the base Armor value.

RANGED ATTACKS

For the past several centuries, most combatants have preferred killing at range to getting their hands dirty. The dominant tool for this purpose has been the firearm. Thus, the Reflex System focuses on firearm-based ranged combat as the default method of attacks. Other possibilities are addressed with rules exceptions or expansions later in this chapter.

To make a ranged attack, a character must have a ranged weapon ready, and he must be able to see his intended target (unless using indirect fire - see p. 163). The Coordination attribute, which defines a character's hand-eye coordination and instinctive grasp of three-dimensional movement, governs all ranged attacks.

RANGE

In a gunfight involving rifles that can kill from a kilometer away, a difference in range of a few meters rarely matters. Accordingly, the Reflex System avoids the use of precise range measurements in favor of broadly descriptive *range bands*. The easiest way to envision range bands is as a set of concentric circles with the character at the center. Each range band has an inner and outer boundary, and anything whose distance from the character falls within those two boundaries is within that band. Range bands, from closest to farthest, are:



- **Personal:** Personal range is within arm's reach of a character, or close enough to physically strike with a hand weapon. Characters must be within personal range of one another to engage in physical contact, whether consensual (e.g. first aid) or hostile (e.g. a knife fight).

- **Gunfighting:** Gunfighting range is from just outside arm's reach to 7 meters. According to law enforcement statistics, this is the range within which the vast majority of modern handgun combat occurs.

- **Close Quarters Battle (CQB):** CQB range begins at 7 meters and extends to 25 meters, which makes it the maximum range at which most combat within buildings or large vehicles will occur.

- **Tight:** Tight range is from 25 to 100 meters, the range at which most gunfights occur within cities, jungles, and other outdoor areas that tightly restrict movement and lines of sight. In the Tight range band and under normal field conditions the human eye will pick a human-sized target out of its surroundings more than 90% of the time.

- **Medium:** The range that most military-scale combats will occur in surroundings with a moderate degree of cover and terrain complications. The Medium range band extends from 100 to 200 meters. This is the practical limit at which the unaided eye can discern significant details of a subject. Under normal field conditions, an average observer will discern a standing human target about 50% of the time at Medium range.

- **Open:** As the name implies, the Open range band encompasses the ranges at which most infantry actions take place in open terrain with minimal contours: 200 to 400 meters. Visual observation normally encounters minimal penalties at these distances. Under normal field conditions, an average observer will discern a standing human target about 15% of the time at Open range.

- **Sniping:** The range band from 400 to 800 meters is the province of long-range weapons. Visual observation can be significantly impaired at these distances. Under normal field conditions, the unaided human eye has less than a 5% chance of detecting standing human targets at Sniping range. Ranged attacks without magnifying optics are effectively impossible.

- **Extreme:** From 800 to 1,600 meters, only the longest-ranged firearms have a chance of hitting man-sized objects. Unaided visual observation is limited to simple shapes and major details, and the naked eye cannot effectively discern a human target.

Range Bands and Weapons

Every ranged weapon has both an *optimum range* and a *maximum range*. A weapon's optimum range is the distance at which it provides the best possible balance of speed and accuracy. If a target is within a range band that's closer than the weapon's optimum range, attacks take more time, as the wielder has to fight the weapon's inertia to swing it to bear on a new target. Every range band closer than optimum adds a cumulative +1 to the tick cost of all attacks.

If a target is within a range band beyond the weapon's optimum range, attacks suffer an accuracy penalty: a cumulative -3 per range band. A weapon has no reasonable chance of accuracy against targets in range bands farther away than its maximum range, even though it may theoretically be capable of launching a projectile that far.

GM Hint:

Range Band Use and Flexibility

The numbers given for the range bands aren't absolute upper and lower bounds. Bullets don't magically stop when they encounter an invisible 100-meter barrier, and real-world firearm performance isn't so rigidly defined. Accordingly, the GM should feel free to allow about 10% flex in each range band if it can save trouble, help the story along, or prevent the players from wasting time while squabbling over a couple of extra meters.

Let's say that the team has been chasing their hated nemesis for months of game time and several sessions of play time. They've finally tracked him down as he's leaving a meeting with his peers and have a single opportunity for a clear shot at him as he's walking from the bunker to his helicopter. However, the range is 900 meters, and the team's longest-ranged weapon is an assault rifle (maximum range of Sniping, or 800 meters). By strict interpretation of the rules, all the team can do is sit and watch impotently. However, there's no good reason to make them into bystanders and tell the team sniper that he's not allowed to even attempt a nearly-impossible shot. If he misses, the team now gets the dubious pleasure of fleeing the area while the pissed-off warlord's troops hunt them, and if he manages to make the kill, it's a "no shit, there we were" story that the players will re-tell for years.

Example: An M4A1 carbine's optimum range is Tight and its maximum range is Open. Attacks against targets in CQB, Gunfighting, or Personal range take more ticks than normal to resolve - respectively, +1, +2, and +3 ticks as the target grows progressively closer. Attacks against targets in Tight range suffer no speed or accuracy penalties. Attacks against targets in Medium or Open range suffer respective -3 and -6 accuracy penalties (in addition to any penalties applied by the limit of visual range - see p. 74). No attacks are possible against targets in Sniping or Extreme range. This doesn't mean that a bullet fired from an M4A1 is physically incapable of traveling 800 meters, but rather that the weapon is so inaccurate at that range that no shooter has a chance of hitting a man-sized target without laboratory conditions for the shot.

Odd-Sized Targets

The default target size in the Reflex System is an adult human body, as the vast majority of attacks target adult humans. In some situations, characters will want to shoot at things significantly larger or smaller than this size. For attacks that target specific parts of a human body, use the Called Attacks rules (see p. 144). For ranged attacks on targets larger or smaller than normal, apply the same range modifiers that affect visual observation:

Human Size Equivalence	Effective Range
¼ (cat, rifle)	2 bands farther
½ (dog, child)	1 band farther
2x (horse, passenger car)	1 band closer
4x (elephant, armored fighting vehicle)	2 bands closer
8x (small house)	3 bands closer

Table 5g: Size Range Modifiers

OPTIONS

The basic ranged attack rules assume that a character is attacking a single specific target with a single projectile. In many

engagements, particularly with military-grade weapons, this isn't a safe assumption. The following rules address the most common special cases that can arise with firearms.

Burst Fire

Some firearms – typically submachine guns, assault rifles, and machine guns – are capable of firing more than one round with each trigger pull. The Reflex System treats all such capabilities as *burst fire*. A weapon that a character can fire in this manner is designated with a “B#” notation in its Rate of Fire trait. The “#” is the number of rounds the weapon fires with each burst (e.g. “B3” indicates that the weapon fires three-round bursts). A burst can be applied to any hip, snap, or aimed shot.

When a character fires a burst rather than a single round, the additional volume of lead he's sending downrange increases his chances of hitting the target. A burst attack receives a bonus equal to the number of additional rounds being fired (e.g. a three-round burst provides a +2 bonus).

When a burst fire attack hits, it's possible that more than one round strikes the target. Roll a number of d6s equal to the number of additional rounds being fired. Every die result of 1 indicates another hit on the same hit location that the first round struck. Every die result of 2 or 3 indicates another hit on a randomly-determined hit location. Every die result of 4 through 6 is a clean miss. Each additional round that hits uses the attack's overall margin of success for damage resolution.

Example: *Matt makes a burst attack with his AK-47, which has a Rate of Fire of B4. He's firing a four-round burst, so he receives a +3 bonus. Matt's attack succeeds, so he rolls for hit location for the first round, then rolls 3d6. The dice come up 1, 3, and 4. Matt hits the target with two additional rounds: one in the same location as the first, and another in a randomly-determined location. The fourth bullet misses entirely. Matt marks off four rounds from his magazine.*

A burst always expends a number of rounds equal to those being fired – bullets don't magically multiply. For example, a four-round burst always consumes four rounds. If a weapon doesn't have enough ammunition remaining for a full burst, the burst empties the weapon and is resolved with the actual number of rounds fired. Thus, if a character uses a weapon with a B5 rate of fire to fire a burst, but the weapon only has three rounds remaining, the resulting attack is treated as if the weapon had only a B3 rate of fire.

RECOIL

All firearms are subject to *recoil*, the momentum that the explosion of a cartridge's propellant imparts to the gun. For the shooter, the primary effect of recoil is to jerk the gun off-target, which makes rapid subsequent shots more difficult. Any weapon with a Recoil value is subject to the following rules.

Single Shots

Every time a character makes an attack with a firearm, compare the gun's Recoil to the shooter's Muscle. If Recoil exceeds Muscle, the character's *next* action suffers a penalty equal to the difference. This applies only if the next action is a hip shot or snap shot with the same weapon.

Example: *Matt has Muscle 9. As his first action of this exchange of fire, he fires an aimed shot with a .300 Winchester Magnum hunting rifle (Recoil 13). This attack suffers no penalty. Matt then makes a second attack, this one a snap shot. The second attack is subject to a recoil penalty of -4 (the difference between Matt's Muscle and the weapon's Recoil). Matt reloads, then makes a third attack, again a snap shot. Because of the interven-*

ing action between the second and third attack, the third attack suffers no recoil penalty.

Burst Fire

Any attack using burst fire is subject to recoil. Even the slowest-firing automatic weapon has a cyclic rate high enough to unleash the second bullet before the shooter can compensate for the recoil of the first. When a character fires a burst attack, add the number of rounds in the burst to the weapon's Recoil value. If this modified Recoil exceeds the shooter's Muscle, the attack suffers a penalty equal to the difference. This is in addition to any effect the weapon's modified Recoil has on any following attack.

Example: *Matt returns to using his trusty AK-47. His Strength of 9 exceeds the weapon's Recoil of 7, so he suffers no recoil penalty for single shots. However, if he fires a four-round burst, the AK-47's modified Recoil value will be 11, so he will suffer a -2 penalty (the difference between his Muscle and the weapon's burst Recoil).*

Other Factors

A weapon's base Recoil value assumes that the shooter is using the number of hands for which the gun was designed: one for a handgun, two for a longarm. A shooter gripping a handgun with both hands increases his effective Muscle by 2. Conversely, a shooter using only one hand for a longarm halves his Muscle (unless the gun is permanently attached to a tripod or other fixed mount). A character's stance also can increase his effective Muscle.

Design Note: Rock and Roll

Yes, it's possible to hold down the trigger on a fully automatic weapon and spray lead in a continuous stream until the ammo runs out or the barrel melts. However, no one who actually *knows* how to use such a gun does this, especially in a post-apocalyptic world without ammunition factories. Recoil from sustained automatic fire quickly leads to muzzle climb, which means all of the following rounds are being wasted skyward. The proper method of using automatic fire is short, controlled bursts, with a quick recovery between each burst to keep the weapon on target. We've chosen to replicate this reality by not providing explicit rules for bullet hosing. The superior capabilities of weapons designed for sustained automatic fire – machine guns – are already replicated in the bonuses they receive to burst fire.

With this said, it's possible that untrained characters will get their hands on military firearms over the course of play. At the GM's discretion, a character who doesn't understand the principle of short, controlled bursts uses double the ammunition and suffers a -2 penalty to each burst attack. Such attacks can never hit with more bullets than the default number fired in a (trained) burst; the extra rounds are always wasted.

Design Note: Recoil

The intent behind the recoil rules is to emphasize the fact that a character takes a measurable fraction of a second to recover from firing a powerful weapon. If he makes a hip or snap shot immediately after making a previous attack that he's not strong enough to control, he's still bringing the gun back on target when he pulls the trigger again. Aimed shots don't suffer this penalty because the increased Speed of an aimed shot includes the character steadying the gun before firing.



If a weapon has a bipod, shooting with the bipod down (which requires the character to be stationary - and prone or otherwise braced) reduces the weapon's base Recoil by 2. If the weapon is permanently affixed to a tripod, a vehicle weapon mount, or a similar fixed mount, its base Recoil is halved.

OTHER RANGED WEAPONS

Firearms aren't the only means by which characters can kill each other beyond arm's length.

Archery

Bows, crossbows, and spearguns are all ranged weapons whose projectiles are slower and heavier than bullets. All have roughly similar ballistic performance, so attacks with them fall under the Archery skill. These weapons are susceptible to high winds in the same manner as thrown weapons (see p. 75). In all other respects, ranged attacks with them are resolved as per the basic firearm rules.

Throwing

Throwing is a basic task that most humans learn (admittedly, with varying degrees of mastery) by age six. Accordingly, no specialized skill exists for attacks with thrown weapons; instead, a Coordination attribute check governs this task. The character's Muscle attribute determines the attack's optimum and maximum ranges:

Muscle	Optimum	Maximum
1-4	Personal	Gunfighting
5-7	Personal	CQB
8-12	Gunfighting	CQB
13+	Gunfighting	Tight

Table 5h: Throwing Range Bands

These ranges assume a thrown item with weight roughly equal to that of a normal hand grenade, knife, Molotov cocktail, javelin, or rock: between 0.1 and 1 kg. For heavier items (up to half the character's Muscle value in kilograms), reduce both optimum and maximum ranges by one range band. For items whose weight exceeds this limit, thrown attacks are impossible.

Hand Grenades

A hand grenade is unlike other explosive weapons in that it isn't fused to detonate on impact. Instead, it has a time delay fuse, typically designed for three to five seconds. Once activated, the fuse cannot be stopped. What this means in game terms is that a grenade will detonate 1d10+4 ticks after it is thrown. In addition, hand grenades are considered indirect-fire weapons, so failed attacks with them are subject to the Stage III deviation rules (see p. 164).

A character who wants to lessen the chance of an enemy picking up a live grenade and throwing it back may attempt to "cook" the grenade. This requires an Activate/Deactivate Equipment action to pull the pin and start the fuse. The character may then hold the grenade as long as he wants prior to making his attack with it. However, the time remaining on a grenade's fuse isn't externally evident, so the GM should secretly make the roll for detonation time.

Heavy Weapons

When all you have is a hammer, everything starts to look like a nail. Inevitably, players will want their characters to use heavy weapons against other characters, either for the sake of expediency or to absolutely ensure the demise of a particularly important target. This is not necessarily an easy task, though. Most anti-vehicular weapons are designed for precision relative to the size of their intended targets. Firing at a human, whose visual profile is an order of magnitude or two smaller than that of a tank, requires unerring accuracy on the part of the gunner. The following rules apply to all weapons fired with the Gunnery and Support Weapons skills (weapons fired with Artillery are completely incapable of sufficient precision to target an individual character).

- *Machine guns* of all types are intended for area targets or suppressive fire rather than accuracy against point targets. However, they are conventional small-caliber firearms and thus are sufficiently accurate to suffer no penalties when fired against individual characters.

- *Flamethrowers* are not officially intended for use against personnel. However, their hose-like nature makes adjusting aim easy enough that they suffer no penalties for use against personnel.

- Squad support weapons, such as *grenade launchers* and *man-portable rocket launchers*, are intended for use against small vehicles or massed infantry. Accordingly, these weapons are less difficult to use against characters than larger ones are. An attack on a character with such a weapon incurs a -3 penalty. The same guidelines apply to *light autocannon*.

- Anti-tank weapons, including *ATGMs* and *cannon*, are designed to engage significantly larger targets. Attacks on personnel with these vehicles suffer a –6 penalty. Attacks on smaller passenger vehicles such as cars and SUVs suffer a –3 penalty.

- Although outside the scope of these rules, weapons built to the even larger scale of structures or ships are completely incapable of targeting characters. This includes all aircraft-dropped bombs, torpedoes, cruise missiles, naval guns, and similar anti-ship or bombardment weapons.

CLOSE COMBAT ATTACKS

Close combat involves attacks and counter-maneuvers that occur within the Personal range band. The majority of such attacks will involve either bare hands or hand weapons, though firearms may see occasional use as per the Gun Fu rules (see p. 151).

Close combat receives a slightly greater degree of abstraction than ranged combat does. In reality, most close combat fights involve more than a simple series of attacks and occasional blocks. Opponents maneuver for position, close and separate, and feint in a constant dance. Most attacks aren't single strikes, but rather rapid combinations of maneuvers intended to get the final strike or strikes through the enemy's defenses. However, precisely replicating these subtle complexities would significantly slow down the pace of combat. For this reason, we've reduced close combat in the Stage I and II rules sets to the same three basic attack types as ranged combat, with a couple of additional refinements thrown in. For narrative purposes, players and GMs are safe in describing a single Attack action in terms of several discrete maneuvers: "I wait for him to overextend, weave around, and give him an elbow to the back of the neck."

Odd-Sized Targets

The default target size in the Reflex System is an adult human body, as the vast majority of attacks target adult humans. In some situations, characters will want to kick or stab things significantly larger or smaller than this size. For attacks that target specific parts of a human body, use the Called Attacks rules (see p. 144). For attacks on targets larger or smaller than normal, apply the following modifiers:

Human Size Equivalence	Modifier
¼ (cat, rifle)	-4
½ (dog, child)	-2
2x (horse, passenger car)	+2
4x (elephant, armored fighting vehicle)	+4
8x (small house)	+5

Table 5i: Size Modifiers

OPTIONS

Close combat enables a character to make full use of the range of motion of the human body – both his own and his opponent's. This allows for some tactics which the simple kinetic energy exchanges of ranged combat do not permit.

Blocks

Unlike ranged attacks, which involve projectiles moving faster than normal human reflex speed can anticipate, close combat

attacks can be deflected by the target. The Block action allows a character to attempt this feat.

To block an incoming close combat attack, a character must take the Block action within one tick of the beginning of the attack (so if an attack is declared on Tick 14, the target must block on Tick 14 or Tick 13). Remember that a Block action has a tick cost equal to 1 plus the weapon's Blind Strike Speed. The player then makes either a Hand-to-Hand (OODA) or Hand Weapons (OODA) skill check, depending on whether he's blocking with bare hands or a held object. This check opposes the attacker's attack check, as per standard results for opposed actions.

Example: *Max attempts to block an incoming knife attack with his police baton. The baton has Speed 2/3/5, so the Block action costs 3 ticks (1 plus the baton's Blind Strike Speed of 2). The attacker's margin of success on his Hand Weapons skill check was 4. Max makes a Hand Weapons (OODA) check to oppose this, receiving a margin of success of 5. This gives the attacker a net margin of failure of 1. The knife carves a few slivers of polymer from the baton, but it saves Max from taking a nasty stab wound.*

If a character employs bare-handed defense against an edged weapon, he runs the risk of sustaining injury to his arm even if the block technically succeeds. In such a case, there is a flat 50% chance that with a successful block, the defender still sustains damage to a randomly-selected arm equal to the weapon's base Damage.

Conversely, if a character uses a close combat weapon to deflect an unarmed attack, he may be able to injure his attacker with a successful block. In such a case, there is a flat 50% chance that with a successful block, the *attacker* sustains damage to the attacking limb equal to the blocking weapon's base Damage.

Diving Strikes

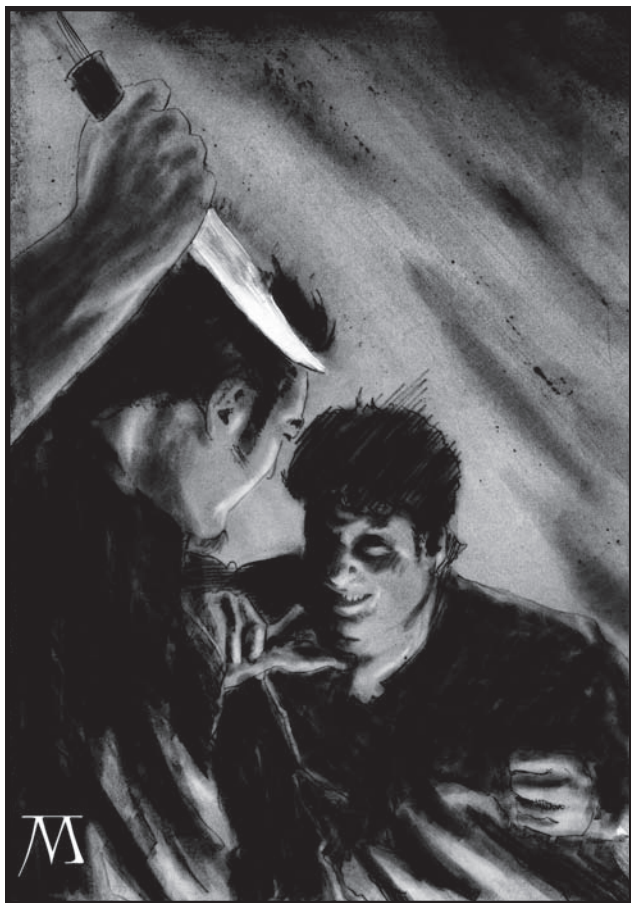
A character can use his own body as a projectile. As with any other moving object, the amount of kinetic energy delivered in such a collision increases with speed. In a *diving strike*, a character moves toward a target at a trot or faster speed, ends his movement within close combat range, and immediately makes a close combat attack. This attack may be combined with the movement, as per the standard rules for tactical movement, or it may be the action the character takes immediately after moving.

A diving strike suffers a penalty determined by the movement speed of the attacker: –3 for a sprint, –2 for a run, or –1 for a trot. If the attack succeeds, its base Damage is increased by double the penalty: +6 for a sprint, +4 for a run, or +2 for a trot. In addition, the target must successfully oppose the attack with a Muscle check or be knocked prone (success on this opposed action does not count as a Block action).

THE EMPTY HAND

In close combat, a character's bare hands are treated as a standard close combat weapon for purposes of speed and damage. Any character's bare hands (feet, knees, elbows, foreheads, et cetera) have Damage 0, Penetration Nil, Bulk 0, and Speed 1/2/4.

(Some readers may feel that this intentionally short-changes trained martial artists who have developed "deadly hands" via decades of esoteric training. However, such characters should be built with high Muscle values and Hand-to-Hand skill ratings. These two factors will lead to greater average margins of success on attacks, which translate directly into more damage. We feel that this is sufficient. The Reflex System has no rules for Secret Squirrel Dim Mak Death Touch.)



After resolving any diving strike, the attacker must succeed in a Muscle check or fall prone. This check suffers the same penalty for the attacker's speed that the original attack suffered. If the attack failed, this penalty is doubled.

Example: Seeing another enemy taking aim on Pete with a sniper rifle, Max charges with his baton leveled. He takes a Movement action at running speed, immediately following it up with an Attack action, making a blind strike with his baton. The attack suffers a -2 penalty for the run in addition to the standard penalties for a blind strike. Max succeeds with a margin of success of 4. The attack's Damage is increased by 4 for the diving strike in addition to all other modifiers.

Max's opponent must make a Muscle check or go prone. Because Max had a margin of success of 4, his target needs a margin of success of at least 5 to stay on his feet. Max also must make a Muscle check to stay up, suffering a -2 penalty for running.

Grappling

Any close combat attack or block may be an *attack to grapple* or *block to grapple*. Mechanically, this occurs as normal, but changes the skill check to require the /Grapple qualification (as usual, an unqualified attempt is possible but suffers a penalty of 3 skill levels). When making a grapple attempt, a character does not attempt to injure his opponent, but to reduce or eliminate his mobility. A successful grapple does not inflict damage; instead, it inflicts a Control value equal to the margin of success (so a zero margin of success grants no Control). Control is an abstract measure of the degree of physical control that one character has

Design Note: Breaking Blocks

Yeah, we saw the ninja episode of the myth busting TV show too. No, we didn't write rules for snatching arrows out of the air or deflecting sword strikes with bare hands. The Reflex System is designed for realistic play in modern or near-future environments, which means we place emphasis on firearms as the primary means of killing other characters. Ninja masters are rare enough in the modern era, let alone a year after the world ended in nuclear fire. Feats of extreme martial arts prowess are outside the scope of these rules and definitely outside the bounds of the post-apocalyptic paramilitary genre of **Twilight: 2013**. However, they are likely to appear in a future supplement if demand is sufficiently high.

over another. It depicts the extent of joint locks, pins, compliance holds, and other restrictions on movement.

If a character succeeds in a diving grapple, the normal damage bonus from a diving strike translates to extra Control: 3 for a sprint, 2 for a run, or 1 for a trot.

Grappling With Weapons

Although most close combat weapons don't have the flexibility or grasping ability of the human hand, it's still possible to execute a grapple attack with one. In such an event, the attacker uses his weapon for leverage to enact joint locks, or wedges an appropriate part of it into a pressure point. A knife point under the eye is just as effective in gaining compliance as a thumb in a nerve cluster.

Maintaining Control

Grappling comes with a price for an attacker. Once an attacker has Control on a target, he must maintain his advantage or lose all Control. While maintaining Control, an attacker may only make the Attack, Block, Communicate, Ready Item, and Wait tactical actions. Any actions against a target other than the controlled victim suffer a -3 penalty. If the attacker takes any other tactical action or any operational action, or if he declares a hold at the end of an exchange of fire, he loses all of the Control he currently has on his target.

Effects of Control

A Controlled character suffers a penalty to all physical actions equal to half the total Control that all attackers currently have on him. This penalty is halved again for actions taken against a character who is exerting Control on the victim.

A character under Control also suffers from reduced movement capability. Any attempt to move requires a Muscle check, opposed by the Muscle check of the Controlling character. If the victim succeeds, he may move a maximum number of meters equal to his margin of success. This movement may not exceed the normal limits imposed by injury, encumbrance, and the character's normal movement rates.

Using Control

A character who has Control over an opponent has several options available to him, depending on his current Control value. Each of the following actions has a minimum Control which the attacker must have.

- **Increase Control (minimum 1):** The attacker attempts to consolidate his hold on his victim, making another attack to grapple. If the attack succeeds, it inflicts no damage, but its margin of success is added to the character's current Control.
- **Compliance Hold (minimum 2):** Pain and the threat of (further) physical injury can go a long way toward discouraging continued aggression. The attacker makes a close combat attack

against the victim, receiving a bonus equal to half his current Control. If it succeeds, it inflicts no damage. However, for the purposes of morale (see p. 159), the victim becomes subject to a number of threat conditions equal to half the attacker's margin of success.

- **Disarm (minimum 4):** Normally, a disarm is accomplished with a called shot to the limb holding the weapon. An attacker who doesn't want to inflict injury instead makes a close combat attack against the victim, opposed by a Muscle attribute check on the victim's part. If the attacker succeeds, the victim drops whatever is in one hand of the attacker's choice. With a margin of success of 5 or more, the victim releases the contents of both hands.

- **Attack (minimum 4):** The attacker uses his dominance and leverage to make a joint bend the way it isn't supposed to, or to get a blade into the victim's eye socket. He makes a normal close combat attack, but adds his Control as a bonus to the skill check. If this bonus exceeds +5, it is subject to the normal cap of +5, but any remaining bonus is applied to reducing the penalty of any called strike the attacker chooses to make.

- **Choke Out (minimum of victim's Muscle +3):** Despite the name, this maneuver doesn't cut off the victim's air supply, but rather the blood flow to his brain. It requires an entire exchange of fire to accomplish – the attacker must declare it as his first action, and it has a Speed equal to the attacker's starting initiative. At the end of the exchange of fire, if the attacker still has the minimum control necessary to start this maneuver, the victim makes a Fitness check. If this Fitness check succeeds, the victim falls unconscious. If the check fails, the victim dies, and resuscitation attempts treat him as if he had a critical head injury. If the attacker still has Control at the end of the exchange of fire but can't meet this maneuver's minimum, the current injury condition of the victim's head worsens by one level.

Escape

A character who is suffering from Control may attempt to break free. This requires a standard close combat attack, but the attack must be declared as an *attack to escape*. A successful attack to escape does not inflict damage; instead, it reduces Control by its margin of success.

Gun Fu

Ranged weapons aren't designed for use at contact ranges, but some circumstances leave a shooter no choice. A character wielding a firearm may use it to make attacks at Personal range. This requires a check with the appropriate skill, using Muscle rather than the standard Coordination. Any such attack suffers the normal penalty for attacking at a range closer than optimum. In addition, the target may attempt a Block action as if the attack were a standard close combat attack. Diving strikes provide no bonus to such attacks, though a firearm may be used as a blunt implement in a grapple attempt.

Other Ranged Weapons

Most ranged weapons other than firearms aren't usable at Personal range. Bows require too much freedom of movement to be wielded (through crossbows can be used in the same manner as firearms). Heavy weapons are too bulky to be fired at Personal range; any such attack automatically fails.

Throwing is likewise useless, though most thrown weapons can be used as direct impact tools. Throwing knives, javelins, and the like function as standard close combat weapons. Grenades are equivalent to rocks. If a character wants to drop a live grenade at his feet, this requires no attack – he just has to ready it, activate it, and ditch it.

DAMAGE

Every character has a set of wound thresholds for each hit location (or, under Stage I rules, one set of wound thresholds for his entire body) that define his ability to sustain injury. Whenever a character receives damage, compare the amount of damage received to his wound thresholds for the affected location. The highest threshold that the damage equals or exceeds is the degree of injury that the character suffers (see p. 152 for effects).

Example: *Pete's torso has a slight wound threshold of 1, a moderate wound threshold of 8, a serious wound threshold of 16, and a critical wound threshold of 24. Pete receives a hit to his torso with a damage value of 11. This amount of damage exceeds his slight and moderate wound thresholds, but not his serious or critical wound threshold, so Pete suffers a moderate torso wound.*

ATTACKS

Characters can receive damage in many ways, but the most common form will be deliberate attacks. When an attack against a character is successful, add the attacker's margin of success to the attack's Damage value to determine the total damage value of the hit.

Example: *In the above example, a guerrilla shot at Pete. The guerrilla used a rifle with Damage 7 and received a margin of success of 4. The total damage value of the hit was 11.*

The Rule of Zero

Any normal attack whose margin of success is exactly zero is a glancing or grazing hit. Such an attack cannot inflict worse than a slight wound, regardless of its Damage value. When dealing with a direct attack using an explosive projectile, the Rule of Zero indicates that the warhead didn't strike the target with enough force to trigger its fuse and detonate its explosive payload.

PASSIVE HAZARDS

Most of the ways a character can sustain injury involve some form of hostile intent – in other words, they're attacks. Some things, however, are dangerous even though they don't involve the intent and skill of an attacker. These sources of damage are considered *passive hazards*, so called because they don't involve a direct active attempt on the victim's life.

Every passive hazard has three traits: a Damage value, a Penetration value, and an Avoidance Check (see p. 156 for common passive hazards). The Damage and Penetration values are identical in function to those of a weapon. The Avoidance Check is an attribute check that the player must make whenever the character is exposed to the hazard in question. If the check succeeds, the character manages to twist out of the way, hold his breath, or otherwise evade the hazard, and he suffers no damage. If the check fails, the margin of failure is added to the hazard's Damage to determine the total amount of damage that the victim suffers.

Example: *Ed and Simon are attempting to escape a burning building and must run through part of the fire. The fire has Damage 4 and Avoidance Check MUS (TN -2). Ed succeeds on his Muscle check and suffers no damage. Simon fails his Muscle check with a margin of failure of 5; he suffers a damage value of 9.*

RECURRING INJURIES

If a character is already injured and suffers an additional wound of equal severity to the same location, the severity of the existing injury is increased by one level. For example, a character with a moderate injury to the left arm who suffers another moderate hit to the left arm would instead receive a *serious* injury to the left arm. Further moderate injuries to the left arm would not raise the arm's injury level any further, but a subsequent serious injury to the left arm would worsen the arm's condition to critical.

LESS-LETHAL DAMAGE

No source of injury can ever be truly "non-lethal." A human can drown in half an inch of water or bleed out from a surgical incision, given sufficient ill fortune. Every day, people die from injuries sustained from nothing more than aggressive bare-handed attacks. Consequently, the Reflex System does not have a separate mechanic for what modern weapon manufacturers euphemistically term "less-lethal" attacks. Weapons designed to stun rather than kill are likely to have low Damage values, but may have other effects in addition to the raw physical trauma they inflict.

PROTECTION

Body armor, vehicle armor, and cover provide some measure of protection against incoming attacks and accidents. Each such piece of equipment or scenery has an *Armor* value which roughly defines its resistance to kinetic energy.

An attack's *Penetration* is a measure of how well it transfers energy through armor or other protection to the character or equipment protected by that armor. Penetration is a multiplier – in other words, when an attack strikes a target, multiply the target's printed Armor value by the attack's Penetration value to determine the armor's actual effectiveness against the attack.

After determining the protection's actual Armor value against the attack, subtract that number from the attack's total damage value. If the result is zero or less, the attack inflicts no injury or damage.

Example 1: Pete is hit again in identical fashion, suffering a damage value of 11. This time, however, he's wearing a vest with Armor 2. The attack has a Penetration rating of x2. Armor 2 multiplied by Penetration x2 equals an effective Armor value of 4. Subtracting 4 from the damage value of 11 yields a final damage value of 7.

Example 2: Pete is hit a third time, once more with a damage value of 11 and Penetration x2, but now he's behind a cinder block wall (Armor 9). Armor 9 multiplied by Penetration x2 is 18. The wall's effective Armor value exceeds the attack's damage value, so Pete suffers no injury.

Some damage sources are particularly poor at penetrating anything denser than human flesh. These damage sources have a "Nil" Penetration value. Such an attack inflicts no injury or damage through any protection that has a nonzero Armor value.

INJURY

Injuries are an unavoidable part of combat. As described in the preceding rules, whenever a character suffers damage, the degree of injury he sustains is dependent on the total damage he suffers and the wound thresholds of the affected body location. Each body location has wound thresholds for four degrees of injury. Each of these degrees of injury has common effects that apply regardless of the location, as well as location-specific effects.

WOUND PENALTIES

In the Reflex System, most penalties to task checks are simple numerical modifiers. Wound penalties are the only mechanism that removes dice from task checks. This represents the relative severity of injuries compared to external factors. A thunderstorm is an inconvenience; a sucking chest wound is a real problem.

Skill Checks

A wound penalty reduces a character's effective skill rating for all affected checks by one or more levels, which, in turn, reduces the number of dice the player rolls and the total number of bonuses he may add. If a wound penalty reduces a character's effective skill rating below Unskilled, the character rolls one additional die for each additional level of reduction, taking the highest (and worst) of all dice.

Example: Pete has an Expert rating in Deception (4d20L), a Competent rating in Medicine (2d20), and a Novice rating in Support Weapons (1d20). If Pete sustains a moderate head injury, he suffers a –2 skill level penalty to all actions. His Deception rating drops to Competent (2d20L). His Medicine rating drops to Unskilled (2d20H). His Support Weapons rating drops one level below Unskilled (3d20H).

If multiple wound penalties apply to a single roll, apply only the *worst* relevant wound penalty.

Attribute Checks

Attribute checks made to actively perform tasks (e.g. breaking down a door with Muscle, solving a physics equation with Education) are affected by wound penalties in the same manner as skill checks. However, passive attribute checks made solely to resist negative effects (e.g. Fitness checks to resist infection, Personality checks to recognize lies) are *not* affected by wound penalties. CUF and OODA attribute checks *never* suffer from wound penalties.

Virtual Injuries

Some effects inflict *virtual injuries*, treating a character as if he were suffering from an injury that he has not actually sustained. It is possible for a character to sustain both actual and virtual injury to the same location. In such an event, apply the effects of the worst injury.

Example: Pete is on a party drug which inflicts a moderate virtual head injury. He's also been clubbed in the head, inflicting a slight head injury. Pete suffers the effects of a moderate head injury. If he's clubbed in the head again and sustains a serious head injury, he'll then suffer the effects of a serious head injury.

Slight Injuries

"It's just a flesh wound." The character suffers pain and may have unsightly wounds, but is unlikely to be in danger of dying unless he becomes infected. In peacetime, a slight injury would be treatable with home medicine.

Common Effects: None.

Head: A slight head injury inflicts a –1 skill level penalty to all actions.

Torso: A slight torso injury inflicts a –1 skill level penalty to all physical actions.

Arm: A slight arm injury inflicts a –1 skill level penalty to all actions involving the use of that arm.

Leg: A slight leg injury inflicts a –1 skill level penalty to all task checks involving the use of that leg. In addition, the character cannot sprint.



Moderate Injuries

The character sustains a noticeable injury that will cause some degree of lasting impairment until healed. In peacetime, a moderate injury would call for a non-emergency doctor's visit (though many people would panic and rush to the ER anyway).

Common Effects: Whenever a character suffers a moderate injury, the player must succeed in a Fitness check or the character enters shock. If the margin of failure is greater than 5, the character also becomes unstable.

Head: A moderate head injury inflicts a -2 skill level penalty to all actions.

Torso: A moderate torso injury inflicts a -2 skill level penalty to all physical actions.

Arm: When a character suffers a moderate arm injury, the player must succeed in an immediate Muscle check or the character drops any object held in that hand. In addition, a slight arm injury inflicts a -2 skill level penalty to all actions involving the use of that arm.

Leg: When a character suffers a moderate leg injury, the player must succeed in an immediate Muscle check or the character falls down. In addition, a slight leg injury inflicts a -2 skill level penalty to all actions involving the use of that leg, and the character cannot move faster than a walk.

Serious Injuries

The character suffers a significant amount of physical trauma that has the potential to be life-threatening, or to cause permanent impairment if left untreated. In peacetime, a serious injury would justify an ambulance run and emergency surgical treatment.

Common Effects: Whenever a character suffers a serious injury, the player must succeed in a Fitness check or the character enters shock. If the margin of failure is greater than 5, the character also becomes unstable.

Head: A serious head injury inflicts a -3 skill level penalty to all actions.

Torso: A serious torso injury inflicts a -3 skill level penalty to all physical actions.

Arm: When a character suffers a serious arm injury, the player must succeed in an immediate Muscle check (TN -2) or the character drops any object held in that hand. In addition, a serious arm injury inflicts a -3 skill level penalty to all actions involving the use of that arm.

Leg: When a character suffers a serious leg injury, the player must succeed in an immediate Muscle check (TN -2) or the character falls down. In addition, a slight leg injury inflicts a -3 skill level penalty to all actions involving the use of that leg, and the character cannot move faster than a stagger.

Critical Injuries

The character suffers immediately life-threatening trauma that will almost certainly cause some degree of permanent impairment unless expertly treated with long-term rehabilitation. In peacetime, a critical injury would call for air evacuation to a trauma center.

Common Effects: A critically injured character automatically enters shock. In addition, the player must succeed in a Fitness check or the character becomes unstable.

Head: A character who sustains a critical head injury instantly becomes unconscious and remains so until the injury is healed to serious.

Torso: A critical torso injury inflicts a -4 skill level penalty to all physical actions.

Arm: When a character suffers a critical arm injury, he automatically drops anything held in that hand. The arm is unusable and any task requiring its use automatically fails. If the damage inflicted exceeds twice the arm's critical wound threshold,

there is a 50% chance that the arm is catastrophically amputated.

Leg: When a character suffers a critical leg injury, he automatically falls down. The leg is unusable and any task requiring its use automatically fails. The character's only available mode of movement is crawling. If the damage inflicted exceeds twice the leg's critical wound threshold, there is a 50% chance that the leg is catastrophically amputated.

Shock

When a character enters *shock*, his body is beginning to shut down in an attempt to deal with what it perceives as catastrophic trauma. A character who enters shock is unable to act for the rest of the current exchange of fire. For the remainder of the scene, any effect that would put the character into shock instead renders him unstable.

At the beginning of each subsequent exchange of fire, before initiative is rolled, the player must succeed in a CUF check. If this check succeeds, the character may act normally during the next exchange of fire. If the check fails, the character is semiconscious and may take no tactical actions.

Instability

An *unstable* character is experiencing significant bleeding or other persistent and immediate degradation of his physical condition. At the end of each subsequent *full* exchange of fire or pause (or one full minute, in a non-combat situation), every hit location that is injured becomes one level worse. Uninjured hit locations don't degrade. This cycle continues until a hit location that is already critically injured becomes one level worse, at which point the character bleeds out and is clinically dead.

If a character becomes unstable as a result of a head injury, he also instantly becomes unconscious and remains so for the rest of the scene.

Example: *Pete becomes unstable. He has slight injuries to his left arm and left leg, a moderate injury to his head, and a serious injury to his torso. At the end of the next pause or exchange of fire, Pete's left arm and left leg will degrade to moderately injured, his head will degrade to seriously injured, and his torso will degrade to critically injured. At the end of the following pause or exchange of fire, Pete will bleed out from his critical torso injury.*

In anticipation of the need to save characters' lives, players are advised to become familiar with the first aid rules (see p. 174).

DAMAGING EQUIPMENT

While other characters are the most common targets for attacks, equipment falls victim to misadventure or deliberate harm on a regular basis. Every solid object has an Armor value and a single damage threshold. When an item suffers damage, compare the final damage value to its damage threshold. If the value is less than the threshold, the item loses some cosmetic appeal but continues to function normally. If the value equals or exceeds the threshold, the item gains 1 point of Wear and becomes *disabled*. It no longer works, but repairs are possible (see p. 184). If an item is already disabled and suffers another hit with damage equal to or in excess of its damage threshold, it is destroyed.

An item's armor value and damage threshold depend on its construction and size, as per the following table. If an item is constructed of multiple materials, use the most logical one. For example, an AK-47 has a wooden stock, but its working parts are made of steel, so it's considered a steel object for damage purposes. At Bulk 3, it has Armor 4 and a damage threshold of 7. As always, apply common sense over rigid adherence to the rules, particularly if the rules give a nonsensical set of values.

Design Note: Instant Death

Most readers will have noticed by now that the injury rules as written do not allow a character to die instantly from a single massive source of trauma. This is intentional. The potential lethality of untreated critical injuries is sufficiently high to allow careless players to become very familiar with the character creation rules. Instant kills are excluded from these rules as a small measure of mercy for such players. We have no mercy for *characters* in our cold, withered hearts, as should be painfully obvious by this point.

With that being said, we do acknowledge that exceptionally well-placed attacks can immediately destroy a character's central nervous system or other vital functions, "turning off the lights" before the victim even knows he's been hit. Likewise, massive energy transfers such as large explosions or vehicular collisions can disincorporate a victim with equally instantaneous fatal consequences.

For groups that want to allow for the possibility of instant death, we recommend a fifth wound threshold, Dead Right There (DRT). This wound threshold exists only for the head and torso locations. For each location, the DRT threshold is equal to the critical wound threshold plus the character's base wound threshold (in other words, base x4 for the torso and base x2.5 for the head). A character who suffers damage to each of these locations that equals or exceeds the DRT threshold is immediately gone with no possibility of resuscitation. *We strongly caution GMs to apply this rule only if all players accept its potential effects on their characters.*

For instant destruction of items, a similar recommendation applies: if the final damage result is at least *double* the damage threshold of a working item, it's instantly destroyed.

Stage III Option: Increased Lethality

For groups who want even nastier combat scenes, we recommend that each successful attack add *double* its margin of success to the base Damage rating of the weapon. This further rewards good shot placement.

Note that the following rules apply only to personal equipment or objects of equivalent size. For attempts to damage scenery or structures, see the demolition rules (see p. 195).

Substance	Armor	Damage Threshold
Paper	0	Bulk
Pottery/glass	0	Bulk + 1
Electronic components	0	Bulk + 1
Leather	1	Bulk + 1
Rubber	1	Bulk + 1
Wood, soft	2	Bulk + 2
Bone	2	Bulk + 2
Plastic, hard	2	Bulk + 2
Aluminum	3	Bulk + 1
Wood, hard	3	Bulk + 3
Polymer	3	Bulk + 3
Stone	4	Bulk + 3
Iron	4	Bulk + 3
Steel	4	Bulk + 4
Titanium	5	Bulk + 5

Table 5j: Material Damage Threshold

OTHER DAMAGE SOURCES

The basic combat rules assume that characters and equipment will most often suffer damage from a direct, intentional application of kinetic energy. While this is the most common way for a character's day to be ruined, the world of **Twilight: 2013** is full of many other sources of trauma.

EXPLOSIONS

Unlike bullets, blades, and fists, all of which inflict damage only at the point of impact, explosions distribute kinetic and thermal energy over a significant volume. Any character or item near an explosion is at risk. Accordingly, explosions in the Reflex System have some additional characteristics which other sources of damage do not possess.

From a physics perspective, an explosion is a rapid expansion of gas, usually accompanied by intense heat. This atmospheric shock wave radiates in all directions from the source of the explosion. As it travels, it also propels small solid objects that happen to be caught in its path: pebbles, bits of the explosive's outer casing, or pieces of anything that was in contact with the explosion.

In game terms, every explosive device has a Damage trait. This functions in the same manner as the Damage trait of any other weapon: it injures or damages the victim of a successful attack (or the character or object who's in direct physical contact with it when it detonates). Three additional traits model the secondary effects that radiate out from the point of impact: Radius, Blast, and Fragmentation Density (abbreviated "Frag"). Explosive devices do not have separate Penetration values. The Penetration of any explosive against its primary target is always x1, and the Penetration of blast and fragmentation effects are discussed in the following sections.

Example (Part 1): A high explosive anti-tank (HEAT) warhead for an RPG-7 rocket launcher has Damage 80, Radius 4m, Blast 4, and Frag 2. These values are all important because an enemy has just fired such a round into the side of the vehicle from which Ed, Keith, and Pete are emerging, attacking with a margin of success of 3. The vehicle is the primary target of the successful attack, so it suffers normal damage: Damage 80 plus MoS 3, for a total damage value of 83. This is applied to the vehicle's Armor with Penetration x1.

Radius

An explosion's Radius defines the distance within which it does its greatest damage: its primary radius. The explosion inflicts lesser effects within twice this distance, or its secondary radius. The concussive and fragmentation effects that occur within these radii are, respectively, primary effects and secondary effects. If a victim is exactly on the border between primary and secondary effects, assume secondary effects apply.

Example (Part 2): The RPG-7 warhead has a 4-meter Radius. Pete has just exited the vehicle and is one meter away from the point of impact; he suffers primary effects. Keith has taken cover six meters away; he suffers secondary effects. Ed has moved 11 meters away and is outside the secondary radius, so he is pelted with debris but suffers no mechanical effects.

If a target with multiple hit locations (e.g. a PC, star NPC, or vehicle) suffers a direct hit from an explosive, the primary effects also apply to every hit location except the location that took the direct hit. That location is in enough trouble already.

Design Note: Shaped Charges

The Reflex System uses the Damage, Radius, Blast, and Frag traits to vastly oversimplify a number of factors for the sake of playability. One of these factors is the nature of a shaped charge. A shaped charge is an explosive whose material is formed in a specific concave shape. When the material detonates, this shape directs the majority of the explosion's energy in a narrow stream or cone, rather than sending it equally in all directions. Some shaped charges use this effect to superheat a small amount of metal, forging it into a molten projectile moving at hypersonic velocity. This focused effect means that a shaped charge is very good at penetrating anything in the direction of its focus, but has lessened effects in all other directions. In these rules, shaped charges have high Damage values compared to equivalent weights of non-shaped explosives, but have comparatively lower Radius, Blast, and Frag values.

Blast

An explosive's Blast value represents the force of the shock wave that radiates out from its point of detonation. It is roughly equivalent to a Damage value.

Primary Blast Effects

Every target within an explosive's primary radius suffers damage equal to the Blast value plus the attack's margin of success. For targets with multiple hit locations (PCs, star NPCs, and vehicles), this damage is applied separately to every location that is exposed to the blast. Primary blast damage has Penetration x2.

Secondary Blast Effects

Every target within an explosive's secondary radius suffers damage equal to half the primary blast damage. Secondary blast damage has Penetration x3.

Example (Part 3): The RPG-7 warhead has Blast 4 and the attack succeeded with a margin of success of 3, for a total blast damage of 7. Pete suffers primary blast damage: a separate Damage 7 hit to each hit location, with Penetration x2. Keith suffers secondary blast damage: a separate Damage 4 hit to each hit location, with Penetration x3. The vehicle also suffers primary blast damage to each location except the one that took the direct hit.

GM Hint: Blast

In some cases, using an attack's margin of success for blast damage doesn't make a lot of sense. For instance, if an attack misses and deviates horribly but still lands close enough to someone to inflict injury, there's no margin of success to apply. Likewise, an antipersonnel land mine doesn't "attack" - it simply explodes where it is. In such a case, roll 1d6 and substitute the die result for margin of success. This provides a randomizing factor for the overall blast damage, serving the same purpose that MoS normally does.

Some explosives have very low - even negative - Blast values. This is typical for small explosive charges whose primary purpose is to propel fragments. If the total damage is zero or less, even after the MoS is applied, then the explosion isn't significant enough to harm anyone who isn't in direct contact with it.

Design Note: Frag

An explosive's Fragmentation Density is dependent not on its size, but on its composition. A fragmentation grenade is designed specifically to propel pieces of metal in all directions, and thus has roughly equivalent weights of explosive and shrapnel material. In contrast, a concussion grenade carries a much greater weight of explosive, but its casing is too light to survive detonation as lethal fragments. Larger devices that are designed to distribute shrapnel throughout a wider area have Frag values comparable to those of a fragmentation grenade, but much greater Radius values. This models the fact that the larger number of fragments is being spread throughout a correspondingly greater volume of space. Yes, technically, a character standing right next to a block of C-4 in a keg of nails will soak up much more shrapnel than one standing right next to a fragmentation grenade, but we had to draw the "simplification for the sake of play" line somewhere.

Fragmentation Density

Every explosion that occurs outside a sterile environment raises a cloud of smoke and dust. An explosion's Frag value provides a rough definition of the amount of potentially lethal solid shrapnel that's also in the air in the instants after detonation. Unlike blast, which is a constant pressure wave, fragmentation is random in its devastation. Some potential victims may be shredded by multiple hits while others are left unscathed. Roll hit location separately for each fragment hit.

Primary Frag Effects

For each potential target within the primary radius, roll a number of d10s equal to the explosion's Frag. Each die that comes up 6 or more is a lucky break. Each die that comes up 5 or less is a fragment hit. Primary fragments have Damage 6 and Penetration x2. The die result serves as the margin of success for this "attack."

Secondary Frag Effects

For each potential target within the secondary radius, roll a number of d20s equal to the explosion's Frag. Each die that comes up 6 or more is a lucky break. Each die that comes up 5 or less is a fragment hit. Secondary fragments have Damage 4 and Penetration Nil.

Example (Part 4): The RPG-7 warhead has Fragmentation Density 2 (fairly low because it's a shaped charge, not an anti-personnel round). Pete suffers primary fragmentation effects, so the GM rolls 2d10. The dice come up 1 and 5, indicating two hits. For each hit, the die result (1 and 5) is added to the base Damage 6. Pete takes a Damage 7 hit and a Damage 11 hit, both with Penetration x2.

The vehicle also suffers primary fragmentation damage.

Keith suffers secondary fragmentation effects, so the GM rolls 2d20. The dice come up 4 and 18, indicating one hit, whose base damage is 4. Keith takes a single hit with Damage 8 and Penetration Nil.

Explosive Effects Summary

The following table summarizes how the various traits of an explosion interact.

Range	Damage	Blast	Frag
Contact	Applies, Pen x1	(Blast+MoS), Pen x1	(Frag)d10, 1-5 hits: Dam 6, Pen x2
< Radius	N/A	(Blast+MoS), Pen x2	(Frag)d10, 1-5 hits: Dam 6, Pen x2
Radius - 2x Radius	N/A	(Blast+MoS)/2, Pen x3	(Frag)d20, 1-5 hits: Dam 4, Pen Nil
> 2x Radius	N/A	N/A	N/A

Table 5k: Explosive Calculations

Characters and Explosions

Characters will not often be the direct targets of explosive ordnance. The Damage values of most warheads in the game are "tuned" to reflect their performance against vehicles and other hard targets. If a character is unfortunate enough to sustain a direct hit from a large-caliber HE or HEAT round, his survival is not plausible, regardless of how the numbers work out. The GM should exercise a balance of common sense and mercy, depending on how cinematic or bloodily realistic he wants his game to be.

PASSIVE HAZARDS

Fire

All animals share an instinctive dread of fire; man is no exception. Open flame (or a source of equivalent temperature, such as molten metal) is a passive hazard. The Damage of fire depends on its temperature, while the Avoidance Check is a CUF check whose difficulty is determined by the size of the fire:

Flame Source	Temperature (°C)	Damage
Paper fire	230°C	1
Brush fire, gasoline fire	500°C	2
House fire	600°C	3
Forest fire, vehicle fire	800°C	4
Campfire, napalm, diesel fuel fire	1,000°C	5
Aviation fuel fire, lava	1,200°C	6
Blowtorch	1,300°C	7
Magnesium flare	1,800°C	9
White phosphorus	2,000°C	10
Thermite	2,500°C	12
Fire Size	Avoidance Check TN Modifier	
Pinpoint (cigarette tip)	+4	
Candle flame	+3	
Torch	+2	
Campfire	+1	
Human-sized (bonfire)	Standard	
Small vehicle (car)	-1	
Large vehicle (APC)	-2	
Structure	-3	
Complete envelopment in flame	-5	

Table 5l: Fire Damage



Fire has Penetration $\times \frac{1}{2}$ against body armor and other protective gear and Penetration $\times 2$ against structures and vehicles. Note that this rule only accurately models brief exposure. If an item suffers extended exposure to fire, apply common sense over rules.

Ignition

Given sufficient fuel and oxygen, fire spreads. A character or object that sustains damage from fire has a chance of catching fire itself

Fire-Based Attacks

Fire is considered a “normal” attack if a character directs it against a target as a projectile or close combat weapon. The most common means of making such an attack are flamethrowers and burning objects. In such an event, the initial attack is resolved normally, using an appropriate skill check and the weapon’s Damage value. However, if the target suffers damage from such a source, there is a chance it ignites using the rules given above. Once the initial attack is resolved, all further damage from being on fire is handled as a passive hazard.

Impact

A sufficient magnitude of blunt trauma can be as lethal as a blade or a bullet. Close combat weapons are the most likely source of such injuries, but PCs also have a distressing propensity for falling from high places or throwing themselves in front of moving vehicles. Damage from such causes, as well as other sources of wide-area kinetic energy transfer, is collectively referred to as *impact* damage.

If a character falls, the distance in meters equals the Damage value of the impact. Increase this value by 1 if the character is moderately encumbered, by 2 if he’s heavily encumbered, or by 4 if he’s overloaded. If a character is struck by a moving vehicle, add the vehicle’s weight in tons to its speed in kilometers per hour and divide by 10 to determine the collision’s Damage value.

Against rigid armor – scenery, vehicles, and such – impact has Penetration $\times 1$. Against soft body armor and helmets, it has Penetration $\times 2$, reflecting the fact that padding provides superior protection (and, in fact, is often specifically designed to mitigate impacts).

The avoidance check for impact is always a Coordination attribute check. This check starts at standard TN but suffers a cumulative -1 penalty per meter fallen or per 10kph of closing speed. The effects of a failed avoidance check differ slightly from the norm. Instead of increasing the impact’s Damage, the margin of failure increases the *extent* of the damage. A failed avoidance

check results in a number of separate hits equal to the margin of failure.

Example: *Pete falls from an 8-meter cliff while heavily loaded. He suffers a -8 penalty to his avoidance check and fails it by 5. Pete suffers five hits, each with Damage 10 (8 meters, +2 for a heavy load).*

Drowning and Suffocation

A character without breathable air has only a limited amount of time before he loses consciousness from hypoxia. These rules assume that such a character is interested in self-preservation and will attempt to hold his breath as long as possible rather than inhaling water, chlorine gas, or the pillow that his estranged wife is holding over his face. Accordingly, when a character is deprived of oxygen, make a Fitness check. *Half* the margin of success is the number of exchanges of fire and pauses (or minutes, outside combat) that the character can hold his breath before he begins suffering from oxygen deprivation. With a margin of success of zero, ill effects begin at the end of the current exchange of fire or pause. If the character has time to prepare by hyperventilating or otherwise increasing his blood oxygenation, apply a +4 bonus to the Fitness check.

Once oxygen deprivation sets in, the character receives a slight virtual head injury. This virtual injury becomes one stage worse after each subsequent exchange of fire or pause (or minute). Once this injury becomes critical, the character goes unconscious. One exchange of fire or pause (or minute) later, he dies. At any point before death, returning the character to an environment in which he can breathe reduces the severity of the virtual head injury to slight. This virtual injury is healed, and an unconscious character regains consciousness, after five minutes of rest.

The same rules apply to a character who attempts to hold his breath in the face of an airborne hazard. In this case, rather than suffering from oxygen deprivation, a character who runs out of air must breathe and becomes subject to whatever is in the air he’s now breathing.

Gas Behavior

The most likely airborne hazards that characters will encounter are chemical weapons, whether riot control agents or more lethal substances. Most chemical weapons are deployed via a grenade or warhead that emits a cloud of its contents upon detonation. The initial cloud has a radius equal to the weapon’s listed burst radius and comes into existence upon detonation. At the beginning of each subsequent exchange of fire or pause, the cloud extends downwind an additional distance equal to its

diameter, for a number of exchanges of fire or pauses determined by the current wind speed:

Wind Speed	Dispersion Duration
Mild/none	4
Moderate	2
Strong	1
Major storm	0

Table 5m: Gas Dispersion Duration

A gas cloud disperses at the end of the exchange of fire on which its dispersion duration expires (so in a major storm, a gas cloud vanishes at the end of the exchange of fire during which it appears).

If a gaseous agent is deployed in an enclosed environment without appreciable wind, it spreads to twice its original radius in all directions, then disperses after 1d6 minutes.

SURPRISE

"Surprise is an event that occurs in the mind of the commander," states an ancient military maxim. In the Reflex System, *surprise* is an effect that occurs in the mind of any character who isn't psychologically prepared when combat begins.

The default initiative rules assume that all involved parties have at least a few seconds' warning that they are about to exchange punches or bullets. This can happen when two opposing forces become aware of each other simultaneously, or when a less hostile social interaction begins to obviously break down into imminent violence. Regardless of the precise circumstances, everyone knows the fight is coming and has the opportunity to make the mental shift into a fighting mindset. When one or more characters don't have this advance warning, they are surprised.

MUTUAL SURPRISE

Mutual surprise occurs when two opposing groups that were previously unprepared for combat suddenly encounter one another and choose to initiate hostilities. In this case, every participant starts on equal footing, so the standard initiative rules apply.

AMBUSH

An ambush is asymmetrical surprise - some participants know they're about to be in a fight, but others don't. In this case, the combatants with foreknowledge have a distinct advantage. They can, at least to a limited extent, choose the time and location at which combat begins. An ambush can be planned well in advance, or it can be an impromptu tactical decision based on only a few seconds' warning.

Setting an Ambush

To prepare an ambush, the participant leading the effort makes a Tactics (COG) check which the target will oppose after the fact. This check suffers a cumulative -1 penalty for every vehicle involved in the ambush, as well as every intended attacker who is Unskilled in Tactics. Preparing an ambush requires one minute per participant in the attack. All characters in the crew positions of a single vehicle count as one participant for this purpose.

Example: *Ed is leading Simon, Justin, and Leslie on a patrol when he receives a report that an enemy squad is moving in*

their direction. Ed decides to prepare an ambush at a nearby bridge; he and Simon will dismount and use their personal weapons, while Justin and Leslie will stay in the gunner's and driver's positions of the team's HMMWV. This ambush will involve two independent attackers and one vehicle crew, so setup takes three minutes. Ed makes a Tactics (COG) check, suffering a -1 penalty for the one involved vehicle. None of his group is Unskilled in Tactics, so he suffers no additional penalty for ambushers who need extra supervision.

Detecting an Ambush

As a target approaches an ambush site, he receives one chance to detect the ambush. Unless he is specifically watching for an attack, this is an Awareness check that opposes the ambusher's earlier Tactics (COG) check. With success, the target becomes aware of the ambush immediately before combat begins and is not surprised.

If the prospective victim is actively scanning for an ambush, he may make a Tactics (AWA) check which opposes the ambusher's earlier check. With success, he identifies the ambush with enough advance warning that he can decide whether to enter it (and thus begin combat normally, with no surprise) or avoid it entirely.

In either case, noticing an ambush involves visual perception and thereby is subject to any environmental or other limitations on vision.

Effects of Surprise

If the target of an ambush fails to notice it, he is surprised. His base initiative value for the first exchange of fire is considered zero, though he still makes his initiative check normally. In addition, being ambushed has morale effects (see p. 159). After the first exchange of fire, a surviving ambush victim acts according to the normal initiative rules.

Ambush Variations

The basic ambush rules define the creation of a classic ambush in the military sense: one group of combatants establishes prepared, concealed positions and waits for an enemy group to enter the kill zone. However, variants on this theme are certainly feasible. A comprehensive examination of the principles and techniques of tactical surprise would require a book at least as large as this one. Accordingly, we can't cover every possibility here, and the GM is advised to use his own discretion in arbitrating players' ingenious plans for creative ambushes. Two prototypical alternate tactics are discussed below.

Social Ambushes

Not all ambushes revolve around conventional military action. A meeting with an arms dealer in a dockside tavern can be a setup for a robbery attempt. Obtaining an invitation to a warlord's private party may be easier than staging a frontal assault on his fortress. In such situations, prospective attackers may need to surprise targets via face-to-face interaction rather than camouflage and IEDs. Social ambush attempts are variations on diverting the target's attention so he doesn't recognize the impending threat until he feels the knife slip between his ribs.

To plan and execute a social ambush, the ambush leader makes a Deception (COG) skill check, rather than a Tactics (COG) check. This check suffers a cumulative -1 penalty for every *additional* participant in the ambush. Each participant who is Unskilled in Deception inflicts an additional -1.

Detecting a social ambush requires a Personality check for a causal observer or a Tactics (PER) check for a defender who's actively scanning for threats.

GM Hint: Team Ambushes

If all participants in an ambush are members of a team (see p. 131), a successful team order reduces the setup time to one minute, regardless of the number of participants. A team may designate a specific ambush description as a reaction drill, which makes the setup time 2d20H seconds - basically, enough time to scatter for cover and point weapons in the direction from which a threat is about to appear. The team leader still has to make the Tactics (COG) check to determine how well the ambush is set.

If *any* participant in the ambush is not a member of the team, these benefits are negated. The character leading the ambush still has to explain to the outsiders what to do so they don't screw up the predetermined actions of the team members.

Maneuver Ambushes

In a *maneuver ambush*, the attacker moves into a position of tactical advantage, rather than waiting for the target to come to him. Stealthy movement, as opposed to simple stationary camouflage, is a key component of a maneuver ambush. Accordingly, the ambusher uses the *lower* of his Tactics or Fieldcraft skill ratings to enact this ambush. If making a Fieldcraft check, he suffers a cumulative -1 penalty for every participant who is Unskilled in that skill, as well as a cumulative -1 penalty for every motorized vehicle involved in the ambush.

If a maneuver ambush occurs in an urban, rather than wilderness, environment, substitute Streetcraft for Fieldcraft.

MORALE AND THREATS

A Hollywood hero never succumbs to fear. Regardless of the odds arrayed against him, he sets his square jaw and fixes his steely gaze upon the hordes of enemies. In the Reflex System, however, characters are a bit more human. The following rules model the conditions under which a character's courage can fail him, reducing his combat effectiveness and ultimately robbing him of his will to fight.

A character's morale condition is determined by two factors: his Coolness Under Fire value and the current *threat level* arrayed against him. Various *threat conditions* represent events or injuries that can negatively affect a combatant's morale. The character's threat level is equal to the total number of threat conditions that apply to him during the current combat scene. As long as his threat level is less than or equal to his CUF, he suffers no adverse effects. He's sufficiently hardened that the bullets, bombs, and blood don't faze him. However, if his threat level exceeds his CUF, he suffers a penalty on all checks equal to the difference between threat level and CUF. If the difference is 5 or more, his will to fight is *broken* and he's unable to take any actions other than fleeing, performing first aid on himself, communicating, and curling into a fetal ball and weeping. At the end of each exchange of fire, he may not press - he must hold. Furthermore, a broken character automatically fails all opposed and competing social checks.

Example: *Leslie has CUF 8. As long as her threat level is 8 or less, she suffers no morale-related penalties. If her threat level increases to 11, she suffers a -3 penalty on all checks. If her*



threat level increases to 13 or higher, she becomes broken, unable to carry on the fight due to a total morale failure.

THREAT CONDITIONS

The following list of threat conditions represents the most common battlefield threats that can affect morale. At the GM's discretion, factors not described here can also be threat conditions. Note that some threat conditions are subjective; as always, the GM's interpretation is final.

Basic Threats

- combat is occurring
- character has been attacked
- character has been attacked with lethal force
- enemy is using automatic weapons (burst fire)
- enemy is using explosives
- enemy is using incendiary weapons
- enemy is obviously irrational/insane (rabid, psychotic, on meth, etc.)
- enemy is charging and is (a) mounted, (b) in a vehicle, or (c) an animal larger than human size

Tactical Considerations

- ambushed (no advance warning)
- fighting in darkness (night-vision gear negates this condition)
- character and allies are outnumbered 2:1 or more
- character can't see enemy
- character has no weapon that can reach or harm enemy
- enemy has clearly superior position (high ground, prepared fighting positions)
- enemy has clearly superior armament
- enemy has clearly superior mobility
- escape is impossible (fight or die)

Injuries

A character's most severe injury (or virtual injury) adds to his threat condition. Each level of injury counts as one threat condition. Thus, if a character has two slight injuries, a moderate injury, and two serious injuries, only the worst injury level - serious - applies to morale, and it counts as three threat conditions.

Casualties

As allies go down, the odds look worse. The first friendly casualty counts as one threat condition. For purposes of this rule, a casualty is critically injured, unconscious, dead, or broken. Every additional 25% losses counts as an additional threat condition. In addition, if the character is in a team (see p. 131) and the team's leader becomes a casualty, that loss counts as yet another threat condition.

Lifesaving

Having someone else's life literally in your hands is stressful under any circumstances. Accordingly, whenever a character is performing first aid or surgery on someone else, the patient's most serious injury level generates threat conditions in the same manner as injuries to the caregiver himself. Thus, attempting to stabilize a critically-injured victim counts as four threat conditions. These threat conditions persists until treatment is successful, at which time they vanish.

If a character treats multiple patients over the course of a single scene, only the worst lifesaving threat condition applies.

GM Hint: Threat Tokens

Any experienced GM knows that players have a tendency to "forget" penalties that their characters have accrued, especially if those penalties are changing rapidly. One way to keep everyone aware of his character's threat level is to hand out threat tokens. Put a pile of small, distinctive objects in the center of the table. Toss one to a player every time his character is subject to a new threat condition. Don't forget to take one for yourself every time the PCs manage to apply a new threat condition to the NPCs you're running.

What you use is a matter of personal choice. We've seen poker chips, empty .44 Magnum casings, and glass beads all work well. Dice are probably a bad idea because players are likely to grab them for rolls. If you use candy, let your players eat it at the end of the fight as a reward for surviving (or as a consolation prize for being sent back to Chapter Four).

Example: *Leslie's band of survivors is ambushed by a large group of well-armed opponents. She sustains a moderate injury in the initial volley of machine gun and RPG fire. Leslie's initial threat conditions are substantial: she's in combat (1), she's been personally attacked (1), the enemy is using both automatic weapons and explosives (2), she's been ambushed (1), and she's moderately injured (2). Her threat level is now 7. With her CUF of 8, she's not yet subject to morale penalties, but she will be if the fight gets much worse.*

Extreme Threats

Some threats are sufficiently overawing as to be outside the normal scope of sanity. Accordingly, they are likely to count as more than one threat condition.

Personal Fears

Characters with the Aversion and Phobia disadvantages are rattled whenever they confront the objects of their fears. Whenever a character encounters the subject of an aversion, roll 2d6L to determine the number of threat conditions that it represents for the current scene. Whenever a character encounters the subject of a phobia, roll 2d6H.

In addition, self-inflicted moral violations can be demoralizing. Breaking the conditions of a Code disadvantage counts as 1d6 threat conditions.

WMDs

Nuclear, biological, and chemical hazards are never cuddly, but survivors of the Last Year view them with particular horror, having likely seen their effects firsthand. The mere hazard of exposure to a WMD or an equally lethal non-weapon hazard (avian influenza, industrial chlorine gas leak) qualifies as 1d6 threat conditions. Actual exposure qualifies as 2d10H threat conditions, replacing the lesser threat condition for the hazard.

Protective gear appropriate to a threat reduces these values to 1 and 2d6L, respectively.

If the threat is of a general type but less than full weapon-grade exposure (year-old fallout, cholera, industrial runoff), the hazard is a single threat condition and actual exposure is 2d6L threat conditions. Appropriate protective gear negates these threat conditions entirely.

Horrifying Experiences

Although most survivors have seen their share of bad things by 2013, some sights can still rattle them. At the GM's discretion, witnessing or finding evidence of tragedies or atrocities can qualify

as anywhere from 1 to 2d10H threat conditions. The GM should maintain a sense of perspective, using the rules here as guidelines for the relative shock and horror of a given event.

Suppressive Fire

Most attacks are made with a definite target in mind – randomly spraying bullets downrange is unlikely to neutralize any enemies. However, some situations call for controlled fire into an empty area in order to discourage opponents from moving through it or otherwise doing anything that might make them targets. This technique is known as *suppressive fire*. Any firearm can be used for suppressive fire.

Suppressive fire requires a snap shot Attack action, targeting an area rather than an enemy. The maximum width of area that can be suppressed is equal to half the number of bullets being fired in meters (e.g. a three-round burst can suppress an area up to one and a half meters wide). Using a single shot or a short burst (5 rounds or less) gives an area an effective threat rating of 1. A long burst (5 or more rounds) gives it a threat rating of 2. Using explosives or tracer ammunition increases the threat rating by 1 (the incoming fire is visible in this case, not just audible).

If a character takes an action that places him within the suppressed area and exposes him to the source of the suppressive fire, his current threat level increases by the suppressed area's threat rating. This lasts until the end of the current exchange of fire. If he exposes himself before the attacker's next action, the attacker also gets a "free shot" on him, using the same rate of fire that he used for the suppression. This action has a tick cost of zero and is resolved before the suppressed character's action is resolved.

Example: *Keith is using his Minimi (ROF B5/B9) to suppress two enemies who are behind an armored bunker door. Keith hoses bullets into the door at his gun's high rate of fire, laying down a 9-round burst. The Minimi's ammo mix includes tracer rounds, so anyone who sticks his head out of the door before the end of the exchange of fire will suffer a +3 increase to his threat level.*

The bunker door is too thick for the Minimi to penetrate, so the enemy troops aren't initially exposed to the fire. However, before Keith's next action, one of the enemies opens the door to throw a grenade at Keith. As he exposes himself to the suppressive fire, his threat level immediately increases by 3. Keith takes his free attack on the exposed enemy, putting down another 9-round burst – and his target.

Keith's next action is to reload. While Keith is reloading, the second enemy takes the opportunity to run out of the bunker toward Keith's position. This also exposes him to Keith, raising this enemy's threat level by 3 as well. However, Keith is no longer engaged in suppressing the same spot, so he doesn't get a free attack on the second target.

Intimidation

The Intimidation skill is a means of implicitly or explicitly threatening a subject. This only works outside of combat; verbal threats aren't effective when bullets are already flying around. Intimidating someone verbally (or silently) requires five minutes and an Intimidation (RES) check, while a physical display requires one minute and an Intimidation (MUS) check. The margin of success is the number of threat conditions that the character presents, compared to the subject's RES rather than his CUF. This is an exception to the general rule that morale applies only during combat.

Design Note: Self-Preservation

We feel it only fair to warn the GM that morale rules can be decidedly unpopular with some players. The most common problem that players have with these rules is that they deprotagonize PCs. In other words, players feel that their characters are the stars of the story, and therefore should never be subject to outside forces that dictate how they feel or react. This is a fair complaint. We've included these rules for the sake of drama and realism, but some players may not want this much verisimilitude in their post-apocalyptic escapism.

Before you excise this section from the book with a straight razor, there are a couple of game balance points to consider (and to present to your objectors). First, the single greatest mechanical functions of the CUF attribute and the Intimidation skill are linked to these rules, so removing self-preservation from the game may prove a disadvantage to players who've created characters with investments in these traits at the expense of other desirable ones. Second, CUF cuts both ways, so enemies will also have an apparent magical immunity to suppressive fire when the PCs react to a bad situation by flipping their selector switches to full auto.

With that said, some players may still prefer John Woo and Michael Bay to The History Channel. There's nothing wrong with this, so long as everyone is on the same page with regard to expectations for the game. Just... please be gentle with the book.

Design Note: Horror

A secondary function of the morale rules is to provide a ready-made framework for using the Reflex System to run horror games. PCs' reactions to the supernatural or unexplained are an integral part of a horror story, and the unknown and unknowable can be every bit as much a threat as a knife or a bomb. Accordingly, a GM using the Reflex System for such a game should feel free to rule that paranormal objects, creatures, and events can apply one or more threat conditions to characters who encounter them.

Example: *Leslie needs information from a prisoner and doesn't have time to waste. She decides to start playing with knives while describing her plans in an ominous monotone. The GM decides that this is primarily psychological despite the blades, so Leslie makes an Intimidation (RES) check. Her margin of success is 9, so she presents 9 threat conditions to her prisoner.*

Leslie has two teammates in the room to help restrain the prisoner, with more guards outside the locked door. The GM decides that these conditions count as "outnumbered 2:1 or more," "unable to harm enemy," and "escape is impossible," so the total threat level that Leslie presents is 12. This easily exceeds the prisoner's RES of 6. In fact, it exceeds his RES by more than 5, so he breaks. As a broken character automatically fails all opposed social checks, he's unable to further resist Leslie's questioning.

MORALE BOOSTS

Various actions and effects can temporarily increase a character's effective CUF.

Tango Down

Whenever a character's action decisively removes a threat (killed, unconscious, or otherwise rendered incapable of any further aggression), his CUF is increased by 1 for the duration of the combat scene. This is cumulative up to a maximum of +3. If a character's Code disadvantage forbids killing under the current circumstances, this bonus instead becomes a penalty.

Panic Fire

There's something innately reassuring about making noise, even if nothing gets hit. As his first action during an exchange of fire, a character whose current threat level exceeds his CUF may make a hip shot with any firearm or explosive weapon he's currently wielding, using its highest possible rate of fire. This hip shot has no declared attack and no chance of doing damage (though explosives may still deviate into uncomfortable places at the GM's cruel whim). However, for the remainder of the exchange of fire, the character's CUF is increased by half the number of bullets fired or half the explosion's Radius (whichever is greater, if the character is using an automatic weapon with explosive ammunition).

Sweet, Sweet Morphine

An injection of one unit of strong pain reliever eliminates the threat conditions caused by serious or lesser injuries (though not the wound penalties). Critical injuries are traumatic and obvious enough to inflict their full four threat conditions even through a morphine haze.

You Wanna Live Forever?

A character can use the Command skill to bolster an ally's morale. This requires a 3-tick Communicate tactical action for a short (and hopefully inspirational) phrase, along with a Command (RES) skill check. With success, the target's CUF is increased by the margin of success (minimum +1) until the next pause. If a character is the target of multiple such actions, only the most recent one applies.

Teamwork

Acting as part of a team (see p. 131) innately increases a character's CUF.

STAGE III COMBAT OPTIONS

The rest of this chapter provides rules of increased complexity, realism, and lethality for those play groups who want to use the Reflex System more like a wargame for small unit combat.

ADVANCED COMBAT TIMING

The Reflex System's basic initiative and action rules accept a significant fallacy: the conceit that an action is resolved on the tick on which it *begins*, not the tick on which it *ends*.

Example: *Ed and Boris are both acting on Tick 10. They have identical weapons, with which they attack each other. Ed chooses a hip shot (tick cost 3), while Boris chooses an aimed shot (tick cost 8). Despite the aimed shot actually requiring significantly more time, both attacks are resolved simultaneously. This negates any speed advantage that Ed might have hoped to receive from his hip shot.*

The reason that the rules are written this way is ease of play. In our original draft, each action was resolved on its last tick, not its first tick. We found that most play groups had difficulty with the focused attention necessary to declare an action, *not* resolve it immediately, wait a few minutes of play time while resolving previous actions, and *then* remember to resolve the action that had been left hanging.

With this said, we do recognize that players with a strong tactical focus may prefer the more realistic and precise mechanism of resolving actions as they end. To streamline this process, it may help to have a dry-erase board or other tracking mechanism so that everyone can easily see when his current action is up for resolution.

This resolution mechanism introduces the potential for an action to be interrupted before it's complete. If this happens, the acting character effectively loses the action, paying its tick cost and waiting until the end of the interrupted action to begin a new one.

Example: *Ed and Boris are both acting on Tick 10. They have identical weapons, with which they attack each other. Ed chooses a hip shot (tick cost 3), while Boris chooses an aimed shot (tick cost 8). With a cost of 3, Ed's hip shot will end on Tick 7; by contrast, Boris' aimed shot will end on Tick 2. Ed's hip shot therefore is the first action to resolve. It misses. On Tick 7, Ed fires another hip shot, hoping to throw off Boris' aim. This second hip shot will end on Tick 4, which means it still will be resolved before Boris' aimed shot is resolved. Ed's second hip shot strikes Boris in the arm, inflicting a serious injury. Boris, still in the process of aiming, drops his gun. He will be able to act again on Tick 2, which is when the interrupted action would have ended and been resolved.*

ARMOR

Armor Degradation

Once a few high-velocity projectiles have blown through it, armor loses some of its effectiveness. A piece of armor is penetrated whenever the raw Damage of the attack - without applying the attack's margin of success - exceeds the Penetration-modified Armor value. Each normal impact (close combat or solid projectile) that penetrates armor reduces its value by 1. Each explosion or fire that penetrates armor reduces its value by half the amount of damage that penetrated.

Example: *A tank suffers a near-miss from an artillery shell. After Armor reduces the incoming Damage, the tank still receives 13 damage from the blast to the left side of its hull. The tank's left hull facing has its Armor value reduced by half the penetrating damage, or 7.*

ASSISTANT GUNNERS

Military doctrine calls for an assistant gunner to be assigned to most support weapons or belt-fed weapons. This is because the care and feeding of such armament goes faster with more than two hands. An adjacent character can take one of the two actions required to reload a belt-fed or heavy weapon. If he's carrying the ammo himself, he can also take responsibility for having it to hand as soon as the gunner needs it, thereby saving the gunner any action necessary to ready it.

EXPLOSIONS

Knockdown

The concept of bullet impacts knocking victims flat is a cinematic myth, but the distribution of explosive force across a character's whole body is another thing entirely. When a character suffers blast damage, the player must make a Muscle check with a penalty equal to half the final damage value. If this check fails, the blast knocks the character prone.

Confined Spaces

If an explosion occurs in an enclosed space with walls strong enough to resist its force, the shock wave rebounds within that space, likely striking all targets multiple times within a fraction of a second. This is known as the "chunky salsa effect" for reasons which should be obvious to any reader with an active imagination (thank you, FASA).

Shock waves tend to follow the path of least resistance whenever one exists. If an explosion occurs within a space that is less than twice its Radius in only one or two dimensions, extend its Radius by an amount equal to the lack of space. For example, in a two-meter-wide hallway, an explosion with a 5m Radius is missing eight meters of normal expansion room. Therefore, its Radius is extended from 5m to 13m.

If the explosion occurs within a totally enclosed space that is less than twice its Radius in its longest dimension, compare the Blast of the explosion to the Armor value of the space's weakest surface. If the Blast is greater, the structure partially contains the blast before giving way: double the Blast and Frag values applied against all targets within the space. If the Armor is equal or greater, the structure totally contains the explosion: multiply the Blast and Frag values by *four*.

HANDEDNESS

Between 85% and 92% of adults favor their right hands as dominant. Going by the statistics, *unless a player specifies at character creation that his character is left-handed, he is assumed to be right-handed*. This detail is important in the Reflex System because the use of a hit location table allows for the possibility of injury to the dominant arm. Sufficiently debilitating injuries may leave the character with no choice but to perform some actions - such as defending himself from further injury - with his non-dominant hand.

Whenever a character attempts to use his non-dominant hand as the primary hand for any action, he suffers a -2 penalty, increased to -4 if the action requires fine motor control. The Ambidexterity advantage (see p. 122) can eliminate this penalty for certain specific tasks.

If a character suffers a permanent impairment to his dominant hand, he may transition to using his non-dominant hand as his dominant hand with extensive daily practice. In such an event, every 2 months of game time reduce the penalty by 1 (thus, 10 months after losing his right hand, a formerly right-handed character is fully left-handed).

One-Handed Actions

Some actions require the character to use two hands. These include (but are not limited to) attacks with two-handed weapons and vehicle maneuvers. Whenever a character attempts a two-handed action with only one hand, he suffers a -3 penalty. This is cumulative with the penalty from use of the non-dominant hand (above). At the GM's discretion, some actions, such as attacking

with a bow or an ATGM, may be entirely impossible without the leverage that two hands provide.

Two-Gun Mojo

Thanks to Hollywood, some players may have a vastly inflated idea of their characters' ability to simultaneously fire two guns with unerring accuracy. In the somewhat harsher reality of the Reflex System, this tactic is useful for blindly spraying suppressive fire, but not very cost-effective.

A character with a one-handed firearm in each hand may attack with both guns simultaneously. Because it's impossible to achieve a sight picture with both weapons, the character may only make hip shots. The player makes a separate attack check for each weapon. If both attacks are directed at the same target, each suffers a -2 penalty; if two different victims are targeted, this penalty increases to -4. In addition, standard penalties for use of the non-dominant hand apply.

Long and Short

Unlike marksmanship, close combat with hand weapons often relies on the use of twin or irregularly paired implements for both attack and defense. Accordingly, a character wielding a one-handed close combat weapon in each hand has a much easier time than a two-gun shooter if he has the proper training - in this case, the Ambidexterity (Hand Weapons) advantage. Without this advantage, *none* of the following bonuses apply.

A character with a one-handed close combat weapon in his off hand uses it primarily for defense. This translates into more effective Block actions. Any Block action receives a bonus equal to 1 plus the off-hand weapon's Bulk.

An off-hand weapon also enables the wielder to make coordinated attacks. This isn't a simultaneous double strike, but rather a use of the off-hand weapon to knock aside the target's defenses before striking with the primary weapon. Such an attack receives a bonus equal to 1 plus the off-hand weapon's Bulk.

Twin Fists of Fury

Most martial arts attempt to minimize a fighter's reliance on his dominant hand by teaching strikes, parries, and other maneuvers with all available limbs. With the Reflex System's abstraction of close combat attacks, it's safe to assume that a character is making a full-body effort to maneuver, defend, and attack. No off-hand penalty applies to unarmed combat actions. If a character has injuries to one or both arms, use the lesser wound penalty to unarmed actions.

INDIRECT FIRE

Indirect fire is a ranged attack at a target that the attacker can't himself see, which requires a weapon with the Indirect Fire Range (IFR) trait. In order to know that he needs to attack something rather than just blindly lobbing projectiles over intervening terrain features, he needs guidance. This guidance comes from another character who can directly observe the target (*a forward observer*).

To initiate indirect fire, the forward observer must *call for fire*. This requires a Communicate (Complex) operational action and a successful skill check - either Artillery (COG, TN +2) or Tactics (COG). With success, the forward observer provides the attacker enough useful information to set up the first shot.

Once the attacker has received a successful call for fire, he can make his first attack, provided that the target is within his weapon's IFR. This attack uses the appropriate weapon skill, typically Artillery, and is an operational action rather than a

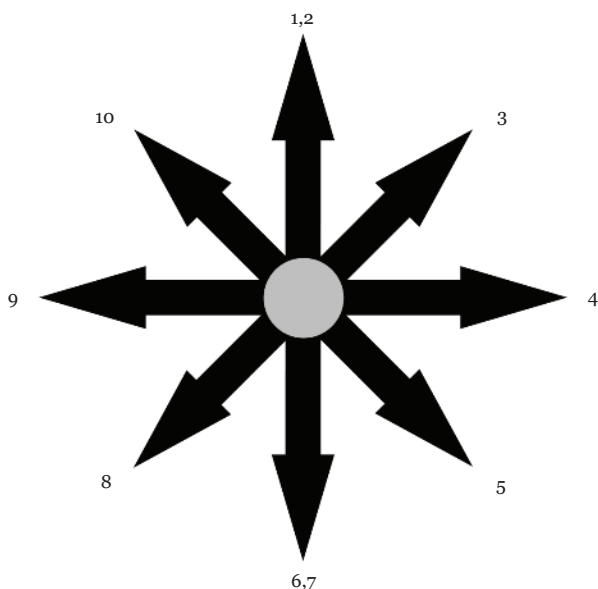
standard attack tactical action. The base attribute is always Cognition. The attack check suffers a penalty equal to 15 minus the forward observer's margin of success (minimum penalty -5). This extremely high penalty means that most indirect fire attacks will deviate as described in the following section.

Indirect fire lands at the end of the exchange of fire or pause in which it was fired. Thus, the round detonates after all Tick 1 actions or operational actions have been resolved.

Deviation

The trajectory of indirect fire means that projectiles will impact the ground somewhere in the area of combat. As indirect fire usually involves explosive warheads, there is a chance that even a failed attack will still result in a round landing close enough to a target – if not necessarily the intended one – to inflict damage. When an indirect fire attack fails, it therefore *deviates* from its intended point of impact.

To determine the direction in which a miss deviates, roll 1d10 and consult the deviation diagram shown here. The vertical arrow indicates the direction of the attack. Thus, a die result of 1 or 2 indicates that from the attacker's perspective, the miss lands directly behind the target, and on a 6 or 7, the miss lands on a direct line *between* the attacker and the target.



The distance by which a miss deviates is dependent on how badly the attacker missed and how far away the target is. Multiple the margin of failure by a factor determined by the range band of the attack, as follows:

Range Band	Deviation Factor
Gunfighting	0.5 meters
CQB	1 meter
Tight	2 meters
Medium	3 meters
Long	5 meters
Sniping	8 meters
Extreme	10 meters
past Extreme	20 meters

Table 5n: Indirect Fire Deviation Factor

Adjusting Fire

Once an attacker has received an initial call for fire, he can continue to make indirect fire attacks at the same target, subject to the same penalty as the initial attack. However, this doesn't gain him any accuracy. The role of the forward observer at this point is to *adjust* the incoming fire by telling the attacker where his shots are landing so he can correct his aim.

Adjusting fire is a Communicate (Simple) tactical action with a tick cost of 5 ticks, which a forward observer can undertake once per exchange of fire after observing the impact of the last indirect fire attack. Each action requires the same skill check as a call for fire: the forward observer's choice of Artillery (COG, TN +2) or Tactics (COG). With success, the attacker's penalty for indirect fire is reduced by 1 (with a MoS of 5 or more, the penalty is reduced by 2). This reduction is cumulative for multiple adjustments, though it can never reduce this penalty below -5.

Changing Targets

A forward observer can shift an attacker's fire to a different target once indirect fire is under way. The amount of information necessary requires another call for fire. However, the effects of any adjustments are not lost.

Self-Observed Fire

If a character is within visual range of his target (see p. 74), he doesn't need a forward observer or a call for fire, so long as he knows where he's shooting. For example, if an enemy platoon runs behind an office building that a mortarman can see, he doesn't need someone else to tell him where to fire. A character with a bow, crossbow, or thrown weapon can also use self-observed fire (though in the case of non-explosive projectiles, the likelihood of the direct hit required to inflict damage is vanishingly small).

When a character uses self-observed fire, the attack check's penalty begins at -10 and decreases by 2 for each subsequent indirect fire attack on the same target, without a call for fire or adjustment being needed. There is no minimum penalty. In addition, if the attacker is using a weapon with a normal Speed trait (such as a grenade launcher), the attack occurs as a normal attack action rather than an operational action.

MINES

A mine is an explosive and attached detonator that is left in place, usually concealed, until a passerby triggers it. For game purposes, all such devices fall under these rules, whether they're mass-produced in a factory or improvised in an insurgent's goat shed.

Emplacing a Mine

For a mass-produced mine, emplacement is fairly straightforward. While any explosive is innately dangerous, industrial quality control ensures that the user isn't likely to blow himself up unless he errs catastrophically. Putting a mine into position requires the player's choice of a Construction/Demolition (CDN, TN +2) or Tactics (CDN) skill check. This task takes three minutes for an antipersonnel (AP) mine or fifteen minutes for an antitank (AT) mine. Success leaves the mine armed. Failure indicates that it's still inert, but a margin of failure of 10 or more means that the character accidentally detonates the mine while attempting to emplace it.

Improvised explosive devices (IEDs) are much more prone to failure due to their irregular nature. Emplacing an IED always requires a Construction/Demolition (CDN) skill check. If the check fails, the GM rolls 1d10. If the die result is less than or equal

to the margin of failure, it's time for a new character.

In either case, it is assumed that the character emplacing the mine wants to conceal it so that enemies will blunder into it rather than detecting and avoiding it. Accordingly, the margin of success on the skill check is opposed by the Awareness check of any subsequent observer. At the GM's discretion, particularly favorable or unfavorable terrain may modify the margin of success. If the character wants to leave the mine in the open, the skill check receives a +3 bonus and the time to emplace the mine is reduced to one-third normal.

Detonating a Mine

Most mines are rigged for one of two forms of detonation, based on their design. Mines designed to be buried are detonated by pressure, such as the weight of a character's footstep or a tank's tread. Mines intended for above-ground deployment, such as directional antipersonnel mines, are detonated via tripwire or another directional sensor system. Both types may also have backup or anti-tamper sensors.

Minefields

A minefield is a wide area in which multiple mines are emplaced. Minefields typically provide area denial, preventing movement across specific areas. If a character or vehicle passes through a minefield, there is a random chance of setting off a mine. This chance is based on the number of mines per 10 square meters of the field and the distance that the prospective victim travels through the field.

Typical densities of minefields range from 0.01 to 0.04 mines per 10 square meters. In other words, a low-density minefield will average one mine per 1,000 square meters, and a high-density minefield will average one mine per 250 square meters. To determine the chance that a traveler triggers a mine, multiply the minefield's density by the distance in meters that he travels through the minefield, then roll percentile (for a character or mount) or 1d20 (for a vehicle). If the die result is less than or equal to the chance of detonation, a mine is detonated. Regardless of density and distance, a percentile result of 96+ or a d20 result of 20 always indicates safe passage.

Example: *Matt unwittingly drives his truck 200 meters across a minefield with a density of 0.02. 200×0.02 equals 4. Because Matt is in a vehicle, the GM rolls 1d20. If the die result is a 4 or less, Matt will trigger a mine.*

Choke Points

Minefields are effective only if the owner has a large supply of mines to spread around. For more limited inventories - such as those with which most PC groups will be operating - it's more effective to emplace one or a handful of mines in a place through which an enemy is sure to pass. Bridges, hallways, jungle trails, mountain passes, and city streets are all likely choke points in which an emplaced mine is vastly more likely to be detonated.

When a mine is emplaced in a choke point, the GM should record the margin of success on the skill check to emplace it. Subsequently, whenever traffic sufficient to detonate the mine passes through the choke point, the GM rolls 1d20 for a pressure-detonated mine or 1d10 for a mine with a tripwire or directional sensor. If the die result is less than or equal to the margin of success, the mine is detonated. With a margin of success of zero, the mine still detonates on a die result of 1.

Character Effects

When a character triggers a mine, he only suffers full blast damage to one leg (randomly determine right or left). Each other

body part suffers half blast damage. Resolve fragmentation hits normally.

Vehicle Effects

When a vehicle triggers a mine, it suffers full blast damage to its suspension and half blast damage to its hull rear facing. If the mine is a shaped charge (i.e. has a Direct Damage value), the vehicle instead suffers full blast damage to its suspension and full direct damage to its hull rear facing. Resolve fragmentation hits normally, using rear armor values where appropriate.

Command Detonation

Some mines, particularly directional AP mines, are intended to be detonated by intentional command rather than accidental encounter. If a mine is rigged for command detonation, it will not detonate until it receives the appropriate signal. Depending on the precise system, this may be an electrical impulse carried through a wire, a coded radio signal, or even a burning fuse. Obviously, some form of observation is required in order to know when a target will be close enough to the mine for its detonation to have the desired effect.

To command-detonate a mine, a character must have the detonator ready. Sending the detonation signal is a tactical action. For a mechanical or electronic system, this action costs 2 ticks and detonation is instantaneous. For a fuse that must be lit, the action costs 5 ticks and detonation occurs 1 tick after the action (plus any time for the fuse to burn, if the character is using a time-delay fuse).

A command-detonated mine is treated like a normal explosion, rather than one that automatically occurs in contact with the victim. Characters or vehicles suffer the effects listed above only if they are in contact with the mine when it explodes. If the attacker tries to time the detonation so that it occurs precisely when a moving object passes over the mine, a CUF (TN -1) check is required.

Marking Minefields

If a character is aware of a minefield's presence (through either savvy observation or messy trial and error), he may attempt to map its boundaries or determine a safe route through it. Either task requires an incremental Construction/Demolition (AWA, TN +2) skill check. Maps or written notes from the party responsible for the minefield provide a +2 bonus. In addition, if the character emplaced the minefield himself, he receives a +2 bonus. Each check takes 10 minutes and marks a number of meters of route or boundary equal to the margin of success. Failure indicates that the character can't be sure that his route or boundary is accurate and safe, while a margin of failure of 10 or more means that the character accidentally detonates a mine.

GM Hint: Redirection

Another use of minefields is to redirect an enemy force, either to hamper its movement or to funnel it into a more advantageous killing zone. Most minefields used for redirection are obvious - or set up to appear "poorly concealed" - as a deception tactic, drawing attention to the minefield and away from other threats. Mines used in this manner tend to be surface-deployed rather than buried.

Redirection minefields are useful when a unit has a low supply of mines. A redirection minefield can contain a low number of real mines on its borders, with fake mines adding apparent depth. Once a minefield is spotted (or triggered), few commanders will be willing to probe to determine just how deep it is.

Removing Mines

The safest way to remove a mine is to detonate it in place or destroy it with an attack. Deliberate triggering is left to the fiendish imagination of the players. Destroying a mine follows the standard rules for damaging items (see p. 154). A standard AP mine has Bulk 1, Armor 3, and a damage threshold of 4. A standard AT mine has Bulk 3, Armor 4, and a damage threshold of 7. There is a flat 50% chance that a mine will explode upon being disabled. If it doesn't detonate then, there is a flat 25% chance that it will detonate whenever it is moved.

Alternately, particularly brave or foolhardy characters may try to defuse a mine and recover it for their own use. If the mine only has its normal detonator, this requires a Construction/Demolition (COG, TN -2) check and 10 minutes.

Anti-Tamper

Some mines are designed to detonate if an attempt is made to move them. If a mine has an anti-tamper mechanism, a Construction/Demolition (AWA, TN -2) check is required to spot it. Once the technician is aware of the anti-tamper system, defusing the mine becomes an incremental Construction/Demolition (RES, TN -3) check with a 10-minute period and a target total determined by the sophistication of the mechanism. On any disarming attempt, a margin of failure of 5 or more means it's time to go back to Chapter Four. Moving a mine with a live anti-tamper system results in detonation, even if a standard defusing attempt was "successful."

SUSTAINED FIRE

The basic rules for ranged attacks assume that every attack occurs on its own. This is a deliberate simplification that ignores one fact of firearm use: it's quicker to continue firing on the same target than to shift to a new one.

Under this option, once a character has made a ranged attack against a target, all of his subsequent ranged attacks against the same target have their tick costs reduced by 1 (to a minimum of 1). This bonus is not cumulative and applies only so long as the character is doing nothing other than attacking with the same weapon. Any other action – including moving or reloading – removes this bonus; the character must then resume attacks in order to regain it.

In addition, if the character is firing bursts with tracer ammunition, every attack after the first that receives the bonus described above also receives a cumulative +1 bonus to the skill check.

Example 1: Keith attacks a rabid bear with his shotgun. The first attack is not considered sustained fire and receives no bonus. Keith then fires two more rounds; each of these attacks has its tick cost reduced by 1. The bear is getting close at this point, so Keith now takes a movement action to walk backward while firing a fourth shot. Even though Keith is still attacking, the movement action interrupts his sustained fire, so this fourth attack does not have its tick cost reduced.

Example 2: Ed opens fire on an oncoming truck. He's using an M249 loaded with tracer ammo (maybe not the best anti-vehicular weapon, but the best he had on hand at the time). Ed fires four bursts in succession. The first receives no sustained fire bonus. The second has its tick cost reduced by 1 and receives a +1 bonus from the tracers. The third has its tick cost reduced by 1 and receives a +2 bonus. The fourth has its tick cost reduced by 1 and receives a +3 bonus.



CHAPTER 6

MAINTENANCE

AND SURVIVAL

A day in the life of an embedded reporter:

0500 (5:00 A.M. for those of you who don't live by a military clock): Get woken up by the last guy to have fire watch duty, stoke the fire, start the breakfast flatbread. Hunt up some honey or yogurt. Boil water for tea; try not to think of coffee. If it's an egg day, fry 'em. No, Sergeant, there's still no bacon in Kurdistan, but can I interest you in some boiled cow tongue?

0600: Shave and sponge bath, if today's your day for the leftover hot water – and if it's not too cold to strip down.

0615: Lurk on the fringes of the captain's morning staff meeting. Take note of anything newsworthy (ha) that's planned for the day. Log the morning radio report from the squad running the listening post at the top of Mount Nowhere.

0630: Turn out for agricultural duty with our Kurdish hosts. Allow self to be guided around the fields by an illiterate kid who, at the ripe old age of eleven, is a much better farmer than you'll ever be. Try not to kill the wheat.

1200: Lunch break, which the Kurds bring out to the fields. More flatbread. Some combination of beans, rice, potato, poultry, or sheep. More tea. If you're eating sheep, you probably knew its name at some point.

1245: Back to the fields.

1600: Get the worst of the field grime off yourself, as best you can with a stream that's mostly frigid snowmelt. Do your share of maintenance on the platoon's equipment, which usually involves trying to diagnose and fix malfunctioning electronics with minimal tools. Listen to the captain's daily rant about the radios. Listen to Little Jim cursing the Stryker's turbocharger. Add a few more spare parts to the shopping list that the next supply convoy will take back to Arbil.

1800: Clean your rifle.

1815: Mend your clothes.

1830: Dinner, probably a repeat of lunch. If you're very lucky, there may be some fruit for dessert; mix it into yogurt to ensure there's enough to go around.

1900: Fill the lamps with oil. Scrawl a few lines in your journal about the day's events, or listen to someone read another chapter of the paperback novels from the platoon's collective library.

2030: Log the evening radio report. Leave your boots and rifle where you can find them in the dark. Turn down the lamp and go to bed. Try not to dream about home.

The superior man, when resting in safety, does not forget that danger may come. When in a state of security, he does not forget the possibility of ruin. When all is orderly, he does not forget that disorder may come. Thus his person is not endangered, and his States and all their clans are preserved.

— Confucius

As recently as a year ago, most characters from industrialized nations took for granted the trappings of modern life. Utility companies provided power, clean water, and information. Agribusiness ensured a ready supply of food in every community. Medical and technological specialists were available to diagnose and solve virtually any ailment of a citizen or his belongings. Third World nations without this “basic” infrastructure were objects of pity or scorn.

To the survivor in mid-2013, the former popular image of the Third World now seems the height of luxury. Depopulation and devastation make even a rusted shack, a muddy river, a campfire, and a community clinic hard to attain all at once. Even those individuals fortunate enough to have the backing of a surviving government, military, or other organization are unlikely to receive all of the material and labor resources they want. No longer is the rule of the day “if you want something done right, do it yourself.” In 2013, the correct phrasing is “If you want something done *at all*, learn to do it yourself.”

BASIC NECESSITIES

In the 1940s, a psychologist named Abraham Maslow proposed a model of the human hierarchy of needs. Visually, this model is pyramidal, representing the fact that a human must satisfy the most basic level of his needs before he can focus on the next highest level.

The base of Maslow’s hierarchy is *physiological needs*, or those which are necessary to keep the organism alive. Food, water, air, sleep, and basic biological processes all appear at this level. This chapter addresses the ways that a character satisfies these needs.

GM Hint: Staged Rules and Survival

Survival is one of the primary themes of **Twilight: 2013**. This isn’t a game in which the characters can depend on returning to homes or inns between missions or adventures, nor can they automatically assume that wounds will heal cleanly or maintenance personnel will fix their broken gear. The need for self-reliance in such matters may be a harsh transition for players who are accustomed to having a secret agency or elder wizard take care of all of their characters’ maintenance needs for them. Accordingly, it’s a good idea to give your players an early notification of how much of this chapter’s material you intend to use and how much of it you’ll be glossing over. None of this chapter is explicitly labeled as Stage Three material, but most of it can be hand-waved away if you and your players want to focus exclusively on the action rather than what happens the rest of the time.

It’s worth noting that if you play strictly by the rules presented here, life in 2013 is likely to suck. There’s not a lot of adventure or glamour in trying to balance dwindling reserves of food and medicine against the immediate need of a bunch of PCs who are slowly dying. Focusing excessively on the minutiae of survival may be anti-fun to players who don’t enjoy thinking too much about that sort of thing. Know your group and calibrate your game accordingly.

Above physiological needs are *safety needs*, including security from harm and safety from disease. Chapter Five addresses the ways in which characters deal with threats to their persons, while this chapter contains rules for disease and how to avoid or treat it. The hierarchy also places job security at this level, though this is arguably subject to the assumption that the character lives in a society in which a steady job other than personal survival is a necessity.

The top three tiers of the hierarchy are devoted to psychological factors: love and belonging, respect and self-respect, and the attainment of knowledge and aesthetic pleasure. In this and most other RPGs, these are factors for roleplaying rather than game mechanics, though extreme cases of their absence do impinge on this chapter’s rules for psychological damage.

The fact that you’re reading this book is indicative of your own position on Maslow’s hierarchy of needs. Roleplaying is a social leisure activity that demands a certain amount of disposable income (You did pay us for this book, right?) and time. Accordingly, your physiological and safety needs are likely to be mostly satisfied - maybe marginally so if you’re a college student. You’re probably roleplaying in order to satisfy your higher-level psychological needs, whether you want the acceptance and respect of your gaming group or the aesthetic satisfaction of telling a good story.

Your character is not so fortunate.

Unless you have a particularly lenient GM, chances are good that your character spends a great deal of his time trying - and often failing - to satisfy his physiological and safety needs. At any given time, he is cold, wet, tired, dehydrated, malnourished, stinky, ill, fighting for his life, or some combination thereof. This doesn’t leave much opportunity for him to feel good about himself or engage in philosophical ramblings such as the last few paragraphs. The following sections address ways in which you can make his life less miserable.

FOOD REQUIREMENTS

At character creation, you determined your character’s starvation threshold. This is the number of days he can go without food before starvation begins to set in. A character who consumes one day’s worth of food (see p. 245) for every day of light work is assumed to be meeting his nutritional requirements. For every full four hours of heavy work, add another quarter-day’s worth of food to this requirement. Likewise, add another quarter-day’s rations if your character is operating in a cold environment, and a half-day’s rations for an extremely cold environment.

After a single day of insufficient food, your character’s fatigue level (see p. 172) worsens by one stage. This penalty remains in place until reversed (see following). After a number of days equal to your character’s starvation threshold, his character’s Cognition, Coordination, Fitness, and Muscle each decrease by 1. This latter cycle repeats at the same interval until one of the affected attributes reaches zero, at which point your character dies of starvation. Eating half rations can slow this process. If your character is on half rations, attribute loss takes three times as long.

Your character can reverse the effects of starvation by eating normally. All effects of starvation are reversed at the same rate they take effect. However, if any attribute is reduced to half its initial value or less, there is a 10% chance that that attribute is decreased by 1 permanently.

Design Note: Starvation

The intent of the starvation rules is to emphasize the survival concerns inherent in a post-apocalyptic world. GMs should apply these rules sparingly. If the PCs are starving, it should be a major plot point (wouldn't it be if you were?). The GM should provide opportunities for acquiring food (via commerce, diplomacy, or force) in such circumstances. Don't penalize players if their characters skip breakfast one day a month.

OBTAINING FOOD

Unless they're fortunate enough to live in an agricultural community with enough of a surplus to support a regular farmers' market, most characters need to work for their food. Note that even in uninhabited areas, the PCs aren't the only ones competing for natural resources. With any of the following methods of acquiring food, a margin of failure of 5 or more means that the character runs afoul of a predator appropriate to the local terrain.

Foraging

Searching for edible plants in a wilderness area is the least efficient method of gathering food, but involves minimal risk and requires no special equipment. A foraging attempt requires four hours (or four man-hours if multiple characters are involved) and a Fieldcraft (AWA) skill check. With success, the forager gathers a number of meals of wild food equal to his margin of success. Once any given square kilometer of wilderness has been foraged successfully, any further foraging attempts there for the next month automatically fail.

Hunting

Most players don't find it particularly interesting to routinely play out combat between their characters and unarmed herbivores. Accordingly, the Reflex System abstracts hunting to a single Fieldcraft (AWA) task check. To make this check, your character must be armed with a ranged weapon that he knows how to use (i.e. has the applicable skill with at least a Competent rating). Each hunting attempt requires two hours. The results depend on the weapon your character is using, and these rules assume a modicum of common sense on his part. Too light a weapon will be ineffective, while too heavy a weapon will ruin most of the usable portions of the animals.

- **Small Game (weapon Damage 5 or less):** This category of prey includes rodents, birds, and similarly-sized animals, as well as most species kept as pets before the Collapse. Each attempt at hunting small game expends 1d10 rounds of ammunition. Success brings in a number of meals of wild food equal to half the margin of success. If the weapon has an optimum range closer than Gunfighting, the skill check suffers a -2 penalty. Small game can be hunted even in urban areas (but Fieldcraft remains the relevant skill).

- **Large Game (weapon Damage 4-10):** Most roughly human-sized herbivores, such as deer and boar, qualify as large game. Each attempt at hunting large game suffers a -2 penalty and expends 1d6 rounds of ammunition. Success brings in a number of meals of wild food equal to twice the margin of success. If the weapon has an optimum range closer than CQB, the skill check suffers a -2 penalty. Additionally, if the weapon's Damage is less than 7, the skill check suffers a penalty equal to the difference.

- **Very Large Game (weapon Damage 10+):** Prey of this size is present only in certain areas of the world and includes

herbivores that grow to a vehicular scale: moose, elephant, Cape buffalo, and so forth. This task is possible only at the GM's discretion and suffers a -4 penalty. Each attempt expends 1d6 rounds of ammunition, and success brings in a number of meals of wild food equal to 10 plus 10x the margin of success. If the weapon used has an optimum range closer than CQB, the skill check suffers a -2 penalty. Additionally, if the weapon's Damage is less than 12, the skill check suffers a penalty equal to the difference.

It is possible to hunt out an area. Each successive hunting attempt in a given square kilometer suffers a penalty equal to the number of successful hunting attempts that have occurred there in the past month.

Trapping

Small game can also be trapped with snares, deadfalls, and other methods. Finding a good location and setting a trap takes one hour and requires a Fieldcraft (AWA, TN -3) skill check. With success and after 24 hours, the trap yields a number of meals of wild food equal to half the margin of success.

Fishing

Your character can attempt to catch fish in any body of open water, from a stream to an ocean. Each attempt at fishing takes one hour and requires an Aquatics (RES) or Fieldcraft (RES) skill check. With success, your character brings in a number of meals of wild food equal to the margin of success. If the fishing attempt is taking place on the open water and using equipment suitable for large fish, multiply this total by 2 or 3 at the GM's discretion.

As with foraging and hunting, excessive fishing can depopulate a given body of water. Each successive fishing attempt along a given kilometer of river or shoreline suffers a penalty equal to the number of successful fishing attempts that have occurred there in the past week.

Grenade Fishing

It's still true: any klutz can throw a grenade in a pond and kill fish. No skill is needed. If your character drops a fragmentation or concussion grenade or a stick of dynamite

Environmental Modifiers

Nature isn't equally generous in all seasons and climates. The basic rules for obtaining food assume that characters are operating in a temperate climate in summer. All foraging, hunting, and fishing attempts are modified by other circumstances as follows.

Climate	
Factor	Modifier
Tropical (rain forest, savanna)	+1
Dry (desert, high plains)	-2
Polar (tundra)	-3
Season	
Factor	Modifier
Spring	-1
Autumn	+1
Winter	-3

Table 6a: Climate and Weather Modifiers

At the GM's discretion, one or more methods of gathering food may be impossible in extreme barren regions such as polar ice caps.

into a body of water containing fish, 1d6-1 meals of wild food float to the surface. Each subsequent attempt in the same body of water within the same day suffers a cumulative -1 penalty (so more than 5 such attempts in any given day are ineffective). The effect of larger explosives is resolved at the GM's discretion, should you be wasteful enough to attempt such antics. If your character goes grenade fishing in swiftly-moving water, he needs some means of retrieving the fish before they float away.

Agriculture

Characters with permanent dwellings and arable land can attempt to raise crops. For game purposes, the basic unit of cultivated land is the hectare (10,000 square meters). The maximum land area on which a worker can raise crops depends on his physical fitness and the level of technology available to him:

Tech Base	Hectares per Farmer
Hand tools and manual labor	Farmer's Fitness
Hand tools and draft animals	Farmer's Fitness x3
Non-powered machinery	Farmer's Fitness x10
Powered machinery	250
Industrial machinery and modern chemicals	1,000

Table 6b: Farm Size

A full crop cycle requires a farmer to prepare the land, plant seeds, tend the plants during the growing cycle (including protecting them from animal predation, weeding out unwanted competing plants, and irrigating as needed), and harvest the mature crop. The length of time required for this process varies depending on local growing conditions and the plant species in question. Before the Twilight War, most temperate climates had a growing season (last frost to first frost) of 6 to 8 months. Irregular weather conditions delayed spring planting in 2013 by several weeks, and most farmers expect that they will need to harvest their crops earlier than usual to avoid losing everything to an unseasonably early snowfall. For the foreseeable future, a 6-month growing season may be rare.

Before planting a crop, a farmer must decide what he's putting in the ground. For game purposes, players don't need to weight the benefits of beans versus wheat or strawberries, but rather make two general decisions: how long the crop cycle will be, and whether the crop will be for human consumption or other uses (e.g. animal fodder, ethanol production). A crop cycle is the total length of time from planting to harvest, and must be between 3 and 8 months.

Raising a crop requires an incremental Agriculture (COG, TN +3) skill check with a period of 1 month and a target total of 6. For each month that the character does not put in at least 40 hours of hard work per week on agriculture, that month's skill check suffers a cumulative -1 penalty per week of missed work. These checks can occur *only* during the growing season. In addition, farming occurs at the mercy of the weather. Each month's check receives penalty determined by the *worst* environmental condition that occurs in that month:

Condition	Penalty
Optimal weather	None
Windstorm	-1
Drought, mild	-2
Flooding, mild	-2
Hailstorm	-3
Drought, severe	-3
Flooding, severe	-3
Hurricane	-4
Locusts, plague thereof	-5

Table 6c: Environmental Condition Penalties



If the check succeeds, the crop yield per hectare is 400 kg of usable material. If the crop is a food crop, this equals 400 meals. If it's an industrial crop (e.g. plants for ethanol or biodiesel production), it can be processed into low-quality food at a 25% conversion rate. If the incremental skill check fails, divide the yield per hectare by the number of failed periodic checks plus 1. For example, a crop with 4 successful checks and 2 failed checks provides $(400 / 3)$ 133 kg of usable material. For a food crop, this is 133 meals. For an industrial crop, this is 133 kg of usable material (e.g. vegetable oil) or 33 meals.

Looting

Food packing plants largely shut down by the end of 2012, and it's hard to find a point in the distribution network that wasn't looted in the Collapse. Most caches of manufactured food that aren't already in someone else's possession tend to be small and well-hidden. Looking for such food therefore falls under the general rules for scrounging (see p. 188).

WATER REQUIREMENTS

As with food, the human body needs a certain daily amount of water for proper function. For all characters, the base requirement is 2.5 liters. Also as with food, both temperature and exercise can increase this requirement: +0.5 liter per hour of hard work, +1 liter for a hot climate, and +2 liters for an extremely hot climate. Some diseases can also further increase your character's need for water due to diarrhea and vomiting, as described later in this chapter. Alcohol, seawater, and urine do not count as drinkable water.

For every day that your character drinks less than his water requirement, he accrues two levels of fatigue (see p. 172). If he is

critically fatigued due to dehydration and goes an additional day without meeting his water requirement, he dies. Half rations of water - less than the full requirement, but at least half of it - halve this speed, inflicting only one level of fatigue per day.

Your character can reverse the effects of dehydration by meeting his water requirement. All effects of dehydration are reversed at the same rate they take effect.

OBTAINING WATER

In most environments, water is easy to come by. One hour of searching and a successful Fieldcraft (AWA, TN +3) skill check will locate a water supply sufficient to meet most groups' needs. Extremely arid environments inflict penalties on this roll at the GM's discretion, ranging from -1 for a mild summer drought to -10 for searching for water in the Gobi Desert.

Water Hazards

Many natural water sources aren't safe to drink without treatment. Microorganisms and toxic chemicals both threaten the health of any character who ingests them.

Chemicals are present at the GM's discretion, usually in areas downstream from industrial centers or former battlefields. In such areas, there is a chance between 1% and 50% that drinking contaminated water will subject the character to industrial poisoning (see p. 176).

Microorganisms are present in virtually every natural water source, to one degree or another. Whenever a character drinks water that hasn't been decontaminated, there is a chance of exposure to disease, as per the Disease section (see p. 176).

Decontaminating Water

When the alternative is death by diarrhea, most characters will have a strong interest in decontaminating their water. Methods that characters can take to decontaminate water include:

- **Boiling:** Bringing water to a hard boil for ten minutes will kill any microorganisms present in it. However, this does nothing to eliminate chemical contamination.
- **Filtration:** Passing water through a filtering mechanism usually a chemically neutral substance with extremely small pores - serves to remove some chemical contamination and most microorganisms.
- **Field purification:** Iodine tablets, chlorine bleach, or other chemical means can be used to kill microorganisms. For best results, this technique is used in conjunction with filtration.
- **Industrial purification:** A community with a functioning water purification and distribution system suffers no risk of chemical or biological contamination. Most such facilities are plot points, not portable equipment available for character purchase.

SHELTER

Protection from the elements is a fairly low-order human need. While our primate forebears may have found adequate accommodations in treetops, modern humans require a greater degree of shelter for comfort. The degree of shelter your character enjoys can affect his rest, healing rate, and resistance to disease. The Reflex System defines four grades of shelter:

- **None:** Your character is exposed to the environment with no protection to speak of. At most, he has a tree to keep some

precipitation or sunlight off himself. Sanitation involves leaving waste products downstream rather than upstream. No shelter provides HF -1 (see p. 173). All Fitness checks to resist disease or infection suffer a -3 penalty. There is a 50% chance that every four-hour period of attempted rest (see p. 172) provides no actual benefit.

- **Minimal:** Your character at least has a solid object to provide some measure of protection from precipitation, sun, and wind. This may be a vehicle, a cliff overhang, a drainage culvert, a tent, or similar accommodations. At least basic sanitary measures are in place, albeit likely restricted to a slit trench and a bucket of cold wash water. Minimal shelter provides HF 0. All Fitness checks to resist disease or infection suffer a -1 penalty. There is a 10% chance that each four-hour period of attempted rest provides no actual rest.

- **Adequate:** Four walls and a roof are enough to keep the direct effects of the elements off the shelter's occupants, though small animals still have easy access. Climate control is a fire (hopefully well-ventilated) in cold weather and hope of a breeze in hot weather. Sanitary facilities are downwind and there is some provision for waste disposal, whether through burning or burying. Semi-permanent military encampments, buildings abandoned during the Collapse, and large caves converted to dwellings all provide adequate shelter. Adequate shelter provides HF 1.

- **Complete:** Before the Twilight War, the majority of industrialized nations' citizens enjoyed the benefits of complete shelter. Well-maintained modern structures with climate control and indoor plumbing constitute complete shelter. Complete shelter provides HF 2 and a +3 bonus on all Fitness checks to resist disease or infection.

LOCATING SHELTER

Your character can attempt to look for shelter, either natural terrain features or abandoned buildings. In a wilderness area, this requires one hour and a Fieldcraft (AWA) skill check. With success, he finds something that provides minimal shelter. A margin of success of 10 or more indicates that he's lucky enough to find adequate shelter.

In an urban area, locating shelter requires one hour and a Streetcraft (AWA, TN +5) skill check. With success, your character finds minimal shelter. With a margin of success of 5 or more, he finds adequate shelter.

In both cases, extremely featureless or devastated environments (desert, nuked city) may impose penalties at the GM's discretion.

Improvising Shelter

Constructing a personal shelter from available materials is a basic function of the Fieldcraft (in wilderness areas) or Construction (in urban areas) skills. An attempt takes one hour and requires a single task check (COG, TN +1). With success, your character establishes minimal shelter for one occupant. This check suffers a -2 penalty in areas with minimal natural resources, such as deserts or snow fields. Basic tools and survival equipment (e.g. rope, emergency blanket) provide a bonus of up to +3, depending on quality.

An improvised shelter requires a minimum of one hour of maintenance per day. At the GM's discretion, inclement weather may increase this up to six hours. This effort may include repair of normal wear and tear, replacement of natural components with a limited lifespan, gathering of firewood, and other camp tasks.

REST AND FATIGUE

Biology dictates that the human body's energy reserves are not limitless. Regular rest is as basic of a human need as are food and shelter. While characters can push themselves, those who run on the ragged edge of exhaustion experience noticeable losses in effectiveness. As is the case with most of this chapter, accounting of activity and rest isn't necessary under normal circumstances, but in crisis situations, the GM may want to highlight this hazard through the following rules.

The Reflex System measures your character's relative degree of fatigue with four stages of fatigue, similar to the four stages of injury. The stages of fatigue are abstractions representing incremental degrees of physical tiredness. A character accumulates fatigue through sleep loss and physical activity and eliminates it through rest.

Activity

For the purposes of tracking fatigue, your character can engage in four levels of activity:

- **Sleep:** Although it should be obvious, we'll explicitly state it: no other action is possible when sleeping. A character's fatigue is reduced by one level for every four consecutive hours of sleep. If a character does not sleep for at least four consecutive hours in a 24-hour period, his fatigue level *increases* by one stage. For a character who is at least 55 years old, each of these requirements is reduced to three hours. A sleeping character is unable to act; see Awakening (below).

- **Inactivity:** An inactive character is engaged in no appreciable physical or mental action, though he can carry on a conversation or engage in passive leisure pursuits. Riding as an inattentive passenger in a vehicle also counts as inactivity. A character's fatigue is reduced by one level for every eight contiguous hours of inactivity.

- **Light Work:** Physical or mental activity that doesn't cause a character to exert himself is considered light work. This includes such tasks as hunting and foraging, performing routine equipment and personal maintenance, doing paperwork, studying, walking a perimeter patrol, driving a vehicle or riding an animal on a road, preparing meals, setting up and breaking down camp, and performing routine medical procedures. Light work does not affect a character's fatigue level.

- **Heavy Work:** Physical exertion is considered heavy work. Combat, marching, physical training, mining, riding a bicycle, driving a vehicle or riding an animal cross-country, doing construction, and making repairs on heavy machinery are all examples of heavy work. Additionally, any task that requires constant focused attention in the face of danger, such as surgery or explosive ordnance disposal, counts as heavy work. Heavy work is the primary factor that increases a character's fatigue level.

In most cases, a character's activity level for any given hour of the day is the *majority* activity in which he's engaged. A few minutes of unloading boxes from a truck in the middle of a day at the office doesn't count as heavy labor. The one exception to this is combat: any combat scene, no matter how brief, counts as one hour of heavy labor (or more, if the fight somehow lasts longer than an hour).

Fatigue Thresholds

As with injuries, the Reflex System tracks fatigue in stages of increasing severity, with commensurately more severe penalties attached to each one. A character's normal condition is a rested

Stimulants

Humans have been using natural stimulants to foster alertness and stave off fatigue for at least five millennia. In the world of **Twilight: 2013**, substances such as coffee, tea, and amphetamines are once again worth their weight in gold for the benefits they can provide.

A single dose of coffee (1 cup/200 mL) or tea (2 cups/400 mL) allows a character to function as if he were at one lower fatigue level. This only works for slightly and moderately fatigued characters. The effect lasts for 1d4 hours (if you don't have a d4, roll 1d6, rerolling a result of 5 or 6).

Repeated doses can prolong this effect, but at a cost. For every additional dose a character consumes without reducing his fatigue level through sleep or rest, the benefit lasts one hour less (e.g. a character's third cup of coffee only lasts for 1d4–2 hours). Each additional dose with a zero or negative net effect also counts as one additional hour of hard work, further worsening the character's overall fatigue state.

Medical stimulants such as amphetamines have the same effect as coffee or tea, but also affect a character who is seriously or critically fatigued. However, if a character receives a dose of medical stimulant while suffering from a serious or critical wound to the head or torso, he runs a flat 10% chance of developing cardiac problems and becoming unstable (see p. 154).

or unfatigued state, but few characters will have the luxury of remaining in this state at all times.

A character's fatigue thresholds are measured in *cumulative hours of heavy work*. From least to most severe, they are:

Slight Fatigue

This level of fatigue is equivalent to the effects of a prolonged workout or a night without adequate sleep. It's more annoying than dangerous, though it does have the potential to have significant ill effects in high-stress situations.

Effects: A slightly fatigued character suffers a –1 penalty to all tasks and to all checks to resist infection.

Moderate Fatigue

Moderate fatigue is equivalent to the effects of ongoing sleep loss or a full day of hard work. Most college students and people with jobs involving manual labor are familiar with the effects of moderate fatigue.

Effects: A moderately fatigued character suffers a –2 penalty to all tasks and to all checks to resist infection. In addition, he cannot sprint.

Serious Fatigue

Serious fatigue is a state of both mental and physical exhaustion. Extended physical work in adverse conditions or several nights without adequate sleep can cause serious fatigue, as can chronic illness.

Effects: A seriously fatigued character is considered to have a virtual slight head injury, suffers a –3 penalty to all checks to resist infection, and cannot sprint or run.

Critical Fatigue

A critically fatigued character is running on sheer willpower and is a danger to himself and others. His physical capabilities are significantly degraded, as are his cognitive processes and judgment. His body is actively trying to shut down in order to recharge itself, and even staying awake requires determined effort.

Effects: A critically fatigued character is considered to have a virtual moderate head injury and suffers a –4 penalty to all checks to

resist infection. In addition, he cannot sprint, run, or trot. Finally, for every hour that your character does not spend sleeping, you must make a Resolve check. With failure, your character falls asleep and will remain asleep for a minimum of 1d6 hours unless awakened by combat or an equally violent stimulus.

Example: *Matt's fatigue thresholds are slight 4, moderate 8, serious 12, and critical 15. He wakes up with no fatigue and starts his day with an hour of running and weightlifting, which counts as hard work. After breakfast, he heads off to work on the construction crew that's helping to rebuild the local hospital. The first three hours of construction work bring Matt to a total of four hours of hard work for the day, making him slightly fatigued. The crew breaks for lunch after another hour, then continues for an additional four hours. By the end of Matt's work day, he's put in a total of nine hours of hard work, making him moderately fatigued.*

Matt goes home intending to get a good night's rest. Unfortunately, after six hours, he's awakened by fire bells and has to go help extinguish a blaze at a neighbor's house. Matt did get at least four hours of sleep, so he's only slightly fatigued when he joins the bucket brigade (and does another hour of hard work). Once the emergency is past, Matt returns home and attempts to go back to sleep, but when his alarm clock goes off in an hour, he's still slightly fatigued.

Awakening

As noted above, the primary game benefit of sleep is to reduce fatigue. However, your character is vulnerable and not consciously aware of his surroundings. For a sleeper to awaken when subject to an appropriate stimulus (footsteps, whispers, a tarantula walking across his face), you must succeed with an Awareness check. This check suffers the normal penalties for the character's current fatigue level, as well as an additional -5 penalty for the fact that the character isn't conscious. If the check succeeds, your character awakens. This check receives a bonus or penalty at the GM's discretion, based on the nature of the stimulus – a fight in the next room will be more likely to awaken your character than one occurring across the street.

If an initiative check occurs immediately after your character awakens, he suffers a penalty on this check, as well as all subsequent actions during the exchange of fire that follows. This penalty is equal to 5 minus the margin of success on the Awareness check (minimum penalty of 0). This penalty disappears at the end of the exchange of fire, as your character now has enough adrenaline in his system to overcome any lingering sleepiness.

Receiving an injury always awakens a character (unless the injured area is anesthetized). Other effects that automatically awaken a sleeper occur at the GM's discretion.

MEDICINE

Like all other trappings of modern civilization, medical care is not a resource that a survivor in 2013 can take for granted. Recovering from wounds or illnesses can be a long and uncertain process. The following sections describe medical care and general hazards in the post-Collapse world.

NATURAL HEALING

The body's innate healing processes can handle slight to serious wounds without much assistance. Your character has a base *Healing Factor* (HF) determined by his current Fitness value.

Various other circumstances, such as medical care, living conditions, and nutrition, can modify the HF, as summarized below:

Fitness	
Factor	HF
13+	4
8-12	3
5-7	2
1-4	1
Shelter	
Factor	HF
Complete	2
Adequate	1
Minimal	0
None	-1
Conditions	
Factor	HF
Starvation	-2
Dehydration	-1
Chronic fatigue	-1
Extended care	per attending physician's skill
Infected wound	no healing occurs
Disease	per disease effects

Table 6d: Healing Factor

To determine the speed at which an injury heals, divide its base healing time by the character's modified HF. The result is the number of days required for the injury to heal to the next lowest stage. If your character's HF is reduced to 0 or less, he is incapable of healing until his HF increases to at least 1.

Injury	Base Healing Time
Slight	10 days
Moderate	30 days
Serious	90 days
Critical	180 days

Table 6e: Base Healing Time

Example: *Pete has Fitness 6 (HF 2) and is living in adequate shelter (HF 1). He has sufficient food, water, and rest, but is not receiving medical care, so his total HF is 3. Pete has a serious injury to his left arm. His arm heals to moderately injured in (90 / 3) 30 days, then to slightly injured in another (30 / 3) 10 days, then to uninjured in another (10 / 3) 3 days.*

Natural Healing and Critical Injuries

Critical injuries, as befits their life-threatening nature, don't resolve as gracefully as lesser wounds. After a critical injury's modified healing time is up, make a Resolve check. If the check succeeds, one critically injured hit location of your choice heals to a serious injury. If the check fails, you must then make a Fitness check. If this check fails as well, your character receives a permanent impairment (see p. 175) to one randomly-selected critically injured hit location.

MEDICAL TREATMENT

In 2013, relying solely on the body's natural healing processes is a good way to die. Medical treatment backed by several thousand

years of knowledge is a powerful healing tool, even in the absence of all prewar drugs and equipment.

All attempts at medical treatment are complicated by the severity of a patient's wounds. Every Medicine check is penalized according to wound severity: -1 for a moderate wound, -2 for a serious wound, and -3 for a critical wound. For treatment of a single hit location (i.e. first aid), only the condition of that location applies. For full-system treatment (i.e. stabilization, resuscitation, trauma surgery, and extended care), these penalties are cumulative for *all* injured locations.

Stabilization

Invariably, some humanitarian characters will not wish to allow their unstable comrades to bleed to death in the middle of combat. Stabilizing an unstable patient requires a Render Aid operational action (or one minute outside combat) and a Medicine (COG, TN +2) skill check.

With success, the patient is stabilized and no longer suffers the continued wound degradation of instability. If the check fails with a margin of failure of 4 or less, the patient is not stabilized but does not degrade at the end of that exchange of fire.

Example: *Pete sustains a critical torso injury, a moderate left leg injury, and a slight left arm injury from a burst of automatic fire. He becomes unstable and begins bleeding out. Erin, not wanting to go to the effort of digging another grave, attempts to stabilize Pete. Her total penalty is -4: -3 from the critical torso injury and -1 from the moderate leg injury.*

Resuscitation

A character who has bled out has one final chance at survival: resuscitation. This must occur within a total number of exchanges of fire and pauses (or minutes if outside combat) equal to the recently deceased character's Resolve value. Resuscitation requires a Render Aid operational action (or 1d6 minutes outside combat) and a Medicine (RES, TN -2) skill check. This task suffers the same penalties as stabilization, but also suffers a cumulative -1 penalty for each pause, exchange of fire, or minute that has passed since death.

A successful resuscitation attempt returns the patient to life in an unstable condition with the injuries he had upon expiration. If he is not subsequently stabilized, he will die (again). He remains in shock and unconscious for the remainder of the scene.

Example: *Erin's stabilization attempt fails and Pete's heart stops. Pete has Resolve 4, so Erin has a total of 4 exchanges of fire and pauses (or 4 minutes) before Pete is brain dead. She immediately initiates resuscitation procedures. Her total penalty to her first attempt is -4: -3 from the critical torso injury and -1 from the moderate leg injury.*

Erin's first attempt fails. She tries again, now with an additional -1 penalty for the exchange of fire that just passed. This time, she succeeds, and Pete returns to life. He still has a critical torso injury, a moderate left leg injury, and a slight left arm injury, and is unconscious and unstable. Hopefully, Erin's next action will be another attempt at stabilization.

First Aid

First aid is initial medical treatment of any injury that occurs after the patient is stable and out of combat. Successful application of first aid can have a significant impact on later recovery from the injury. Applying first aid requires five minutes per injured hit location and a successful Medicine (COG) check. This check is not supply-dependent, but the caregiver may expend 1 unit of first aid supplies per injured location for a +1 bonus. First aid also suffers

a cumulative -1 penalty for every full hour that has passed since the injury occurred.

If a character receives successful first aid to all injured body parts within 6 hours of receiving his oldest injury, all future attempts at trauma surgery and extended care receive a +3 bonus.

Example: *Immediately after the fight, Erin administers first aid to Pete. This requires 15 minutes and a Medicine (COG) check, which suffers a total -4 penalty (again, -3 for Pete's critical torso injury and -1 for his moderate leg injury).*

Trauma Surgery

A patient who receives surgical care for a critical injury stands a greatly increased chance of recovery. Trauma surgery is a supply-dependent Medicine/Surgery (COG) action requiring 1d6 hours per critically injured location, +1 hour for every other injured location. Each check consumes 1 unit of whole blood, 2 units of surgical supplies, and 1 unit of local anesthesia per hour, as well as 1 unit of antibiotic (regardless of the length of the procedure). 2 units of total anesthesia may be substituted for all local anesthesia requirements for the whole procedure, and *must* be substituted if the patient has a critical head injury. Trauma surgery suffers a cumulative -1 penalty for every full hour since the character sustained his oldest critical injury.

If a patient receives successful trauma surgery, all of his critical injuries are upgraded to serious. If the surgery fails, he receives a number of permanent impairments equal to one-fifth the margin of failure (minimum 0).

Example: *Two hours after the fight, Pete arrives at a field hospital and is rushed into surgery. The GM rolls 1d6 for a result of 4; adding 2 for Pete's other injured locations, the surgery will take 6 hours. Its base supply requirement is 6 units of whole blood, 12 units of surgical supplies, 6 units of local anesthesia, and 1 unit of antibiotic. In addition, the attending surgeon will suffer a total penalty of -6: -3 for the critical injury, -1 for the moderate injury, and -2 for the two hours since Pete was injured. On the upside, this is partially offset by the +3 bonus from the previous first aid.*

Extended Care

Medical care and supervision can speed a character's recovery. Care requires ½ hour per day per wound level. No skill check is required, but the caregiver must be skilled in Medicine. The patient's HF is increased by a number dependent on the attending physician's Medicine rating: +1 for Novice or Competent, +2 for Professional or Expert, +3 for Master, and +4 for Legendary.

This skill check is not supply-dependent. However, extra medical supplies will assist the process. If sufficient supplies are available for the entire duration of treatment, the character's HF bonus from the treatment is doubled. "Sufficient supplies," in this case, means one unit per week per wound level of any combination of the following: antibiotics, IV fluids, first aid supplies, mild sedative, and pain reliever.

Example: *Pete has a seriously wounded torso (3 wound levels), a moderately wounded left leg (2 wound levels), and a slightly wounded left arm (1 wound level). With a total of 6 wound levels, Pete's extended medical care will require 3 hours per day until one of these wounds heals.*

Erin has a Professional Medicine rating, so her care provides a +2 HF bonus. To further speed Pete's recovery, she prescribes a combination of drugs and periodic treatment. This will require 6 total units of supplies per week until one of Pete's injuries heals, at which point the requirement will be reduced. With another +2 HF bonus, Pete's total HF is 7. He'll heal his slight wound in only one day.

PERMANENT IMPAIRMENTS

Critical injuries have the potential to be permanently debilitating. If trauma surgery or the healing process for a critical injury goes horribly awry, a character receives a permanent impairment to the affected hit location. Roll 2d10L. Select any one or a combination of disadvantages (see Chapter Four) appropriate to the hit location and the nature of the injury, so long as the total point value of the disadvantages equals or exceeds the die result.

Reconstructive Surgery

It is possible, though difficult, to remove some permanent impairments. This requires reconstructive surgery, which involves inflicting *more* trauma on the patient in the hope that the eventual result will be a net gain. To benefit from reconstructive surgery, a patient must be uninjured in the hit location that is to undergo the surgery.

Reconstructive surgery is a supply-dependent Medicine/ Surgery (COG) action lasting 1d3 hours. Each hour consumes 1 unit of whole blood, 4 units of surgical supplies, 1 unit of antibiotic, and either 2 units of local anesthesia or 1 unit of total anesthesia.

At the end of surgery, the hit location sustains a serious wound, but the patient automatically avoids shock and does not become unstable. If the surgery succeeds, the surgeon removes one permanent impairment of his choice from the affected hit location. The impairment's point value must be equal to or less than the surgery's margin of success +2. Reconstructive surgery may not restore lost attribute points – only therapy (see following) can restore these. If the surgery fails with a margin of failure greater than 5, the surgeon must select one permanent impairment in that location which may *never* benefit from a future attempt at reconstructive surgery.

Physical Therapy

Physical therapy requires the patient to have no injuries more severe than slight. The patient and the therapist must work together for a minimum of 2 hours a day. A character can serve as his own physical therapist, but because of the increased difficulty of self-diagnosis and self-analysis, all involved Medicine skill checks suffer a –3 penalty.

At the end of every week of physical therapy, the therapist makes a Medicine (COG, TN +2) check and the patient makes a Resolve (TN +2) check. Each of these checks suffers a penalty equal to the number of days of therapy missed in the past week. If both checks succeed, the patient receives 1 Physical Therapy Point (PTP). If either check fails, the patient neither gains nor loses a PTP. For each week during which no physical therapy occurs, the patient *loses* 1 PTP.

The patient's player may spend 5 PTPs to reduce the point value (and thereby the effect) of a physical disadvantage by 1 point. A disadvantage reduced below its minimum point value in this manner is eliminated. Alternately, the player may spend a number of PTPs equal to the *original* value of a reduced physical attribute to increase that attribute's value by 1. In all cases, expenditure of PTPs may only remove or reduce conditions from which the character suffers as a result of injury. Disadvantages acquired during character creation may not be removed in this manner, nor may attributes be increased above their starting values.

Example: A critical injury reduces Pete's Muscle from 9 to 8. To recover this lost attribute point, Pete must accrue 9 PTPs. This will require a minimum of 9 straight weeks of successful physical therapy.

WOUND INFECTION

Combat rarely takes place in a sterile environment. Skin serves as the body's first line of defense against infection, and many injuries breach this protective barrier, allowing harmful microorganisms access to the bloodstream and internal organs.

After the end of every combat scene, each hit location in which a character has sustained any degree of injury runs the risk of infection. The base chance is 15% for normal injuries, 30% if the injury was caused by fire or acid, 50% for animal-inflicted injuries, and 1% if the injury was caused by blunt force trauma that didn't break the skin. Successful first aid within one hour of the injury reduces the chance of infection by a percentage equal to the caregiver's margin of success. Double the margin of success if the caregiver expended 1 unit of antibiotics *or* 1 unit of first aid supplies; if both, *triple* the margin of success. This may result in no chance of infection.

If a character has an infection in *any* hit location, healing in *all* injured hit locations stops. In addition, for every week an infection lasts, the player must make a Fitness (TN –2) check for each infected location. With success, the location stays at the same level of injury; with failure, the location's injury becomes one level worse. If any hit location becomes critically injured as a result of infection, the character becomes unconscious. If any hit location that is already critically injured worsens as a result of infection, the character dies. Trauma surgery cannot repair an infected location.

Treating an infection is a supply-dependent Medicine (COG) action that suffers a penalty equal to the number of infected locations. Each check requires 1 week and a number of units of antibiotics equal to the number of infected locations. With success, one infected location of the attending physician's choice is cured.

DISEASE

Disease was the single greatest cause of death during the Last Year, and it's still a very real hazard for every survivor in **Twilight: 2013**. Even a character who takes normal sanitary precautions can still run afoul of one of the many pathogens in circulation.

Three primary vectors for disease exist: human contact, animal contact, and contaminated water. A character encountering any of these vectors runs the risk of infection if disease is present.

Human Contact

Most diseases transmitted via human contact are the result of poor personal hygiene, inadequate community sanitation, or overcrowding. A disease can be carried and transmitted even by a population that is itself immune to the ailment in question.

Whenever the characters come in close contact with other people (or recently-killed corpses), the GM rolls 2d6. If the die result equals or exceeds a number dependent on the subjects' *average* level of shelter, the characters are exposed to a randomly-selected disease. At the GM's discretion, a community with an aggressive public health program has a reduced or nonexistent chance of harboring disease.

Average Shelter	Exposure on...
Complete	12
Adequate	11+
Minimal	10+
None	9+

Table 6f: Disease Exposure Potential

If exposure occurs, the GM rolls 2d6 again to determine what disease is present:

Roll	Disease
2	Influenza
3	Cholera
4	Hepatitis-A
5	Dysentery
6	Food poisoning
7	Minor illness
8	Pneumonia
9	Typhus
10	Typhoid fever
11	Bubonic plague
12	Pneumonic plague

Table 6g: Human Disease Exposure

Animal Contact

Characters can come into contact with animal-borne diseases through hunting, acquiring new draft animals, or engaging in close combat with predators. Whenever any of these events occurs, the GM rolls 2d6. On a result of 12, the characters are exposed to a randomly-determined disease, selected by another 2d6 roll on the following table:

Roll	Disease
2	Rabies
3-4	Bubonic plague
5-8	Minor illness
9-11	Food poisoning
12	Influenza

Table 6h: Animal Disease Exposure

Contaminated Water

Whenever characters drink water that they haven't first purified, they run a chance of ingesting harmful microorganisms. Again, the GM rolls 2d6. On a result of 12, the characters are exposed to a randomly-determined disease, selected by another 2d6 roll on the following table. At the GM's discretion, the chance of exposure may be higher if the water source is downstream from a population center, mass grave, farm, or other potential source of human or animal waste.

Roll	Disease
2	Hepatitis-A
3-5	Minor Illness
6-9	Dysentery
10-11	Typhoid fever
12	Cholera

Table 6i: Contaminated Water Disease Exposure

Disease Descriptions

Each of the following disease descriptions follows a standard template. A disease has the following descriptive and mechanical traits:

- **Vector:** The manner in which the disease is transmitted



- **Contagion:** Whenever your character is exposed to a disease, you must make a Fitness check subject to this modifier. Failure indicates that your character contracts the disease.

- **Symptoms and Effects:** The symptoms and game effects that a victim experiences after contracting the disease. Unless otherwise specified, the victim does not experience any game effects while asymptomatic or during the disease's incubation period.

- **Diagnosis:** An observer can diagnose the disease with a Medicine (COG) skill check subject to the listed modifier. Failure results in a misdiagnosis as described here.

- **Treatment:** The medical care required to treat the disease. Unless otherwise specified, each treatment provides its listed bonus to recovery (see next). The total bonus from treatment may exceed +5 (this is an exception to the normal cap). No skill check is required to administer this treatment, but the caregiver must have at least a Competent rating in Medicine or the total bonus from treatment is halved.

- **Recovery:** After the time listed here, you must make a Fitness check subject to the modifier listed here. With success, your character recovers from the disease, subject to the after-effects described here.

- **Failure:** If the aforementioned recovery check fails, your character suffers the consequences described here.

Bubonic Plague

The first recorded pandemic was a bubonic plague outbreak in 541. Eight centuries later, the same disease killed between half and a third of Europe's population. Rare in developed countries before the Collapse, it has enjoyed a resurgence concurrent with postwar explosions of rodent populations.

Vector: Fleas, usually those of rodents.

Contagion: TN -2.

Symptoms and Effects: Victim is asymptomatic for an incubation period of 1d6 days. After this, symptoms include fever, swollen lymph nodes, and severe abdominal pain. The victim's fatigue level cannot drop below serious.

Diagnosis: TN standard. Misdiagnosed as minor illness.

Treatment: 2 units of Gram-negative antibiotic: +4 if administered in the first week, otherwise +2. Relief of pain and fever: +1.

Recovery: 2 weeks after onset of symptoms; TN standard. With success, the victim's fatigue level cannot drop below moderate for 2d6 weeks, then cannot drop below slight for 2d6 weeks, then returns to normal.

Failure: Death.

Cholera

Cholera is a bacterial disease that causes death primarily through dehydration due to sustained, acute diarrhea. The primary source of most outbreaks is a population's use of untreated water in which the bacterium is present, particularly if the community's own wastes are allowed to taint its water source.

Vector: Contaminated food or water.

Contagion: TN -3.

Symptoms and Effects: Victim is asymptomatic for 1 day, after which he develops abdominal pain, acute diarrhea, and fever. His fatigue level cannot drop below moderate and his daily water requirement is doubled.

Diagnosis: TN standard. Misdiagnosed as dysentery.

Treatment: Intravenous and ingested fluid replacement: +3. 1 unit of Gram-negative antibiotic: +2. Relief of pain and fever: +2.

Recovery: 1 week after onset of symptoms; TN standard. With success, the victim's fatigue level cannot drop below slight for 1d3 weeks, then returns to normal.

Failure: Death occurs with a margin of failure of 8 or more. Otherwise, the victim's fatigue level cannot drop below moderate for 1d3 weeks, then cannot drop below slight for 1d3 weeks, then returns to normal.

Dysentery

Dysentery is an acute inflammation of the lower gastrointestinal tract. It can be caused by both bacterial and amoebic infection, as well as some medical treatments.

Vector: Contaminated food or water.

Contagion: TN +1.

Symptoms and Effects: Victim is asymptomatic for 1d3 days, after which he develops abdominal pain and diarrhea. His fatigue level cannot drop below moderate and his daily water requirement is doubled.

Diagnosis: TN standard. Misdiagnosed as cholera or minor illness.

Treatment: Intravenous and ingested fluid replacement: +3. Relief of pain and fever: +1.

Recovery: 1 week after onset of symptoms; TN +2. With success, the victim's fatigue level cannot drop below slight for 1d6 days, then returns to normal.

Failure: Death occurs with a margin of failure of 9 or more. Otherwise, the victim's fatigue level cannot drop below moderate for one week, then cannot drop below slight for one week, then returns to normal.

Food Poisoning

This illness encompasses a wide variety of specific infections caused by ingesting foodborne pathogens. The most common causes of food poisoning are bacterial infections such as E. coli, salmonella, and shigella. Infection usually can be traced to improper food storage and preparation.

Vector: Contaminated food.

Contagion: TN -2.

Symptoms and Effects: After 4d6 hours, victim develops severe abdominal pain, cramps, and vomiting, as well as a slight fever. His fatigue level cannot drop below moderate and his daily water requirement is increased by 1 liter.

Diagnosis: TN standard. Misdiagnosed as cholera or another variety of food poisoning.

Treatment: Roll 1d10 to determine the specific variety of food poisoning and effective treatment:

1-2: Symptom relief: +2. 1 unit of specific antitoxin: +5.

3-5: Symptom relief: +2. 1 unit of Gram-positive antibiotic: +3.

6-8: Symptom relief: +2. 1 unit of Gram-negative antibiotic: +3.

9-10: Symptom relief: +4.

Recovery: 1 week after onset of symptoms; TN -3. With success, the victim's fatigue level cannot drop below slight for 1 week, then returns to normal.

Failure: Death occurs with a margin of failure of 7 or more. Otherwise, the victim's fatigue level cannot drop below moderate for one week, then cannot drop below slight for one week, then returns to normal.

Hepatitis-A

"Hep-A" is a viral liver infection, usually spread through poor sanitation in food preparation. On its own, it is debilitating, though rarely fatal.

Vector: Bodily contact and poor hygiene, or contaminated food or water.

Contagion: TN -2. Prior infection provides a +1 bonus to resist recurrence.

Symptoms and Effects: Asymptomatic incubation for 1d6 weeks, after which the victim develops general body pain, fever, and malaise, as well as jaundice (yellowed skin and eyes). His fatigue level cannot drop below moderate.

Diagnosis: TN -2. Misdiagnosed as minor illness.

Treatment: Relief of pain and fever: +2.

Recovery: 1 week after onset of symptoms; TN +3. With success, the victim's fatigue level cannot drop below slight for 1 week, then returns to normal.

Failure: Death occurs with a margin of failure of 9 or more.

Otherwise, the victim's fatigue level cannot drop below moderate for one week, then cannot drop below slight for one week, then returns to normal.

Influenza

The family of influenza viruses ranges from those that cause "common" flu illness to more lethal strains. Over history, various mutations of influenza have caused periodic pandemics, including the "Spanish Flu" outbreak in 1918 that killed an estimated 50 to 100 million people. During the Collapse, a mutated strain of "swine flu" claimed a significant number of victims.

Vector: Bodily contact, airborne particulates (coughing or sneezing), or droppings of infected birds.

Contagion: TN -3.

Symptoms and Effects: After 1d3 days of incubation, the victim develops fever, chills, and general body pain. His fatigue level cannot drop below moderate. 1d3 days after onset of initial symptoms, symptoms worsen and the victim's fatigue level cannot drop below serious.

Diagnosis: TN -2. Misdiagnosed as minor illness.

Treatment: Relief of pain and fever: +2. Specific antiviral medication: +2d6L.

Recovery: 1 week after onset of symptoms; TN -1d6. With success, the victim's fatigue level cannot drop below slight for 1 week, then returns to normal.

Failure: Death occurs with a margin of failure of 7 or more. Otherwise, the victim moves immediately into late-stage pneumonia.

Minor Illness

This is a generic representation of a wide array of minor but debilitating bacterial and viral illnesses. When a character contracts a minor illness, the GM may randomly or sadistically select symptoms and treatments at his discretion.

Vector: Any human, animal, water, or food contact.

Contagion: TN standard.

Symptoms and Effects: Incubation period of 1d3 days, after which the victim develops fever, headache, general body pain, nausea, vomiting, diarrhea, rash or discoloration, or anything else within reason. His fatigue level cannot drop below slight.

Diagnosis: TN from -3 to +3 at the GM's discretion. Misdiagnosis can indicate any other illness, but usually another minor one.

Treatment: GM's choice or roll 1d20:

1: Symptom relief: +1. 1 unit of specific antitoxin: +5.

2-6: Symptom relief: +2. 1 unit of Gram-positive antibiotic: +2.

7-11: Symptom relief: +2. 1 unit of Gram-negative antibiotic: +2.

12-20: Symptom relief: +4.

Recovery: 1d20 days after onset of symptoms; TN -1. With success, no further problems.

Failure: The victim's fatigue level cannot drop below slight for 1d6 days, then returns to normal.

Pneumonia

Pneumonia can occur from a variety of causes, including bacterial, viral, or fungal infection, as well as actual injury to the lungs. It is an inflammation of lung tissue in which the structures responsible for exchanging oxygen and carbon dioxide become filled with fluid and unable to function at full efficiency.

Vector: Bodily contact or airborne particulates (coughing or sneezing).

Contagion: TN -3.

Symptoms and Effects: After 1d6 days of incubation, the victim develops coughing, chest pain, fever, and general discomfort, and

eventual fluid in the lungs. His fatigue level cannot drop below slight. 1d6 days after onset of symptoms, fluid in the lungs also develops, after which the victim's fatigue level cannot drop below moderate.

Diagnosis: TN standard. Misdiagnosed as minor illness, pneumonic plague, or a different variety of pneumonia.

Treatment: Roll 1d10:

1-2: Symptom relief: +2. 2 units of Gram-positive antibiotic: +3.

3-5: Symptom relief: +2. 2 units of Gram-negative antibiotic: +3.

6-10: Symptom relief: +4.

Recovery: 2 weeks after onset of symptoms; TN standard. With success, no further problems.

Failure: Death occurs with a margin of failure of 9 or more. Otherwise, the victim's fatigue level cannot drop below slight for one week, then returns to normal.

Pneumonic Plague

Pneumonic plague is a variant strain of bubonic plague in which the victim's lungs, as well as his bloodstream, become infected. This increases both lethality and the likelihood of transmission.

Vector: Bodily contact or airborne particulates (coughing or sneezing).

Contagion: TN -4.

Symptoms and Effects: After 1d6 days of incubation, symptoms include fever, swollen lymph nodes, severe abdominal pain, severe coughing, and chills. The victim's fatigue level cannot drop below serious.

Diagnosis: TN standard. Misdiagnosed as minor illness or pneumonia.

Treatment: 2 units of Gram-negative antibiotic: +3 if administered in the first week, otherwise +1. Relief of pain and fever: +1.

Recovery: 2 weeks after onset of symptoms; TN -2. With success, the victim's fatigue level cannot drop below moderate for 2d6 weeks, then cannot drop below slight for 2d6 weeks, then returns to normal.

Failure: Death.

Rabies

Deriving its name from the Latin word for rage or madness, rabies is a viral infection that causes acute inflammation of the brain and concurrent psychological effects. Without vaccine treatment, it is invariably lethal in both humans and animals.

Vector: Blood or saliva, usually through an animal bite.

Contagion: TN -1.

Symptoms and Effects: After 2d6 weeks of incubation, the victim develops fever, malaise, and sore throat. His fatigue level cannot drop below slight. 2 weeks after onset of symptoms, the victim develops severe pain, excessive salivation and sweating, and a variety of psychological ailments including hallucinations, paranoia, and violent and aggressive behavior. Once late-stage symptoms occur, the victim is considered to be suffering from critical psychological damage and is no longer playable.

Diagnosis: TN standard. An Animal Husbandry (AWA, TN +4), Fieldcraft (AWA, TN +3), or Medicine/veterinary (AWA, TN +5) check can also diagnose an animal that is in the later stages of rabies. Misdiagnosed as minor illness.

Treatment: If the standard 4-week rabies vaccination process is initiated after infection but before the onset of initial symptoms, no symptoms occur and recovery is possible. Otherwise, no treatment is effective.

Recovery: Upon completion of treatment, recovery is automatic - no Fitness check is required. If treatment is terminated before completion, it provides a +1 bonus per week and the standard

Fitness check is required.

Failure: If treatment does not occur or if the recovery check fails, the victim dies 1 week after the onset of late-stage symptoms. Remember that treatment must begin *before* initial symptoms appear or death is automatic.

Typhoid Fever

Virtually eradicated in most developed nations before the Collapse, typhoid is debilitating but rarely fatal. It is a bacterial disease spread primarily through inadequate hygiene and sanitation.

Vector: Bodily contact or contaminated food or water.

Contagion: TN -2.

Symptoms and Effects: After 1d3 days of incubation, severe fever, pain, coughing, and apathy develop. The character's fatigue level cannot drop below moderate.

Diagnosis: TN -3. Misdiagnosed as pneumonia or pneumonic plague.

Treatment: 3 units of Gram-negative antibiotic: +4.

Recovery: 3 weeks after onset of symptoms; TN +1. With success, the victim's fatigue level cannot drop below slight for 1 month, then returns to normal.

Failure: Death occurs on a margin of failure of 9 or more. Otherwise, the victim's fatigue level cannot drop below moderate for 1 month, then cannot drop below slight for 1 month, then returns to normal.

Typhus

Typhus is a family of related bacterial diseases transmitted between humans by lice. As with lice, typhus is most frequently seen in populations living in close quarters with inadequate personal hygiene.

Vector: Body lice.

Contagion: TN -2.

Symptoms and Effects: After 1 day of incubation, the victim develops headache, fever, and rash. His fatigue level cannot drop below slight.

Diagnosis: TN +3. Misdiagnosed as minor illness.

Treatment: 2 units of *any* antibiotic: +3.

Recovery: 2 weeks after onset of symptoms; TN +1. With success, no further penalties.

Failure: Death occurs on a margin of failure of 8 or more. Otherwise, the victim's fatigue level cannot drop below slight for 2 weeks, then returns to normal.

POISON

In game terms, *poison* is any chemical substance, whether natural or artificial, that induces unwanted effects in a character. Not all of the poisons depicted in this section are likely to be fatal; some of the most commonly-encountered are chemical warfare agents designed for less-lethal crowd control.

Poison Descriptions

Like diseases in the previous section, the poison descriptions here follow a standard template:

- **Vector:** The manner in which the poison is introduced to the victim's body. If specific equipment partially or entirely protects against exposure, it will be described here.

- **Symptoms and Effects:** The symptoms and game effects that a victim experiences after exposure to the poison.

- **Diagnosis:** If the poison isn't immediately obvious, an observer can diagnose it with a Medicine (COG) skill check subject to the listed modifier. Failure results in a misdiagnosis as described here.

- **Treatment:** The medical care required to treat the poison. Unless otherwise specified, each treatment provides its listed bonus to recovery (see next). The total bonus from treatment may exceed +5 (this is an exception to the normal cap). No skill check is required to administer this treatment, but the caregiver must have at least a Competent rating in Medicine or the total bonus from treatment is halved.

- **Recovery:** After the time listed here, you must make a Fitness check subject to the modifier listed here. With success, your character recovers from the poison, subject to the after-effects described here.

- **Failure:** If the aforementioned recovery check fails, your character suffers the consequences described here.

Atropine

This derivative of the deadly nightshade plant is used (in minute quantities) in eye surgery to paralyze the eye muscles and dilate the pupils. Its primary interest for most characters, however, is in its use in larger quantities to counteract the symptoms of nerve agents. NATO militaries commonly issued autoinjectors of atropine and other chemical compounds to troops operating under the threat of such weapons. This in no way means that it's a beneficial drug; it is considered a nerve agent remedy only because its symptoms are a lesser threat than those of the poisons it treats. The following rules apply even if atropine is used for nerve agent treatment.

Vector: Injected. Most characters will encounter atropine prepackaged in autoinjectors, and these rules assume a single measured dose from such a source.

Symptoms and Effects: Within 1d10 ticks of exposure (effectively immediately outside of combat), the victim experiences a dangerously elevated or irregular heart rate, blurred vision, light-sensitivity, extreme vertigo, and possibly hallucinations. This inflicts a virtual serious head injury and restricts the victim's movement to crawling.

If a victim receives an additional dose of atropine while still under the effects of the first, make a Fitness check with a penalty equal to the total number of doses currently in the victim's system. With failure, the victim immediately goes into cardiac arrest, becoming unstable with a serious (not virtual) torso injury.

Diagnosis: Obvious to anyone with training from a military with chemical warfare defense capabilities. Otherwise, Medicine (COG, TN +2).

Treatment: 1 unit of specific counter-agent: +4.

Treatment of cardiac arrest follows the standard rules for stabilization.

Recovery: 1 hour after exposure; TN standard. With success, a moderate virtual head injury persists for 1 hour.

Failure: The severe virtual head injury persists for 1d6 hours, after which a moderate virtual head injury persists for 1d6 hours.

Blister Agent

Developed during World War I, blister agents or "mustard gases" were among the first chemical weapons. This category includes HD (sulfur mustard) and HN (nitrogen mustard).

Vector: Aerosol, typically deployed via artillery shells or bombs, or residual surface contamination after aerosol exposure. Blister

agents tend to be heavier than air, and thus concentrate in low-lying areas. Vapors remain airborne for 1d3 hours after dispersal, and subsequent contamination of exposed surfaces persists for 1d6 days (or until heavy rain or deliberate decontamination). Full protection requires a sealed chemical warfare suit and gas mask; a gas mask alone protects against eye contact and inhalation but not skin contact.

Symptoms and Effects: No symptoms appear until 4d6 hours after exposure, when skin that came in contact with the poison develops large swollen blisters. Each affected hit location suffers 2d10H damage, which inflicts normal physical injuries.

If the victim's eyes were exposed, the head injury inflicts 2d20H damage. A critical wound from this effect results in permanent blindness.

If the victim inhaled the poison, the torso injury inflicts 2d20H damage. A critical wound from this effect results in death from pulmonary edema.

Diagnosis: Impossible prior to onset of symptoms, though chemical warfare defense systems can detect contamination.

Treatment: Prior to onset of symptoms, decontaminating the victim's skin reduces damage to 1d10 (1d20 for eye exposure and inhalation). After injuries manifest, treatment follows standard medical procedures for surface and internal injuries.

Recovery: As per standard recovery from physical injuries, but the victim's HF is reduced by 1 as long as he has unhealed blister agent injuries.

Failure: N/A.

Nerve Agent

Nerve agents are a class of chemical weapons that disrupt both the voluntary and involuntary functions of the nervous system. Examples include GA (tabun), GB (sarin), GD (soman), VG, and VX. V-series nerve agents are persistent and subsequent contamination of exposed surfaces persists for 2d10 days (or until heavy rain or deliberate decontamination).

Vector: Aerosol, usually deployed via artillery shells or bombs, or skin absorption. Full protection requires a sealed chemical warfare suit and gas mask; a gas mask alone protects against inhalation (damage to the head) but not skin absorption (damage to the torso).

Symptoms and Effects: 1d3 exchanges of fire, pauses, or minutes after exposure, the victim suffers damage to his head and torso with a random value of 1d10. At the beginning of every subsequent minute, pause, or exchange of fire, *whether or not the victim is still exposed*, he suffers damage again, with the damage value cumulatively increased by an additional 1d10 (i.e. four minutes after exposure, the victim suffers 4d10 damage to his torso). This damage continues - and continues to increase - for 1d10 minutes, pauses, or exchanges of fire after exposure ends. If the victim is already suffering from a critical head or torso injury and sustains another critical head or torso injury from nerve agent, he dies.

Diagnosis: Obvious to anyone with emergency response, medical, or military training; otherwise, an EDU (TN -2) check.

Treatment: If the victim has received no worse than a moderate wound from nerve agent, one dose of atropine and 2-PAM-CI stops further damage. If he has received a serious or critical wound, two doses are required. In either case, the victim suffers the effects of atropine (see previous).

Recovery: As per standard recovery from physical injuries, but the victim's HF is reduced by 2 as long as he has unhealed nerve agent injuries.

Failure: N/A.

Pepper Spray

Also known as OC (from its source, oleoresin capsicum), pepper spray is an organic extract used for much the same purposes as tear gas (see following). Its lower toxicity makes it a preferred substance for personal defense for both civilians and law enforcement officers. However, it is not as universally incapacitating due to a wide variety of factors, including a history of previous exposure.

Vector: Aerosol, usually from a small hand-carried sprayer. Absorption occurs through the eyes and respiratory tract. A gas mask provides complete protection. Improvised face protection (sunglasses and a bandana or filter mask) has a 50% chance of preventing exposure, though failure to immediately discard the contaminated items will result in exposure after one exchange of fire, pause, or minute.

Symptoms and Effects: Immediately upon exposure, the victim makes a Resolve (TN -4) check. With success, he suffers a slight virtual head injury. With failure, he suffers a moderate virtual head injury. With a margin of failure of 10 or more, the victim suffers acute inflammation of the respiratory tract and begins suffocating (see Chapter Five).

Diagnosis: Obvious to anyone with medical, law enforcement, or military experience, or anyone who's previously been exposed; otherwise, an EDU (TN +1) check.

Treatment: Flushing eyes with milk, mild detergent, or similar fatty or oily non-toxic liquid: +2. Oxygen treatment: +2.

If the victim is suffocating, treatment requires opening the airway - a Medicine (RES, TN +5) skill check.

Recovery: 1 hour after end of exposure; TN +3. With success, symptoms and effects cease.

Failure: Symptoms and effects persist for a number of minutes equal to 10 times the margin of failure.

Pulmonary Agent

This category of poisons includes both chemical weapons and related industrial toxins that kill by disrupting ability of the victim's lungs to absorb oxygen. Chlorine, CG (phosgene) and DP (diphosgene) are all examples of pulmonary agents. For game purposes, blood agents such as AC and CK (which interrupt the ability of red blood cells to transport oxygen) have identical effects.

Vector: Aerosol, both inhaled and absorbed through eye contact. A gas mask provides full protection. Holding one's breath halves damage. Some pulmonary agents are corrosive and have a cumulative 1% chance per minute, pause, or exchange of fire of destroying gas mask filters, thus removing all protective effects.

GM Hint: Chemical Weapons

We *strongly* recommend against the use of chemical weapons (nerve, pulmonary, and blister agents) as anything but a plot device. As should be apparent from the rules presented here, there are few better ways to ensure a TPK - Total Party Kill - than to deploy one of these substances against your PCs. Almost all stockpiles of chemical weapons were either used or destroyed during the Twilight War. Characters will be aware of this and will be unlikely to have retained the heavy and uncomfortable chemical protection gear necessary to keep them alive if exposed.

With that said, anything is fair game if you're running a pre-Collapse campaign set on the battlefields of 2010 through early 2013.



Symptoms and Effects: Upon exposure, the victim suffers damage to his torso with a random value of 1d6. At the beginning of every subsequent minute, pause, or exchange of fire during which the victim is still exposed, he suffers damage again, with the damage value cumulatively increased by an additional 1d6 (i.e. after four minutes of continuous exposure, the victim suffers 4d6 damage to his torso).

If the victim suffers a serious torso wound from this damage, he begins suffocating and will die according to the rules in Chapter Five unless removed from contact with the poison.

Diagnosis: Obvious to anyone with military or industrial experience. Otherwise, Medicine (COG, TN +1).

Treatment: Injuries received prior to the onset of suffocation are treated as normal physical wounds. Once suffocation begins, treatment is impossible and the victim will die.

Recovery: As per standard recovery from physical injuries.

Failure: N/A.

Snake Venom

This category of poison encompasses the natural toxins produced by a variety of venomous snakes around the world. Specific chemicals and toxicity differ by species, but two main groups of poisonous snakes exist, each with distinct venom effects. The first is the cobra family, which also includes sea snakes, coral snakes, and kraits. The second is the viper and rattlesnake family. Where game traits differ, separate entries provide descriptions for each family's venom.

Vector: Injected by snakebite (or mad scientist). A margin of success of 3 or more on any attack capable of injection indicates

that one dose of poison is injected. Most snakes' venom sacs contain 1d6 doses, allowing for repeated strikes.

Symptoms and Effects (Cobra): Upon injection, roll 1d20-5. If the result is greater than zero, that many hours pass before symptoms manifest; otherwise, the venom takes effect immediately.

Cobra venom is a neurotoxin whose severity varies. Make a Fitness (TN -4) check. With success, the victim suffers dizziness, double vision, slurred speech, and a slight head injury. With a margin of failure of 1 to 4, these symptoms worsen to a moderate head injury. With a margin of failure of 5 to 9, these symptoms further worsen in 1d6 minutes to partial loss of muscle control and a serious head injury. With a margin of failure of 10 or more, the victim's condition further worsens in 1d6 minutes to respiratory paralysis and he begins suffocating.

Symptoms and Effects (Viper): Upon injection, roll 1d6-3. If the result is greater than zero, that many hours pass before symptoms manifest; otherwise, the venom takes effect immediately.

Viper venom is a hemotoxin, which causes rapid blood coagulation and clotting. Make a Fitness (TN -1) check. With success, the victim suffers swelling, discoloration, severe pain, and a slight injury in the affected hit location. With a margin of failure of 1 to 4, these symptoms worsen in 1d3 hours to diarrhea, vomiting, partial paralysis of the affected hit location, and a moderate injury to the affected hit location. With a margin of failure of 5 to 9, the victim suffers similar symptoms but the injury is severe. With a margin of failure of 10 or more, the victim lapses into a coma. Make a second Fitness (TN -1) check; with failure, the victim dies within 1d3 days.

Diagnosis: Medicine (COG, TN -2) or Fieldcraft (COG, TN -1); alternately, positive identification of the snake itself requires a Fieldcraft (COG, TN +2) check. With failure, the poison is obviously snake venom but the precise species can't be identified.

Treatment: Constriction band applied to affected limb: +1. One dose of species-specific antitoxin: +6. Both of these treatments provide their bonuses to the Fitness check made to resist effects. If either treatment is administered after the onset of symptoms, its bonus is halved.

Recovery: As per standard recovery from physical injuries. If the victim is comatose, the coma lasts 2d10H days, during which normal healing does not occur.

Failure: N/A.

Tear Gas

"Tear gas" is a generic term for a number of less-lethal irritant agents used for crowd control, including CS, CN, and CR. The following rules also apply to pepper spray (OC), with exceptions noted when appropriate.

Vector: Aerosol, usually from launcher or hand grenades with solid contents that burn, producing smoke laden with irritant particulates (OC is also available in hand sprayers with a maximum range of CQB). Absorption occurs through the eyes and respiratory tract. A gas mask provides complete protection. Improvised protection (breathing through a wet cloth or holding one's breath) has a 50% chance of preventing exposure, reduced by 10% and re-rolled after each exchange of fire, pause, or minute of sustained exposure.

Symptoms and Effects: Immediately upon exposure, the victim experiences burning in the eyes and sinuses, heavy production of tears and mucus, and reflexive eye closure. This raises the victim's fatigue by one level and inflicts a -4 penalty on all actions that rely on vision or concentration.

Use of tear gas in enclosed spaces has a cumulative 20% chance per grenade (or equivalent source) of potentially lethal exposure, causing pulmonary edema (fluid in the lungs). A character who

suffers this effect receives a serious torso wound and becomes unstable.

Diagnosis: Obvious to anyone with medical, law enforcement, or military experience, or anyone who's previously been exposed.

Treatment: Flushing eyes with at least one liter of water: +2. Oxygen treatment: +2.

Recovery: 5 minutes after end of exposure; TN +3. With success, symptoms and effects cease.

Failure: With a margin of failure of 6 or more, pulmonary edema occurs as described above (with OC, swelling of the respiratory tract produces the same game effect). Otherwise, symptoms and effects persist for a number of minutes equal to twice the margin of failure (5x for OC).

Vomit Gas

This category covers a number of crowd control agents with effects more severe than those of tear gas. Most stockpiles of these chemicals were under the control of various law enforcement agencies in former Soviet Bloc nations, though repressive regimes across the globe may have bought or synthesized their own.

Vector: As per tear gas.

Symptoms and Effects: As per tear gas, but the victim must make a Fitness (TN -4) check. With failure, he is incapacitated by violent and repeated vomiting; with a margin of failure of 5 or more, he also suffers loss of bladder and bowel control. No action except crawling and whimpering is feasible without a successful Resolve (TN -4) check.

Diagnosis: As per tear gas.

Treatment: As per tear gas.

Recovery: As per tear gas.

Failure: As per tear gas, though vomiting and other effects cease immediately.

RADIATION

The last known nuclear explosions occurred in early 2013. Now, over six months later, almost no significant radiation hazards remain from the bombs. Most of the nuclear weapons used in the Twilight War were relatively clean designs or detonated above ground level, so actual impact craters that still emit significant amounts of radiation are extremely rare. Fallout has by now settled and either dissipated or begun to inflict its subtle long-term effects.

Despite these mitigating factors, radiation can still be an occasional threat. Urgent missions may take PCs near or even into some of the few still-hot strike craters, almost all of which were direct hits or near-misses on the highest-value targets. Nuclear reactors and radiological medical equipment can still be dangerous, particularly if they were damaged during the Collapse. Finally, though no one has a complete count of all the nuclear weapons used during the Last Year, most surviving military personnel believe that at least a few are still in usable condition...

Lifetime Dose

The Reflex System measures your character's cumulative lifetime radiation dose in *rads* (admittedly, a largely-obsolete unit, but there's something to be said for tradition). Every character begins play with a certain number of rads from a combination of direct and fallout exposure during the Twilight War. This total can never be reduced, but the simple fact of its existence doesn't have any effect on your character. He's already gone through any radiation-induced illness that resulted from his accumulation of that dose.

Exposure

Your character accumulates more rads if he is exposed to a source of radiation. The amount of accumulation depends on the strength of the source. Unless otherwise stated, all of the listed sources assume that any damage or other critical incident occurred during the Collapse.

Radiation source	Dosage
Reactor after a core meltdown	1d10 rads/minute
Reactor waste storage facility	1d6 rads/minute
Nuclear weapon with damaged casing	1d20 rads/hour
Radioisotope generator with damaged casing	1d10 rads/hour
Damaged medical radiation equipment	1d6 rads/hour
Impact crater from high-yield ground burst	1d10 rads/day

Table 6j: Radiation Dosage

Radiation Illness

At the end of any day during which your character accumulates additional rads that bring his total cumulative dose to 50 rads or more, you must make a Fitness check. The TN of this check depends on your character's dose: a cumulative -1 for every 50 rads or fraction thereof. Note that higher doses may result in negative TNs, but you must roll anyway. If you succeed, your character suffers no ill effects. If you fail, the margin of failure determines what level of radiation illness your character undergoes: 1-5 indicates slight, 6-10 indicates severe, and 11+ indicates lethal.

The Recurring Nightmare

Every survivor of the Twilight War places a resumption of nuclear hostilities among his greatest fears. We've deliberately not defined the number and status of remaining nuclear weapons in the world to allow individual GMs to ignore or exploit this possibility as they see fit. We will note that numbers are likely to be small - generally, if a nuke wasn't used, this was because something destroyed it before it *could* be used.

With this said, a character directly exposed to a nuclear explosion at a survivable distance immediately receives 2d100 rads in addition to any injuries inflicted by the blast and thermal pulse. Radiation received from fallout downwind of the blast is given in daily doses:

Days after explosion	Rads/day
1	6d20
2	4d20
3	2d20
4	1d20
5-6	1d10
7-8	1d6
9-11	1d3
12-14	1
15+	negligible

Table 6k: Direct Radiation Exposure

These doses assume that a character has no appreciable protection against fallout. If he is able to stay in a fallout shelter, divide his daily dose by 10.

Slight

1d6 hours after exposure, the character begins to experience nausea, vomiting, and headaches, which last for one day (two days if his dose is 600 rads or higher). For the duration of slight radiation illness, the character's fatigue level cannot drop below moderate. Once this period passes, the character has no lasting effects except his increased dose.

Severe

The character first suffers slight radiation illness, from which he recovers normally. 2d6 days after exposure (1d6 days if his dose is 300 rads or higher), he is then incapacitated with severe vomiting and diarrhea (with blood in both), subcutaneous hemorrhaging, acute nausea and abdominal cramps, and hair loss. For the duration of this experience, his fatigue level cannot drop below serious. Severe radiation illness lasts for 2d6 days. Each day during which the character receives pain relief and intravenous fluid replenishment counts as two days toward this duration. Once the illness itself passes, the character suffers the effects of slight illness again for 1d6 weeks.

Lethal

The character first suffers slight and then severe radiation illness, dying within 1d10+10 days the onset of severe symptoms.

PSYCHOLOGICAL DAMAGE

The Last Year wasn't a good time by any stretch of the imagination, and the current state of the world isn't better by most standards. Every character in **Twilight: 2013** has endured some rather unpleasant experiences and made significant moral compromises in the name of survival. As a rule, most characters are capable of managing the stresses of day-to-day existence in a post-apocalyptic world; most of the people who can't are already dead. This doesn't mean, though, that everyone is happy or well-adjusted. When particularly bad things happen to your character - or when circumstances force him to violate his moral code - he suffers *psychological damage*. This is a game mechanic that models the effects of such stress on the human psyche.

Receiving Psychological Damage

Unlike physical damage, psychological damage is cumulative - small sources of stress can gradually add up over time to cause eventual reactions out of proportion to the individual stimuli that trigger them. Every character has a Stress value (which starts at zero for a newly-created character) that reflects his total accumulated stress thus far.

Whenever your character suffers psychological damage, make a Resolve check. With success, his coping mechanisms are sufficient for him to deal with the problem and not sustain any lasting effects. With failure, add the margin of failure to your character's current Stress value.

Certain events and actions cause psychological damage, as shown in Table 6x: Stress Inducing Factor on the following page. Some of these occurrences are easier to handle than others; each one lists a base TN or modifier that applies to the Resolve check. Also, some stimuli can be ignored if your character has sufficient experience with them: if he meets one or more of the criteria listed in the Immunity column (if any), he doesn't suffer psychological damage from that source.

Despite the length of this table, this is far from an exhaustive list of events that can trigger psychological damage. Any reader of this book has likely experienced at least one emotionally significant event that isn't listed here. These are the most common events we expect to occur in play, but the GM should feel free to exercise his

own discretion in determining TNs for other sources of extreme stress that characters experience.

Effects

As your character accrues Stress, he becomes subject to gradually increasing symptoms. Every character has the same four Stress threshold values. Your character's current Stress level is equal to the highest threshold that his Stress value equals or exceeds:

Stress Threshold	Stress Value
Slight	8
Moderate	16
Serious	24
Critical	32

Table 6l: Stress

Slight Psychological Damage

At this level, the character's elevated level of stress manifests itself socially, though only observers who are already familiar with the character will notice something overtly wrong with him. His Personality value is reduced by 1. He often seems distracted, and his responses to normal interaction are often slightly inappropriate.

Moderate Psychological Damage

Social stress effects become more severe at this level. The character's impairment is obvious even to observers who've just met him. His Personality value is reduced by 3. In addition, stress begins taking a physiological toll, and he suffers a -1 penalty to all Fitness checks made to avoid disease and wound infection.

Serious Psychological Damage

At this point, the character is riding the ragged edge of sanity. His Personality value is reduced by 5, he suffers a -3 penalty to all Fitness checks made to avoid disease and wound infection, and his fatigue level can never drop below slight without the use of chemical assistance. In addition, he receives one Psychological

GM Advice: Psychological Damage

As we discussed in the Morale rules in Chapter Five, psychological effects aren't universally popular with players. The idea of a character cracking under stress or going gradually insane is much less palatable than the many ways he can sustain physical trauma. Many players will prefer to focus on the external and physical problems facing their characters rather than confronting the internal ones. For this reason, we recommend that you treat psychological damage as a Stage III option, only using it in your game if all parties are comfortable dealing with it.

It's also worth noting that even if you do use these rules, some parts of them are likely to cause a fair amount of debate. For instance, several potential sources of psychological damage involve the character performing an action that is anathema to his moral code. Some players may argue that their characters' morality or theology absolves them of blame for certain actions or in certain situations. With the wide array of faiths and value structures in the real world, it's nigh-impossible for us to make these rules universally applicable. Be willing to compromise, but don't let one extremist rationalize away atrocities in the name of "playing my character" unless you want to deal with some queasy looks on the faces of your other players.

Disadvantage of the GM's choice that remains in effect until he drops to slight or no psychological damage.

Critical Psychological Damage

The character has gone insane on both a clinical and practical level. He is sufficiently dissociated from reality that he is effectively unplayable (though if he already was psychopathic, he may be completely functional in the most dangerous possible way). Specific effects are left to the GM's discretion, but may range from complete withdrawal or regression to berserk homicidal rage.

Overcoming Psychological Damage

You probably won't want your character carrying around a high Stress value for very long. Psychological damage can be reduced or eliminated in several ways.

Time

Given time, the mind's own internal processes can handle most psychological damage. As long as your character's psychological damage level is lower than critical, natural healing is effective. For every week of game time during which your character does not suffer any additional psychological damage, reduce his Stress value by 1.

R&R

Opportunities for guilt-free relaxation (or even indulgence in harmless guilty pleasures) are few and far between in 2013, which makes them all the more effective. If your character's psychological damage level is lower than serious, reduce his Stress level by 1 for every day during which he is able to spend at least eight hours on leisure activities.

If an entire team (see Chapter Three) is able to engage in leisure pursuits at once, the team leader should make an Integration check (TN standard). If the check succeeds, add the margin of success to the Stress reduction of the R&R. No penalty occurs with failure.

Psychotherapy

Professional help may be the only way a sufficiently unhinged

character can recover. This requires the therapist to engage in regular interaction with the patient, assisting him in coming to grips with whatever he's experienced or done. For each week of psychotherapy (at least five hours of interaction), make your choice of a Personality or Resolve check. The therapist then makes a Persuasion/Psychiatry (PER) check. If you failed your check, the therapist suffers a penalty on *his* check equal to your margin of failure. If the therapist's check succeeds, your character's Stress level is reduced by the margin of success (minimum reduction 3).

WEAR, MAINTENANCE, AND REPAIR

Nothing lasts forever. One of the ongoing problems facing characters in a post-apocalyptic environment is the constant abuse they inflict on their equipment. Without modern industry to replace worn-out parts and pants, owners of such gear must make do with whatever repairs they can perform on their own. In **Twilight: 2013**, this is a constant balancing act between expending dwindling resources on repairing broken gear, taking the time to scavenge or trade for replacements, or pressing on and praying that everything holds together for another week.

The following rules use the shorthand of ATS - *Appropriate Technical Skill* - to refer to maintenance and repair tasks. The ATS depends on the nature of the item in question. As described in Chapter Three, Artisan, Electronics, and Mechanics (with or without a qualification) are all appropriate technical skills for equipment that falls within their respective domains.

WEAR

The Reflex System measures the amount of abuse an item has endured with *Wear*. The higher an item's Wear value, the more worn-out it is. A factory-fresh item has Wear 0, while any item

Personal Victimization		
Event or Action	TN	Immunity
Failure to achieve major life goal	TN -2	
Public humiliation	TN +2	CUF 5+
Breaking during combat	TN Standard	
Receiving serious injury	TN +2	CUF 8+
Receiving critical injury	TN Standard	CUF 10+
Being tortured	TN -2	
Being sexually assaulted	TN -4	
... self-inflicted harm	-1 penalty	
... event results in permanent physical impairment	-2 penalty	
Personal Loss		
Event or Action	TN	Immunity
Death of close friend or relative	Standard	
Death of acquaintance or distant relative	TN +1	
Death of pet	TN +1	
Destruction/loss of all possessions	TN +1	Ascetic disadvantage
Destruction/loss of permanent home	TN +2	Ascetic disadvantage
Destruction/loss of personal keepsake	TN +3	Ascetic disadvantage
... character directly caused event	-3 penalty	
... character could have prevented event	-4 penalty	

Table 6m: Stress Inducing Factors

<i>Violating Social Contract</i>		
Event or Action	TN	Immunity
Breaking minor promise	TN +3	
Breaking major oath	TN -2	
Violating tenet of Code Disadvantage	TN -2	
Stealing trivial item that won't missed	TN +4	
Stealing valuable but common item	TN +2	
Stealing valuable and rare item	TN Standard	
Stealing irreplaceable personal keepsake	TN -2	
Permanently renouncing loyalty	TN +1	
Rebelling against object of loyalty	TN Standard	
Violently rebelling against object of loyalty	TN -1	
Covertly betraying object of loyalty	TN -2	
... act was necessary for own survival	+2 bonus	
... act dooms someone else to serious loss	-1 penalty	
... act dooms someone else to death	-3 penalty	
... victim was close friend or relative	-3 penalty	
<i>Witnessing or Causing Death or Loss</i>		
Event or Action	TN	Immunity
Seeing one corpse	No check required; too common in 2013	
Seeing ten corpses	TN +1	Forensics or Medicine Professional+ or CUF 5+
Seeing 100 corpses	TN Standard	CUF 7+
Seeing 1,000 corpses	TN -3	CUF 11+
Killing one person	TN Standard	CUF 4+
Killing ten people	TN -2	CUF 6+
Killing 100 people	TN -4	
Killing 1,000 people	TN -6	
... witnessing the death occur (but not causing it)	-1 penalty	
... victims were unable to fight back	-1 penalty	
... particularly gruesome death (fire, plague, VX)	-2 penalty	
... majority of victims were children	-3 penalty	
... self-defense	+1 bonus	
... death was euthanasia	+2 bonus	
... seeing the death remotely, not in person	+3 bonus	
... knowing death occurred but not seeing it	+5 bonus	
... uncertain that death actually happened	re-roll failed Resolve check once	
Torture	TN Standard	
Sexual assault	TN -2	
... performing torture or sexual assault	-4 penalty	

Table 6m: Stress Inducing Factors (cont.)

that reaches Wear 10 has fallen apart and is good only for salvage.

Accruing Wear

A factory-fresh item begins with Wear 0. During play, each of the following events adds 1 to its Wear value:

- It receives sufficient damage to disable it, as per the rule in Chapter Five for damaging items. In the case of a vehicle, this criterion is “receives a hit that results in one or more major damage results.”
- It undergoes one period of use (see following) after which it does not receive preventive maintenance.
- While using it, an Unskilled user fails a skill check with a MoF of 5 or more (butterfingers!).
- It receives particularly egregious abuse or misuse (GM’s

opinion; dropping electronics from shoulder height onto concrete, smashing a car through a chain-link fence after an off-road chase, or burying a firearm in mud and firing it without cleaning are all appropriate conditions).

Except at the GM’s discretion, no single item’s Wear can increase by more than 1 in any given scene.

Effects of Wear

As an item accrues Wear, it exhibits signs of decay in both appearance and performance. Its reliability declines, making it more likely that it will break down at an inopportune moment.

Whenever an item accrues a point of Wear, the GM secretly rolls 1d10. If the die result is less than or equal to the item’s *new* Wear value, the item will break the next time it is used (unless it receives maintenance first - see following). An item that breaks due to Wear is considered disabled, just as if it had received a damaging attack.

GM Hint: What Wears Out?

In theory, every piece of equipment is subject to Wear. Clothing frays and tears. Rechargeable batteries gradually lose capacity over repeated charge/discharge cycles. Blades lose their edges. Entropy affects everything.

In practice, keeping track of Wear for every single item is a logistical effort that would make the game unplayable (at least, until we license the Reflex System as an online game and can let computers do all the math). Making players track Wear on such mundane items as backpacks and frying pans is antithetical to the idea of a roleplaying game being fun. Therefore, we strongly recommend that you apply Wear only to mission-critical items: weapons, sophisticated electronics, and vehicles (body armor also falls into this category, but the armor degradation rules in Chapter Five should be sufficient). Dramatic failures of worn-out pants are amusing but rarely critical to the story.

Stage III: Vehicle Component Wear

As anyone knows who's nursed an old but beloved car or motorcycle through major mechanical work, it's possible for one component of a vehicle to catastrophically fail while others are still in perfect working order. If you want to track the gradual degeneration of your vehicle in more detailed terms, you can track the Wear of each component (i.e. each possible damage result) separately. For these purposes, each weapon, weapon stabilizer, sensor, communication device, and auxiliary system is considered a separate component, as well as the engine, the fuel system, the turret traverse mechanism, the steering mechanism, and the suspension.

If you use this option, each component begins with the same Wear value. During play, components individually receive Wear according to the rules presented in this section for damage, failed Unskilled use, and outstanding abuse. When the vehicle undergoes one period of use without receiving maintenance, increase the Wear value of 1d6 randomly-selected systems.

When an item reaches Wear 10, it breaks immediately. No roll is necessary.

Every attempt at maintenance, repair, or reconditioning suffers a penalty equal to an item's Wear - 4. In addition, if an item is used for any task requiring precision - such as an attack - any associated skill check suffers half this penalty (rounded down).

On the open market, an item's base barter value is divided by its Wear value. A seller can attempt to disguise an item's actual Wear with an ATS (AWA, TN -2) check opposed by the prospective buyer's ATS (AWA) check. If the seller wins, the item's apparent Wear is reduced by his net margin of success.

Example: Leslie's G36 assault rifle has Wear 7. Any skill check made to work on the gun will suffer a -3 penalty. In addition, every attack Leslie makes with the gun suffers a -1 penalty because of its instability.

USE, MAINTENANCE AND RECONDITIONING

Every item has a Maintenance value. This represents the number of hours of maintenance that it must receive per period of use to keep its condition from deteriorating. The item's period of use depends on the environment in which it is kept and used and the amount of use that it sees, as per the following guidelines.



- **Negligible Use (period of 1 year):** The item is kept in storage and protected from the elements. At most, it is periodically turned on or checked to ensure that it is still functioning.

- **Light Use (period of 3 months):** The item is used only periodically, and rarely in a heavy-handed or abusive manner. For complex electronics, this entails 20 hours or less of run time per week. For a vehicle, light use is equivalent to normal prewar commuter travel, or an average of 100 kilometers per week of road travel. For a firearm, light use is the expenditure of 50 rounds or less per week. Alternately, an item that is not in use but is stored outdoors in a mild climate is considered to be receiving light use.

- **Moderate Use (period of 1 month):** The item sees regular use, but does not exceed its normal operating capabilities. For complex electronics, moderate use is 50 hours or less of run time per week. For a vehicle, moderate use is 500 kilometers per week of road travel or 100 kilometers per week of off-road travel. For a firearm, 100 rounds or less per week constitutes moderate use. Alternately, an item that is not in use but is stored outdoors in a harsh climate is considered to be receiving moderate use.

- **Heavy Use (period of 1 week):** Equipment undergoing heavy use is being frequently used or severely tested. If it isn't mil-spec gear, it's likely seeing conditions that the original manufacturers never intended. If not looked after carefully, an item undergoing heavy use will degrade quickly. Electronics receive heavy use if they're run up to 100 hours per week. A vehicle is undergoing heavy use if it averages 1,000 kilometers per week of road travel or 200 kilometers per week of off-road travel. The expenditure of 250 rounds a week constitutes heavy use for a firearm.

GM Hint: Wear Descriptions

GMs may find the following material useful in describing the apparent condition of an item.

Wear 0: The item is mechanically and cosmetically in perfect condition. If it isn't factory-fresh, it has recently undergone detailed cleaning and rebuilding at a manufacturer's reconditioning facility or the equivalent.

Wear 1: "Only used once; like new." No cosmetic deterioration is apparent, and all parts are in working order.

Wear 2: The item has started to show the effects of regular use, but is still fully functional.

Wear 3-4: The item has started to show signs of heavy use and internal components display the first hints of erosion. However, it is still perfectly usable.

Wear 5-7: The item has started to show considerable signs of use. Working surfaces and delicate components are wearing down. At this point, its reliability may be suspect, and its condition begins to complicate attempts to work on it.

Wear 8-9: The item looks, and is starting to function, like it was dragged down a stretch of bad road and then back up for good measure. By this point, it is held together by little more than chewing gum, baling wire, and wishful thinking. It is in such bad shape that only a specialist will be able to keep it in working order for any length of time.

Wear 10: The item is no longer functional. Its cosmetic appearance is deplorable at best. With luck, some parts may still be salvageable for use in other devices.

- **Severe Use (period of 1 day):** At this level, the equipment is being sorely taxed and requires constant attention to remain in good working order. For electronics, severe use is continuous runtime for more than a week. A vehicle undergoes severe use if it sees 1,000 road kilometers or 200 off-road kilometers in a single day. A firearm that fires 250 rounds or more in a single day is undergoing severe use.

An item's operating conditions can also affect its use. Use is considered one level higher if the item is being used in conditions of excessive humidity, dust, sand, or corrosion (including sea air). Conversely, the default rules for use assume field conditions; if the item is being used in the equivalent of complete shelter, reduce its use by one level for a mechanical item or two levels for electronics.

Maintenance

After a device undergoes one period of use, it requires preventive maintenance to maintain its current Wear value. Preventive maintenance is not intensive mechanical work; rather, it involves cleaning, lubricating, tightening bolts, checking connections, running diagnostics, and other time-consuming but largely trivial tasks. This process requires a number of hours of work equal to the item's Maintenance trait, as well as a skill check. This latter can be either the skill appropriate to *using* the device (COG, TN +3) or ATS (COG, TN +5). Alternately, if the character has at least a Novice rating in either skill, he can expend one unit of maintenance supplies appropriate to the device for automatic success. With success, the device does not accrue Wear for the period of use that just ended.

Example: Leslie's G36 has Wear 7. Over the past week of play, Leslie has been involved in three firefights and has expended several hundred rounds, which constitutes heavy use of the gun. The

weapon now needs maintenance or it will accrue Wear. Leslie is Unskilled in the ATS (in this case, Mechanics or Artisan [Gunsmithing]), but has sufficient skill in Longarm to handle the task. She makes a Longarm (COG, TN +3) skill check. The G36 is a fully automatic firearm, so this task requires one hour. Despite the -3 penalty for the item's existing Wear value, she succeeds handily, and her G36's Wear stays at 7.

If you've skipped ahead to the Chapter Seven, you've noticed that no item of personal equipment has a printed Maintenance value. This is because Maintenance requirements tend to be the same for items of a similar complexity. The following table lists suggested Maintenance values for specific broad categories of equipment. Each vehicle has a specific Maintenance requirement, as detailed in Chapter Eight.

Weapons	
Item Type	Maintenance (hrs)
Close combat weapon	0.25
Firearm, simple action (revolver, bolt-, break-, or pump-action)	0.25
Firearm, semi-automatic	0.5
Firearm, fully automatic	1
Heavy weapon, unguided	2
Artillery	2
Heavy weapon, guided	4
Electronics	
Item Type	Maintenance (hrs)
Electric light	0.25
Personal entertainment device	0.25
Night-vision optic	1
Radio	2
Computer	3
Sensor (geiger counter, gas detector)	4
Tools	
Item Type	Maintenance (hrs)
Simple hand tool (personal water filter, multitool)	0.5
Simple large tool (group water filter, parachute)	2
Complex hand tool (sextant, chainsaw)	2
Complex large tool (portable darkroom, hydraulic power unit)	5

Table 6n: Farm Size

Reconditioning

Preventive maintenance is a vital part of keeping a survivor's gear in working order. However, it cannot improve an item's condition, only keep it from degenerating further. Actually restoring an item's condition (thereby reducing its Wear) is a more involved task.

Reconditioning an item is a supply-dependent action requiring one unit of parts. It takes a number of hours equal to the item's current Wear times its Maintenance value, as well as an ATS (COG, TN -2) skill check. With success, the item's Wear value is reduced by 1. With a margin of failure greater than 5, the attempt does more harm than good and the item's Wear *increases* by 1.

Reconditioning can never reduce a device's Wear to 0.

Example: Tired of missing easy shots because of her G36's condition, Leslie turns over the gun to Matt for reconditioning. Matt digs out his stock of spare parts and sets to work. The rifle has Maintenance 1 and Wear 7, so the task takes 7 hours. It also consumes one unit of small mechanical parts. Matt makes a Mechan-

ics (COG, TN -2) skill check, suffering an additional -3 penalty for the gun's Wear. Despite the penalties facing him, he succeeds. The G36's Wear is reduced to 6. While that isn't enough to completely remove penalties, it's a good start.

Cannibalization

Desperate times can call for desperate measures. While a survivor might not yet be desperate enough to eat his friends, it's quite likely that he will at some point find himself taking components from one disabled device to keep another operational. This practice is known as *cannibalization*.

Cannibalizing an item effectively destroys it as the mechanic disassembles it for useful components. This task takes twice the item's Maintenance and requires an ATS (AWA, TN -2) skill check. With success, the process yields a number of units of parts equal to the margin of success. With a margin of success of 0, the item yields no parts but is not (yet) destroyed, and the mechanic can try again. No cannibalization attempt can ever produce more parts than (12 - the item's Wear).

Cannibalization and Reconditioning

Once an item is cannibalized, the parts it yields can immediately be used to recondition another *identical* device. If a character chooses this option and has a Novice or better ATS skill rating, each reconditioning attempt made with a unit of these donor parts succeeds automatically and takes half the normal time. If the parts are saved for later use, this benefit is lost (unless you really want to engage in the bookkeeping necessary to track the source of every unit of parts you salvage).

Example: *Matt finds another G36 and decides to strip it for parts for Leslie's. The donor rifle has Wear 8. Matt makes a Mechanics (AWA, TN -2) skill check, suffering a -4 penalty for the gun's Wear. Matt succeeds with a margin of success of 3 and receives 3 units of small mechanical parts (the maximum he could have received was 4).*

Matt decides to use 2 units of the donor parts to restore Leslie's gun from Wear 6 to Wear 4. This takes a total of 5.5 hours (3 hours to reduce Wear 6, plus 2.5 hours to reduce Wear 5) and requires no skill checks. He tucks the third unit of small mechanical parts away for later use.

Reconditioning in this manner *can* reduce a device's Wear to 0. However, taking a device from Wear 1 to Wear 0 requires 10 units of parts, at least half of which must be cannibalized.

REPAIR

When a piece of equipment becomes disabled, whether through combat damage or Wear accrual, it must be repaired before it can be used as anything but a blunt implement.

Repairing an item is a supply-dependent action requiring a one unit of parts. It takes a number of hours equal to the item's current Wear times its Maintenance value, as well as an ATS (COG) skill check. With success, the item is repaired and is no longer considered disabled. With a margin of failure greater than 5, the attempt does more harm than good and the item is destroyed permanently.

RESUPPLY

As should be obvious by now, characters in 2013 don't often have the luxury of buying what they need from an all-night convenience store. More often than not, they must obtain

the necessities of life (and death) through their own labor. The following rules address these processes.

SCROUNGING, SALVAGING, AND LOOTING

Taking items from their current owners is usually referred to as "robbery" or "banditry." The rules governing such tasks appear in Chapter Five. Characters who would prefer to acquire items that aren't already in someone else's possession need to search for them. Figuring out where goods are likely to be located is a part of understanding a given environment. Accordingly, all attempts at locating abandoned material are governed by the "environmental knowledge" skills: Fieldcraft and Streetcraft. Locating useful items in an urban area requires Streetcraft, while Fieldcraft is necessary for finding manufactured goods in rural and wilderness areas.

Scrounging isn't usually a simple matter of walking through an abandoned hardware store and taking hammers and drill bits off the shelves. Most of the easy pickings are already gone, looted in the global "grab what you can" panics that characterized the Collapse's spasms of civil disorder. A successful scrounger knows the less-obvious places where any given item was manufactured, stored, repaired, used, or discarded. He's also familiar with the ways in which people deliberately conceal contraband or cache survival supplies.

General Scrounging

In a general scrounging attempt, your character isn't looking for anything specific. Rather, he's canvassing an area for any items of value or interest. This is the scrounging equivalent of window shopping.

A general scrounging attempt requires a Fieldcraft or Streetcraft (AWA) check. This takes one hour for a hectare of rural or wilderness land, four hours for a block of suburban houses or businesses, or thirty minutes for one floor of a multi-story apartment or office building. With failure, you find only detritus and damaged goods. With success, you find a number of useful items equal to your margin of success (minimum 1). The GM determines what specific items are found in any given location. Particularly valuable things may count as two or more results.

Detailed Stripping

The salvage equivalent of a plague of locusts, a detailed strip of a location removes *everything* of value that isn't nailed down. This is not only a physical effort of lifting and carrying, but also an intensive search for hidden items. Detailed stripping takes ten times as long as a general scrounging attempt, representing the extra effort that goes into locating and evaluating items. Before making the skill check for general scrounging, make a Forensics (AWA) check. If both checks succeed, *multiply* their margins of success to determine the total number of items found. If only one check succeeds, no hidden treasures are uncovered; treat the process as a standard general scrounging attempt. At the GM's discretion, detailed stripping of a resource-poor location may be impossible (someone else has already gotten most of the items of value).

Targeted Searching

A targeted search is a focused attempt to find one specific thing, be it diesel fuel, a left-handed pipefitter's wrench, or an oscillation overthruster. The downside of a targeted search is that other useful items are more likely to be overlooked in the process.

Design Note: Scrounging Skills

Previous editions of **Twilight: 2000** included a discrete Scrounging skill for locating goods. Rather than maintaining the paradigm of “finding stuff” being a separate skill, we’ve chosen to treat this action as a function of the character knowing his environment. Streetcraft was the obvious choice for urban scavenging, as it’s the general “urban survival” skill. Fieldcraft required a little more debate, but our eventual decision was that knowing how to locate an abandoned mine or hunting lodge is a function of wilderness familiarity, not street navigation.

At the GM’s discretion, another specific skill may replace Fieldcraft or Streetcraft if it’s directly relevant to the current site or environment. Scouring a farm for spare parts arguably falls under Agriculture, as few characters can learn this skill without spending a lot of time on farms. Likewise, locating the small arms locker on board a wrecked naval vessel logically can rely on Seamanship.

A targeted search requires a Fieldcraft or Streetcraft (AWA) check and takes half the time of a general scrounging attempt in an equivalent area. With success, your character locates what he needs (though not necessarily in the quantity he desires - scrounging for 300,000 liters of aviation fuel is unlikely to succeed, but 300 liters is more reasonable). For every full four points of MoS, he also locates one other item of interest. The GM may assign a bonus or penalty based on the likelihood that the object of the search is present in the area, or may disallow the attempt altogether if it stretches the bounds of plausibility.

ITEMS OF INTEREST

Some items, particularly certain vital consumables, are sufficiently valuable that characters will expend significant effort to acquire them. Food and water, the most essential of all, are discussed elsewhere in this chapter. The following sections deal with specific manufactured goods and how characters can obtain or reproduce them.

Ammunition

Firearms are the dominant personal weapons of the modern era, but without ammunition, they’re not much more than awkward clubs. Most PCs will stock up on ammo in bulk during character creation, but every fight reduces this reserve. Supplies can be stretched by looting fallen foes, but there’s no guarantee that an enemy’s gun is chambered for the same caliber as a PC’s. The next logical step is to take the guns, too, but it’s impractical to carry around a hockey bag full of firearms in different calibers. How, then, do PCs keep their magazines full when all the major ammunition factories are in ruins?

Production

A round of small arms ammunition has four major components: the casing, the explosive primer and powder, and the bullet itself. If your character has the proper tools (i.e. a reloading bench - see p. 234), he can assemble these components into ammunition that’s almost as reliable as factory production ammo.

In game terms, each round of ammunition requires one casing and bullet of the proper caliber, one primer, and a number of units of powder equal to the weapon’s base Damage value. Assembling these components takes one hour and a Artisan (Gunsmithing; CDN, TN +2) skill check. With success, the hour’s work yields (MoS x 5) rounds. With failure, a botched attempt ruins 2d10 rounds’ worth of materials.

Recovering Brass

When a cartridge is fired, the explosion of the primer and powder consumes them. The bullet, obviously, goes downrange, and its impact with a target deforms it so that it cannot be reused. However, the round’s casing (or “brass,” after the most common material) can be recovered and reloaded. After a combat scene, collecting expended brass takes five minutes for each firearm (not shooter) involved in the fight. This task requires an Awareness check. The number of casings recovered is equal to 20% of those fired times the margin of success, to a maximum of 90% (on average, a few casings are always damaged enough to make reuse unsafe). For example, if Justin fires 65 rounds during a fight and subsequently recovers his brass with a margin of success of 3, his search yields a total of 60%, or 39 casings.

Shotgun shells cannot be recovered, as they use thin plastic or thick paper rather than metal, and the stresses of firing significantly damage the material. (If you want to get into gunfodling minutiae, yes, there are brass-cased shotgun shells, but they’re sufficiently rare that we didn’t list them in Chapter Seven.)

Replacement

There’s no easy way to entirely replace ammunition with a low-tech equivalent; guns are precision instruments that don’t adapt well to throwing rocks. With this said, a character without access to complete supplies can attempt to reload brass (see the previous production rules) with less-refined replacements for powder, primers, and bullets. Note that catastrophic failure when making any sort of explosives is truly catastrophic.

For game purposes, two varieties of gunpowder are available: modern nitrocellulose-based smokeless powder and archaic black powder. Producing either of these from raw chemicals requires 20 hours of work and an Education (TN +2 for black powder or -3 for smokeless powder) check. With success, the attempt produces (MoS x 20) units of powder. Smokeless powder functions as per standard powder, while black powder reduces the weapon’s Damage by 25%.

Making primers requires access to raw chemicals, 40 hours of work, and an Education (TN -2) check. With success, the attempt produces (MoS x 3) primers. These function as per standard primers.

Making bullets is simpler and less hazardous, requiring only a bullet mold, lead, and a heat source. Two hours of work and a successful Artisan (appropriate cascade; CDN, TN +1) skill check produce (MoS x 5) bullets. Note that these are unjacketed bullets, and thus function as hollowpoint ammunition (see p. 256).

Creating new casings from metal stock is also possible. This requires appropriate small-scale machine tools, four hours of work, and a Mechanics/Machinist (CDN, TN -1) skill check. Success produces (MoS x 5) casings. If your character uses hard metal such as brass, the casings can subsequently be reloaded; this isn’t feasible with steel, nor with soft metal such as aluminum. The same process can also be used to add jacketing to molded lead bullets, making them function as standard ammunition.

Each replacement component in a batch of ammunition adds a cumulative 3% chance (10% for black powder) that the ammunition will cause a failure during any combat scene. Add the gun’s Wear, if any, to this chance. The GM should secretly roll at the beginning of any fight for each weapon using ammo with replacement components. For any weapon whose roll indicates an ammunition-related failure, the GM then rolls 1d3+1 to determine the exchange of fire in which the mishap occurs. On the first shot fired after the beginning of that exchange of fire, the

gun jams, misfires, or otherwise malfunctions. This malfunction does add a point of Wear to the weapon. If a player tries to be clever by mixing factory and substandard ammo in a magazine, use the failure chance of the lowest-grade ammo his character is carrying.

Example: *Leslie is using reloaded cartridges in her G36. This batch of ammo has factory casings and bullets, but hand-made primers and smokeless powder. Combined with the gun's Wear 6, this gives a 12% chance of malfunction in each fight. At the beginning of combat, the GM rolls percentile for the G36, and the die roll indicates an imminent failure. He then rolls 1d3+1 for a result of 3. He makes a note to himself that Leslie's gun will function normally for the first two exchanges of fire, but then malfunction on the first shot she takes after the beginning of the third exchange of fire. If the fight doesn't last more than two exchanges of fire, Leslie will avoid any ill effect... this time.*

Salvage

Small arms ammunition consumption, as might be expected in a global war, was astronomical over the Last Year. By best estimates, the United States military alone used over two billion cartridges. Even with every ammo plant in the world running around the clock in the preceding years, supply was not always able to keep up with demand.

By the beginning of 2013, most national governments had seen the writing on the wall and had seized existing ammunition plants and their stockpiles of supplies for exclusive military use. Large distribution centers were likewise looted during the Collapse, sometimes by local police and militias acting under actual or assumed authority. By mid-2013, few ammunition stockpiles larger than a thousand rounds remain uncontrolled. Of these, most are well-hidden reserves that lie untouched only because no one living knows their location.

Modern cased ammunition is designed for long-term storage. In a dry environment between -50°C and 50°C, cartridges will remain viable for decades. Properly-stored ammunition of World War II vintage is still more than 80% usable. The most common cause of premature degeneration is corrosion of the primer, which occurs over long periods (6+ months) of exposure to moisture. The best method for storing ammunition is to place it in a sealed container with a few packets of desiccant to absorb condensation.

Fuel

Refined petroleum fuel is the lifeblood of modern industrial society. Its current scarcity is one of the primary factors limiting recovery around the globe, second only to a lack of people with the skills vital to rebuilding. Without rare and specialized equipment and training, most locales have resorted to alternate fuel sources rather than wasting effort in futile attempts to develop their own drilling and refining capabilities.

Production

Few oil production facilities remain in the world. Almost all major wellheads and refineries were destroyed in the Twilight War. Some became collateral damage during battles over their control, while others were deliberate targets of conventional or nuclear strikes intended to deny them to the enemy. Billions of dollars of drilling, extraction, and distillation equipment are now so much tangled scrap, and no factories are producing replacements.

With this said, the world's petroleum industry isn't a complete write-off. Before the Twilight War, tens of thousands of oil fields existed around the globe. However, the majority of the world's crude oil came from fewer than 1,500 of these. Many others too small or cost-ineffective to make commercial exploitation profitable, or had already been emptied of most of their



readily-accessible contents. However, tiny wells capable of producing only a few dozen barrels of crude oil a day do still exist in out-of-the-way corners of the world. These sites often escaped notice during the Collapse and are still capable of pumping if power is available.

Crude oil in and of itself isn't very useful, though. Heating oil, diesel fuel, gasoline, avgas, petroleum lubricants, and other compounds all must be extracted from crude via refining processes. This process is simple from an engineering and chemistry perspective, but implausibly difficult and expensive to reconstruct in 2013. Even the smallest facilities of the prewar era, capable of refining "only" a few thousand barrels of oil a day, cost over \$100 million and required several years of construction. Several thousand facilities of this size existed prior to the nuclear exchanges, and perhaps a few hundred are still intact enough that a qualified staff could restore them to operation.

PCs aren't likely to stumble upon an operational wellhead or refinery that's free for the taking, of course. Small production facilities of the sort likely to still be functional may have been unknown on a global scale, but they were hardly local secrets. They were the primary industries in small towns and are certain to be under the control of whatever local regimes survived (or came into existence after) the Collapse. A slightly less unlikely scenario is a lightly-damaged facility having been abandoned and subsequently ignored because no local survivors knew that repair was possible, but making use of such a resource presumes that the group includes a petroleum engineer. All in all, if characters *do* get their hands on an operational facility, the easiest (and most interesting, from a game play perspective) course of action is to leave wellhead and refinery operations to the NPCs while the PCs concentrate on exploiting and defending their economic advantage.

Replacement

Agricultural surpluses are by no means assured in 2013, but areas that can take advantage of them have a renewable fuel source that's much easier to develop than crude oil. Ethanol (distilled from grains and sugars) and methanol (distilled from wood) both can replace gasoline in most internal combustion engines, while biodiesel (distilled from vegetable oils or, more rarely, animal fats) can directly replace conventional diesel fuel. Chapter Eight provides rules for using these in place of petroleum-based fuels (see p. 276).

Alcohol

Alcohol production requires clean water, organic matter (grain or sugary plants for ethanol, or wood for methanol), a heat source, and a still. Each still described in Chapter Seven has a maximum production capacity per batch.

The raw materials required to produce one liter of alcohol fuel are 1 kg of organic matter and 1 liter of water. These are combined to produce 1.75 kg of *mash*, the basic organic mixture that will be fermented and distilled. The water is not required to be safe to drink, but it must be relatively clean of particulate and chemical contamination. A character with an appropriate woodcutting tool can gather (20 + Muscle) kilograms of suitable wood in an hour of heavy work; halve this number in winter, and halve it in a vegetation-poor environment.

From start to finish, distilling a batch of alcohol fuel takes three days. The first day is consumed with gathering the raw material and combining it into the mash. The second day requires the mash to be cooked over constant low heat to facilitate fermentation. On the third day, the still is heated to distill the alcohol from the mash, separating out water and other waste products. As the still is used only during the third day, batch production can be continuous, with all three steps occurring at once for three different batches. Any character with a Novice or better rating in Agriculture or

an appropriate Artisan cascade, or an appropriate degree, can supervise this process with no task check.

Biodiesel

Biodiesel production requires raw crop materials, as well as ethanol or methanol, acids, and catalysts to facilitate the chemical processes. It also requires a heat source and a reaction vessel that can be sealed to prevent the alcohol from evaporating off.

The raw materials required to produce one liter of biodiesel are 1 kg of vegetable oil, 0.12 liters of ethanol or methanol, and 1 unit of production chemicals (acids and catalysts). These amounts scale linearly, so a 500-liter batch requires 500 kg of vegetable oil, 60 liters of alcohol, and 500 units of production chemicals. Cooking the batch requires 16 hours of light work. As with alcohol production, any character with a Novice or better rating in Agriculture or an appropriate Artisan cascade, or an appropriate degree, can supervise this process with no task check.

Salvage

Before the Collapse, most fossil fuels were used within a few weeks of their manufacture. Long-term storage was rarely necessary. In mid-2013, however, any fuel reserve that a character manages to scrounge has been sitting in its container for a minimum of six to eight months.

Sources

Few large-scale fuel sources remain for scavenging in 2013. Those that survived the Collapse have already been looted or fallen under the control of local powers. Characters in search of fuel must resign themselves to working on a smaller scale.

Modern filling stations tended to have a storage capacity between 75,000 and 150,000 liters. Obviously, few will have even a fraction of this much fuel remaining in their tanks. Those that do still contain any usable amount of fuel were located in areas which lost electrical power early in the Collapse and then experienced heavy casualties or mandatory evacuations. The underground tanks used in such facilities have both inspection and filling hatches that require special tools to open, but these are kept on-site.

It's much more likely that characters will have to scavenge fuel from wrecked or abandoned vehicles. Assume that any given wreck still contains (1d10-7 x 10)% of its original fuel capacity. The GM may declare that a formerly well-populated or well-traveled area has already been scavenged dry.

Even smaller sources are available in the garages and tool sheds of middle-class families in certain nations. Any family that owned a gasoline-powered lawnmower is likely to have kept at least a few liters of fuel on hand for it. Likewise, gas-powered snow blowers and other yard tools were commonplace in certain areas and economic strata. Again, though, such sources will only be present in areas whose residents didn't have time to perform thorough scavenging.

Complications

An unsealed container of fuel is likely to have experienced evaporation, oxidation, or condensation. Evaporation removes the lighter hydrocarbons from the liquid, making the fuel harder to ignite. Oxidation combines the fuel's hydrocarbons with oxygen in the air to produce a gummy residue. Condensation occurs in cool conditions and results in the formation of water droplets within the container, which can further lead to rust in the container or the growth of bacteria or algae in the water. Any or all of these factors can combine to render the fuel unusable without proper purification. Attempting to fuel an engine with contaminated fuel can clog fuel lines or filters, requiring several hours of work to diagnose and fix. In extreme cases, permanent damage can occur.

In game terms, there is a cumulative 3% chance per month that an open container of fuel will become contaminated. For a closed container, the chance drops to 1% per month. With visual examination and a good sniff, contamination in a fuel source is obvious to any character with a Novice or greater rating in Mechanics. Unskilled mechanics must succeed with an Education check to detect any contamination.

Purifying contaminated fuel is simple, requiring only some means of filtration (*not* a water filter) to remove sludge and particulates. Water tends to settle to the bottom of a fuel container, so pumping or siphoning the container will remove it with a modicum of care. A character working with only unpowered tools (hand pump, siphon line, cheesecloth, and a bucket) can purify one liter of fuel per minute of hard work. Assume that the purification process will recover 90% of a given supply's volume; the remaining 10% is unusable.

BUILDING AND REBUILDING

Buildings are among the most powerful symbols of civilization. From the first Sumerian structures to modern skyscrapers, they call to mind the accomplishments of man - or at least they did before the Twilight War. Now many of these once-proud structures jut like broken teeth, providing a grim reminder of the madness that consumed the world. Nuclear exchanges, conventional munitions, firestorms, and natural disasters combined to reduce many of the largest buildings to little more than piles of smoldering rubble. Many buildings that were not destroyed outright suffered severe structural damage, and consequently are unsafe for occupation. National infrastructures suffered heavy damage as well. Many roads are now treacherous or entirely impassable. Water, sewage, data, and energy distribution systems are useless, as even those that physically survived now lack the necessary support structures or power sources.

Even areas that escaped outright destruction or crippling damage are now faced with the aftermath of the Collapse. Shattered windows leave the interiors of buildings open to the elements, which both reduces the available shelter for survivors and hastens the decline of the buildings and their contents. Along with weather conditions, ruptured utility conduits have created pools of standing water, human waste, or less identifiable substances, providing ideal breeding grounds for a number of microorganisms, fungi, and insects. Even the current "nuclear autumn" does little to deter these environmental threats.

As a basic human need, shelter is a high priority for individual survivors and communities alike. With the current state of the world, finding a building in usable condition is certainly possible, but finding one that's also in the right location is another matter entirely. Likewise, few communities can boast a full array of public utilities and transportation arteries in good working order. Characters are likely to need to repair existing structures or create new ones - and, when the devil drives, to further contribute to the Twilight War's destruction.

The Reflex System uses the broad term *structure* to refer to any artifact of large-scale construction. Houses, bridges, dams, parking garages, and bunkers are all examples of structures and are subject to the rules presented in this section. Each structure has four traits: Armor, Damage Threshold, Structural Integrity, and Shelter.

DAMAGING STRUCTURES

Armor, Damage Threshold, and Structural Integrity all affect how a structure responds to damage. Armor is calculated according

to the thickness and material of the structure's outer surfaces, as per the values in Chapter Five for cover:

Material	mm per Armor 1	Multiplier
Advanced ceramic composite armor	2.5	0.4
Steel armor plate	5	0.2
Sheet steel	6	0.16
Reinforced concrete	25	0.04
Concrete, brick	35	0.03
Stone, packed dirt, wood, liquid	50	0.02
Fiberglass	150	0.007
Loose dirt	250	0.004

Table 60: Farm Size

As structures are significantly larger than most items that will be damaged in combat, Damage Threshold is calculated differently for them than it is for other items. A structure's Damage Threshold is equal to 10x its Armor. If a structure has Armor 0, it has a Damage Threshold of 5.

Structural Integrity (SI) is a measure of the structure's total load-bearing capacity and redundancy. The higher a structure's SI, the more damage it can take before it begins to collapse. A building has roughly one point of SI per 50 square meters of floor space.

A structure receives damage and enjoys the effects of Armor just as any other target. If an attack's final damage value is less than the structure's Damage Threshold, it has no effect. If the damage value exceeds the Damage Threshold, the structure loses one point of SI. If this damage is from a massive source, such as an explosive or a large vehicle collision, each additional multiple of the Damage Threshold causes the loss of an additional point of SI (so if a building suffers explosive damage equal to 3.3 times its Damage Threshold, it loses 3 points of SI). As a structure loses SI, it becomes less of a structure and more of a pile of rubble. This affects both the structure's Shelter and its load-bearing capacity.

Losing Shelter

After a structure loses its first point of SI, its Shelter rating cannot exceed Adequate. After losing 25% of its original SI, its Shelter rating cannot exceed Minimal. When a structure loses all of its SI, it collapses and is destroyed, providing no Shelter (though the rubble may still yield building materials for improvising a lean-to or shack).

Losing Stability

After a structure loses 50% of its SI, its stability under further stress is no longer assured. Whenever it is subject to a load for which it was originally designed, there is a 25% chance that the structure will experience a partial collapse. Depending on the structure, this may result in the source of the load being trapped, falling from a great height, or suffering another misadventure. After losing 75% of its SI, the chance of collapse increases to 50% for loads that approach the original design limit, and any significant but lesser load incurs a 25% chance of collapse.

The loads that are significant for a given structure are subject to interpretation, but should be obvious with the application of common sense. For example, a railroad bridge is designed for loads of several thousand tons. After losing 75% of its SI, it's still unlikely to collapse under the weight of a few PCs and their backpacks, but a 5-ton cargo truck will be in danger if it's not driven with the utmost care. On a narrow wooden bridge with the same damage, the pedestrians will be in danger and the truck will certainly fall through the bridge deck.

Structures and Small Arms

Most structures are sufficiently large and heavy to be effectively immune to small arms fire. This doesn't mean that bullets can't cause damage, just that they're unlikely to trigger a collapse without the expenditure of hundreds or thousands of rounds. At the GM's discretion, a structure that sustains extensive cosmetic damage from small arms or close combat weapons will lose a level of Shelter due to broken windows and other issues.

SHELTER

Shelter is rated on a four-stage scale (see p. 173): None, Minimal, Adequate, or Complete. Each structure's Shelter rating is assigned according to the GM's judgment. As a general guideline, few intact structures should provide no Shelter, but Complete Shelter is available only in undamaged buildings in temperate climates (or with functioning climate control equipment). This rating represents the degree of protection that a structure provides from the elements, as well as its sanitary facilities and general cleanliness. Damage and overcrowding can both reduce a structure's Shelter. At the GM's discretion, other events, actions, or failures to take action can also affect Shelter.

Living Space

A structure's Shelter rating assumes adequate living space for its inhabitants. One adult human requires a minimum of 16 square meters of floor space. This includes a share of common areas such as kitchens, hallways, sanitary facilities, and storage space, as well as the basic area needed for sleeping and performing personal tasks with comfort. The number of inhabitants a structure can comfortably house is also referred to as its Living Space trait. A structure without Living Space is not designed for habitation, though it can be converted for this purpose at a less efficient rate of 20 square meters per inhabitant.

"Comfort" is key in defining living space. A structure can support more inhabitants than its Living Space suggests, albeit at descending degrees of comfort. At up to 50% overcrowding (e.g. 9-12 people inhabiting a structure fit for 8), each attempted period of rest has a 10% chance of providing no benefits. At up to 200% capacity (e.g. 13-16 inhabitants), the structure's Shelter rating is reduced by one level. At up to 400% capacity (e.g. 17-32 inhabitants), the structure's Shelter rating is reduced by two levels. Worse overcrowding automatically drops the structure's Shelter to None if it wasn't there already. At the GM's discretion, rigorous public health procedures, such as military barracks discipline, can mitigate these penalties.

STRUCTURAL REPAIR

Given the present conditions, many buildings and infrastructure elements will need at least some level of repair before survivors can make full use of them. Unfortunately, lack of specialized equipment and materials will make the repair of many modern structures at best impractical and at worst impossible. Also, the large population losses of the Collapse make mass manual labor viable for only the largest and best-organized communities. With this said, characters who take possession of a structure for any length of time are likely to want to restore it. This can be a cursory job to restore Shelter or an extended renovation to restore Structural Integrity.

Restoring Shelter

It's perfectly possible to nail plywood over broken windows and stretch tarps over holes in the roof without paying any heed to a structure's crumbling foundation and sagging joists. Characters who aren't concerned with overloading a structure or subjecting it to additional damage may simply return it to livable condition. Restoring one level of lost Shelter is a supply-dependent incremental Construction (MUS) task. This task has a period of four hours, a supply requirement of one unit of light building materials, and a target total equal to the structure's Living Space.

If a structure's Shelter is restored to a level greater than its SI allows, *any* subsequent loss of SI will cause the structure to revert to its normal Shelter rating.

Restoring SI

Repairs to a structure's core load-bearing elements are more difficult and time-consuming. Restoring one lost point of SI is a supply-dependent incremental Construction (MUS) task. This task has a period of eight hours, a supply requirement of one unit of heavy or industrial building materials (depending on the structure's dominant material), and a target total equal to the structure's Armor.

Salvaging Materials

Most repair jobs require workers to clear away debris before beginning to rebuild. With luck, some materials can be salvaged from the wreckage of a building and reused. Sifting through one lost SI worth of debris requires one hour and a Construction (AWA) check. With success, the character recovers a number of units of building materials equal to half the margin of success. The type of building materials recovered is appropriate to the materials of which the structure is made - the wreckage of a single-family home is unlikely to yield industrial-grade steel-reinforced concrete.

CONSTRUCTION

Construction on a prewar industrial scale is outside the scope of this book and outside the reach of most PCs. No one's putting up new skyscrapers in 2013. However, there is an ongoing need for new structures to replace those destroyed during the Collapse or to aid in the establishment of new communities. Characters may want to construct homes, bridges, fortifications, or bunkers.

Construction efforts take place in two phases: design and execution. The design phase involves site survey work and the creation of architectural diagrams, materials lists, job assignments, and other paperwork necessary to expedite the work. The execution phase is the physical work necessary to assemble the structure. In the execution phase, it's unlikely that one character will work alone; the skill check is for the *foreman*, or the character leading the effort.

Buildings

Characters can erect a wide array of buildings, from modest homes to hardened command bunkers.

Design requires a Construction (EDU, TN +1) check. This task takes a number of days equal to the building's Living Space x 10.

Execution requires an incremental supply-dependent Construction (COG, TN +3) check. This check's period is 60 man-days, its supply requirement is 1 unit of building materials, and its target total is equal to the building's Living Space x 5 divided by the designer's margin of success.

At least half of the total building materials used for this incremental check must be appropriate to the building's intended Armor - either heavy or industrial. If the building is designed



to provide only Adequate Shelter, not Complete Shelter (i.e. is designed without climate control), the check period is only 20 man-days.

Example: Andy decides to build a well-fortified bunkhouse for his team - unfortunately, with no air conditioning. The building will require Living Space 8. Andy's base design time is 80 days. Fortunately, he has a functioning notebook computer and a CAD/CAM software suite, which reduces the time to 8 days. He receives a margin of success of 5 on his design check.

Andy and three teammates set to work executing his plans (the other four are on guard and maintenance duty). Andy's incremental skill check has a period of 5 days (20 man-days divided by 4 workers) and a target total of 8 (Living Space 8×5 , divided by Andy's MoS of 5). With a minimum of 8 skill checks to be made, Andy will need at least 4 units of industrial building materials - remember, the building is well-fortified - and 4 units of light or heavy building materials.

Non-Residential Buildings

If a building is not intended for habitation, design takes a number of days equal to half the building's floorspace in square meters. The target total for execution is equal to the floorspace divided by (5 x the designer's MoS).

Bridges

Bridges are rated in terms of *deck area* and *maximum load*. A bridge's deck area is equal to its width times its length in meters, while its maximum load is the total amount of weight (not including its own) in tons that it can support at any one time.

Design requires a Construction (EDU, TN +2) check. This task takes a number of days equal to the bridge's maximum load plus half its deck area.

Execution requires an incremental supply-dependent Construction (COG, TN +4) check. This check's period is equal to the bridge's maximum load in man-days, its supply requirement is 1 unit of industrial building materials per 10 tons of maximum load, and its target total is equal to the bridge's deck area divided by the designer's margin of success (minimum divisor of 1).

Example: Andy is tasked with replacing a destroyed bridge that used to span a local river. At the best location, the bridge will need to be 20 meters long. To save time and materials, Andy decides to make it just wide enough to accommodate a single truck: 3 meters, giving it a deck area of 60 square meters. Its maximum load will be 40 tons, which should be more than sufficient for any vehicle except a main battle tank. Andy's base design time is 70 days, reduced to 7 days for computer assistance. Andy makes his design check and receives a margin of success of 4.

The community gives Andy a crew of 14 laborers with which to build the bridge. Andy's incremental skill check has a period of 3 days (40 man-days divided by 15 workers), a supply requirement of 4 units of industrial building materials (40 tons maximum load divided by the flat modifier of 0), and a target total of 15 successes (60 square meters divided by MoS 4).

Footbridges

Bridges designed for pedestrians and animals rather than vehicle traffic follow the same rules given above. However, they only require heavy, rather than industrial, building materials.

Sample Structures

The following table provides suggested trait values and ratings for common prewar structures.

<i>Homes</i>				
Structure	Armor	SI	Shelter	Living Space
Farm/vacation cottage	2	1	Adequate	3
House, 1 bedroom	2	2	Complete	5
House, 2 bedrooms	2	3	Complete	8
House, 3 bedrooms	3	5	Complete	11
House, 4 bedrooms	3	7	Complete	14
Mansion	5	25	Complete	80
Apartment block, 3-story	8	21	Complete	64
Apartment low-rise, 6-story	9	45	Complete	280
<i>Commercial Buildings</i>				
Structure	Armor	SI	Shelter	Living Space
Business, small	3	4	Adequate	10
Business, large	4	20	Adequate	45
Business, retail outlet	4	250	Adequate	600
Warehouse	5	400	Minimal	300
Factory, light	4	30	Minimal	100
Factory, heavy	10	70	Minimal	200
Factory, superheavy	12	150	Minimal	400
<i>Bridges</i>				
Structure	Armor	SI	Shelter	Living Space
Pedestrian footbridge	1	1	None	-
Rural road bridge, wood	4	2	None	-
Rural road bridge, stone	6	5	None	-
Highway bridge, 4-lane	15	8	None	-
Railroad bridge	30	10	None	-
Temporary pontoon bridge	4	12	None	-
<i>Military Structures</i>				
Structure	Armor	SI	Shelter	Living Space
Bunker, fighting position	3	Minimal	1	
Bunker, housing	5	6	Adequate	9
Bunker, command post	10	8	Minimal	20
Hardened aircraft shelter	20	25	Minimal	60

Table 6p: Sample Structures

GM Hint: Tools and Time

The following rules assume that a construction effort is taking place with pencil and paper, manual labor, and hand tools. If electronic surveying tools are available, divide all design phase times by 2. If computer design software is available, divide all design phase times by 10. If power tools are available for a majority of the workforce, divide all execution phase times by 2. If heavy equipment (bulldozers, hydraulic excavators, etc.) is available, divide all execution phase times by 10.

Field-Expedient Structures

The previous rules for construction assume that characters intend to build permanent structures. If time is critical, an engineer may opt for speed of construction over permanence and safety. This divides all required times by 5, but the structure has a 10% chance per month of losing 25% of its original SI. At the GM's discretion,

harsh weather or other physical stresses can hasten this collapse.

DEMOLITION

Give sufficient ammunition, anyone can lob artillery shells at a structure until it collapses. Demolition is the efficient use of explosives to destroy a structure in a controlled manner. This task is the province of the Construction/Demolition qualification.

To partially or totally demolish a structure, your character must have one or more explosive charges, either manufactured or assembled by hand according to the rules in Chapter Seven (see p. 267). For each charge he wants to emplace, you must make a Construction/Demolition (COG) check. With success, the building's Armor against that charge is divided by half your margin of success. With failure, the character emplaces the charge in a location where its force is wasted, and the building's Armor is *doubled* against that charge.

THE NATURAL WORLD

Even before the Twilight War, climate change and its effects on the biosphere were ongoing concerns. The nuclear exchanges of 2012-2013 have not destroyed the world, but they have contributed additional chaos to an already unstable system. Nuclear blasts damaged the ozone layer and threw millions of tons of dust and debris into the atmosphere. In addition, enormous amounts of smoke from burning cities, forests, and grasslands have added to the amount of particulate matter still circling the globe.

The full impact of the Twilight War on weather patterns and climate is still unknown. As of mid-2013, it is apparent that the amount of sunlight reaching the ground is less than it should be. Historical evidence indicates that precipitation is above normal due to the elevated particulate levels, resulting in a world that's perpetually gray, sullen, and muddy. On the plus side, the sunsets are spectacular.

Thus far, the nuclear winter predicted by Cold War-era scientists has yet to materialize. Nor has a sudden spike in global warming occurred from increased greenhouse effect factors. The few surviving climatologists with access to data and equipment have insufficient information with which to make predictions. Their best guess is that conditions *probably* won't shift to either extreme. However, the world is moving into a "nuclear autumn." Winters are likely to grow longer and colder over the next few years, resulting in snow as far south as the 30-degree north latitude mark (Florida and Texas, northern Africa and India) and as far north as the 35-degree south latitude mark (Argentina, southern Australia). Growing seasons will be reduced, enough so that mass starvation would be likely if the world hadn't already been depopulated so thoroughly. Reduced temperatures may lead some species of plants and animals to die off entirely or migrate from the temperate to the sub-tropical zones. Depletion of the ozone layer will continue the trend of increased UV radiation hazards seen in the late 20th century, leading to quicker sunburns and increased incidences of skin cancer.

All of these factors make weather and the other aspects of the natural world a topic of daily concern in 2013. For centuries, humanity has altered its environment to suit its whims. Nature is now reasserting its dominance, a state of affairs that even people accustomed to nature's unpredictability find unsettling.

WEATHER

Characters can no longer rely on satellite weather reports and meteorologists to advise them of upcoming conditions, nor can farmers trust the recommended agricultural schedules of almanacs. Weather is now a daily concern - and even an adversary - for farmers, travelers, and soldiers alike, and it's more dangerous than it has been in living memory.

Chapter Three contains the basic rules for weather effects on characters and their ability to function (see p. 74). To recap:

- Precipitation reduces visual range, which hampers vehicle operations, ranged combat, and other vision-dependent tasks.
- Wind interferes with ranged attacks, vehicle operations, and movement.
- Heat increases fatigue, water intake requirements, and equipment maintenance demands.

GM Hint: Weather in Play

Most players don't spend nearly as much time outdoors as their characters do, and so aren't fully aware of all the ways that weather can affect PCs' lives. Accordingly, regular descriptions of the weather can be - pardon the pun - atmospheric. Frequent reminders of rain, mud, and gloom go a long way toward reminding your players that they're playing in a gravely injured world.

Weather is always happening. Something is always coming out of the sky or ground or moving towards or around the PCs. Whatever else is going on in your campaign, the weather is always there. Sub-optimum conditions can make any scene more interesting (in the sense of the Chinese curse). A sandstorm can cut visibility to near-zero, reducing an open-field battle to a knife fight in a telephone booth. Flash floods can turn an ordinary journey into a fight for survival. Even something as simple and seemingly inoffensive as the drizzle falling before dawn can make the last watch shift a special misery. Every session shouldn't feature a major weather event, but occasional encounters can provide unexpected challenges, as well as breaking the monotony of regular combat scenes with human opponents.

Thanks to early training in clearing out dungeons, many player groups have a tendency to loot everything that isn't nailed down and pry up many things that are. In a game such as **Twilight: 2013**, this can lead to a disproportionate accumulation of supplies and equipment. In addition to maintenance, travel mishaps, and enemy action, weather is another tool that you can use to keep your PCs from getting too comfortable with excesses of wealth and power.

Let's say that your PCs have designed and executed a tactical masterstroke for which you were completely unprepared. They've wiped out an enemy outpost and managed to make off with not only pallet loads of rations and fresh water, but also a tanker full of diesel fuel, several half-ton trucks, and a fully loaded main battle tank (which you were hoping to deploy against them in a climactic battle scene later in the campaign). The road back to home base takes the characters through a rugged mountainous area. Looking back through your notes, you see that you've been stressing the continuous rainfall over the last week. As the characters head down the cracked and broken road, you call for Fieldcraft (AWA) checks from the PCs in the lead vehicle. Those who succeed have just enough warning to halt the convoy as the vibrations from multiple heavy vehicles trigger a mudslide. Vehicles that don't stop in time may be swept away, and their crews will have to choose between bailing out or hoping they aren't buried in their seats. Suddenly, an easy drive home has become an extended rescue and salvage operation in hostile territory.

Alternately, you can plan an extreme weather or geological event well in advance, using it and its aftermath as a major plot point. A hurricane, tornado, volcanic eruption, drought, sandstorm, windstorm, blizzard, flood, monsoon, or tsunami can restrict travel, keep characters in or out of certain regions, threaten virtually any outdoor project, complicate military operations, or present an extended survival and recovery challenge. Major storms can cause massive crop failures in the characters' community, requiring them to lead diplomatic missions (or raids) to secure outside aid and prevent mass starvation. A simple trip to the coast to locate and recover a VIP can become a multi-session nightmare run through a flooded city when the PCs and a hurricane arrive simultaneously. An earthquake can disrupt ongoing recovery efforts, necessitating strong leadership and decisive action to keep a year's worth of progress from being lost.



- Cold increases fatigue, food intake requirements, and equipment maintenance demands.

Other Weather Complications

Any weather extreme can complicate characters' lives. At the GM's discretion, these or other factors can impose minor to moderate (-1 to -3) penalties on tasks not covered by the basic rules, and can increase the maintenance requirements of exposed items. Protective clothing or shelter can reduce or eliminate these penalties.

Water

In 2013, frequent precipitation is a fact of life in most parts of the world, even areas that weren't previously known for high humidity. Water gets into everything - weapons, food, vehicles, clothing. If characters fail to keep up with maintenance and hygiene, mold may grow on equipment or on the characters themselves. Moisture causes rust on ferrous metals, from which most weapons and many other items are made. Distilled alcohols and petroleum products can also become contaminated with water through leakage or condensation, and water in fuel or lubricants can completely ruin an engine.

Particulates

Particulates, whether sand, ash, or dust, also find their way into even the smallest crevices and most tightly-sealed containers. This results in equipment malfunctions as moving parts become clogged and lubricants thicken. Electronics must be cleaned regularly and thoroughly to prevent dangerous static buildup. As with water, particulates can also contaminate fuel, which will destroy an engine in short order. Characters living in dusty environments may develop a variety of minor but uncomfortable skin and eye problems.

Salt

Ocean and coastal environments present additional problems in the form of sea salt. Salt in air or ocean spray can accelerate rust and corrosion, particularly on alloys not specifically designed for use in a marine environment. Salt water can also break down chemical compounds, such as lubricants and ammunition

propellant, at an accelerated rate.

Forecasting

Predicting the weather is difficult, even with the aid of technology capable of gathering data over an entire hemisphere. In 2013, most forecasters are lucky to have a thermometer, a barometer, and a farmer's almanac.

Predicting upcoming weather requires a Fieldcraft (AWA, TN -2) check. With success, the character produces an educated guess at the general weather pattern for the next day. A margin of success of 5 or more provides a forecast for the next two days, and a margin of success of 10 or more gives a three-day forecast. An Education (TN -1) check is also acceptable if a character has one or more appropriate degrees.

ANIMALS

Whether they're food sources, transportation, labor, or potentially lethal threats, animals are as much a part of the world as man. These roles changed very little from prehistoric times until the past century, when mechanization and refrigeration made working animals obsolete and took food production out of the public awareness. The loss of these advantages has returned animals to prominence in every part of the world, and they are once again an integral part of virtually every survivor's life.

Dressing and Preserving

Each animal presented in this chapter has a maximum amount of edible meat that can be acquired from it. After killing an animal, "dressing" the carcass - separating usable parts from unusable ones - requires an Animal Husbandry (MUS, TN +2) or Fieldcraft (MUS, TN +1) skill check. With success, the character receives 30% of the maximum available meat, plus 10% times the margin of success (thus, a MoS of 4 yields 70% of the maximum meat). The same percentage of the animal's hide is usable for making leather via an appropriate Artisan cascade.

In the absence of refrigeration, fresh meat goes bad after 1d10 days (less in hot climates) and further consumption results in an encounter with food poisoning. To preserve meat, a character can

salt or smoke it. This requires six hours of light work in a stationary location over three days, as well as an Animal Husbandry (COG) or Fieldcraft (COG, TN -2) skill check. Smoking requires a ready source of firewood, while salting requires one kilogram of salt per 10 kilograms of meat. Success preserves the meat for (8 + MoS) months.

Ranching

Hunting and trapping aren't the only ways to get meat on the table. Some domesticated herds survived the demise of their owners, as well as weather and fallout, and are now semi-feral but still biddable. In other areas, surviving or newly-established ranchers are aggressively breeding their stock to the maximum number of heads allowed by their available grazing land. A food supply is important to any community, and cows or sheep may be considered more valuable than human life.

Without refrigeration, it's easier and safer to drive livestock across country than to kill them, preserve the meat, and then transport it. Martial-inclined characters may receive job offers to protect a cattle drive, or may find a ranch to be a ready-made base of operations. Farmers and ranchers may work together, or may be engaged in vicious disputes over croplands and grazing areas. Predators of all kinds will be attracted to large concentrations of livestock.

An adult cow consumes roughly 100 kilograms of forage per day, with half of that weight being deposited back on the land as waste. The amount of grazing area needed per animal varies depending on species, terrain, food quality, irrigation, and other factors. The following table summarizes pasture requirements for several common types of livestock and draft animals, assuming average grazing land. Double or triple these requirements for poor or marginally-habitable land, and reduce them by one-third for fertile, well-tended, and well-irrigated pasture.

Animal	Pasture Area
Cow	2.4 hectares
Donkey	0.8 hectare
Goat	0.1 hectare
Horse	2.4 hectares
Pig	0.15 hectare
Sheep	0.4 hectare

Table 6q: Farm Size

Unorthodox Options

During the Collapse, desperate people hunted whatever was available. City zoos were quickly depopulated. Dogs and cats have become very rare in such areas due to widespread consumption of pets. However, populations are now rebounding, albeit mostly feral and wary of man. Rats and pigeons were also targets, but both reproduce prolifically and have edible meat on their bones. Some communities without breeding stock for larger animals have taken to raising former pets and vermin as penned livestock in order to ensure a continuous food supply.

Threats

Although there are numerous dangerous animals in the world, not all of which are traditional scavengers or predators. Most wild and feral animals still fear man, though this is changing. The Twilight War's effects and after-effects have already caused mass migrations, leading to territory and population pressure. In many areas, wild animals are breeding faster than humans, which further contributes to these problems. Domestic animals go feral in a surprisingly short amount of time, sometimes losing

respect for man in the process. Pigs have been known to go feral in a matter of weeks after being released to the wild and can be aggressively territorial. Packs of feral dogs now roam the ruins of cities even after man has tentatively reasserted control.

Animals generally attack humans for one of three reasons: fear, food, or family. Fear typically motivates animals to flee before fighting, but cornered creatures will turn and fight for their lives. All but the most docile herbivores can inflict at least some degree of damage.

Hunger is a universal motivator for all animals. Carnivores and omnivores are very likely to attack lone humans or small groups, particularly those who aren't traveling with noisy mechanized assistance. Some communities are now menaced by predators who have acquired a taste for human flesh.

Above all else, animals will fight to ensure their reproductive futures. This rarely brings humans into conflict with animals - unless they intrude into dens or nests. Many animals will attempt to decoy threats away from their offspring.

Insects also present a myriad of threats - not usually through their own natural weapons, but through the diseases they carry. The disease rules (see p. 175) present only a small sample of these hazards, which include malaria, yellow fever, dengue fever, Japanese B Encephalitis, Filariasis, lyme disease, leishmaniasis, sleeping sickness, chagas disease, typhus, and bubonic and pneumonic plague.

Larger animals carry their own arrays of diseases. In addition to rare but deadly rabies outbreaks, animal bites and scratches usually cause bacterial infection that can severely inflame even the smallest scratches. Cattle can carry anthrax which, though usually confined to the skin in human cases, can become far more serious. Livestock of many types can be infected with brucellosis, a severe flu-like disease that is communicable to humans (if so desired, treat as influenza - see p. 178). Improper sanitation, such as placing pastures upstream from population centers, can contaminate water supplies with waste products.

Wheels — err, Hooves

Survivors have many uses for animals other than as food sources. A horse is not as fast as a truck, but it still gets the rider there, and a team can pull a sizable cargo. An ox can provide steady power for a pump, grain mill, or electrical generator. A working dog can assist with herding work or can be a better perimeter warning system than any mechanical sensor. All of these uses stem from the use of the Animal Husbandry skill to domesticate wild animals and train domestic ones.

CHARACTER IMPROVEMENT

That which does not kill your character is likely to make him stronger - if he learns from the experience. The following rules address the ways in which his capabilities can improve over the course of play.

SKILLS

The surest way to get better at a skill is frequent practice. The Reflex system represents this through *learning experiences*, in-game events that provide the mechanical possibility of improving the skill that the character was using during the experience. On the character sheet, three boxes are located next to each skill. Whenever your character undergoes a learning experience, check one of the boxes next to the appropriate skill. The following events are considered learning experiences:

- **Extraordinary Success in the Face of Adversity:** You make a skill check with a total modifier of at least -5 and succeed with a margin of success of 5 or more.

- **Catastrophic Failure:** You fail a skill check, and at least half of the dice you rolled come up 20s. This doesn't count as a learning experience if your character's rating in the affected skill is Unskilled, as he has to have some minimum basis for understanding before he can learn from his mistakes.

- **Assistance:** Your character assists in a successful skill check in which the primary character's skill rating is at least three levels greater than his own.

- **Roleplaying:** The GM may, at his discretion, award a learning experience as a reward for particularly good roleplaying involving use or discussion of the specific skill. In the interest of game balance, no character may receive this award more than once per session.

Learning experiences don't provide immediate benefits. Your character needs time — more specifically, at least a week of downtime — to reflect on what he's learned. During downtime, you may make one percentile roll for each learning experience box with a check in it, to a maximum of three rolls for any one skill. If the roll is greater than or equal to your character's age, he gains one point in that skill. After making all rolls, erase all your check marks and starts the process over.

Training

Learning skills in the field can be impractical, slow, and sometimes dangerous if opportunities for practice don't often arise. Fortunately, your character can also benefit from the tutelage of a qualified teacher, which makes learning Artillery and Construction/Demolition a survivable experience.

Design Note: Training

The rules for training assume intensive instruction in highly-motivated small groups, which is the most likely situation when one PC teaches others a skill that may be critical to the team's survival. We do not claim to model the typical public high school's teaching efficiency with this system.

Design Note: Book Learning

Some skills are harder to learn from books than others. At the GM's discretion, training materials for any skill that primarily or exclusively involves physical effort are not available above an Unskilled level. Realistically, no one can become a sharpshooter or rock climber just from reading about guns or mountains.

GM Hint: Long-Term Campaigns

Some campaigns will encompass years of game time. In such situations, characters may be able to consistently sustain enough directed effort to improve their attributes. Our suggestion for such a situation is to award each character a single +1 increase to one primary attribute per year of game time. This should come during an extended period of downtime (preferably a month or more). Rather than allowing the player to assign this increase, the GM and other players should collectively decide which attribute the character is most likely to improve, based on his established history of actions and interests.

Training a skill requires 40 hours of instruction, spread over any amount of time. An instructor may train a maximum number of students at once equal to his Cognition value, and he must have a *value* (not rating) in the skill he is training that exceeds the rating of each student. Once 40 hours of instruction are complete, the instructor makes an Instruction (PER) skill check. This check suffers a cumulative -1 penalty for each full week over which the training occurred.

If the instructor's skill check succeeds, each student makes a Cognition check. If this check succeeds, the student gains 1 point in the skill being trained.

Book Learning

In the absence of a teacher or direct experience, your character can attempt to pick up some knowledge of a skill through textbooks, shop manuals, and other instructional material. This self-directed study is neither as efficient nor as quick as other methods, but it's the only way that many isolated survivors are now learning the trades necessary to arrest the continuing fall of human civilization.

To learn from instructional material, your character must have a sufficient understanding of the topic. Furthermore, the material's complexity determines whether or not he can use it. If your character's skill rating is less than the material's own rating, it's too complicated for him to use. Conversely, if his skill rating exceeds that of the material, he already knows everything it contains. Training material is available at Unskilled through Competent ratings; if your character's skill rating is Professional or higher, he can't further improve from books.

Absorbing training material requires 20 hours of study per level of its complexity (e.g. two weeks for material with a Novice rating). At the end of this period, make an Education check. If you succeed, your character's study time counts as a learning experience. If the study occurred during downtime, you may immediately make the standard roll to convert a learning experience to a skill point. No character may ever receive more than 3 learning experiences from any given piece of training material.

QUALIFICATIONS

Qualifications, like skills, can be acquired during play. However, unlike skills, the only way for your character to learn a new qualification is to study under an instructor. Qualifications represent specialized or complex variations on the basic principles of their parent skills, and it's generally a bad idea to become a surgeon through self-directed trial and error.

Training a qualification is an incremental Instruction (PER) skill check with a target total of 5 and a period of 40 hours of instruction. As with a skill, an instructor may train a maximum number of students at once equal to his Cognition value. He must also have the qualification that he is teaching, though his rating in the skill does not have to exceed that of his students. Each skill check suffers a cumulative -1 penalty for each full week over which that 40 hours of training occurred.

If and when the incremental skill check succeeds, each student makes a Cognition-based skill check, using his own rating in the appropriate skill (e.g. after being instructed in Seamanship/Sailing, each student makes a Seamanship [COG] skill check). With success, the student acquires the qualification.

ATTRIBUTES

Your character is born without any skills and learns them through practice, training, and experimentation. However, attributes are a more intrinsic part of him, determined as much

by genetics as by life experience. A one-point increase in the value of an attribute literally represents years of development. The opportunity for this sort of improvement just isn't available in most campaigns, as characters are too focused on simple survival to concentrate on months of weight training or advanced academic studies. For this reason, your character's primary attribute values are fixed once play begins and cannot be improved above their starting values.

Combat Attributes

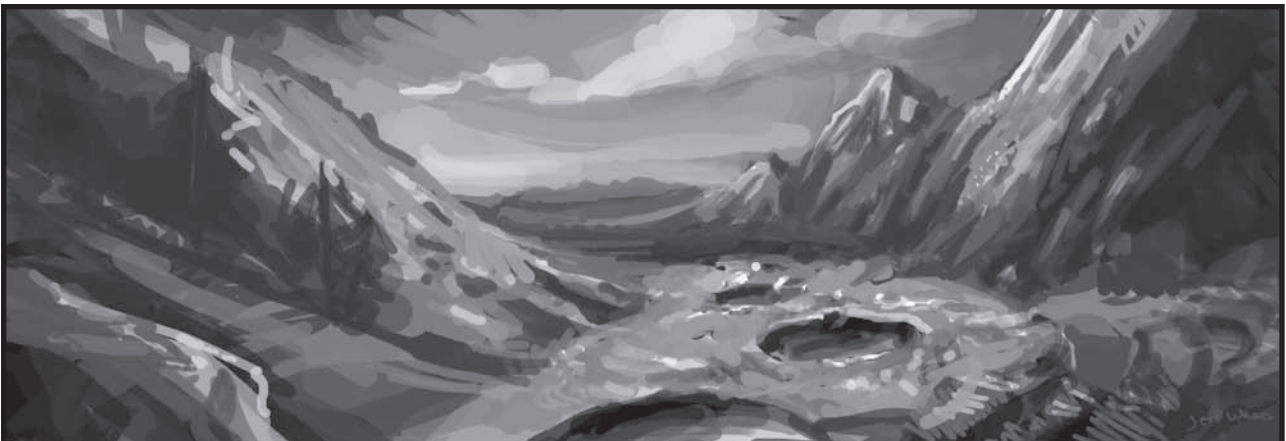
CUF and OODA are exceptions to the general rule against attribute improvement because they are products of both natural inclination and protracted experiences. Therefore, it is possible for your character to improve these attributes through repeated exposure to (and action in the face of) lethal threats.

Whenever your character survives a combat scene in which he took at least one action other than movement, he gains 1 improvement point (IP). When he enters a period of downtime with at least 10 accrued IPs, choose either CUF or OODA and increase its value by 1, then reset his IP total to zero.

ADVANTAGES AND DISADVANTAGES

For the most part, advantages and disadvantages are intrinsic parts of your character. In the case of advantages, you paid skill points for them (or got lucky during a Hazardous Event Table roll), so they represent an investment of some value. Conversely, you most likely received skill points in exchange for taking disadvantages during character creation, so easily eliminating those disadvantages bends, if not breaks, game balance.

With this said, many advantages and disadvantages can be lost or gained through sufficient effort. If you want to change one of these traits in an advantageous manner, ask your GM what sort of task is required. Conversely, your character's actions during play may lead your GM to remove an advantage or impose a disadvantage on him.



CHAPTER 7

EQUIPMENT

Before the Collapse, I took a lot of stuff for granted. Something breaks? Buy a new one. Need batteries, fuel, soup, pants, a new memory stick? Run down the the corner store.

If only.

I flew into Iraq with a lot of gear. Some of it broke – I bought cheap, and it wasn't ready for a war. A lot of it burned with the hotel. That which I still have left is precious, both because it's from home and because I know I can rely on it. And I've picked up some other stuff along the way, too.

First: boots. I love my boots. Perfectly broken-in. They used to be my spare pair. I bought 'em at an REI store about a month before I came over. I do not think the salesman believed me when I told him where I was headed.

Then there are the tools of the trade: my cameras. There are many like them, but these are mine. One digital, one 35mm SLR that was my parents' graduation present to me. The digital rides in a padded NVG pouch on my vest; the SLR stays wrapped in a towel inside an ammo can unless I'm sure it's safe to bring it out.

The vest is the one the Army issued me when I embedded. Everything I absolutely can't live without stays attached to it: water, snacks, ammo, trauma kit, a few very basic wilderness survival items. If I beat the dust out of it, I can see the original digital camouflage pattern.

I still carry Maggie, the AK-47 I picked up from an Iranian acquaintance. I named her because, at the time, I thought that's what you're supposed to do. If the platoon's M4s are prom queens, Maggie's a biker chick. But she gets the job done.

The most important things I carry, though, are these notebooks. I've captured the last two years in these stained, battered volumes. Every chance I get to steal current from the solar cells, I boot my slowly-dying laptop and spend a few hours transcribing typed notes into longhand. It may be a pointless gesture, but it's what I *do*.

Every gun that is made, every warship launched, every rocket fired signifies in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed. This world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children. This is not a way of life at all in any true sense. Under the clouds of war, it is humanity hanging on a cross of iron.

— Dwight D. Eisenhower, speech to the American Society of Newspaper Editors, 16 April 1953

In the consumer culture of pre-Collapse industrial nations, most people defined themselves as much by their possessions as by their own identities and capabilities. From clothing to transportation to portable electronics, personal property was an inseparable component of personal image. In 2013, personal property tends to define a character on a more basic level: without certain gear, he's likely to be dead in days or months. This chapter describes the personal equipment, from armament to water filtration, that is essential to survival after the fall of civilization.

POST-APOCALYPTIC ECONOMY

The realities of supply, demand, and commerce in 2013 occupy a strange middle ground between the prewar economy and the typical Cold War image of a post-nuclear wasteland. Despite the massive damage wreaked by weapons of both local and mass destruction, a surprising majority of durable goods escaped destruction. The world took less than a year to go from a normal, if unsteady, industrial and information economy to the universal disorder and breakdown of the Collapse. There simply wasn't enough time for humanity to wreck all of its previous work before most people died.

Most expendable resources, on the other hand, disappeared during the Last Year with frightening speed. Rates of consumption in a global crisis state vastly exceeded even the most pessimistic estimates, and the production facilities for some of the most critical resources were among the first industries to be disrupted. Most centralized public utilities went out of commission due to infrastructure damage, so the tools necessary to make the supplies are even now unavailable.

The end result of this dichotomy is that material wealth in pre-Collapse terms is relatively easy to acquire. Characters will need to exercise a bit of creativity in looking for the things they want, as all of the easy pickings are gone, and they're much more likely to find property in need of clean-up than pristine and factory-fresh gear, but plenty of property remains to go around the surviving 10% of humanity. The problem is in locating or replacing the now-rare consumables required to make full use of that wealth – and to survive to enjoy it.

TRANSACTIONS

The economy of 2013 is much less abstract than that of the immediate prewar period. Electronic fund transfers and credit cards are things of the past. This section discusses the ways by which survivors now exchange goods and services.

Cross-References

This chapter contains rules for how characters acquire gear and what it does. Because we're idiosyncratic, other chapters also contain rules relevant to this gear. Chapter Five contains rules for damaging gear during combat (see p. 154). Chapter Six contains rules for wear, maintenance, and repair (see p. 184). Chapter Eight describes vehicles.

Barter

The simplest – and, in 2013, the most common – means of conducting transactions is barter. Quite simply, this is a process of negotiation by which two characters come to an agreement over the relative value of items or work to be exchanged: “I’ll fix your truck’s engine if you give me those four chickens.” Barter rarely occurs without some back-and-forth haggling. Each involved party wants the best possible deal, and will try to represent his bargaining position in a favorable light: “Four? No, my good fellow, these chickens are valuable egg producers. I’ll give you two of them and this fine can of peas.”

Trade Goods

In survival and subsistence economies, material wealth directly relates to a character's supply of daily necessities. Local economies enjoy surpluses and shortages based on what was in warehouses and rail yards when the world stopped working, but certain consumable goods have become near-universal commodities. These can be exchanged for services or other goods in virtually any community, though their relative value can fluctuate wildly from day to day and town to town. These trade goods include medical and hygiene supplies, small arms ammunition, batteries, food, and livestock and draft animals. Fuel is also a highly-valued trade item, though few locales have enough to meet local demand, let alone export it.

In addition, certain books have astronomically increased in value over the Last Year. Printed reference material for survival, agricultural, medical, and reconstruction skills is in high demand. A book's trade value directly relates to its instructional utility for a particular audience and the local need for the skill set it describes.

Cash

With the collapse of many national governments, the paper currency that they once issued is now all but worthless. Starving citizens can't eat money. However, communities that are stable enough to be operating on a level above barter do still have a need for physical representations of monetary value. Many such areas across the globe have independently come to the same conclusion: gold still works. Precious metals have no more nutritional or tactical value than paper, but they are themselves a limited commodity to which a near-universal cultural significance is attached.

No global standard exists as a formally agreed-upon measure of value in gold. For game purposes, the effective standard of cash equivalence is one gram of gold (currency symbol GG, as in “GG1,200”).

Colorful Paper

While the national governments that printed paper money may be dissolved, destroyed, or bankrupt, large numbers of paper currency notes are still extant. For the most part, these have little to no value except as souvenirs of a home that no longer exists. However, many survivors like to keep a few folded bank notes in reserve; most paper money was printed on paper with a high linen or cotton content, so it makes good firestarting tinder.

With that said, there are still isolated regions whose residents have agreed among themselves to continue using the paper currency to which they were accustomed. These will generally be small communities which were lucky enough not to be displaced

by the Collapse. The residents, surviving alongside people that they know and trust, use their familiar dollars, pesos, or yen within the community, falling back on barter or gold for trade with outsiders.

Because of the amount of personal trust inherent in a paper-based transaction, it does not avail the casual bandit to try to load up on bank notes through pillaging old banks or robbing the locals. The community will not do business with a foreign criminal, and the next closest settlement may or may not have any interest in the paper money.

Credit

For many former consumers, one bright side of the apocalypse is that their credit ratings are no longer relevant. Mortgage payments aren't much of a concern any more. Conversely, a triple platinum card is now worth only the plastic on which it's embossed.

Without centralized financial institutions to track a character's financial history, credit is once again a matter of a lender's personal trust in the borrower's ability and willingness to repay a debt. It's also a matter of survival: most people in 2013 can't afford to wait around for payment next week when they need to buy food today.

If a seller does have enough reserves to enable him to extend credit, convincing him to do so requires an opposed social skill check (PER, TN -3). Modifiers may apply based on the character's apparent wealth or ability to obtain it. If the reputation rules (see p. 326) are in play, the character's Skill (in mercantile or financial matters), Integrity, or Service aspects may be applicable.

Buying and Selling

The economy of 2013 is more of a free market than the retail-dominated one of the 20th and early 21st centuries. Few sellers offer their goods or services for absolute fixed prices, and virtually every buyer is willing to haggle a little to get the best possible deal. Characters who throw their gold or trade goods around without negotiating on value are likely to be seen as desperate or having wealth to burn, either of which can make them targets in a variety of ways.

Design Note: The Gold Standard

We've used the gram of gold as a convenient measure of value that makes a certain amount of sense in the post-Collapse world. This brings to mind unfortunate connotations of the "gold pieces" so common in fantasy RPGs. Readers who have trouble getting their heads around this anachronism may mentally convert grams of gold to dollars. The conversion rate we used to establish the barter values in this book is one gram of gold to \$20 in 2007 United States dollars.

Most characters who deal in gold (rather than simply trading for bullets or calories) won't see actual gold coinage. Rather, they'll more likely encounter salvaged scraps, melted-down jewelry, or whatever other snippets of gold their trade partners have scraped together. With this said, several countries did strike gold currency in the 20th and 21st centuries, though mostly as collector's items rather than actual circulated coin. Two exceptions which are likely to be in circulation in 2013 are the British Sovereign (game value GG7.32) and the South African Krugerrand (game value GG31.10). Both of these coins enjoy a certain amount of notoriety. Western aviators as early as World War II carried Sovereigns in their survival kits for buying aid from locals, and both Krugerrands and Sovereigns were associated with spies and mercenaries throughout the Cold War.

In game terms, financial negotiations – whether cash or barter – can occur in two ways. The first is simple roleplaying: the players negotiate the transaction from an in-character perspective, with the GM taking the role of the NPC involved in the deal. Alternately, it can occur mechanically via an opposed Persuasion (PER) check. The winner may increase the relative value of his offering by his margin of success times 5%. For example, if a character has a collection of canned food with a book value of GG500 and attains a margin of success of 4, he may add 20% – another GG100 – to the food's relative value for this transaction.

This chapter provides *suggested* barter values for items. These represent standard or average values, but they are not absolute. The actual value of an item in any given situation or area can vary widely based on need and desire. For example, a farmer is not likely to have any personal use for a main battle tank, regardless of its prewar dollar value, but he may give the shirt off his back in exchange for a few cartons of cigarettes. Ultimately, the GM is the final authority on the starting value of any item, as well as whether or not a given trading partner is willing to accept it in exchange for his own goods or services.

SUPPLIES AND DEMANDS

The rapid and violent collapse of industrialized civilization and the catastrophic casualties of the Last Year have produced a unique economy in terms of supply and demand. Some formerly valuable items are now readily-available but worthless, while commodities that most citizens used to take for granted are now rare and precious. The following sections describe the availability, or lack thereof, of certain items and resources.

Simple Goods

In general, most simple goods – simple manufactured items with no electronic or motorized components – are in good supply. In sparsely-populated areas, items common to households or small businesses are free for the taking if a character wants to spend a little time searching and salvaging. Many aren't in the best condition, but hand tools and winter coats don't need to be pristine to get the job done.

With this said, quality determines both scarcity and value. The more durable or efficient the item, the less likely that one is simply sitting around waiting for someone to find it. For example, high-grade camping equipment, which commanded a premium price at prewar outfitters, is prized by anyone who maintains a mobile lifestyle. Such items as personal water filters, lightweight sleeping bags, and backpacks with superior load-bearing ergonomics are all in high demand.

Vehicles

Passenger and civilian cargo vehicles are readily available in most areas of the world in which they were present before the Collapse. Few are in pristine condition – civil unrest, evacuations, military action, EMP effects, and casual vandalism all took their toll. However, even the most war-torn of regions have ready supplies of defunct vehicles that can be restored to working order with a dedicated reconditioning effort. It's safe to assume that in any industrialized nation, a mechanically-adept character can put together something with wheels and an engine.

With this said, not all civilian vehicles are suitable for use in the current environment. Most passenger cars were not built to withstand the abuse of constant operation in field conditions, nor do they have the cargo capacity necessary for carrying all of the equipment that the mobile survivor wants to keep. Only the mildly insane are willing to endure the inefficiency of rattling around the wastelands in salvaged muscle cars. Even some so-called "light

trucks” and “sport-utility” vehicles are woefully inadequate for sustained off-road operations, a fact that became lethally apparent to many evacuees during the Collapse. Fuel, of course, is always a major limiting factor in actually using the vehicles that a group manages to acquire.

Military vehicles are another story entirely. Attrition rates during the Twilight War were far in excess of even the most pessimistic planners’ expectations. Combat losses were exacerbated by maintenance casualties. As logistics networks collapsed, units in the field resorted to “cannibalism,” stripping some vehicles for parts in order to keep others running. For most nations’ equipment, the lack of common parts shared with civilian designs meant that even soft-skinned cargo vehicles couldn’t be maintained through salvaging or looting consumer and commercial vehicles. Stripped and burnt-out hulks are commonplace in all areas that experienced fighting, but virtually every combat vehicle that works (or can be made to work) is already claimed by someone with no desire to relinquish it.

Shipping

A large number of hulls survived the Twilight War, avoiding both nuclear exchanges and conventional naval warfare by the expedient of heading for less-traveled waters. By mid-2013, most of those vessels have made landfall, and their crews either have abandoned them or are stripping them for salvage. Few ships anchored offshore stay there for more than a few months if left unattended, thanks to wind and waves, so shipwrecks are common features in virtually all coastal areas of the world. For the surprisingly large number of ships that are still technically seaworthy, the prodigious amount of fuel required for a journey of any distance means that refueling is beyond the capabilities of all but a fortunate few port facilities.

Most naval hulls are now on the bottom of the ocean. Those that survived the war rarely made landfall in friendly ports, so were scuttled by their crews to keep them from falling into the wrong hands. Of those operational few, most are relatively small support or littoral combat vessels, which are equally likely to be in the hands of remaining national forces or rogues and mutineers. Rumors persist that nuclear-powered submarines are still at sea, but no confirmed sightings have occurred since midwinter. All known nuclear-powered surface vessels were destroyed, except for two aircraft carriers that were dry-docked when the Twilight War began and now remain immobile without fuel for their reactors.

Aircraft

The first nuclear exchange effectively ended civil aviation in late 2012. Of those aircraft that were actually airborne at the time, few survived the effects of EMP on both air traffic control networks and their own avionics. A large number of major airports subsequently fell prey to civil disorder. Few airliners or heavy transports now remain in flyable condition. Private planes enjoyed a greater survival rate because no small number of pilots used their craft to evacuate their families to real or imagined safe areas. The bottom line is that small airplanes are available to particularly dedicated scavengers, but the necessary grade of fuel is almost impossible to acquire. Alcohol conversion is possible for some small piston engines, but this places severe limits on range, ceiling, and cargo capacity.

Military air power is a thing of the past. The effectiveness of anti-aircraft defenses in open warfare resulted in horrifying casualties during the opening weeks of most conflicts. Those warplanes that weren’t blown out of the sky or destroyed on the ground now sit neglected in their hardened shelters, as no surviving refineries are currently producing jet fuel. Some relics of the early Cold War era remain in Third World nations whose threat environments were less intense, but they, too, are invariably grounded by the same resource shortages.

Real Estate

Claiming land or buildings is a hit-or-miss proposition. If an area suffered extensive damage from a nuclear strike or a conventional battle, it’s unlikely that any structures remain that will provide more than the most basic shelter and concealment. Even in communities that didn’t sustain such damage, later accidents often had the same net effect. Far too many fires started by a cooking or heating accident grew to consume vast stretches of cities and suburbs, raging unchecked due to a lack of water pressure with which to fight them. In many former urban areas, it’s possible to travel for a kilometer or more without seeing an undamaged structure.

In areas that escaped direct conflict or large-scale accidents, pickings are much better. Entire neighborhoods now stand empty, their residents having died or moved on since the Collapse. Unless a given building was abandoned before the war, it has endured only a year or so of neglect and is likely to still be structurally sound. Assessing a given structure’s suitability for habitation or other uses is a Construction (COG, TN +3) check.

Outside former population centers, structures tend to have sustained less in the way of random damage. However, where urban buildings were destroyed *en masse*, those in rural areas have often received personal attention. Vandalism, arson, accidents, and smaller-scale combat conspire to make worthwhile structures in rural areas just as rare as those in cities. In addition, a larger number of such buildings are already claimed by survivors who prefer to avoid both formerly- and currently-populated areas.

Land

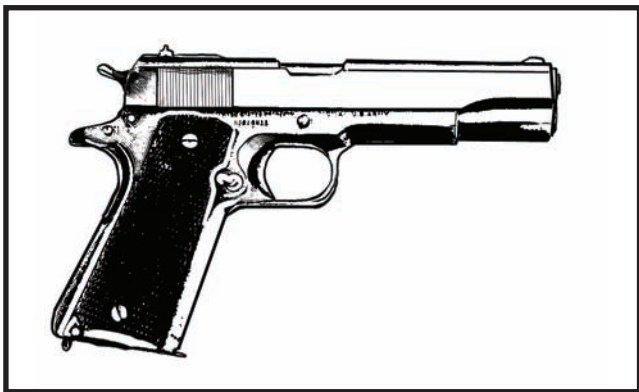
Land, formerly seen by many as deriving its worth from what could be built on it, is once again valuable for its natural assets. Rich farming soil, clean water, a defensible location, mineral or timber resources, and simple accessibility or inaccessibility are all prime considerations for selecting a location in which to live. With most of the surviving population currently unable to sustain more than an early industrial level of technology without outside help, agricultural considerations are foremost. Thus, fertile farmland is by far the highest-value acreage in most communities.

Land ownership is yet another matter in which possession is nine-tenths or more of the law. Regardless of what property records say, in most locales, land belongs to whoever can claim and use it. Few characters will find someone willing to sell “rights” to land, except to the gullible.

Electronics

Across most of the northern hemisphere, EMP took a savage toll on unprotected electronics. Telecommunication equipment, entertainment devices, navigation aids, and a host of other consumer goods instantly ceased to function after the blasts. The much lesser extent of nuclear warfare in the southern hemisphere resulted in a correspondingly reduced swath of destruction, but those devices in areas that were affected suffered just as greatly.

The good news is that EMP wasn’t all-consuming. Even with more than 99% destruction of unshielded and unprotected electronics, the industrial output of the last twenty years meant that enough equipment was in circulation for quite a bit to survive. Some did so by accident or geography, being located in deep basements or mountain valleys that sheltered them from the electric fields generated by the bombs. Others made it through the blasts due to deliberate precautions taken by their owners. In addition, certain military-grade equipment was designed to endure EMP and is still functional – albeit not always in optimum condition – despite repeated exposure.



Simpler electric equipment without electronic controls fared much better. EMP isn't intense enough to destroy switches, relays, or electric motors. Simple electrically-powered devices like flashlights, small household appliances, and power tools are likely to be in working order. The limiting factors in their continued operation are power sources.

The net result is that examples of most electronic equipment are rare but still in circulation. However, their trade value rarely corresponds to their prewar dollar value. Instead, the most valuable are devices that can directly contribute to survival or combat capability: chemical hazard detection systems, night-vision optics, electronic gunsights, and the like. Communication and navigation equipment runs a close second as more communities tentatively seek to contact their neighbors. Few survivors have sufficient leisure time to waste on entertainment devices.

Computers and the Internet

One of the Internet's original design criteria was nuclear war survivability. However, the original ARPA designers did not envision a global information culture running on a network overloaded with high-bandwidth multimedia content. When the initial nuclear attacks destroyed a large number of central routing nodes, the remaining ones crashed within an hour, overloaded by communication traffic from a world desperate for news. Some nations deliberately shut down their networks in failed attempts to mitigate panic via information control. In the subsequent months, continued infrastructure loss has effectively destroyed the Internet.

Individual computers, whether personal, server, or mainframe, fared no better than the networks on which they communicated. The more sophisticated the electronic component, the more susceptible it was to EMP. Billions of dollars worth of processors fried instantaneously. Of those that remained functional, circumstances were similar to those for other electronics, but the margin of survival was narrower.

At present, computers are only of use or interest in limited roles. Governments, whether old or new, are hungry for data collection and management systems. Reconstruction efforts that involve extensive civil engineering will pay dearly for a computer capable of handling the necessary math. Agencies involved in restoration of order need access to the staggering volumes of prewar data – censuses, land surveys, crop and weather records – that exist only in electronic format. Military and espionage organizations hunger for intelligence data from the final months of the war.

For now, the only networks that exist are physically-isolated LANs within industrial or government headquarters. Not even the most protected and aggressively-motivated communities have yet restored their utility companies' data networks. Remote hacking is a thing of the past. Characters who need access to a specific computer must gain it physically.

Data Storage

The total amount of information lost in the war may never be known. Magnetic media not specifically protected against EMP was horribly vulnerable. Any computer whose processor was destroyed can reasonably be assumed to have also lost anything stored on its hard drive. Flash memory systems were hit equally hard. Optical data storage, on the other hand, is invulnerable to EMP. Anything stored on CD or DVD is still readable with working hardware.

Most governments and large corporations took precautions against data loss – not necessarily against the specific threat of nuclear war, but as general insurance against disasters. Off-site data backup facilities tended to be hardened against EMP as an incidental part of their resistance to fire, flood, and seismic activity. Magnetic media stored in such facilities is still viable, assuming no physical mishaps befell it.

Weapons

The world of 2013 is a dangerous place, with the greatest threat coming from other humans. Despite vastly-reduced population pressures, resource shortages continue, as does simple predation for no reason other than expediency or personal inclination. Thus, all but serial victims and the most dedicated pacifists are completely unarmed.

Common close combat weapons – blades and blunt implements – are just simple tools, and thus are commonly available in virtually any area. High-quality metal, wood, or polymer may be more desirable, but a perfectly functional knife or hammer can be acquired with ease. More purpose-built weapons such as swords are much harder to find, as most pre-Collapse production focused on decorative replicas completely unsuitable for actual combat use. Despite ammunition shortages, firearms remain the dominant personal weapons of the era, so the smithies and forges now coming online are focusing on tools rather than armament.

Firearm availability varies widely, subject primarily to the prewar laws of the region in question. The commonness of any given firearm is directly proportionate to the extent of prewar civilian ownership. Thus, handguns are much more common in the Americas than in Europe, and hunting rifles and shotguns are found virtually everywhere. Unlike simpler tools, however, few firearms are free for the taking. Most guns left unattended and not well-hidden have already been claimed – if not out of need, then in order to keep them from falling into other hands. In areas with surpluses, civilian weapons are available for purchase on the open market.

Military small arms are now universally available, if not in the same amounts as civilian guns. Few areas of the globe did not see military action, if only in internal security operations, and casualty and desertion rates resulted in a large number of military weapons falling into civilian hands. Without proper training in their use and maintenance, however, all new owners have not taken proper care of their assault rifles and machine guns, so reliability is sometimes questionable. In more organized communities, such arms are redistributed to local militias. These groups often are formed around veterans of previous wars, and thus some standard of training is present. Open sale of military firearms is much less common than that of civilian weapons, except in regions which saw the heaviest fighting of the Twilight War and now have a ready supply of battlefield salvage.

Heavier weapons are, at best, hard to come by. Those that weren't destroyed in combat remain in the hands of military or paramilitary units – who aren't always the original owners. Ammunition for heavy weapons is scarce at best, with guided warheads nearly nonexistent by now. Only the most successful arms merchants have a surplus of heavy weapons with which they're willing to part.

Animals

Animals of many sorts are more desirable, though harder to maintain, than they were before the Collapse. Horses and oxen are needed for transportation and farming, as vehicles and fuel are in short supply. Livestock of various sorts supply milk and meat. The once-humble house cat is recruited to help control exploding populations of rodents which carry diseases and prey on crops, and the dog is relearning his old roles as hunter's helper and protector of the house.

Livestock exists in small herds in rural areas. Large herds are rarely seen, as veterinary care and medicine are scarce. When even lifelong farmers are struggling to keep their animals alive and healthy, novices will have a difficult time learning the intricacies of animal husbandry.

Smaller animals like cats and dogs are generally more plentiful, as well as more self-sufficient. One rarely sees pampered house pets anymore; most animals that live with humans earn their keep. Feral cats generally keep to themselves, while feral packs of dogs may become nuisances or even hazards to communities and travelers alike.

During the Collapse, many domestic animals were shortsightedly slaughtered for food. Those that remain were likely under farmers' protection - or were wary enough of man to avoid notice. Capturing and re-domesticating these ferals is an ongoing source of work for those with the necessary acumen.

TRADE

Commerce in 2013 occurs on a much lesser scale than it did only a few years ago - between small communities rather than regions and nations. The same cycles of production and consumption are still at work. The primary differences today are ones of scale, technology... and the nature of the hazards facing a traveling businessman.

Traders

The retail distribution networks and shipping companies of the prewar era have been replaced by individual entrepreneurs. Some represent their home communities, such as a former farmer who now moves his neighbors' surplus crops to nearby towns in exchange for a share of the profits. Others have no support base and rely on luck, bargaining skill, or a secret cache of salvaged goods to keep themselves in business. These latter traders are more likely to follow irregular routes rather than sticking to a regular circuit with a small number of established stops.

Most goods travel relatively slowly due to the logistical complications of moving large loads. Few cargoes are valuable enough to justify the use of petrochemical fuel to transport them, and even alcohol substitutes are reserved for time-critical shipments. Waterways are regaining their former prominence, and river port communities are becoming major trade centers. A few areas with surpluses of labor and coal or wood are attempting to

Plata o ploma?

The phrase *plata o ploma* originated as Mexican drug gang slang addressed to a troublesome individual, indicating he had his choice of taking a payoff (silver - *plata*) or a bullet (lead - *ploma*). In 2013, it's become bastardized into a standard query in transactions: is someone trading in hard cash (usually precious metals) or equipment and supplies?

Among American servicemen stranded overseas, the standard response is a line from the film *The Magnificent Seven*: "We deal in lead, friend."

restore limited local rail service with mothballed or museum-piece steam locomotives. Off these major arteries, most cargo travels by horse- or ox-drawn wagon. Merchants tend to prefer convoys for mutual aid and protection, as the nature of their business makes them more attractive targets than the usual refugee or wanderer.

The Salvage Economy

One unique aspect of the post-apocalyptic economy is the role of salvage as a primary means of "production." As has been discussed throughout the preceding sections, the death of nine-tenths of the world's property owners has left a massive amount of manufactured goods unclaimed, even taking into account the devastation of the Twilight War. In many cases, the facilities responsible for the production of these items cannot be restored to function without years or decades of directed effort. For the short term, existing stockpiles are the only sources for many such goods.

The speed of the Collapse left many goods in whatever points of their distribution networks they occupied at the time the system stopped working. Abandoned trains, trucks, and warehouses may be full of spoiled or worthless goods, or may stand empty - or they may contain tons of priceless batteries, spare parts, or canned food. Within a few years, most such treasures are likely to be found and used. For now, a "salvage rush" is in effect, with thousands of survivors across the globe gambling on the discovery of portable wealth.

ENCUMBRANCE

In a post-apocalyptic environment in which mechanical transportation may not be available, characters will often find themselves in situations that require them to carry all their worldly possessions on their own backs. A human can lift and bear a fair amount of weight, but doing so can have a significant impact on his athletic capabilities, including his freedom to maneuver in combat. The Reflex System's *encumbrance* rules reflect these realities.

Encumbrance Levels

Encumbrance is rated on a five-level scale, as described in the following section. A character's encumbrance rating is dependent on both the total amount of weight he's carrying (as per the weight limits established during character creation) and the relative ease with which he can maneuver his load. Even a single carried item can significantly impede him if it's particularly heavy or unwieldy. Conversely, modern load-bearing equipment can more ergonomically distribute the weight of a heavy pack or vest across the wearer's body, allowing him to carry a greater amount of gear than he could handle if he had to juggle a less-efficient set of containers.

Unencumbered

An unencumbered character has complete freedom of movement. He is neither weighted down with gear nor wrapped up in layers of clothing or armor. Unless otherwise noted, all rules in the Reflex System assume a character is unencumbered. Your character is unencumbered if he is:

- Carrying a total weight of gear less than his combat load.
- Wearing clothes suitable for warm (temperate spring/summer) or warmer environment.
- Not wearing body armor or a helmet.
- Carrying or wielding a single personal weapon of Bulk 2 or less, or two of Bulk 1 or less.

- Carrying or wearing no more than a single small bag, pack, purse, or other container.

Generally speaking, an unencumbered character is wearing and carrying the same amount of clothing and equipment that an average 21st-century individual has on his person in a typical classroom or office environment.

Mechanical Effects: An unencumbered character's combat movement and swimming ability are unimpeded. His travel speed is increased by 2 km/hr. His base initiative value is 15.

Lightly Encumbered

A lightly encumbered character has to work a little harder to achieve peak physical performance, but is still capable of performing most actions. At this level of encumbrance, the character is still comfortable in almost all conditions. Your character is lightly encumbered if he is:

- Carrying a total weight of gear less than his combat load.
- Wearing clothes suitable for a cool (temperate zone autumn) or warmer environment.
- Wearing motorcycle leathers, a light vest without trauma plates, or other minimal body armor, possibly with a helmet or protective gear (kneepads, work gloves).
- Carrying or wielding a single personal weapon of Bulk 3 or less, maybe with a holstered backup weapon of Bulk 1 or less.
- Carrying or wearing no more than a single medium-sized bag, pack, purse, or other container.

In general terms, a lightly encumbered character is wearing and carrying the same amount of clothing and equipment that an average 21st-century commuter carries to and from work or school, or the same amount of gear that a police officer wears for street duty.

Mechanical Effects: A lightly encumbered character cannot sprint. His travel speed is increased by 1 km/hr. All attempts to swim suffer a -3 penalty. His base initiative value is 12.

Moderately Encumbered

A moderately encumbered character is likely to be uncomfortable from time to time, but can move and, if required, fight. Characters carrying this much equipment often find it inconvenient to enter or exit vehicles or move through confined spaces such as interior hallways. Your character is moderately encumbered if he is:

- Carrying a total weight of gear less than his march load.
- Wearing clothes suitable for a cold (temperate zone winter) or warmer environment.
- Wearing a fireman's bunker coat, a fighter pilot's G-suit, a vest with trauma plates, or other significant body armor or equivalently bulky overgarments, along with a helmet and supplementary protective gear.
- Carrying or wielding a single personal weapon of Bulk 4 or less; he may have one or two backup weapons, each with Bulk 1 or less.
- Carrying or wearing a single large bag or pack, or a combination of load-bearing equipment and a smaller container.
- Wearing scuba gear on land.

This level of encumbrance is also referred to as "combat loaded" because it represents the typical amount of gear that a modern infantryman wears into combat. Alternately, this is the amount of equipment that an experienced backpacker carries for a week-long hiking trip.

Design Note: Encumbrance in Play

The system given here is intended to provide a narrative approach to encumbrance. Simple mass is rarely the single determining factor in how a carried load affects a character. Ergonomics and weight distribution are of at least equal importance, a fact that escapes many players who have no practical experience in sustained movement with heavy loads. A 30 kg load carried in a properly-adjusted backpack – close to the body's center of gravity and pressing directly down on its main load-bearing structures – is easier to carry and less tiring than an equal mass carried in the hands. Even the "insignificant" 4 kg mass of a loaded assault rifle can be fatiguing after eight hours of patrolling with it held at the ready.

The bulleted points that illustrate each level of encumbrance are only common examples, not exhaustive lists. The GM should feel free to rule on the side of practicality or enforce weight limits when a player attempts to evade the intent of these rules. Conversely, players may want to have their characters exercise a modicum of intelligence and restraint when loading up. Every excess kilogram carried is that much more pain and fatigue at the end of the day.

Mechanical Effects: A moderately encumbered character cannot sprint, and can only run for a maximum number of ticks per exchange of fire equal to his Fitness. His travel speed is unaffected. All attempts to swim automatically fail, and even trying to stay afloat requires an Aquatics (MUS, TN -4) skill check. His base initiative value is 9.

Heavily Encumbered

A heavily encumbered character is likely to be in some degree of physical discomfort on a constant basis. If called upon to fight or otherwise exert himself at peak capacity, one of his first priorities will be to ditch some of the crap that's weighing him down and making him an easy target. Your character is heavily encumbered if he is:

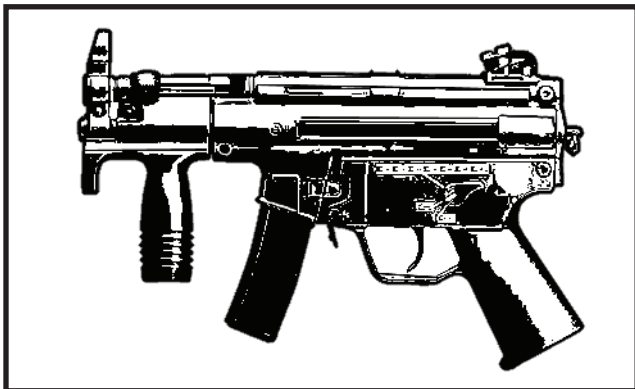
- Carrying a total weight of gear less than his emergency load.
- Wearing clothes suitable for polar winter.
- Wearing chemical protective gear, EOD armor, an airport crash rescue suit, or other enclosed fully-body protection.
- Wearing a space suit in microgravity.
- Carrying or wielding a single personal weapon of Bulk 5 or less; he may have one or two backup weapons, each with Bulk 1 or less.
- Carrying or wearing a single large bag or pack plus load-bearing equipment.
- Lightly encumbered but helping another character to move.

This level of encumbrance is also called "march loaded" because it represents the typical amount of gear that a modern infantryman carries for a sustained march or other field operation.

Mechanical Effects: A heavily encumbered character cannot sprint or run. In water, he sinks immediately. His travel speed is unaffected. His base initiative value is 7.

Overloaded

An overloaded character is staggering under his burden. Even if load-bearing equipment and a custom-fitted frame pack are distributing it across his entire torso, he's carrying more than he should.



Your character is overloaded if he is:

- Carrying a total weight of gear equal to or greater than his emergency load.
- Wearing a space suit in terrestrial gravity.
- Carrying a tripod-mounted or similar support weapon of Bulk 5 or greater.
- Carrying multiple large containers.
- Carrying another character.

Mechanical Effects: An overloaded character cannot sprint, run or walk – his only movement options are staggering and crawling. In water, his performance is similar to that of an anchor. His travel speed is halved and the fatigue effects of marching are doubled. His base initiative value is 5.

Feats of Strength

A character's damaging load threshold defines the maximum amount of weight he can lift without inflicting automatic injury on himself. If your character attempts to lift a load in excess of this limit, you must make a Resolve check. If you fail, your character fails to increase his maximum load but inflicts damage to himself equal to the margin of failure. If you succeed, your character may briefly – no longer than a single exchange of fire – lift up to an additional (20 x margin of success) kilograms. However, he also inflicts damage on himself equal to half the amount by which he actually exceeds his damaging load threshold. Roll hit location normally, re-rolling any head results; armor provides no protection.

Example: Keith attempts to pick up a crate full of bowling balls by himself. He makes a Resolve check and attains a margin of success of 4. He may lift a total weight up to his damaging load threshold plus 80 kg. The total mass of the crate plus everything he's already wearing exceeds his damaging load threshold by 14 kg. Keith strains himself and suffers Damage 7 to a randomly-determined location.

GEARING UP

Unless the GM is particularly harsh, every character begins play with a certain amount of equipment. In most cases, this will be significantly less personal property than the character was accustomed to having before the Collapse. In a post-nuclear environment, wealth is no longer measured in terms of money or comfort, but in terms of utility and survival. Bullets and calories are more valuable than euros and iPods. Additionally, many player characters live on the trail, and even individuals who have a stable base of operations don't have the time to accumulate a lot of excess clutter.

Design Note: Practicality

A word of caution to some players is in order. A character may have the weight allotment necessary to carry an anti-material rifle, or a group may be able to collectively muster enough equipment dice and luck to acquire a main battle tank. However, just because something *can* be done, it doesn't always follow that it *should* be done. **Twilight: 2013** assumes that equipment requires regular maintenance to keep it working in field conditions, and groups that don't have the time and skills to maintain their gear are not going to enjoy the consequences. In addition, there are precious few gun stores and tank maintenance depots left. The GM is under no obligation to provide additional ammunition, fuel, or spare parts for items that drastically unbalance the game. As if that weren't enough, groups with high-profile material wealth are likely to become high-profile targets for enemies who covet their toys. Don't say we didn't warn you.

Players are further cautioned against getting too attached to any particular piece of gear. The world of **Twilight: 2013** is as hard on equipment as it is on characters. Only a foolish or desperate survivor risks his life for unnecessary material wealth – and in that final equation, just about everything in this chapter is unnecessary in most circumstances.

PERSONAL EQUIPMENT

Personal equipment is just that: *personal*. It's used by one person, who, if he's smart, takes care of it as if his life depends on it. In many cases, it does. A character's inventory of personal equipment represents the small amount of gear that he considers essential to his continuing survival, sanity, and livelihood. Most of it has undergone a harsh Darwinian process in which items that were less rugged, useful, or reliable have been traded off or thrown away. If the character has to run or fight for his life, his personal equipment is probably what he'll grab first.

Selection

At creation, a character begins play with a *total weight of personal equipment no greater than his emergency load threshold*. By default, the Reflex System places no restrictions on this selection process. If a player wants to neglect the basics of survival in favor of loading up his character with high-value trade goods, he's free to do so. The GM is equally free to begin play by placing such an ill-prepared character in the middle of an uninhabited hostile wilderness in which his fortune in gold, batteries, and antibiotics is worthless.

With that said, the GM is advised to tailor the personal equipment selection process to guide wayward players toward the spirit of their campaigns. Some suggestions for appropriate guidelines include:

- Limit the number of items with a street or barter value greater than a certain threshold.
- Require characters to carry a standard basic list of equipment, particularly if they're current or former military personnel who've been issued specific pieces of kit.
- Establish the initial setting for the campaign and advise players that certain items would be a *really good idea* if they want their characters to survive the first few sessions.

Money

If he's traded well over the past few months, your character may have a small amount of money as part of his starting equipment.

GM Hint: I Don't Wanna Buy Pants!

An average starting character (all attributes at 6) begins play with 45 kg of personal equipment. Some players will want to equip their characters exclusively for combat and will object to the demands that such items as clothing, boots, and water filters place on this weight allotment.

The intent behind linking starting equipment to weight rather than value is to emphasize the fact that vehicles and permanent residences are luxuries that aren't guaranteed for a PC. In such circumstances, a character's semi-permanent wealth is limited to what he can carry on his back. If your players have a problem with this, you have a few options.

First, you can increase the weight allotment by a flat amount - say, 30 kg - per PC. This extra weight can only be used to acquire "mundane" items such as outerwear, cooking utensils, and lanterns. This allows players to kit out their characters for combat and still have a margin for comfort and survival equipment. In such a case, players really should acquire at least a couple of pack animals to carry this gear.

Second, you can abandon the weight-based allocation of starting equipment in favor of "cash" purchasing. With this option, we recommend a starting value of equipment between \$5,000 and \$50,000, depending on how well-equipped you want your PCs to be.

Finally, you can tell your players to suck it up. Admittedly, this only works if you have players who won't throw hissy-cows and leave the table. However, it's worth reminding them that the world of 2013 is a harsh and uncaring one. You can't eat mortar ammunition.

As previously discussed in this chapter, the cash economy of 2013 is largely based on precious metals. Make a Personality (TN +3) check; if you succeed, your character begins play with 100 + (25 x margin of success) grams of gold.

Personal Effects

Most survivors carry at least an item or two that has no game function or value to anyone but them. Letters from home, dog tags of fallen comrades, photos of friends and family, religious books or icons, jewelry, baseball caps with hometown team logos, and the last bottles of orange cream soda in all of Turkey are all considered *personal effects*. These have no mechanical impact on play, but as a roleplaying consideration, most characters are likely to have at least a couple of items of personal significance.

Benefits of Personal Equipment

A character is assumed to have a certain familiarity with his personal equipment, as he's probably been carrying it and relying on it for the better part of the Last Year. Accordingly, he is intimately familiar with how it functions in a variety of situations and knows what level of performance to expect from it. Personal equipment thus grants a minor but useful benefit in game terms. Whenever a character uses an item of personal equipment for any task, the total penalties imposed on the task are reduced by 1 (in addition to any bonus the equipment may provide normally). For example, if a character is performing surgery with a total penalty of -5, use of surgical tools from his personal equipment reduces the penalty to -4. At the GM's discretion, use of personal equipment in a situation where no task check is required may grant a similar minor benefit, such as reduced time or enhanced quality of work.

Because this benefit relies on extended familiarity, a character can't simply pick up anything, call it "personal," and instantly receive this effect. The total weight that can be considered personal

equipment is always restricted to the character's initial limit of his overload encumbrance capacity. In addition, the character must regularly carry, maintain, and use a newly-acquired item for three months of game time before he attains sufficient familiarity to consider it personal equipment. Finally, an item may only be part of one character's personal equipment at a time. Sharing a radio or a spotting scope doesn't allow multiple characters to spend enough time using it to develop intimate familiarity with it.

Example: *Matt has acquired a new anti-material rifle and wants to designate it as personal equipment in order to receive the mechanical benefit. The rifle weighs 16 kg. First, Matt must consistently carry and use the rifle for three months. At the end of this time, he must "abandon" enough existing personal equipment to add 16 kilograms of mass to his personal equipment list. This represents the fact that Matt has neglected certain other items in favor of his new gun and has lost the slight edge in proficiency that he once had with them.*

The status of personal equipment does not provide any special protection or story immunity to any piece of gear. Items of personal equipment are destroyed just as easily as anything else.

GROUP EQUIPMENT

From a game perspective, group equipment is everything that the characters own that isn't part of someone's personal equipment. This may be tools that only one person uses, or it may be vehicles that everyone in the group takes turns driving. Likewise, depending on individual views on communal property, a single character may consider any given item "mine," or the whole group may consider it "ours."

Selection

During character creation, every character receives one or more *equipment dice* from his Last Year phase. Every equipment die represents a single 1d6 roll on a group equipment table of the player's choice (see p. 210). Some of the group equipment tables allow a player to use two or three equipment dice at once, rolling 2d6 or 3d6 in hopes of getting a higher-value result. These random

Stage III Option: Personal Equipment Sacrifice

The following optional rule provides a means of enhancing character survival, but also introduces a measure of cinematic "reality."

Once per combat scene, when a character suffers damage, the player may choose to sacrifice an item from the character's personal equipment to negate the injury. Once the player declares that he is exercising this rule, the GM chooses the specific item which takes the hit. This does not represent any conscious action on the part of the victim. Instead, it models the erratic and unpredictable luck of a St. Christopher medal deflecting a bullet or a last-second panicked parry of an axe blow with the butt of a rifle. The item must be in the character's possession, and it must be something that could plausibly, if improbably, deflect the attack, or at least be destroyed by a near miss. If a single attack inflicts damage to multiple hit locations (e.g. an explosion), one item per affected hit location is sacrificed.

A sacrificed item is destroyed automatically, regardless of the nature of the attack and the item's damage resistance properties. No whining is allowed - your other option was making a new character.

rolls represent the fact that characters have spent the past months taking what was available rather than picking and choosing at some all-night arms bazaar and grocery store.

Example: *Matt finishes his Last Year phase (Irregular Warfare) with 7 equipment dice. His first need is a vehicle, so he allocates one die to the Civilian Vehicles table. The die result of 3 gives him his choice of an economy car, full-size car, muscle car, sports car, or motorboat. Against his better judgment, he selects a muscle car.*

The group has agreed that everyone will contribute at least one roll to outfitting the shared base of operations. Matt allocates three dice for a single roll on the Fixed Base Equipment table. With a roll of 10, his contribution is a stationary shortwave radio and base station aerial.

Next, Matt allocates one die to a roll on the Civilian Ammunition table. He rolls 1d6 for a result of 5, indicating that he receives five separate 100-round lots of ammunition. Five percentile rolls give him results of 15, 32, 42, 48, and 99. Matt receives 100 rounds each of .38 Special, 9mm Parabellum, .454 Casull, 5.56x45mm, and 12 gauge ammo.

Matt decides to put his last two equipment dice into a roll on the Fuel table. Rolling 2d6 for a result of 6 gives him a 200-liter fuel drum. He then rolls percentile to determine what it contains: with a result of 64, he has 300 liters of biodiesel.

In order to maximize a group's chances of getting something useful (if not exactly what they want), the GM is advised to let players combine their equipment dice into a single team pool. All rolls should occur in front of the GM – not, of course, to prevent any nefarious dice-fudging or similar shenanigans in which trustworthy players would never engage, but in order to allow him to call for a re-roll if a given result doesn't fit his plans for the game.

As with personal equipment, the GM may also suggest or disallow rolls on certain tables based on how he wants to run his game. For example, if the group consists entirely of civilian refugees, rolls on the military weapons table might be restricted to 1d6 or even prohibited entirely.

Cash

A group may use up to half its total equipment dice for additional cash rather than rolls on the group equipment tables. Roll 1d6 per equipment die spent in this manner, then multiply the total die result by GG250.

GM Hint: The Quartermaster

To expedite both selection of group equipment and later management of it during play, we recommend designating one player as the group's *quartermaster*. This player's character doesn't have to assume a similar in-game role, though we certainly won't discourage such a roleplaying decision. The quartermaster should be the player who maintains the master list of jointly-held gear. This ensures that the play group has a single authoritative location for this information, rather than shuffling through the backs of everyone's character sheets to figure out who wrote down what parts of the loot from two weeks ago. This is a good assignment for the player who's the most mathematically-inclined and detail-oriented. Most player groups have at least one frustrated accountant who spends all his time reading this chapter and will enjoy the challenge of tracking beans and bullets.

Departures and Late Arrivals

The rules for team equipment purchase are tailored for the beginning of a campaign, when all PCs are freshly-created and ready to begin play at the same time. Events both in and out of game can cause a team's roster to fluctuate as players and characters join or leave.

If a character leaves the group, the team doesn't lose any of its jointly-owned equipment that was acquired through his equipment dice. The fate of his personal equipment depends on how he left. If there's a valid in-game reason for the remaining characters to have access to it, they may dispose of it as they see fit. Otherwise, it's assumed that he took it with him.

If a new character joins the team, he enters play with a standard allotment of personal equipment. However, he contributes no new equipment dice. He's assumed to start with only what he can carry. At the GM's discretion, if the team has no available transportation for the new character, he may begin play with a bicycle, motorcycle, or mount, as appropriate to his skills.

Also at the GM's discretion, if the team experiences significant material losses of jointly-owned gear and subsequently receives multiple new player characters within a short span of time, these characters may have access to a heavily-laden vehicle or a nearby supply cache that the team as a whole can use to replenish its inventory. The players of the new characters may acquire group equipment as normal, using only the equipment dice contributions of those new characters.

Option: Rear-Echelon Support

If the PCs are part of a larger organization that can actively supply them, they acquire personal gear as normal. The difference here is that most team items are issued by the organization rather than acquired by the characters. The GM may choose to disregard equipment dice, in part or entirely, and just give the team a list of equipment that makes sense in the context of their mission and the support that their superiors can and will provide.

GROUP EQUIPMENT TABLES

The following tables are where players spend their equipment dice. If a given result lists multiple possible options, the player chooses one option to receive.

Animals

Maximum roll 1d6. At the GM's discretion, camels and elephants may be substituted in appropriate regions. For each beast of burden, roll 1d20 to determine level of training: 1 Untrained, 2-9 Docile (includes pack saddle), 10-19 Riding (includes saddle), 20 Cavalry (includes saddle).

Animals	
Dice Roll	Animal Type
1	Donkey/mule
2	Riding horse, Donkey/mule (Docile) with cart
3	Draft horse, Riding horse
4	Ox, Draft horse (Docile) with cart, Two riding horses
5	Ox (Docile) with cart, Two draft horses (Docile) with wagon
6	Two oxen (Docile) with wagon

Table 7a: Random Animal Table

Food

Maximum roll 1d6. Roll to determine quantity, then roll on the Random Food Type Sub-Table. Multiply the indicated amount on the table by the quantity you rolled.

Dice Roll (1d100)	Food Type
1-21	30 kg of balanced wild food
22-63	20 kg of fresh food
64-65	case of energy bars (36 bars)
66-68	case of survival rations (24 rations)
69-84	box of assorted packaged food (24 meals)
85-91	case of camping food (30 meals)
92-96	case of military rations (12 meals)
97-98	can of tea (50 servings)
99-100	can of coffee (50 servings)

Table 7b: Random Food Table

Example: Andy rolls 1d6 for a die result of 4, then rolls percentile for a die result of 93. He receives 4 cases of military rations, each containing 12 meals.

Fuel

Maximum roll 3d6. Roll on this table to determine the container, then roll on the Random Fuel Sub-Table to determine what's in it. Any group with at least one fuel container larger than a 200L drum also receives one hand or motorized pump (GM's choice).

Dice Roll	Fuel Container
1	jerry can
2	1d3 jerry cans
3	1d6 jerry cans
4	2d6 jerry cans
5-6	200 L fuel drum
7	300 L fuel bladder
8	2x 200 L fuel drum
9	3x 200 L fuel drum
10	750 L bulk tank
11	750 L bulk tank on light cargo trailer
12	1,000 L bulk tank
13	1,100 L fuel bladder
14	1,000 L bulk tank on medium cargo trailer
15	2,000 L bulk tank
16	2,000 L bulk tank on medium cargo trailer
17	4,000 L bulk tank
18	4,000 L bulk tank on medium cargo trailer

Table 7c: Random Fuel Container Table

Random Fuel Sub-Table

Roll percentile to determine fuel type:

Dice Roll (1d100)	Fuel Type
1-20	Methanol
21-58	Ethanol
59-78	Biodiesel
79-90	Gasoline
91-99	Diesel
00	Aviation fuel (1d6: 1-4 avgas, 5-6 jet fuel)

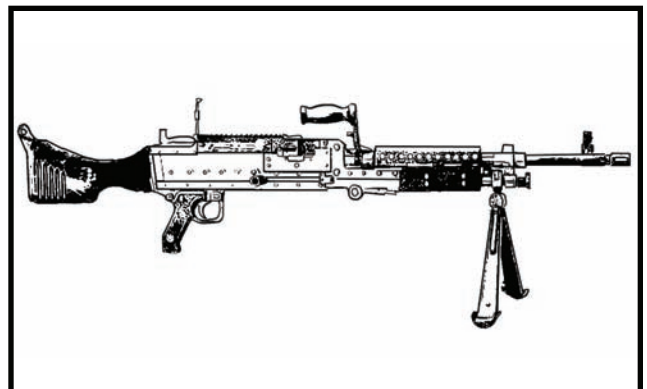
Table 7d: Random Fuel Type Table

Tools and Fixed Base Equipment

Maximum roll 3d6. The following items are technically portable, but many of them are more suited to establishing a long-term encampment or fixed base than to life on the move. Unless otherwise noted (in the table entry or the item description), the following equipment does not come with transport capacity for moving it. If the PCs are beginning play in a fixed base, any item acquired from this table is assumed to be already installed and working.

Dice Roll	Equipment
1	3-man civilian tent; barbecue grill and 1d6 medium bottled gas canisters; construction tools; chainsaw
2	4-man civilian tent; advanced portable darkroom; basic hand tools
3	6-man civilian tent; mechanic's tools; electrician's tools
4	small military tent; small still; small group water filter; 1d6 Novice-level textbooks (GM chooses subjects)
5	stationary shortwave radio; 1d6 rolls of camo netting (each 10m x 5m); basic power tools
6	field telephone switchboard, 300m spool of wire, and 1d6+1 phones; large military tent; 1d6 Competent-level textbooks (GM chooses subjects)
7	military vehicular radio; tiny portable generator; arc welder w/ 2d10 welding rods
8	small arms workshop (gunsmith's tools, reloading bench, and dies for 1d6+3 randomly selected calibers); air compressor; rescue saw
9	large group water filter; small fixed generator and 750L bulk tank (empty); 1d6 Professional-level textbooks (GM chooses subjects); portable cement mixer
10	stationary shortwave radio and base station aerial; small portable generator; medium still; ordnance tools
11	field kitchen; 1d10 solar cells; aircraft tools; oxy-fuel torch w/ 1d6 tanks each of acetylene and oxygen
12	military vehicular radio and base station aerial; 1d3 small wind turbines; desktop computer (roll percentile: 1-40 archaic, 41-70 obsolete, 71-95 modern, 96-99 SOTA, 100 cutting-edge)
13	mobile restroom; 1d3 hydro generators; hydraulic power unit, rescue cutter, and rescue ram
14	portable machine shop; medium fixed generator and 2,000L bulk tank (empty)
15	large still; medium portable generator
16	3d10 solar cells; model-specific vehicle tools
17	large fixed generator and 4,000L bulk tank (empty); model-specific aircraft tools
18	medium wind turbine and 20m tower; industrial still

Table 7e: Random Equipment Table



Ammunition (Civilian)

Maximum roll 1d6; this determines the number of rolls you then make on the Random Civilian Caliber Sub-Table. Each roll on the sub-table provides 100 rounds of the indicated caliber.

Handgun Ammo	
Dice Roll (1d100)	Ammo Type
1-6	.22 LR
7-8	.25 ACP
9	5.7mm FN
10-11	.32 ACP
12-14	.380 ACP
15-19	.38 Special
20	.38 Super
21	.357 SIG
22-23	.357 Magnum
24-26	9mm Makarov
27-32	9mm Parabellum
33-35	.40 S&W
36	10mm Auto
37-38	.44 Magnum
39-41	.45 ACP
42	.454 Casull
Rifle Ammo	
Dice Roll (1d100)	Ammo Type
43-44	5.45mm Soviet
45-50	5.56x45mm
51-53	6.5x55mm
54-56	7mm Remington Magnum
57-62	7.62x39mm
63-68	7.62x51mm
69-70	7.62x54mm
71	.30 Carbine
72-75	.30-06
76-77	.300 Winchester Magnum
78-79	.303 British
80-81	.338 Lapua
82-83	.338 Winchester Magnum
84-86	8mm Mauser
87	.460 Weatherby
88	.50 BMG
Shotgun Ammo	
Dice Roll (1d100)	Ammo Type
89-90	.410
91-93	20 gauge
94-99	12 gauge
100	10 gauge

Table 7f: Random Civilian Caliber Table

Ammunition (Military)

Rolls on this table are allowed *only* if the character's Last Year phase was Twilight Warfare. Maximum roll 1d6. Roll and multiply by 100 rounds to determine quantity, then roll once on the Random Military Caliber Sub-Table to determine caliber. Any ammo listed as "belted" comes in a belt with a 4:1 mix of FMJ to tracer (see p. 256).

Handgun Ammo	
Dice Roll (1d100)	Ammo Type
1	5.7mm FN
2-6	9mm Makarov
7-16	9mm Parabellum
17	.45 ACP
Rifle Ammo	
Dice Roll (1d100)	Ammo Type
18-29	5.45x39mm
30-44	5.56x45mm (belted on a 1d6 roll of 1-3)
45	7mm Remington Magnum
46-62	7.62x39mm
63-72	7.62x51mm (belted on a 1d6 roll of 1-5)
73-82	7.62x54mm (belted on a 1d6 roll of 1-5)
83	.300 Winchester Magnum
84	.338 Lapua
85-89	.50 BMG (belted)
90-94	12.7x108mm (belted)
95-99	14.5x114mm (belted)
Shotgun Ammo	
Dice Roll (1d100)	Ammo Type
100	12 gauge

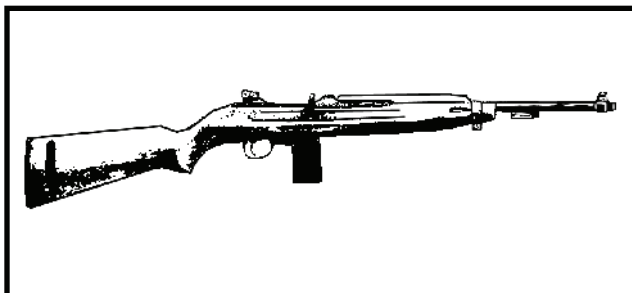
Table 7g: Random Military Caliber Table

Support Weapons

Maximum roll 2d6. A character's equipment dice may be allocated to this table *only* if his Last Year phase was Twilight Warfare. Each weapon that requires a tripod includes one of the appropriate size.

Dice Roll	Support Weapon
1	Squad automatic weapon (FN Minimi, RPK, or RPK-74) with 2d6 belts or drums
2	1d10 M72 LAWs or RPG-18s
3	RPG-7 with 2d6 rounds
4	General-purpose machine gun (FN MAG or PKM) with 2d6 belts
5	1d6 AT4s or RPG-22s
6	Heavy machine gun (Browning M2HB, KPV, or NSV) with 1d6 belts
7	Automatic grenade launcher with 1d3 belts
8	Carl Gustav or RPG-29 with 1d10 rounds
9	60mm mortar with 4d10 rounds
10	AT-7 launcher with 1d6 AT-7 rounds
11	81mm or 82mm mortar with 4d6 rounds; AT-7 launcher with 1d6 AT-13 rounds
12	120mm mortar with carriage and 3d6 rounds; TOW or MILAN launcher with 1d6 rounds

Table 7h: Random Support Weapon Table



Vehicles (Civilian)

Maximum roll 2d6. Each vehicle is acquired with a full load of fuel and a Wear value of 1d3.

Military Vehicles	
Dice Roll	Vehicle Type
1	Bicycle (street or mountain); Canoe; Kayak (one- or two-man)
2	Motorcycle (cruiser or off-road); Snowmobile; Day sailer; Personal watercraft
3	Economy car; Full-size car; Muscle car; Sports car; Motorboat
4	Light SUV; Jeep; Speedboat
5	Economy car, hybrid; Full-size car, hybrid; Light SUV with light cargo trailer
6	Light pickup; Heavy SUV; Van; Cabin cruiser
7	Heavy pickup; Light SUV, hybrid; Light pickup with light cargo trailer; Heavy SUV with light cargo trailer
8	2.5-ton truck; Semi-tractor; Heavy pickup with light cargo trailer
9	Motor home; Bus (any type); 2.5-ton truck with medium cargo trailer; Yacht
10	5-ton truck; Towboat
11	10-ton truck; 5-ton truck with medium cargo trailer
12	Semi-tractor with semi-trailer (any type); 10-ton truck with heavy cargo trailer; Towboat with raft of 1d3 barges

Table 7i: Random Civilian Vehicle Table

Vehicles (Military)

Maximum roll 3d6. Rolls on this table are allowed *only* if the character's Last Year phase was Twilight Warfare. Each vehicle is acquired with a full load of fuel and ammunition and a Wear value of 1d3+3. For each vehicle with a weapons mount as its primary armament, roll 1d20: 1-5 no weapon, 6-9 SAW, 10-15 GPMG, 16-18 HMG, 19 AGL, 20 ATGM.

Military Vehicles	
Dice Roll	Vehicle Type
1	Jeep; Light pickup
2	Heavy pickup, Armored car
3	Tactical truck
4	Tactical truck; Light pickup technical Motorboat
5	Tactical truck, up-armored; Tactical truck with light cargo trailer; Heavy pickup technical
6	Tactical truck, up-armored; 2.5-ton truck
7	2.5 ton truck with medium cargo trailer; Mine-protected vehicle
8	5-ton truck; 2.5-ton gun truck
9	10-ton truck; 5-ton truck with medium cargo trailer
10	BTR-80; Wz551; 10-ton truck with heavy cargo trailer
11	M1126 Stryker ICV; TPz Fuchs NBC Recon; 5-ton gun truck
12	M113; Semi-tractor with semi-trailer (any type)
13	Fv510 Warrior
14	M577 TOC
15	M88A2 HERCULES
16	BMP-2; M2A3 Bradley
17	T-55
18	Leopard 2; T-72; Patrol boat

Table 7j: Random Military Vehicle Table

EQUIPMENT

The Reflex System uses the following traits to describe equipment in game terms. Not all traits are applicable to all items; for example, a shovel doesn't need to be described in terms of electrical power requirements.

Barter Value: The item's current average value in the barter-based economy of 2013. This trait is a guideline rather than a hard-and-fast rule, and may vary widely based on local supply and demand.

Street Price: The item's retail price for legal purchase as of mid-2012, just before the Collapse. These prices are derived from those available as of publication (early 2008), but some commodities have been adjusted based on our projected trends for the game's history.

Weight: Just what you'd expect.

Powered Devices

This chapter contains a fair number of devices that rely on electrical power. The **Power/Usage** trait describes a given device's requirements:

- For a battery-powered device, the value given describes the number and size of batteries that it requires (see p. 247 to stock up on batteries) and the amount of operating time that a full charge provides.

- If the device has an internal rechargeable battery, the notation "charge/(time)" indicates how long it will run on a full charge. Assume that charging the battery requires half the run time that's been depleted. For example, if a battery is good for 4 hours at full charge and currently has half a charge, it's down 2 hours. One hour of charging will restore it to full capacity.

- If the device requires AC power (i.e. a wall outlet), its power requirement is listed in kilowatts (kW).

AC power sources such as diesel generators have the **Output** trait, which is given in kilowatts. At any time, a generator can power any combination of items whose total requirement for AC power does not exceed its Output.

Generators that rely on conventional motors and fossil fuels have Fuel Cap and Fuel Cons traits. The former describes the capacity of the generator's internal fuel tank (if applicable) and the type of fuel it requires: "G" for gasoline or "D" for diesel. The latter is the amount of fuel that the generator burns per hour of use. Gasoline generators can be modified to use alcohol fuel and diesel generators can accept biodiesel, as per the alternate fuel rules for vehicles in Chapter Eight.

Negligible Weight

Items with negligible weight (listed as "Neg." in the equipment tables) don't actually have zero mass, and a character can't carry an infinite number of them for free. In the real world, such items generally weigh less than 100 grams (0.1 kg). For the sake of simplicity in play, assume their average actual weight is around 25 grams each, so four negligible-weight items count as 0.1 kg. This applies to both encumbrance calculations and starting personal equipment selection.

CLOTHING AND PROTECTIVE GEAR

The human body can survive unprotected in only a narrow range of environments. Clothing, in addition to meeting the requirements of long-standing social taboos, is the first means by which humans protect themselves from heat, cold, sunlight, and other natural hazards. Some protective gear also defends against artificial hazards such as bullets.

Civilian Clothing

Most of the following items are readily available in any mall, market, or bazaar in the world, even after the Collapse (subject to norms of climate; extreme cold-weather gear is rare in the Sahara). Style and brand names are now largely irrelevant, however; an item's functionality and durability are much more important than the label sewn into it.

Outfits: Rather than itemize each garment, we've chosen to present basic clothing as a package deal. Each outfit is appropriate for a given temperature range (extremely hot, hot, mild, or cold), and the wearer can remove layers or roll up cuffs to make it acceptable, if not wholly comfortable, for the next higher range. Assume that each outfit includes undergarments, socks, pants or shorts or a skirt, and a shirt and/or undershirt, as appropriate for climate, taste, and gender. Cold-weather clothing also includes thermal underwear and socks and an additional outer layer.

Outerwear: To survive extended exposure to temperatures lower than mild (5°C), a character needs an insulated outer layer. A cold-weather base layer is adequate for brief periods but extended exposure demands an outer layer. Cold-weather gear includes a jacket or coat, insulated hat, and boots. Extreme cold-weather gear adds insulated overboots and pants and replaces the jacket with a heavier parka.

Rain gear: Prior to the Collapse, many characters had never experienced the unique misery of spending days on end outdoors in the rain. This outer layer includes a lightweight, waterproof jacket and pants intended to be worn over a base layer.

Footwear: Practical footwear is the order of the day in 2013. A character wearing running shoes adds 1 meter per action to his sprinting speed. Work boots have a 25% chance of providing Armor 1 against any foot hit. Other footwear provides no game benefits.

Military Clothing

On the first day of basic training, any member of the military receives a basic issue of required uniforms. The following items of clothing were common to every prewar military force on the planet and are in wide circulation in 2013. Military surplus clothing was also popular with hunters and other outdoorsmen for both its camouflage properties and its practicality and durability, so virtually any character may have access to these items.

Fatigues: The standard working or combat uniform of a serviceman. As with basic civilian clothing, a single outfit of fatigues contains socks, undergarments, shirt, and trousers, with additional items for cold-weather ensembles. Most nations have their own fatigue variants with unique arrangements of pockets, fasteners, and identifying marks, but none provide any special benefits for game purposes.

Flight suit: A one-piece garment commonly worn by aviators or those who want to be taken as such. Armor crews, mechanics, and other individuals who work in or around vehicles or heavy machinery often wear coveralls with identical traits.

Overwhites: Available only in arctic and desert camouflage, these are military outerwear designed to fit over a soldier's fatigues and body armor.

Combat boots: The archetypal leather boots common to

militaries and subcultures around the world. Desert and winter versions are respectively intended for comfort in hot and cold climates, and tend to be available only in colors appropriate to those environments.

Body Armor

Protection from enemy weapons has been a constant goal of soldiers throughout history. Over the past decades, advances in materials science have made personal protection feasible, though never absolutely effective.

Each of the following items is rated according to its Armor value and the hit locations that it protects. Some hit locations are also rated by percentage, indicating that coverage for that location is not absolute. In such cases, the percentage given is the chance that each incoming attack will strike the armor.

Unless otherwise noted, body armor cannot be layered. These garments are sufficiently bulky and inflexible that a character wearing multiple layers would be unable to move or act with any degree of effectiveness.

Helmets

Helmet, combat: Steel combat helmets were in use until the 1980s, when the appearance of Kevlar and other ballistic polymers made metal obsolete. Old-style helmets are still common in civilian hands but rarely issued to all but the worst-funded militaries. Most modern designs feature attachment points for night vision goggles.

Helmet, crew: Designed more for impact mitigation than ballistic protection, vehicle crew helmets are available in both aviation and armor configurations. All incorporate integral speakers and microphones for use with vehicular intercom and radio systems, as well as hearing protection. Aircrew helmets also include polarized lenses for glare protection and attachment points for oxygen masks. A crew helmet's base Armor rating is considered to be 3 against impact damage.

Camouflage

Military clothing, packs, and LBE are made in a variety of camouflage patterns and subdued colors. Unless otherwise stated, assume that any such item is available in black, olive green, medium ("coyote") brown, dark ("navy") blue, woodland camouflage, desert camouflage, and arctic camouflage.

Traditional camouflage patterns are mottled, splotchy combinations of three to five colors. About a decade before the Twilight War, researchers perfected digital camouflage, which uses smaller, pixelated color patterns like those of a computer display. "Digicam" provides superior concealment, particularly against observers using electronic vision aids. Digicam items command a premium price, costing 25% more than the values given here.

Because of intellectual property laws, national pride, and variations in local foliage, many militaries have created their own camouflage patterns. For game purposes, recognizing an item's specific camouflage pattern (a Tactics [EDU, TN -3] skill check) may provide useful intelligence in the field.

In game terms, traditional camouflage provides a +2 bonus to Fieldcraft and Streetcraft checks made to avoid visual observation, while subdued solid colors provide a +1. Digicam provides a +3 bonus against direct visual observation and a +4 bonus against observers using electronic sighting systems. Obviously, these bonuses apply only if the camouflage matches the environment. Halve bonuses for partial matches (i.e. a woodland pattern used in the desert). Conversely, use of high-visibility gear inflicts a -3 penalty on all attempts at concealment.

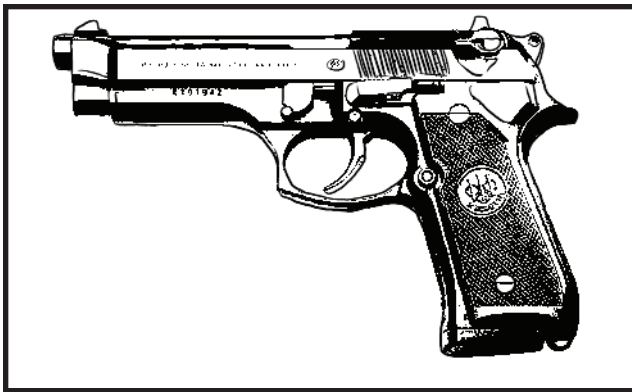
Civilian Clothing					
Clothing	Weight	Barter Value	Street Price		
Outfit, extreme hot weather	0.8 kg	GG5	\$100		
Outfit, hot weather	0.9 kg	GG3.25	\$65		
Outfit, mild weather	1.3 kg	GG4.5	\$90		
Outfit, cold weather	2.8 kg	GG15	\$300		
Outerwear, cold weather	1 kg	GG10	\$200		
Outerwear, extreme cold weather	1.7 kg	GG32.5	\$650		
Rain gear	1.2 kg	G6.25	\$125		
Shoes, casual	1 kg	GG1.25	\$50		
Shoes, running	0.7 kg	GG2	\$80		
Boots, hiking	1.7 kg	GG7.5	\$150		
Boots, winter	2.4 kg	GG7.5	\$150		
Boots, work	2.3 kg	GG6	\$120		
Military Clothing					
Clothing	Weight	Barter Value	Street Price		
Fatigues, hot weather	1.2 kg	GG7.5	\$150		
Fatigues, mild weather	1.2 kg	GG6	\$120		
Fatigues, cold weather	1.4 kg	GG9	\$180		
Flight suit	1.4 kg	GG11	\$220		
Overwhites, cold weather	0.8 kg	GG6.75	\$135		
Overwhites, extreme cold weather	1.4 kg	GG28.5	\$570		
Combat boots	2 kg	GG5	\$100		
Combat boots, desert	1.8 kg	GG6	\$120		
Combat boots, winter	2.2 kg	GG8	\$160		
Helmets					
Armor Item	Weight	Barter Value	Street Price	Armor	Coverage
Aircrew	1.2 kg	GG300	\$600	1*	head (50%)
Armor crew	1.5 kg	GG250	\$500	1*	head (50%)
Combat, steel	1.4 kg	GG50	\$100	1	head (50%)
Combat, ballistic	1.5 kg	GG125	\$250	2	head (50%)
Motorcycle	1.3 kg	GG30	\$90	1*	head (50%)
Torso Armor					
Armor Item	Weight	Barter Value	Street Price	Armor	Coverage
EOD suit	18 kg	GG1,400	\$7,000	3	all except hands, head, feet
Entry jacket	6.8 kg	GG750	\$1,500	2	chest, abdomen, upper arms
Flak jacket	4.1 kg	GG50	\$100	1	chest, abdomen, upper arms
Makeshift armor	8 kg	GG5	\$50	1	chest (50%), arms (25%)
Plate carrier vest	1 kg	GG120	\$240	-	N/A
Stab vest	2 kg	GG175	\$700	2*	chest, upper abdomen
Tactical vest	3.8 kg	GG750	\$1,500	2	chest, abdomen
+ extensions	0.7 kg	GG100	\$200	2	upper arms, neck
Undercover vest	2.3 kg	GG450	\$900	2	chest, upper abdomen
Trauma Plates					
Armor Item	Weight	Barter Value	Street Price	Armor	Coverage
Level III front/rear	1.7 kg	GG105	\$210	4*	chest, upper abdomen (25%)
Level III side	0.9 kg	GG70	\$140	4*	chest, upper abdomen (20%)
Level IV front/rear	2.7 kg	GG120	\$240	7*	chest, upper abdomen (25%)
Level IV side	2 kg	GG100	\$200	7*	chest, upper abdomen (20%)

* See text for special rules.

Table 7k: Clothing and Protective Gear

Helmet, motorcycle: A motorcycle helmet provides physical protection equivalent to that of a crew helmet, but lacks hearing protection or communication gear. For many civilians, this is the best readily-available head protection for post-apocalyptic combat.

Helmet visor: This thick clear polymer visor is used primarily in situations where full face protection is more important than perfect vision. It increases the armor coverage of a ballistic combat helmet by 10% but inflicts a -1 penalty on all AWA-based checks.



Torso Protection

EOD suit: This extremely heavy and uncomfortable suit is worn by explosive ordnance disposal (EOD) technicians when working around live bombs. It's far too bulky to allow any sort of extended activity other than walking to or away from a work site.

Entry jacket: Heavier than most military-issue armor, the entry jacket is preferred by SWAT teams and similar groups that typically don't have to worry about marching to their fights. Many are conspicuously marked with "POLICE" or another agency name in reflective tape. An entry jacket can accept trauma plates.

Flak jacket: The first widely-issued ballistic armor was intended to protect against shrapnel - hence the name - but was inadequate to stop any but the lightest bullets. Flak jackets were state of the art through the early 1970s, but by the Twilight War had been relegated to the military surplus market and the armories of ill-funded Third World militaries.

Makeshift armor: In 2013, many combatants without access to better options seek whatever protection they can assemble themselves. Makeshift armor is little more than a civilian jacket with metal plates sewn or riveted into it. This armor represents a return to the "mend and make do" spirit of WWII but its only real advantage is relatively wide availability.

Plate carrier vest: A compromise for wearers who want vital organ protection without the constriction of all-around armor, a plate carrier vest contains no ballistic armor itself but has pockets for trauma plates. It is also usable as an modular LBE base

element with the same traits and special rules as a fighting load carrier (see p. 218), except that it cannot be worn over a second set of body armor.

Stab vest: This armor is issued primarily to police officers who aren't expected to confront firearm threats. It has little to no value as ballistic protection. Against anything but a close combat weapon, it will stop an attack with Penetration Nil but provides no Armor against a more energetic attack. A stab vest can be worn under normal clothing.

Tactical vest: The modern replacement for the flak jacket provides enhanced fragment protection and some defense against small arms fire. Most contemporary armies issued some brand of tactical vest to their front-line troops, though procurement was not always sufficient to equip all rear-echelon personnel. A tactical vest can accept trauma plates. It can also be fitted with optional extensions, which add weight and bulk but provide additional protection to the shoulders, upper arms, and neck.

Undercover vest: This vest is used by police and security personnel who need limited ballistic protection against pistol-caliber threats. An undercover vest can be worn under normal clothing and can accept trauma plates.

Trauma Plates

Most body armor will only reliably stop pistol-caliber ammunition. Trauma plates are metal-ceramic composite sandwiches designed to provide additional protection for the wearer's vital organs against rifle bullets. Plates are available that conform to two ballistic standards, Level III and Level IV (Levels I and II apply mainly to soft body armor). Any item of body armor that is described compatible with trauma plates has front, side, and rear interior pockets, each of which will accept one plate. Front and rear plates measure about 30x25cm, while side plates are roughly 17x15cm.

Coverage is cumulative for multiple plates, up to a maximum of 90% for one front, one rear, and two side plates. If a coverage check indicates that an attack strikes a trauma plate, add the plate's Armor to the base item's Armor. If an attack strikes the base item but not the trauma plate, the base item functions normally. At the GM's discretion, an attack that comes from directly opposite a plate's facing has no chance of striking it.

Specialized Garments			
Item	Weight	Barter Value	Street Price
Dry suit	3.5 kg	GG375	\$1,500
Earmuffs	0.2 kg	GG0.3	\$30
Earmuffs, electronic	0.2 kg	GG2	\$80
Earplugs, pack of 10 sets	Negligible	GG0.05	\$5
Ghillie suit	3 kg	GG20	\$400
Goggles	0.1 kg	GG10	\$40
Goggles, welder's	0.1 kg	GG20	\$80
Knee and elbow pads	0.6 kg	GG2	\$40
Wet suit	2 kg	GG50	\$400
NBC Defense Gear			
Item	Weight	Barter Value	Street Price
Chemical warfare suit	4 kg	GG90	\$90
Gas mask	1 kg	GG160	\$160
Gas mask filter	0.3 kg	GG35	\$35
Isolation suit	6 kg	GG2,000	\$2,000

Table 71: Miscellaneous Clothing

Specialized Garments

Some situations require specific clothing to make them easier or safer. This section deals with some uncommon items which characters may find useful.

Dry suit: Used for immersion in water below 15°C (60° F), a dry suit is a waterproof full-body suit designed to prevent hypothermia for up to several hours. It provides limited protection (about 15 minutes) even in sub-freezing water.

Earmuffs: Industrial-strength ear protection that reduces the ambient noise level (see p. 76) by two stages. However, they also inflict a -4 penalty on all Awareness-based checks that rely on hearing.

Earmuffs, electronic: Earmuffs with external microphones and internal speakers, which combine to replicate all noises below a certain decibel threshold. The net effect is hearing protection as per standard earmuffs, but without the standard penalty. Electronic earmuffs work for 100 hours on 4 small batteries.

Earplugs: Disposable foam plugs that reduce the ambient noise level by one stage. However, they also inflict a -2 penalty on all Awareness-based checks that rely on hearing.

Ghillie suit: This item is used by hunters of both man and beast to break up their outlines more than simple camouflage can. Most ghillie suits are made by their users and are built to work in a specific type of terrain. A ghillie suit is a loose net that covers the wearer's entire body, usually patterned to resemble a hooded poncho; it also includes a separate cover for a rifle. Before use, local plant life is woven into the net to further customize it. Used on its own, a ghillie suit provides a +2 bonus to skill checks made to avoid visual observation, increasing to +3 if customized for the environment. If worn over camouflage, it increases the camo's bonus by +1, or by +2 if woven with local plants.

Goggles: Protective eyewear comes in a variety of configurations. Ballistic goggles have a 10% chance (stacking with a helmet) of stopping any projectile with Penetration Nil that strikes the head, but provide no Armor against anything more dangerous.

Goggles, welder's: In addition to the protective effects described above, welder's goggles reduce the level of ambient light (see p. 74) by two levels.

Knee and elbow pads: Padded joint protection with a hard shell, used by workmen, athletes, and soldiers alike. Knee and elbow pads have a 20% chance of stopping any projectile with Penetration Nil that strikes an appropriate hit location, but they provide no Armor against anything more dangerous. They also reduce the tick cost of changing stance by 1 tick, as the wearer doesn't have to concern himself as much with an uneven or dangerous surface.

Wet suit: A full-body suit of neoprene that, when submerged, traps a layer of water close to the skin. The body heats this water, creating a barrier of thermal protection that prevents hypothermia in water down to 15°C (60° F). The suit also provides limited protection against abrasion (for example, from coral reefs).

NBC Defense Gear

The following items provide varying degrees of protection against nuclear, biological, and chemical (NBC) hazards.

Chemical warfare suit: Typically issued to troops operating in environments that include NBC threats. A chemical warfare suit includes a jacket and trousers made of several layers of rip-stop nylon, water-repellent synthetic fabric, and absorbent carbon-impregnated fabric. It also includes gloves, overboots, and a hood made of the same material, and is intended to be worn with a gas mask. When issued, a chemical warfare suit is packaged in a sealed plastic bag. Once opened, it begins to decay, and is rendered useless within (15 + 3d10) days. Donning a chemical warfare suit requires one minute or one operational action. While worn, it provides full protection against any skin-absorbed or

inhaled threats. However, it is extremely uncomfortable to wear; all weather conditions are considered one stage hotter than normal, and even cold-climate use is a thoroughly miserable experience.

Gas mask: A full-face mask which filters incoming air, protecting the wearer against inhaled chemical and biological hazards. Military models typically include sealed ports for communications gear and hydration bladder drinking tubes, but are not compatible with most optics (including NVGs). A gas mask's filter is good for 24 hours of normal use, though particularly dusty environments or corrosive chemicals can drastically reduce its lifespan. Replacement filters are available separately. Wearing a gas mask by itself is not nearly as unpleasant as the use of a full chemical warfare suit, but it is by no means desirable. All Awareness- and OODA-based checks suffer a -2 penalty due to sensory impairment, and heavy work inflicts double its normal fatigue penalties.

Isolation suit: The "space suit" typically seen in HAZMAT or plague situations, an isolation suit is a one-piece sealed garment which fully protects its occupant from all gaseous or liquid hazards (though full immersion will eventually press through the seals). Its internal air bottle is good for 30 minutes of light work or 10 minutes of heavy work, and it can be attached to an umbilical for an external air supply.

BAGS, PACKS, AND LBE

Most characters will need to carry far more items than they can fit in their hands and pants pockets. The following equipment provides various options for organizing and carrying other gear, as well as distributing it across the wearer's body in an ergonomic fashion.

Packs

The following containers are designed to be carried over the user's shoulders or otherwise worn on the body, spreading the weight of their contents and reducing stress on the skeletal system. While hand-held luggage items such as suitcases or sea bags are commonly available in the post-Twilight War world, they are awkward to carry and unsuitable for long trips across African veldt or the mountains of Europe.

Frame pack, civilian: This large (80-liter volume) backpack incorporates a lightweight frame which both distributes the weight of its contents and provides attachment points for accessories. Before the war, hikers and campers typically carried such packs for 3- to 5-day trips. Civilian packs tend toward high-visibility colors, which make them more evident to both search and rescue teams and hostile forces.

Frame pack, high-capacity: Military and civilian designs tend to be nearly identical at the upper end of the capacity spectrum. A high-capacity frame pack is intended for extended expeditionary use. If packed wisely, its 125 liters of space can enable a character to carry everything he needs to survive on his own for upwards of a week.

Frame pack, military: A military frame pack is more rugged and marginally less comfortable than its civilian equivalent. Military packs are made exclusively in camouflage and subdued colors.

Rucksack, civilian: A simple backpack (interior volume 40 liters) of the type carried by walkers or schoolchildren the world over, this pack has no special ergonomic properties. Higher-end models are sold as "day packs" for hikers and incorporate a pouch for a hydration bladder of up to 3 liters.

Waist pack: Also called a "butt pack" or "fanny pack," this small zippered pouch is fitted with an integral belt and is designed to be fastened around the waist.

Packs				
Pack	Weight	Barter Value	Street Price	
Frame pack, civilian	2.7 kg	GG8.75	\$175	
Frame pack, high-capacity	4 kg	GG15	\$300	
Frame pack, military	3 kg	GG5	\$100	
Rucksack, civilian	1.3 kg	GG2.5	\$50	
Waist pack	0.2 kg	GG0.5	\$20	
Load Bearing Equipment				
LBE Element	Weight	Barter Value	Street Price	
Basic belt and yoke	1 kg	GG20	\$200	
Tactical vest	1.3 kg	GG20	\$200	
Yoke Components				
LBE Element	Weight	Barter Value	Street Price	Capacity
Cartridge loop	Neg.	-	-	10 rifle shells
Holster	0.2 kg	-	-	1 handgun
Grenade loop	0.1 kg	-	-	1 hand or launcher grenade
Mag carrier, rifle, double	0.1 kg	-	-	2 rifle magazines
Mag carrier, pistol, triple	0.1 kg	-	-	3 handgun magazines
Radio pouch	0.1 kg	-	-	1 radio or similarly-sized device
Sheath	0.1 kg	-	-	1 knife
Shell loop	Neg.	-	-	5 shotgun shells
Belt Components				
LBE Element	Weight	Barter Value	Street Price	Capacity
Canteen carrier	0.1 kg	-	-	1 L canteen
Mag carrier, rifle, quad	0.2 kg	-	-	4 rifle magazines
Shell carrier	0.1 kg	-	-	36 shotgun shells
Utility pouch	0.2 kg	-	-	12x18x8 cm

Table 7m: Bags, Packs and LBE

Load Bearing Equipment

Load-bearing equipment, or LBE, is a military system designed to spread the weight of a soldier's standard load across his upper body. Early-generation (and less expensive) LBE has a fixed configuration: a vest or a suspension yoke was manufactured with a set of permanently-attached pouches, pockets, loops, and holsters. Modern LBE is modular: the vest or yoke has a multitude of attachment points, to which a user can attach whatever containers he desires via Velcro hooks and loops or metal clips.

Combat webbing or tactical vest: This is early-generation LBE, with a vest or combination belt and yoke carrying a fixed configuration of pouches. When acquiring combat webbing, see the following table and select up to 10 individual components, no more than 4 of which may be designated as "belt" components.

Modular Load Bearing Equipment

By the beginning of the Twilight War, modular LBE was the pinnacle of load carrying technology. MLBE is not tailored in a fixed configuration, but instead consists of several base elements - vests, packs, even body armor - fitted with a crosshatched web of attachment points. These attachment points allow different pouches to be fitted to the user's requirements.

Load Distribution

As mentioned in the item descriptions, a frame pack distributes the weight of its contents more evenly. Adjusting a frame pack to an individual wearer (and to its current load) takes 10 minutes. For purposes of carried weight, a properly-adjusted frame pack and its contents weigh 10% less.

Each MLBE base element has a fixed number of attachment points, as denoted by the "AP" notation in the table that follows these descriptions. Each MLBE pouch takes up one or more attachment points. Thus, if a base element has 8 attachment points, it can hold any combination of pouches with a total attachment point requirement of 8 or less.

Fighting load carrier: The most common base element of the MLBE system is a vest (with integral belt) which is designed to fit over body armor. A fighting load carrier has 30 attachment points on the front of the vest, plus an additional 16 on the rear. The rear attachment points cannot be used if the wearer is also wearing a backpack, and are most commonly used to mount a hydration bladder carrier and medical supplies. If more than 16 of the front attachment points are in use, the wearer is considered moderately encumbered, regardless of carried weight.

Pack, patrol: This small pack is sized to fit the food, water, and ammunition that a soldier needs for a 24- to 36-hour operation. In addition to its main compartment and a pouch for a 3-liter hydration bladder, it can also accept additional MLBE pouches on its exterior. No pouch requiring more than 6 APs may be mounted on a patrol pack.

Pack, field: This "3-day pack" is now seen on the backs of former servicemen and -women around the world. As with the patrol pack, the field pack features attachment points in addition to its internal volume. A patrol pack may be attached to a field pack, taking up 12 of the field pack's APs.

Pack, medic: Designed specifically for secure organization of small items, the medic pack is based on the field pack but features additional internal compartmentalization. It will not accept any item larger than Bulk 1, except a medical or other kit that has been broken down into its component tools and supplies. However, readying any item from within a medic pack has a tick cost 1 lower than normal if the character is familiar with the pack's

Modular Load Bearing Equipment					
MLBE Base Element	Weight	Barter Value	Street Price	Capacity	
Fighting load carrier	1 kg	GG100	\$200	30+16 AP	
Pack, patrol	1.5 kg	GG100	\$200	17 AP	
Pack, field	2 kg	GG87.5	\$175	24 AP	
Pack, medic	2 kg	GG100	\$200	24 AP	
Pack frame	1 kg	GG32.5	\$65	N/A	
Thigh carrier	0.2 kg	GG32.5	\$65	4 AP	
Thigh holster	0.2 kg	GG32.5	\$65	1 handgun	
Ammo Storage					
MLBE Container	Weight	Barter Value	Street Price	Capacity	AP Cost
Belted ammo, small	0.2 kg	GG43.5	\$87	100 rounds *	3
Belted ammo, large	0.3 kg	GG60	\$120	200 rounds *	6
Magazine, handgun	Neg.	GG12.5	\$25	1 magazine	1
Magazine, rifle, single	Neg.	GG13.5	\$27	1 magazine	2
Magazine, rifle, double	0.1 kg	GG18	\$36	2 magazines	2
Magazine, rifle, quad	0.1 kg	GG20	\$40	4 magazines	3
Magazine, rifle, six	0.2 kg	GG27.5	\$55	6 magazines	4
Rifle cartridge loops	0.1 kg	GG15	\$30	20 rounds	3
Shotgun shell loops	Neg.	GG14	\$28	12 shells	3
Shotgun shell roll	0.1 kg	GG32.5	\$65	36 shells	5
Hand grenade loop	Neg.	GG18	\$36	1 grenade	1
Launcher grenade loop	Neg.	GG9.5	\$19	1 grenade	1
Equipment Storage					
MLBE Container	Weight	Barter Value	Street Price	Capacity	AP Cost
Canteen carrier	0.1 kg	GG21	\$42	1 L canteen	2
Gas mask carrier	0.2 kg	GG30	\$60	1 gas mask	6
Holster	0.2 kg	GG32.5	\$65	1 handgun	4
Hydration bladder carrier	0.3 kg	GG32.5	\$65	3 L bladder	8
Map pouch	0.1 kg	GG16	\$32	15x30 cm flat	6
Medical pouch	0.2 kg	GG25	\$50	1 IFAK	4
NVG carrier, padded	0.2 kg	GG15	\$30	1 set NVGs	4
Radio pouch	0.1 kg	GG18.5	\$37	1 tactical radio	2
Utility pouch	0.2 kg	GG22	\$44	12x18x8 cm	4

* Assumes belted 5.56mm ammo. Halve capacity for 7.62mm.

Table 7m: Bags, Packs and LBE continued

contents (i.e. organized it himself).

Pack frame: This optional component attaches to any patrol, field, or medic pack, providing the same benefits as a standard frame pack.

Thigh carrier: This is a heavy strap which attaches to the belt of a fighting load carrier and hangs down to mid-thigh. An adjustable band holds it tight to the leg to keep it from flopping when the wearer runs. Obviously, a character may wear only one thigh component on each leg.

Thigh holster: This component attaches in the same manner as a drop-leg carrier. Rather than providing additional attachment points, it is a holster which will accommodate a standard-sized handgun, with an additional pocket for one spare magazine.

COMMUNICATION AND SIGNAL EQUIPMENT

It's no accident that "communication" and "community" come from the same root word. Being in touch with other humans over distances enables an individual to feel less isolated, more a part of a greater whole. Along with many other technologies, the

Twilight War destroyed the world's telecommunication network, reducing most individuals and communities to only direct face-to-face communication. Those who possess surviving technology - or have improvised replacements - enjoy a significant advantage on the tactical, strategic, and economic levels alike.

Visual Signals

Visual signals are simple and reliable, but limited to line of sight and obvious to anyone looking in the right direction.

Flare, aerial: Designed to be launched from a flare gun (see following), this is a single round of "ammunition" consisting of explosive propellant and a pyrotechnic payload. When fired upward, an aerial flare ascends to an altitude of 150 meters and burns for 3d6+10 seconds. Aerial flares are available in a variety of colors, with white, green, and red being the most common.

Flare gun: This device resembles a small revolver with a large bore. It is not a firearm, however, but a launcher for aerial flares. A flare gun is too inaccurate to be used as a weapon beyond Gunfighting range, and attacks even at that range suffer a -4 penalty. A successful hit has Damage 3 and Penetration Nil but is capable of setting a flammable target alight.

		Visual Signals			
Visual Signal	Weight	Barter Value	Street Price		
Flare, aerial	Neg.	GG0.12	\$3		
Flare gun	1 kg	GG35	\$70		
Flare, ground	0.1 kg	GG0.3	\$3		
Flare, ground, IR	0.1 kg	GG3	\$60		
Flare launcher, hand-held	0.1 kg	GG0.9	\$15		
Signal mirror	0.1 kg	GG0.04	\$2		
Signal panel	0.1 kg	GG0.18	\$9		
Strobe light	0.1 kg	GG25	\$50		
Strobe light, IR	0.2 kg	GG100	\$250		
Civilian Radios					
Item	Weight	Barter Value	Street Price	Range	Power/Usage
CB radio, hand-held	2 kg	GG50	\$100	4 km	4 med/6 hrs
CB radio, vehicular	4 kg	GG75	\$150	16 km	0.5 kW
Emergency receiver	0.3 kg	GG50	\$50	-	see text
Personal radio	0.2 kg	GG12.5	\$50	1 km	4 sm/8 hrs
Personal radio, "licensed"	0.5 kg	GG35	\$70	3 km	4 sm/6 hrs
Scanner	1 kg	GG12.5	\$50	-	0.2 kW
Shortwave radio, vehicular	50 kg	GG1,000	\$2,000	20 km	1.2 kW
Shortwave radio, stationary	75 kg	GG1,500	\$3,000	40 km	1.5 kW
Military Radios					
Item	Weight	Barter Value	Street Price	Range	Power/Usage
Manpack radio	10.5 kg	GG4,875	\$6,500	15 km	charge/33 hrs
Survival radio	1.2 kg	GG2,250	\$3,000	5 km	charge/24 hrs
Tactical radio	1 kg	GG1,125	\$1,500	5 km	charge/20 hrs
Vehicular radio	14 kg	GG4,875	\$6,500	40 km	2 kW
Radio Accessories					
Item	Weight	Barter Value	Street Price	Range	Power/Usage
Aerial, base station	25 kg	GG80	\$160	x4	-
Aerial, vehicular	3 kg	GG20	\$40	x2	-
Handset, portable	0.5 kg	GG35	\$70	-	-
Headset, civilian	0.2 kg	GG25	\$50	-	-
Headset, covert	Neg.	GG150	\$150	-	-
Headset, military	0.5 kg	GG200	\$200	-	-
Shortwave radio modem	1 kg	GG75	\$150	-	0.2 kW
Other Comm Systems					
Comm System	Weight	Barter Value	Street Price		
Bugle	1 kg	GG24	\$120		
Field telephone	1.4 kg	GG50	\$500		
Field telephone wire, 100m	5 kg	GG5	\$50		
Field telephone switchboard	13.6 kg	GG120	\$1,200		
Whistle	Neg.	GG0.05	\$2		

Table 7n: Signaling and Communication Equipment

Flare, ground: Otherwise known as a highway flare, this is a signaling pyrotechnic designed to be dropped on a (hopefully non-flammable) surface and left in place as a stationary marker. A ground flare burns for 20+1d20 minutes. Some military designs emit minimal visible light but considerable infrared, making them hard for the unaided eye to detect but obvious to night-vision optics.

Flare launcher, hand-held: Typically found in marine survival kits, a hand-held flare launcher is a self-contained launch system for a single aerial flare (included). A hand-held launcher is waterproof. The pyrotechnic can be ignited without firing the propellant, allowing the user to (briefly) use it as a ground flare rather than an aerial flare. As these devices are marketed primarily as rescue signals, the pyrotechnics are almost always red.

Signal mirror: One of the oldest communication devices, the signal mirror is still valued for its simplicity and independence from electrical power. Typically made of polished metal rather than glass (for durability in the field), a signal mirror enables the user to reflect sunlight, flashing out messages in Morse code or another scheme. On a clear, sunny day, a signal mirror is visible up to 30 km away. Use of other light sources significantly reduces range, as do adverse atmospheric conditions.

Signal panel: A heavy-duty 180 x 60 cm sheet of fabric with metal grommets in each corner, eye-searingly orange on one side and an equally virulent shade of pink on the other. Military forces use signal panels for a variety of simple visual identification and signaling purposes.

Strobe light: A battery-powered high-intensity LED that either can be set to pulse in a repeating pattern or can be manually flashed to send Morse code messages. Civilian models can emit either white or red light, while military designs have a third infrared mode. A strobe runs for 3 hours on a pair of small batteries.

Civilian Radios

Radio communication has long been used in the public safety and industrial sectors. The early 21st century saw a rapid increase in civilian radio use, due to improvements in transmission strength and clarity and the deregulation of some frequency bands. Civilian radio units are generally less rugged than their military counterparts and lack such features as encryption and computer data transmission, but even basic voice communication is an invaluable resource in 2013.

For both civilian and military radio transmitters, an additional game trait, Range, is given. This is the maximum range at which characters reasonably can expect their transmissions to be heard, given optimum atmospheric and terrain conditions. However, a transceiver can pick up transmissions from well outside its own transmission range. At the GM's discretion, adjustments to a transmitter can temporarily boost its range; this requires an Electronics (EDU, TN -2) check. With success, range is increased by (10 x MoS)%.

CB radio: Citizen's band (CB) radio is a (formerly) licensed radio technology used for short-ranged voice communication. CB was the first widely-available means of radio communication that did not require specialized electronic skills, and enjoyed a strong following from the 1960s through the 1980s. Through the Twilight War, it was still commonly used by rural residents and long-distance truckers. CB transceivers are available in both hand-held and vehicular models. Both can run from a vehicle's power supply (hand-held models include adaptors).

Emergency receiver: Intended for use in power outages caused by natural disasters, emergency receivers gained sudden popularity as the threat of nuclear war loomed in mid-2012. An emergency receiver is a radio designed to receive on commercial AM and FM frequencies, as well as shortwave and weather emergency channels. It can accept batteries (3 small batteries give 60 hours of reception), but its primary power source is an attached hand crank connected to an internal generator and rechargeable battery. One minute of cranking charges the device for an hour of listening or using the integral flashlight (treat as a small flashlight).

Personal radio: Known as Personal Mobile Radio (PMR) in Europe and Family Radio Service (FRS) in North America, these devices are an inexpensive, unlicensed means of short-range two-way communication. Until the Collapse, personal radios were available at electronics, camping, and general merchandise stores for nominal prices. Personal radios are low-powered and interference from buildings, trees, or stronger transmitters can reduce their range to only a few hundred meters.

More powerful versions of personal radios exist that have access to an additional set of channels. Until the Twilight War, these latter channels were regulated and radio owners required licenses. Such regulations are, of course, no longer in effect. Neither standard nor licensed personal radios can transmit anything other than voice data.

Scanner: Common in rural areas of North America, a scanner is an automated monitor which constantly shifts among a range of frequencies. When it detects a transmission, it stops scanning for a predetermined period of time, playing the transmission over an external speaker. Typical models can receive CB, shortwave, emergency services, and weather emergency bulletin channels. A scanner has no transmission capability.

Shortwave radio: The most powerful radios available to private citizens, shortwave radios were regulated (and banned in

some repressive nations) until the Twilight War. The degree of technical expertise required to obtain a "ham" license and build and operate a shortwave station (in game terms, Electronics Competent) made them relatively rare. The primary advantage of shortwave radios is range: signals can be bounced off the Earth's ionosphere, allowing theoretically transcontinental communication. In the immediate aftermath of the nuclear exchanges, atmospheric disruptions severely limited shortwave range, but conditions have stabilized by mid-2013 and ranges given are typical.

As each shortwave system is built by an individual hobbyist from selected components, no two are exactly alike. Traits given here are for typical stationary and vehicular installations, including aerial, transmitter, receiver, microphone, Morse code key, speakers, and cables to wire the whole thing together.

In addition to hobbyist shortwave frequencies, various other shortwave frequency ranges are allocated for maritime communication, aviation communication, marine and aviation weather, and military use. A typical hobbyist shortwave rig is capable of receiving these frequencies but, prior to the war, could not legally transmit on them. Military shortwave radios are discussed under Military Radios, while other specialized shortwave apparatus is outside the scope of this rulebook.

Military Radios

Until the telecommunication explosion of the 21st century, military forces had used radio communications longer and in more varied ways than any other group in history. Instant communication allows a commander a much greater degree of tactical awareness and direct command authority (which can be either a blessing or a curse to the recipient of orders).

All of the following radios operate on the same basic range of frequencies; their primary differences are size, range, and power supply. All military radios are capable of making both unencrypted and encrypted transmissions. Military encryption relies on a multi-digit numeric code, sometimes combined with a time/date stamp. This mathematical data serves as the "key" that tells the device's encryption chips which mathematical operations to perform on outgoing and incoming data. In addition to this, most military radios also "hop" between a range of frequencies several times a second on a schedule determined by this key. To communicate using encryption, all radios involved in a conversation must be using the same key.

Most law enforcement agencies and emergency services use radios with game traits identical to the tactical and vehicular radios presented here. However, these radios operate on different frequencies and lack encryption capability. Reduce price by 25% for a police radio.

Manpack radio: A backpack-mounted radio used by a unit commander (but typically carried by his radioman) to communicate both up and down his chain of command. A manpack radio uses a specialized rechargeable battery (1.5 kg, GG750, \$300 for a spare). Battery life is based on normal use (10% transmitting, 30% receiving, 60% standby).

Survival radio: Standard issue for combat aircrews, a survival radio is ruggedized to survive the stresses of ejection and a subsequent parachute landing in any terrain. It's waterproof (and floats if dropped in water) and is likely to wind up in better condition than the downed pilot who carries it. In addition to military frequencies, a survival radio can also transmit on international aviation emergency frequencies ("GUARD"). It uses a specialized rechargeable battery (not compatible with a tactical radio's).

Tactical radio: A hand-held radio issued to either squad leaders or all troops, depending on a military's funding and its degree of trust in its personnel. It runs off a specialized rechargeable battery (0.5 kg, GG300, \$100 for a spare).

Radio Compatibility

All radios can't talk to each other. Different designs use different frequency ranges or different encryption schemes. The following table illustrates which radios are built for each frequency range. Assume that any two radios with a common frequency range can communicate with one another "in the clear" - in other words, unencrypted. For encrypted transmissions, both radios must also share the same encryption key.

Frequency Group	Compatible Radios
Citizen's band (CB)	CB
Law enforcement	Law enforcement, military, shortwave
Military	Military
Personal, open	Personal (all)
Personal, licensed	Military, personal (licensed only)
Shortwave	Military, shortwave

Table 70: Radio Compatibility

Vehicular radio: This radio's internal hardware is identical to that of a manpack radio, but it is designed to run on vehicle or generator power rather than a battery. It can be mounted in a vehicle or dismounted for use in a stationary command post. Its greater range comes from its larger antenna.

Radio Accessories

Aerial, base station: The limit of "portable" broadcast equipment, this 9-meter antenna is built on a collapsible metal skeleton which must be secured with guy ropes to remain upright. When attached to a CB, shortwave, or military radio, a base station aerial quadruples the range of an attached transmitter.

Aerial, vehicular: Normal vehicle-mounted CB and military radios use relatively short antennas, no more than a meter long. This is a 3-meter "whip" antenna which doubles the range of an attached transmitter but makes the presence of radio equipment in the vehicle obvious to any knowledgeable observer.

Handset, portable: Common in law enforcement, a portable handset is a combination speaker and microphone with a one-meter cord that attaches to a hand-held CB or tactical radio. It can be clipped to the wearer's collar or epaulet, enabling him to use his radio without removing it from his belt or vest. Although quieter than the base handset, it's still audible up to 30 meters away at normal volume.

Shortwave radio modem: This addition to a shortwave radio installation enables the user to connect the transceiver to a computer for two-way data transmission. Typical throughput rates are painfully low (under best possible conditions, 9600 baud).

Headsets

These rules assume that a handset radio contains its own microphone and speaker, while a larger radio includes a microphone on a short (1- to 2-meter) cord and one or more speakers. Using such an apparatus requires the operator to have at least one hand free, which can be a liability in a crisis situation. A headset is a combined microphone and speaker unit that attaches to the user's head. In addition to normal push-to-talk (PTT) operation, a headset also allows voice-actuated (VOX) transmission, in which the user's voice automatically activates the microphone without a physical key press.

Headset, civilian: Not intended for rough use or hostile climates, this is a single lightweight earmuff-type speaker connected to a boom microphone.

Civilian Telecom

EMP took a horrific toll on switching equipment across the globe, and few communication satellites survived both the orbital anti-satellite battles and the loss of their ground stations. As a result, the level of voice and data connectivity to which the early 21st-century citizen was once accustomed is now gone. Millions of cellular phones survived the Twilight War, but without networks to which they can connect, they're little more than rechargeable electronic noisemakers. For a working cellular phone with other data management functions, see "smartphone" in the Computer Hardware and Software section.

Headset, covert: This low-profile headset consists of a tiny speaker inserted into the user's ear canal and a separate microphone clipped to the collar or inside a sleeve cuff. Wires connect the covert headset to a radio typically worn under a jacket.

Headset, military: A heavy-duty headset with a sound-dampening boom microphone and either a single or full set of earmuff-type speakers.

Other Comm Systems

Bugle: This simple brass instrument has been ubiquitous in Western militaries for two centuries. In addition to being a key component of martial music (particularly ceremonial tunes such as Last Post), it was also used to give battlefield commands before the advent of portable radios. Forces without better technology, as well as those who want to deliberately project an atavistic appearance, are now rediscovering bugle calls.

Field telephone system: A rugged telephone designed for outdoor use and rare outside military supply chains. Typically, individual phones are installed in key fixed positions such as listening posts, mortar pits, and the commander's quarters. They can be connected by communications wire to each other for a direct connection, or to a central switchboard which provides power and manually-operated call switching for up to 30 phones. If used in direct mode, each phone requires two large batteries, which are good for provide 60 hours of use.

Whistle: A simple audible signaling device, made of either plastic or brass. A whistle can be heard from about 1km on a still day.

Survival Equipment

In the absence of such conveniences as gas heating and indoor plumbing, survivors have a renewed appreciation for less sophisticated - but still functional - items that keep them warm, clean, and well-fed.

Shelter

Bedroll: The traditional outdoorsman's set of a waterproof ground cloth and two blankets, perhaps with a pillow or foam pad for comfort.

Bivouac bag: Minimal protection for the survivor who travels light, a "bivy bag" is a waterproof, breathable fabric cover, just large enough for a single sleeping bag and its occupant. Some deluxe models include flexible ribs similar to tent poles, which provide a somewhat claustrophobic illusion of additional volume. In Hot or Extremely Hot weather, a bivy bag can be used in place of a sleeping bag.

Camp furniture: Lightweight, collapsible furniture suitable for light duty around a campsite. Construction is usually of synthetic fabric and aluminum poles and each item includes a carry bag.

Emergency blanket: A 2.1m x 1.5m blanket made of layered polyethylene and aluminum film. One side is red or orange for visibility in emergencies, while the other is metallic for reflecting heat. A grommet is sewn into each corner so the blanket can be tied or staked down as an emergency shelter. Flimsy, less-expensive designs are smaller and lighter but only usable for a few nights before they fall apart, making them useful primarily for short-term survival applications or for treating shock or hypothermia patients.

Hammock: A hanging net sleeping arrangement, suitable for Hot and Extremely Hot weather. Includes insect netting.

Shelter half: A rubberized canvas sheet. Used on its own, it can provide shelter for a single occupant. Two shelter halves can be attached together to create a two- or three-person space. Issued during the Cold War, shelter halves have been replaced in many military inventories by bivouac bags but are still in use by campers who prefer military surplus gear.

Sleeping bag, 5-season: A “mummy”-type sleeping bag with heavy down or synthetic insulation fill, suitable for Mild and Cold temperatures. “5-season” refers to the traditional four seasons plus arctic conditions.

Sleeping bag, temperate: A lightweight sleeping bag suitable for Mild temperatures.

Tent, civilian: Civilian tents tend to be lightweight, albeit not as rugged as military designs. Each of the tents described here includes a basic tent of synthetic fabric, poles and stakes, and waterproof rain fly and ground sheet. These represent high-quality tents made for the outdoor enthusiast, as lower-end tents for the occasional weekend camper are insufficiently durable to survive extended use.

Tent, military: Military tents are designed for extended use in base camps. They’re made from waterproof, rot-resistant canvas and aluminum or wooden poles. The small (3m x 3m) tent opens at one end. The large (5m x 4m) design has openings at both ends, allowing multiple tents to be linked together to form a larger single structure. Some are designed to admit the rear of a light truck or APC, enabling use of the tent as an extended working area for the vehicle’s equipment.

Water

Canteen: A standard military-issue canteen, including a 400mL drinking cup and a nylon pouch. Canteens are available in both metal and plastic (identical game traits). Newer plastic models don’t make as much noise when sloshing but can’t be used to heat their contents over an open flame.

Flask: A small metal container shaped to fit in a pants pocket. Rarely used to carry water.

Hydration bladder: A flexible plastic bladder with an attached drinking tube, designed to be worn in a backpack. The tube hangs over one shoulder, allowing the wearer to drink as needed.

Water bottle: A clear polycarbonate bottle with a widemouth screw-on cap, popular among fitness enthusiasts.

Waterskin: A treated leather bladder. Manufactured versions use a screw-on cap, while authentic handmade designs use a cork or a drawstring closure.

Water Treatment

Filter, group: A gravity-fed water filter which removes particulate matter and microorganisms by passing water through a ceramic filter. Water is poured into an upper tank, then trickles downward through the filter into a lower tank. The system can hold up to 12 liters at once, and its filtration rate is 16 liters per hour. The only manual effort required is filling and emptying the tanks. A larger version is suitable for entire settlements (up to 300 people), with a purification rate of 100 liters per hour if the system

is constantly refilled. Both designs use replaceable filter cartridges which are good for up to 12,000 liters before losing effectiveness.

Filter, personal: A hand-pumped device operating on the same basic principles as the camp filter. Flow rate is approximately one liter per minute. Typically, a personal filter is attached to a water bottle or hydration bladder for output, with the inlet hose dangling directly into the water source. A filter cartridge is good for 600 liters before it must be replaced. Personal filters were primarily purchased by backpackers; most militaries issued purification tablets (see following) to troops who operated away from supply lines.

Purification tablets: A bottle of 50 tablets, usually iodine- or chlorine-based. Each tablet will purify one liter of water of bacterial or viral contamination. However, it does nothing against chemical contamination or particulate matter, including radioactive fallout. The chemicals used also tend to leave the water with a mildly unpleasant taste.

UV purifier: A waterproof ultraviolet light designed to be lowered into a 1-liter water bottle. A 90-second exposure while gently stirring will kill most microorganisms, including viruses too small to be stopped by a filter. However, a UV purifier does nothing to remove particulates or chemical contamination. The light element is good for about 5,000 liters. Normal models rely on four small batteries, which will power the purification of 100 liters. Rare deluxe models have internal rechargeable batteries and were sold with carrying cases that double as solar chargers.

Food Acquisition

Fishing kit: A typical assortment of line, lures, hooks, bobbers, sinkers, and tools, as well as a small net and two fishing rods. This represents the normal collection of fishing gear accumulated by an angler or fly fisherman over several years of practicing the hobby.

Fishing kit, pocket: A minimal assortment of fishing gear packaged in a pocket-sized tin. This typically includes a dozen fishhooks and weights, a few lures and bobbers, a small folding knife, and 25 m of monofilament line.

Gill net: A gill net is a diamond-shaped polypropylene net designed to be deployed across a pond or river, stretching about 4 meters wide and 2 meters deep. One side is weighted and the opposite side is equipped with floats to ensure that the net remains vertical. The net packs down to a 20 cm x 10 cm bundle.

Trap, bear: A heavy-duty spring-loaded trap intended for catching the leg of large game. A weight of at least 75 kg is required to trigger this trap, which inflicts an automatic hit to a randomly-selected leg with Damage of (10 + 1d6) and Penetration x2. If the damage exceeds the victim’s Muscle, the victim is caught until the trap is opened. Bear traps are rare in the modern era due to the low demand for such methods of subduing large animals.

Trap, box: A “humane” trap consisting of a steel cage and a spring-loaded door attached to a pressure plate. When an animal enters the cage, weight on the pressure plate slams the door shut. Box traps are available in two sizes: one suitable for rats, squirrels, and other vermin, and a larger one appropriate for groundhogs, cats, small dogs, and the like.

Fire, Heat, and Food Preparation

Barbecue grill: A typical backyard grill powered by bottled propane. Preparation of one meal consumes 0.7 liters of bottled gas.

Cigarette lighter: Available in both disposable and refillable varieties, both of which contain fuel for several hundred uses. Refillable models can be adjusted to run on kerosene or gasoline.

Field kitchen: Standard for military units in long-term field positions, this semi-portable kitchen is designed to be set up in a large military tent and used by a staff of between two and five cooks. It has the capacity to prepare and serve 100 meals per hour.

Survival Equipment			
Item	Weight*	Barter Value	Street Price
Bedroll	4 kg	GG0.25	\$25
Bivouac bag	0.3 kg	GG45	\$180
Camp bed	5.2 kg	GG3.75	\$75
Camp chair	3.1 kg	GG1	\$20
Camp stool	0.7 kg	GG1	\$20
Camp table	4.5 kg	GG2.75	\$55
Emergency blanket	0.3 kg	GG1.2	\$12
Emergency blanket, one-use	Neg.	GG0.2	\$4
Hammock	0.4 kg	GG2	\$40
Shelter half	1.3 kg	GG10	\$40
Sleeping bag, 5-season	2.1 kg	GG40	\$160
Sleeping bag, temperate	1 kg	GG15	\$60
Tent, civilian, 1-man	1.9 kg	GG100	\$160
Tent, civilian, 2-man	2.2 kg	GG87.5	\$140
Tent, civilian, 3-man	6.9 kg	GG75	\$120
Tent, civilian, 4-man	10 kg	GG130	\$210
Tent, civilian, 6-man	19 kg	GG295	\$470
Tent, military, small	60 kg	GG700	\$1,400
Tent, military, large	110 kg	GG950	\$1,900
Containers			
Item	Weight*	Barter Value	Street Price
Canteen, 1 liter	1.3 kg	GG1	\$10
Flask, 0.25 liter	0.3 kg	GG1	\$10
Hydration bladder, 1.5 liters	1.6 kg	GG2	\$20
Hydration bladder, 2 liters	2.1 kg	GG2.5	\$25
Hydration bladder, 3 liters	3.2 kg	GG3	\$30
Hydration bladder, 6 liters	6.3 kg	GG3.6	\$36
Hydration bladder, 10 liters	10.3 kg	GG4	\$40
Water bottle, 0.5 liter	0.6 kg	GG0.6	\$6
Water bottle, 1 liter	1.2 kg	GG0.9	\$9
Waterskin, 1.5 liter	1.8 kg	GG1.5	\$15
Waterskin, 5 liter	6 kg	GG2	\$20

* All container weights include a full amount of water (one kg per liter).

Table 7p: Survival Equipment

The traits given here represent a field kitchen without appliances dependent on electricity, but with a supply of bottled gas for its heating elements (or appropriate cookfires as replacements). The field kitchen packs away into a set of included cargo cases, which will fit in a standard one-ton cargo trailer.

Flint and steel: A small ridged piece of steel and a piece of flint. Running the flint across the steel generates sparks, which are sufficient to start fires in dry tinder but inadequate for igniting pooled gasoline, wicks, or fuses.

Matches: A box of 200 safety matches. 1d3 are required to ignite a fire in good weather; increase to 1d6 or more for windy or rainy conditions.

Stove, backpacking: A lightweight multifuel stove capable of burning virtually any flammable liquid. A character can prepare one meal at a time over this stove's small flame. Price and weight do not include fuel or fuel bottle. One meal consumes 0.05 liter of bottled gas (0.1 liter in cold or extremely cold weather).

Stove, camp: A portable two-burner stove using butane or propane fuel. One meal consumes 0.05 liter of bottled gas.

Stove, hexamine: A tiny folding stove that uses hexamine tablets (see p. 246) for fuel. Although slower to heat than camp and backpacking stoves, "hexi" stoves are much more wind-resistant.

Mess kit: An aluminum or titanium set of the minimum

containers and utensils necessary for preparing and eating a single meal. This includes a knife, fork, spoon, cup, small cookpot, and two pans, all designed to nest together in a compact package when not in use.

Sanitation

Hand sanitizer: Anti-bacterial alcohol-based gel, also usable as a fire accelerant in emergencies. A 50mL bottle holds enough for roughly 25 applications.

Mobile restroom: A complete (albeit tiny) facility built into a one-ton cargo trailer. This unit contains a shower stall, sink, toilet, mirror, and soap and paper towel dispensers, as well as a 350-liter fresh water tank and a 650-liter waste water tank. The exhaust fan, internal fluorescent light, and water heater can be powered externally (drawing 0.7 kW) or can run on an 18-hour rechargeable battery. Price and weight include the trailer itself. In a pinch, the restroom can be filled with up to 300 kg of cargo, but become unusable for its normal purpose.

Portable toilet: A folding plastic seat designed to accept standard plastic trash bags in place of the familiar porcelain bowl. Waste disposal after use is still an issue, albeit much less of one as long as the baggies last.

<i>Purification</i>			
Item	Weight*	Barter Value	Street Price
Filter, group, small	3 kg	GG60	\$300
Filter, group, large	28 kg	GG240	\$1,200
Filter, personal	0.5 kg	GG29	\$145
Filter cartridge, group	1.5 kg	GG26	\$130
Filter cartridge, personal	0.2 kg	GG12	\$60
Purification tablets	0.2 kg	GG5	\$10
UV purifier	0.2 kg	GG16	\$80
UV purifier, rechargeable	0.3 kg	GG90	\$180
<i>Food Acquisition</i>			
Item	Weight*	Barter Value	Street Price
Fishing kit	4 kg	GG125	\$250
Fishing kit, pocket	0.1 kg	GG0.2	\$20
Gill net	1.5 kg	GG10	\$20
Trap, bear	20 kg	GG30	\$300
Trap, box, small game	1 kg	GG8	\$40
Trap, box, vermin	0.8 kg	GG5	\$25
<i>Fire, Heat, and Food Preparation</i>			
Item	Weight*	Barter Value	Street Price
Barbecue grill	35 kg	GG3.5	\$140
Cigarette lighter, disposable	Neg.	G0.05	\$1
Cigarette lighter, refillable	0.1 kg	GG2.5	\$20
Field kitchen	1 ton	GG325	\$1,300
Flint and steel	Neg.	GG1.25	\$5
Matches, box of 200	Neg.	GG0.08	\$2
Stove, backpacking	0.4 kg	GG32.5	\$130
Stove, camp	1.2 kg	GG1.5	\$30
Stove, hexamine	0.5 kg	GG0.4	\$8
Mess kit	0.2 kg	GG2.5	\$40
<i>Sanitation</i>			
Item	Weight*	Barter Value	Street Price
Hand sanitizer, 50 mL	Neg.	GG0.1	\$5
Mobile restroom	900 kg	GG1,200	\$12,000
Portable toilet	3.2 kg	GG2.25	\$90
Solar shower	0.4 kg	GG2	\$20
Toilet tissue, 1 roll	0.1 kg	GG0.12	\$0.25

Table 7p: Survival Equipment continued

Solar shower: A 10-liter hydration bladder with a shower spigot and a strap for attaching it to overhanging branches. The bladder is black to absorb solar radiation, heating its contents to an acceptable (i.e. lukewarm) temperature after about 3 hours of direct sunlight. Weight does not include water.

Toilet tissue: Perhaps one of 2013's most sought-after luxuries.

Navigation

Compass: A magnetic pointer of the sort used for centuries. Basic compass use is still a part of most land navigation classes.

GPS receiver: A hand-held GPS receiver displays the user's current coordinates (latitude, longitude, and altitude) and a pointer to true north (or to one of up to 500 saved waypoints). Basic receivers were rare by the 2010s, supplanted by more extravagant units that could also load and display maps. Map cards (flash memory) for a given area and region must be acquired individually, as per hardcopy maps (see following). A GPS receiver runs for 20 hours on two small batteries, though continuous operation is rarely necessary for long-distance trips.

Maps and charts: By the beginning of the Twilight War, centuries of cartographic work had produced detailed records of virtually the entire planet. The Last Year wrought significant changes, but most of the broad strokes are still valid. Maps are available separately for street, topographical, nautical, and aviation navigation, and must be acquired separately for a given region. Hardcopy land maps and nautical charts detail a single city or county, while data cards for GPS units can encompass several states or administrative regions. Aviation maps usually include broader geographic areas, though with less fine detail.

Sextant: The 18th-century tool that revolutionized sea navigation by allowing a captain to calculate his position from star charts and the position of stars relative to the horizon. Although not in common use due to the advent of simpler and more accurate technologies, sextants were still found on some oceangoing vessels as backup systems. Use of a sextant for navigation requires an accurate timepiece and specialized archaic knowledge (Seamanship Professional or an appropriate degree).

Satellite Navigation

Originally developed as closed military networks, satellite navigation systems became available for civilian use in the 1990s and enjoyed an explosion of popularity in the first decade of the 21st century. By the beginning of the Collapse, three global networks were operational: the Global Positioning System (GPS), managed by the U.S. Air Force; *Global'naya Navigatsionnaya Sputnikovaya Sistema* (GLONASS), a joint project of the Russian Space Forces and the Indian Space Research Organization; and the European Space Agency's Galileo. In addition, China and Japan had both deployed regional systems that provided similar service within their borders and territorial waters.

Because of the military advantages of pinpoint navigation, all of the networks were adjusted by the end of 2012 to only allow civilian receivers accuracy to within 100 meters. This contributed to the Collapse's overall disruption of world transportation systems, as almost all commercial aviation and shipping had come to rely heavily on satellite navigation. Military-grade receivers deployed by forces friendly to each network owner were still capable of 3-meter accuracy.

All five networks were high-priority targets during the frenzy of anti-satellite warfare, but replacement was an equally high priority until the nuclear exchanges wiped out most launch facilities. As of mid-2013, all of the networks remain intact enough to provide a normal level of service. However, the loss of most ground-based control stations means that normal maintenance operations are now impossible, and the effectiveness of the networks will degrade over the next several years.

Rules: In mid-2013, use of a civilian GPS receiver provides a +2 bonus to all appropriate navigation- or location-related tasks — including some that may not be immediately obvious, such as HALO jumps in zero visibility or land surveying. A military-grade receiver provides a +3 bonus. A mapping unit increases either bonus by 1. These bonuses will be reduced by 1 per year as the networks decay. By the end of 2017, even a military-grade mapping unit will be useful only for obtaining the correct time from a satellite's onboard atomic clock.

Terrain Mobility

Aquatics

Dive computer: A waterproof electronic device that monitors both a scuba diver's depth and the amount of oxygen remaining in his tanks. This device automates the process of ascending and decompressing, providing a much greater safety margin for extended dives. A dive computer runs for 20 hours on a pair of small batteries.

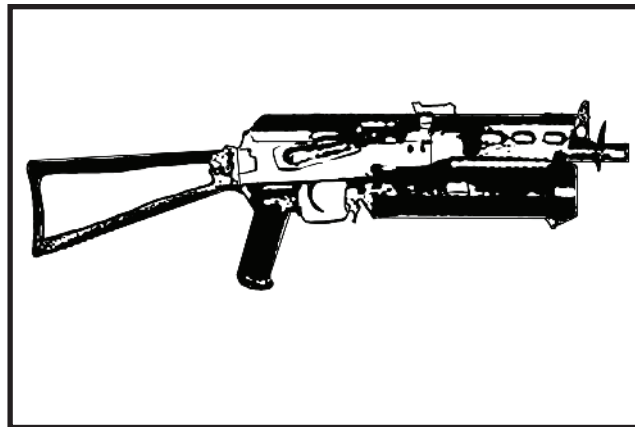
SCUBA gear: A self-contained underwater breathing apparatus, including two air tanks, a regulator, mask, and buoyancy rig. When fully charged, the tanks provide enough air for an hour of moderately vigorous activity at 300 meters, or up to three hours of light duty at lesser depths. Deeper and longer dives require specialized gas mixes which are effectively impossible to obtain.

Snorkel: A diving mask and breathing tube enabling a diver to swim just under the surface.

Swim fins: A pair of rubber fins that attach to a swimmer's feet, increasing his swim speed by 3 meters per action.

Climbing

Climbing harness: A waist and thigh harness suitable for ascent or descent. This is the minimum gear (along with rope, of course) necessary for rappelling.



Climbing kit: No two serious climbers have exactly the same kit. This represents a generalized collection of belays, carabiners, pitons, ascenders, descenders, nuts, and cams, as well as a chalk bag and hammer. This is the minimum set of gear (in addition to a climbing harness and rope) necessary for ascents.

Grapnel: A 3- or 4-pronged metal hook used for securing a thrown rope onto a wall, tree, or roof. A grapnel has a weight limit of 1,500 kg and folds down to the size of a beer can.

Freefall

Altimeter: A device that measures atmospheric pressure, giving a jumper his approximate altitude above sea level. A keen awareness of where the *ground* is located in relation to sea level is still required.

HALO bottle: Supplementary equipment for making high-altitude/low-opening jumps that start between 4,000 and 6,000 meters. A HALO bottle is a small air tank attached to a breathing mask. It is not suitable for underwater or hazardous atmosphere use.

Parachute, military: A typical circular canopy used for static line jumps. A standard military chute has limited maneuverability, being designed for simplicity and reliability.

Parachute, reserve: A small emergency parachute designed to be worn on the chest and used if the jumper's main chute fails. A reserve chute is a lifesaving, rather than aerobic, device and inflicts a -2 penalty on control checks.

Parachute, sports: A rectangular aerobic parachute. Consumer models tend to be brightly-colored for aesthetic appeal and emergency visibility. Military models are rare (typically used by special operations units for covert drops) and made in drab colors. A sports parachute provides a +2 bonus to control checks.

Paraglider: Similar to a parachute, a paraglider is designed not only for a safe descent, but for long-distance glides from cliffs, bridges, or other high places. A skilled wearer (the Freefall skill is used) can ride updrafts and thermals, attaining a speed of up to 50 km/hr. A paraglider has a nominal glide ratio of 10:1 (i.e. 10 meters of horizontal travel for every meter of altitude lost), compared to about 3:1 for a standard parachute. A single-person paraglider can lift up to 110 kg, while a tandem paraglider can handle an additional passenger and a total of 240 kg. Either model packs down to the size of a rucksack with 30 minutes of work; 10 minutes are required for safe unpacking and deployment.

Paramotor: This backpack unit consists of a 2-stroke gasoline engine and a 2- or 3-bladed propeller in a metal cage, attached to a hand throttle and electric ignition by a short cable. When used with a paraglider, its thrust enables the wearer to significantly extend his flight time (Freefall [CDN] skill check, multiply glide ratio by margin of success). A paramotor has a 5-

<i>Navigation</i>			
Item	Weight	Barter Value	Street Price
Compass	Neg.	GG2.5	\$10
GPS, civilian, basic	0.1 kg	GG60	\$120
GPS, civilian, mapping	0.2 kg	GG225	\$450
GPS, military, basic	0.1 kg	GG90	\$120
GPS, military, mapping	0.2 kg	GG340	\$450
Map, GPS data card	Neg.	GG50	\$100
Map, printed	Neg.	GG0.5	\$5
Sextant	2 kg	GG350	\$700
<i>Aquatic Gear</i>			
Item	Weight	Barter Value	Street Price
Dive computer	0.3 kg	GG150	\$1,200
SCUBA gear	20 kg	GG500	\$2,000
Snorkel	2 kg	GG5	\$40
Swim fins	1 kg	GG5	\$40
<i>Climbing Gear</i>			
Item	Weight	Barter Value	Street Price
Climbing harness	0.4 kg	GG1	\$80
Climbing kit	5 kg	GG250	\$2,000
Grapnel	0.8 kg	GG30	\$150
<i>Freefall Gear</i>			
Item	Weight	Barter Value	Street Price
Altimeter	0.2 kg	GG40	\$160
HALO bottle	6 kg	GG580	\$375
Parachute, military	9.6 kg	GG120	\$1,200
Parachute, reserve	6.7 kg	GG90	\$900
Parachute, sports	7.4 kg	GG180	\$1,800
Paraglider, solo	7.2 kg	GG600	\$2,400
Paraglider, tandem	8.6 kg	GG750	\$3,000
Paramotor	25 kg	GG875	\$3,500
<i>Snow and Ice Gear</i>			
Item	Weight	Barter Value	Street Price
Skis, cross-country	7 kg	GG75	\$1,500
Skis, downhill	7 kg	GG65	\$1,300
Snowshoes	2 kg	GG9	\$180
<i>Camouflage</i>			
Item	Weight	Barter Value	Street Price
Facepaint	0.2 kg	GG5	\$5
Netting, 1 m ²	0.2 kg	GG1.25	\$5
Netting, IR, 1 m ²	0.2 kg	GG2.5	\$10
Tape, 10 m roll	0.1 kg	GG2.5	\$10
<i>Lines</i>			
Item	Weight	Barter Value	Street Price
Cable, steel, 30 m	11.8 kg	GG4	\$65
Cable, synthetic, 30 m	1.6 kg	GG15	\$230
Chain, steel, light, 30 m	23 kg	GG4.5	\$75
Chain, steel, heavy, 30 m	462 kg	GG25	\$400
Paracord, 30 m	0.2 kg	GG0.5	\$8
Rope, climbing, 30 m	1.5 kg	GG10	\$75
Strap, cargo, 10 m	1.8 kg	GG2.5	\$40

Table 7q: Terrain Mobility Equipment

liter fuel capacity and consumes 4 liters per hour of fully powered flight or 2 liters per hour of occasional assists. The weight of a paramotor counts against a paraglider's total payload.

Snow and Ice

Skis, cross-country: Wide skis optimized for long treks across snow-covered countryside. The set includes boots, bindings, and poles.

Skis, downhill: Narrow skis optimized for speed and maneuverability. The set includes boots, bindings, and poles.

Snowshoes: Wide, flat attachments for boots to allow normal walking motion over deep snow. A character wearing snowshoes cannot sprint or run.

Camouflage

Facepaint: A small compact containing 3 or 4 colors of grease paint, usually shades of brown, green, or black. Tropical formulations are more sweat-resistant and include insect repellent blended into the paint. Applying camo paint takes 5 minutes and a Fieldcraft (AWA, TN +3) check. If successful, the paint increases the bonus of other camouflage by 1, but it provides no bonus to concealment if it's the wearer's only means of camouflage. One compact is good for 20 applications, assuming use only on the face and hands.

Netting: A fabric mesh designed to break up the outline of tents, vehicles, lookout posts, and anything else that needs to be concealed from prying eyes. Available in sheets large enough to hide a tank, camo netting is often cut down for ease of handling and for hiding smaller objects. As a rough guide, a human-sized object requires 8 m², an automobile needs 30 m², a pick-up or SUV needs about 40 m², a 2.5-ton cargo truck requires 150 m², and a tank or IFV needs 200 m². In addition to standard visual camouflage, enhanced camo netting which masks an object's thermal signature from infrared sensors is also available.

Tape: Adhesive tape printed in a camo pattern, intended for use on weapons and personal equipment. 4 meters of camo tape will cover a submachine gun; 6 meters will cover a rifle or shotgun.

Lines

Cable, steel: A braided steel cable about 10 mm thick, rated for pulling a 1,500 kg weight or suspending up to 6,500 kg. Cable of this type is commonly used on winches designed for recovering light passenger vehicles.

Cable, synthetic: A 10 mm cable of advanced synthetic fibers, rated for pulling a 2,000 kg weight or suspending up to 9,250 kg. Synthetic cable is generally preferable to steel cable of the same diameter, but its cost limited widespread adoption.

Chain, steel, light: Load-handling chain commonly used in heavy transport applications. Individual links are 10 mm thick and a single length will support up to 3,300 kg.

Chain, steel, heavy: With individual links 25 mm thick, this steel chain is intended for heavy cargo-handling use. A single length will hold a 20-ton weight.

Paracord: Thin nylon cord suitable for general camp use. Though military parachute cord is tested to weights of 250 kg (or 550 pounds, hence its nickname of "550 cord"), it is insufficiently robust to be safe for climbing or rappelling use.

Rope, climbing: 11 mm synthetic rope suitable for climbing or general-purpose fastening and restraint. Climbing rope is factory tested to a 2-ton load, though strains, cuts, and abrasions of individual fibers can significantly reduce this safety margin.

Strap, cargo: A heavy-duty nylon strap about 10 cm wide, suitable for securing light cargo or towing light vehicles for moderate distances. Rated to support up to 18 tons in non-

aggressive use, but only capable of safely pulling about 2 tons under any sort of sustained stress.

MEDICAL EQUIPMENT

In the Twilight War, as in countless wars before it, more casualties succumbed to disease than to enemy fire. Medical supplies of all sorts were expended at a prodigal rate, seemingly to no avail. Today, despite the level of pre-war stocks, medical equipment is among the most rare and precious of resources.

First Aid Kits

Prepackaged kits of basic medical supplies were available through a variety of sources. As the name implies, these kits were intended only for immediate trauma treatment, not long-term care. Each of the following kits is described in "factory new" condition, including all consumables. Note that most consumer-market kits do not contain any pharmaceuticals, as these are restricted substances.

Boo-boo kit: This is a small plastic box or nylon pouch containing small adhesive bandages and other supplies suitable for treating only the most trivial of wounds ("boo-boos," in child care slang). Its unfortunate appellation is trauma professionals' acknowledgment that it has no benefit for treating any injury significant enough to have game effects. However, it may be a useful comfort item for roleplaying purposes, and it does contain 1 unit of mild pain reliever.

Civilian first aid kit: The upscale version of a boo-boo kit, civilian first aid kits were commonly found in the households and vehicles of well-prepared consumers, as well as the supplies of outdoors enthusiasts. A civilian first aid kit consists of 2 units of first aid supplies, 2 units of mild pain reliever, and 1 unit of anti-diarrheal, all packaged in a plastic box or nylon pouch. It also includes a fair amount of boo-boo supplies.

Field medic kit: Issued to designated squad medics and fighting vehicles, a field medic kit contains supplies sufficient for treating multiple wounds during or immediately after a firefight. This kit contains 4 units of first aid supplies, 8 units of strong pain reliever, 4 units of clotting agent, and a pair of EMT shears. The kit is packaged in a pair of MLBE utility pouches (included; see p. 218). A civilian paramedic's kit is identical except for its container, which typically is a brightly-colored shoulder bag with reflective tape strips.

IFAK: Standard military issue for all personnel, an individual first aid kit (IFAK) contains the supplies necessary to treat a single gunshot wound. An IFAK contains two units of first aid supplies, one unit of strong pain reliever, and one unit of clotting agent. The kit is typically packaged to fit into an MLBE medical pouch (included; see p. 218) for easy attachment to load-bearing equipment. In many units, it's common practice for each member to mount his IFAK in the same location. If an individual takes a hit, the teammate who administers first aid can easily locate and use the casualty's IFAK.

Site first aid kit: Legally required in many offices and factories, a site first aid kit is a metal cabinet or plastic case mounted to a wall in a central location. It is intended for treating workplace injuries and contains 4 units of first aid supplies, EMT shears, a CPR mask, and several spare pairs of gloves.

Medical Tools

Serious medical work requires more than rolls of gauze and tape. Without the proper tools, a surgeon can do little more than look on helplessly. Each of the following tool sets includes a bag or case for carrying the individual implements.

<i>Medical Aid Kits</i>			
First Aid Kit	Weight	Barter Value	Street Price
Boo-boo kit	0.2 kg	GG1	\$20
Civilian first aid kit	0.8 kg	GG22.5	\$90
Field medic kit	1.9 kg	GG400	\$300
IFAK	0.6 kg	GG55	\$110
Site first aid kit	2 kg	GG50	\$100
<i>Specific Tools</i>			
Medical Tools	Weight	Barter Value	Street Price
AED	1.5 kg	GG2,500	\$2,500
Body bag	2 kg	GG1	\$40
EMT shears	0.2 kg	GG0.5	\$10
Litter, folding	6 kg	GG10	\$400
Stethoscope	0.2 kg	GG100	\$100
<i>Tool Sets</i>			
Medical Tools	Weight	Barter Value	Street Price
GP tools	5 kg	GG500	\$1,000
Dental tools	1 kg	GG500	\$500
Surgical tools, basic	1 kg	GG250	\$250
Surgical tools, comprehensive	12 kg	GG10,000	\$10,000
Surgical tools, disposable	0.8 kg	GG50	\$100
Surgical tools, specialized	4 kg	GG8,000	\$8,000
<i>Basic Supplies (per unit)</i>			
Medical Consumable	Weight	Barter Value	Street Price
Burn cream	0.1 kg	GG25	\$25
Clotting agent	0.1 kg	GG60	\$30
Dental supplies	1.8 kg	GG200	\$200
First aid supplies	0.2 kg	GG7.5	\$30
Hydration salts	Neg.	GG0.05	\$1
Surgical supplies	1.8 kg	GG200	\$200
Syringes, disposable, 100	0.2 kg	GG12.5	\$25
<i>IV Supplies (per unit)</i>			
Medical Consumable	Weight	Barter Value	Street Price
Blood, artificial, 450 mL	0.5 kg	GG250	\$500
Blood, whole, 45 omL	0.5 kg	GG2.5	\$25
IV fluids, 1 liter	1 kg	GG10	\$20
Plasma, freeze-dried, 450 mL	0.6 kg	GG60	\$30
Plasma, liquid, 450 mL	0.5 kg	GG10	\$25

Table 7r: Medical Equipment

Specific Tools

AED: An automatic external defibrillator (AED) is a portable heart monitor with the capability to autonomously administer electric shocks if a patient enters cardiac arrest. It is designed for field use by relatively untrained personnel, and includes both an LCD display and a small speaker for providing text and spoken instructions to the user. Attaching an AED to a patient requires a Medicine (COG, TN +3) skill check. With success, it will monitor the patient and, if he becomes unstable, attempt stabilization. An AED is considered to have Medicine Competent and rolls against a TN of 9. Alternately, if the user attempts to stabilize the patient, the AED provides a +2 bonus. It is powered from a single large specialist battery, which is good for 24 hours of monitoring or 3 resuscitation attempts.

Body bag: A zippered, fluid-resistant bag designed to hold used character sheets.

EMT shears: Heavy-duty scissors with angled blades, these are designed for cutting away a victim's clothing to enable rapid access to wounds. A pair of EMT shears can cut through even the

weak points of soft body armor, but their blunted safety tip makes them useless as an improvised weapon. Blades wear out quickly, however, if used to cut anything thicker than light clothing.

Litter, folding: A collapsible litter equipped with straps for securing a patient and an extendable pole for mounting an IV fluid bag. When folded, it measures 110 cm x 20 cm x 15 cm.

Stethoscope: Used to listen to the sounds made by the human body as an aid to diagnosis. Also used by safecrackers to perceive the falling tumblers of a combination lock.

Tool Sets

GP tools: Every general practitioner (GP) has a collection of basic tools that have remained relatively unchanged for a century. GP tools are basic diagnostic and treatment items for virtually all medicine. A typical set includes thermometers of various sorts, an otoscope, an ophthalmoscope, a blood pressure cuff, a stethoscope, a small flashlight, tongue depressors, examining gloves, a reflex hammer, and the ubiquitous clipboard full of forms. Items with separate entries in this chapter are included in the weight and cost

<i>Pharmaceutical</i>				
Pharmaceutical	Weight*	Barter Value	Street Price	Form
Anesthetic, local	0.01 kg	GG1	\$2	injected
Anesthetic, total, 20-unit tank	0.7 kg	GG80	\$200	gas
Anesthetic, total	0.01 kg	GG20	\$40	injected
Antibiotic, broad-spectrum	0.05 kg	GG30	\$30	injected (ref)
Antibiotic, broad-spectrum	0.05 kg	GG60	\$60	pill
Antibiotic, Gram-negative	0.05 kg	GG30	\$30	injected (ref)
Antibiotic, Gram-negative	0.05 kg	GG60	\$60	pill
Antibiotic, Gram-positive	0.05 kg	GG30	\$30	injected (ref)
Antibiotic, Gram-positive	0.05 kg	GG60	\$60	pill
Antidepressant	0.1 kg	GG8.75	\$35	pill
Antidiarrheal	0.05 kg	GG0.05	\$1	oral liquid
Antidiarrheal	0.02 kg	GG0.1	\$1	pill
Antihistamine	0.05 kg	GG0.5	\$10	pill
Atropine/2-PAM-Cl	0.01 kg	GG2	\$20	injected
Antivenin, specific	0.05 kg	GG200	\$200	injected (ref)
Birth control	0.3 kg	GG18	\$90	pill
Insulin	0.2 kg	GG250	\$200	injected (ref)
Maintenance drugs, specific	0.1 kg	GG500	\$400	pill
Pain reliever, mild	0.01 kg	GG0.01	\$0.20	pill
Pain reliever, strong	0.01 kg	GG0.5	\$1	injected (ref)
Pain reliever, strong	0.01 kg	GG1	\$1	pill
Potassium iodide	0.5 kg	GG100	\$200	pill
Sedative, mild	0.05 kg	GG0.5	\$10	oral liquid
Sedative, mild	0.02 kg	GG1	\$10	pill
Sedative, strong	0.01 kg	GG1	\$5	injected (ref)
Sedative, strong	0.01 kg	GG2.5	\$5	pill
Stimulant, mild	0.01 kg	GG0.25	\$1	pill
Stimulant, strong	0.01 kg	GG1.25	\$10	injected
Vaccine, specific	0.05 kg	GG50	\$50	injected (ref)
Vitamins	0.2 kg	GG2	\$20	pill

* Weights given are per unit.

<i>Autoinjectors</i>				
Pharmaceutical	Weight*	Barter Value	Street Price	Form
Atropine/2-PAM-Cl	0.1 kg	GG5	\$50	injected
Pain reliever, strong	0.1 kg	GG6	\$60	injected
Stimulant, strong	0.1 kg	GG4	\$40	injected

Table 7r: Medical Equipment continued

of the GP tool set.

Dental tools: An oft-overlooked aspect of survival medicine, field dentistry is a specialty of sometimes painful importance. This toolkit contains the picks, mirrors, and other implements necessary for cleaning, pulling, or filling teeth.

Surgical tools, basic: A set of field surgical tools designed for minor invasive procedures under emergency conditions. This set includes exploratory and surgical equipment such as forceps, probes, operating scissors, scalpels, and suturing needles.

Surgical tools, comprehensive: In addition to the contents of the basic surgical tool set, this kit also includes equipment for major amputations or internal medicine, including a bone saw, rib spreader, clamps, and other, less savory instruments.

Surgical tools, disposable: This is a lightweight set of tools with contents identical to those of the basic surgical tool kit. However, while ordinary surgical tools are entirely steel and designed to be re-used after sterilization, these tools cannot safely be sterilized without warping their plastic bodies. They can be used for multiple procedures in a single sitting if the surgeon isn't

concerned about cross-contamination.

Surgical tools, specialized: Surgery has a range of specialties, ranging from parts of the body to ages of the patient. Each specialty has evolved its own set of instruments, which augment the comprehensive surgical tools for greater flexibility within that field.

Medical Consumables

Every medical task requires not only tools, but disposable supplies. The following items are the manufactured and prepackaged consumables that modern medicine considers essential. Unless otherwise noted, all of the following items were originally packaged in sealed and sterile plastic or foil containers.

Basic Supplies

Burn cream: Intended for both immediate first aid and long-term care, burn cream is designed to relieve pain, cool tissue, facilitate skin healing, and prevent infection. One unit of burn cream (50 mL) provides a +2 bonus to perform first aid on a single

location that has sustained a burn. It can also be used to satisfy the supply requirement for long-term care of a burn.

Clotting agent: Introduced in the early 21st century, clotting agent is a powder which reacts with moisture to rapidly form a solid seal. Its foremost use is controlling severe bleeding in battlefield medicine. One unit of clotting agent (a 12x15cm packet) provides a +2 bonus to perform first aid on a single injured location that has sustained a penetrating wound, or a +1 bonus to a stabilization attempt. It is not recommended for use on the head or in internal medicine, as it also reacts with tears and mucus, and its chemical reaction generates a significant amount of waste heat.

Dental supplies: One unit of dental supplies contains swabs, sutures, and filling material suitable for a single procedure.

First aid supplies: Basic medical supplies for controlling bleeding and treating other external injuries. One unit of first aid supplies typically includes gauze, adhesive tape, antiseptic wipes, a wound dressing, and burn cream, as well as a single pair of latex or nitrile gloves.

Surgical supplies: All the expendable items necessary for surgical procedures, including scalpel blades, swabs, suction and intravenous tubing, needles and catheters, syringes, surgical lubricant, a suction bulb, and so forth.

Syringes, disposable: One-use syringes suitable for administering injected pharmaceuticals.

IV Supplies

All of the following items are fluids intended for intravenous introduction into a patient's system. Each unit of IV supplies is provided in a plastic bag and packaged with a two-meter line suitable for attachment to a needle.

Blood, artificial: Only accepted from field trials a few years before the Twilight War, "artificial blood" is a mixture of human blood components and chemicals. It is not a complete blood replacement: although it replicates natural blood's oxygen-carrying functions, it does not carry nutrients or immunological components. Artificial blood can be stored at room temperature for 3 years and is compatible with all blood types (see sidebar).

Blood, whole: The human body contains approximately 5 liters of blood, which it uses for oxygenating tissue, maintaining body temperature, and transporting nutrients. Whole blood is taken in 450mL units from donors for use in transfusions. When combined with stabilizing chemicals, its refrigerated shelf life is 6 weeks. If not refrigerated, blood cells begin to die within hours, and the blood is useless for medical purposes within a day.

Hydration salts: An improved version of popular consumer sports drink mix, used to replenish electrolytes lost to dehydration. One unit of hydration salts is mixed with one liter of water, which then counts as two liters for the purpose of recovering from dehydration. Note that this is temporary relief; long-term recovery still requires the dehydrated character to resume normal fluid intake.

Plasma: The main liquid component of blood and the part that contains many of the proteins vital for life and clotting. Plasma is used as a blood expander in trauma treatment in the absence of whole blood. Liquid plasma must be frozen and, once thawed, lasts for less than a day. In the early 2010s, most militaries returned to the WWII-era use of freeze-dried plasma, which is stable at room temperature for 3 years. Each unit includes a 400mL bottle of distilled water. Mixing freeze-dried plasma requires 3 minutes, after which it is safe to use for 4 hours.

IV fluids: Used to replace volume in the circulatory system, rehydrate a severely dehydrated patient, and carry medications directly into the bloodstream. This category covers several types of IV fluids, such as basic saline solution and Lactated Ringer's solution, which are identical for game purposes. All IV fluids can be stored at room temperature indefinitely.

Stage III: Blood Typing

Medical science recognizes eight distinct blood types, categorized by three variables. Each variable depends on the presence or absence of one antigen, or immunological trigger. The three antigens are A, B, and Rhesus (or "positive" and "negative"). Blood with neither the A nor the B antigen is referred to as "Type O." If an antigen is present in blood, it will cause a life-threatening allergic reaction in a patient who lacks that antigen. Thus, a character with B- blood type has only the B antigen, and cannot safely receive whole blood containing the A or Rhesus antigens. O- is the universal donor blood type, inoffensive to all other types, while AB+ is a universal recipient, capable of accepting a transfusion of any blood type.

To determine the blood type of a given character or supply of whole blood, roll percentile:

Die Result	Blood Type
1-38	O+
39-72	A+
73-81	B+
82-84	AB+
85-91	O-
92-97	A-
98-99	B-
100	AB-

Table 7s: Random Blood Type

All military identification carries the bearer's blood type. Some soldiers and police officers also stencil their blood types on their body armor or LBE to aid emergency treatment. In the absence of such information, testing blood type requires about 45 minutes and one unit of blood typing chemicals (0.1 kg, GG37.5, \$75).

Pharmaceuticals

Pharmaceutical research and production was one of the most competitive and lucrative aspects of prewar medicine. Dwindling supplies and the ever-present threats of injury and disease make the world's remaining drug supplies some of its most valuable trade commodities.

In the following item descriptions and traits, each substance is listed on a per-unit basis unless otherwise specified, and one unit is equal to a single course of treatment. The number of actual doses in a "unit" vary depending on the drug in question. A single injection of strong pain reliever is a complete treatment, while 14 separate injections (collectively one unit) are required for a complete rabies vaccination treatment. The Form column of the equipment table indicates whether a drug is solid (ingested as a pill), liquid (administered orally or via injection), or gaseous (inhaled). A notation of "(ref)" indicates that the drug must be refrigerated and becomes useless at room temperature.

Anesthetic, local: Used for surgery and temporary relief of acute localized pain, local anesthetic numbs a single hit location without inducing unconsciousness. One unit is a single dose.

Anesthetic, total: Used to render a patient unconscious for invasive or extended surgery. One unit is a single dose, which keeps the recipient "under" for 2d6H hours.

Antibiotic: A chemical which kills bacteria within the human body. Antibiotics are ineffective on fungal infections and viruses, and some bacterial strains are resistant to them. For game purposes, three different types of antibiotics exist: Gram-positive,

Gram-negative, and broad-spectrum. One unit provides one week's worth of treatment.

Antidepressant: An antidepressant suppresses the neurochemicals that cause depression, but does not rectify the behavior or neurological causes of the condition. One unit provides a month's worth of treatment. While on antidepressants, a character's Stress value is considered to be 1d10 lower (roll at the beginning of treatment).

Antidiarrheal: Over-the-counter "liquid cork." One unit provides one day of relief from nausea and diarrhea, but does not treat the underlying cause.

Antihistamine: OTC treatment for allergies. One unit provides two weeks of relief.

Atropine/2-PAM-CI: Treatment for nerve agents, as per the poison rules (see p. 179). Atropine and 2-PAM-CI are separate substances but administered together, hence their inclusion here as a single entry.

Antivenin, specific: Biomedical treatment for a specific natural poison, such as snake venom. Antivenin for a species typically is stocked only in hospitals within its natural range, or within zoos or research facilities that contain specimens. One unit is a single treatment, as per the poison rules (see p. 179).

Birth control: Suppresses female fertility and mitigates the effects of the reproductive cycle. One unit is sufficient for three months of treatment.

Insulin: The body uses insulin to control the processing of sugars in the bloodstream. A diabetic character produces insufficient insulin to facilitate this process, and therefore requires an external source. One unit is a single bottle containing enough for two months of daily injections.

Maintenance drugs, specific: By the time of the Twilight War, modern medicine was able to keep at bay any number of conditions that decades before would have been painful or deadly. One unit of maintenance drugs provides a month's worth of treatment for a specific ailment (as per the Maintenance Condition disadvantage - see p. 124).

Pain reliever, mild: An OTC pain and fever medication such as ibuprofen or aspirin.

Pain reliever, strong: A prescription-strength pain medication, usually a controlled substance due to the potential for addiction. One unit is a single dose.

Potassium iodide: This chemical prevents the body's thyroid gland from absorbing radioactive iodine, which is commonly released as fallout from a nuclear explosion or reactor meltdown. However, it does nothing to prevent absorption of any other radioactive substance, nor does it block direct radiation exposure, facts which were rarely present in marketing literature in the years before the Twilight War. If a character begins daily treatment at least 12 hours before coming in contact with fallout, potassium iodide reduces radiation dosage accumulation by 10%. One unit provides three months of treatment.

Sedative, mild: An OTC sleep aid, sometimes with additional substances for relief of coughing and sore throat. One unit is a single dose.

Sedative, strong: A prescription-strength sleep aid or antipsychotic medication, usually controlled due to the potential for abuse and addiction. One unit is a single dose.

Stimulant, mild: An OTC stimulant with effects roughly equal to those of coffee or tea (see p. 172). One unit is a single dose.

Stimulant, strong: A controlled stimulant, typically an amphetamine or epinephrine. Controlled in most countries due to strong addictive potential. One unit is a single dose.

Vaccine, specific: Vaccination for a variety of ailments was commonplace in most developed nations before the war, and travelers abroad often received additional vaccines for local diseases. In some cases, notably rabies, receiving the vaccine after

infection but before symptoms develop can aid in recovery. One unit is sufficient to immunize one character.

Vitamins: Few survivors are able to maintain a balanced diet, which can result in a variety of long-term illnesses. One unit of multivitamin tablets provides a three-month supply. A character on a daily vitamin regimen receives a +1 bonus to all Fitness checks made to resist wound and disease infection.

Autoinjectors

An autoinjector is a spring-loaded syringe, about the size of a permanent marker, manufactured with a single dose of a specific drug. It is designed to be carried or stored over long periods, and to be used to rapidly administer its contents in an emergency. Using an autoinjector is a 2-tick action (if used to attack, it is considered a Bulk 1 improvised weapon). A successful use (or attack) immediately injects the drug into the subject.

TOOLS AND POWER

Man is a tool-using animal, and centuries of industrial progress have resulted in a dizzying array of specialized implements for specific tasks. The following equipment constitutes only a small sampling of the tools that characters may accumulate in their travels.

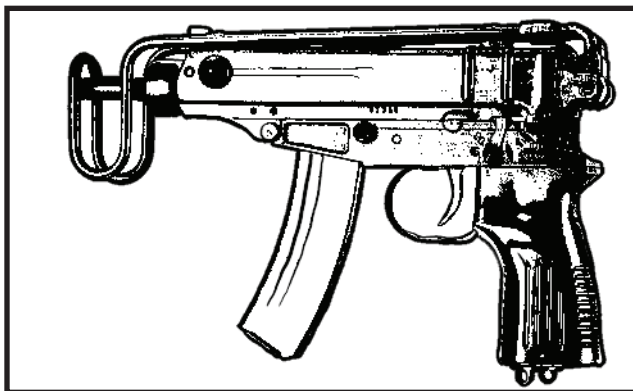
Unpowered Tools

Basic hand tools: The standard collection of tools that most homeowners and vehicle owners accumulate for minor do-it-yourself work. Exact contents of each set vary, but commonly include screwdriver, wrench, and socket sets, pliers, hammers, tin snips, saws, files, and a hand-cranked drill. This is the minimum tool set required to perform most basic Construction and Mechanics tasks without excessive cursing.

Bolt cutters: A long-handled cutting implement capable of exerting up to two tons of cutting force, made with fiberglass handles for use around live electrical wires.

Construction tools: This collection of tools for structural and interior work on buildings is pared down significantly from its prewar contents. In the absence of power tools and energy on which to run them, this set is more likely to contain a variety of hand tools specialized for various tasks, including laying bricks and mortar, cutting, shaping, and joining heavy wood, and laying plaster.

Crowbar: A meter-long iron shaft with an octagonal cross-section and a curved hook at one end, useful for all manner of mayhem. A crowbar provides a +3 bonus to Muscle checks made to force open doors or containers. In combat, it functions as a baseball bat.



Unpowered Tools				
Tools	Weight	Barter Value	Street Price	
Basic hand tools	20 kg	GG20	\$400	
Bolt cutters	2.5 kg	GG2.5	\$50	
Construction tools	40 kg	GG50	\$400	
Crowbar	2.4 kg	GG0.2	\$20	
Electrician's tools	10 kg	GG125	\$500	
Electronics tools	2 kg	GG50	\$200	
Mechanic's tools	30 kg	GG250	\$1,000	
Multitool	0.3 kg	GG6	\$60	
Prybar	0.2 kg	GG0.15	\$15	
Swiss army knife	0.15 kg	GG2.5	\$25	
Armament Tools				
Tools	Weight	Barter Value	Street Price	
Gun cleaning kit	0.3 kg	GG10	\$40	
Gunsmith's tools	4 kg	GG75	\$300	
Ordnance tools	20 kg	GG225	\$900	
Reloading bench	14 kg	GG50	\$200	
Other Specialist Tools				
Tools	Weight	Barter Value	Street Price	
Demolition tools	2.5 kg	GG150	\$300	
Locksmith's tools	1 kg	GG125	\$250	
Portable darkroom, basic	3 kg	GG12.5	\$50	
Portable darkroom, advanced	18 kg	GG600	\$2,400	
Powered Tools				
Powered Tools	Weight	Barter Value	Street Price	Power Req.
Air compressor	39 kg	GG800	\$3,200	see text
Aircraft tools	75 kg	GG625	\$2,500	0.3 kW
Aircraft tools, model-specific	20 kg	GG200	\$20,000	0.5 kW
Basic power tools	15 kg	GG150	\$1,200	0.5 kW
Cement mixer, portable	70 kg	GG85	\$680	0.6 kW
Chainsaw, electric	3.3 kg	GG25	\$100	2.2 kW
Chainsaw, gasoline	4.5 kg	GG50	\$200	see text
Machine shop, portable	2.5 tons	GG625	\$5,000	1 kW
Rescue saw	11 kg	GG350	\$1,400	see text
Vehicle tools, model-specific	10 kg	GG100	\$10,000	0.2 kW

Table 7t: Tools and Power

Electrician's tools: All of the tools necessary for working on structural or vehicular electrical systems. Typical contents include circuit testers, screwdrivers, a hand drill and a selection of bits, and a variety of small insulated hand tools.

Electronics tools: Most modern consumer electronics contain no user-serviceable parts, but older equipment - which is undergoing renewed popularity in 2013 - is more apt to be repairable under field conditions. This small kit contains a soldering iron, circuit tester, resistance meter, small screwdrivers, a few insulated tools for maneuvering components into and out of tight spaces, and a variety of spare components and other necessary substances.

Mechanic's tools: A comprehensive set of tools for performing general work on most ground vehicles and light watercraft. While unlikely to hold the perfect tool for every job, it's likely to have something close enough for improvisation. A typical set contains hammers, screwdrivers, a socket set, pry bars, wheel chocks, a 2-ton jack, and other tools for working on internal combustion engines and the vehicles attached to them.

Multitool: The 21st-century replacement for the venerable Swiss Army knife is a folding multi-function device small enough

to fit in a pocket. The most common features include pliers, a knife blade, scissors, a serrated blade, a file, and multiple screwdriver blades. Deluxe models tend to have additional specialized tools (sometimes even modular attachments). While no substitute for a complete toolkit, a multitool is small enough to be carried in a pocket at all times and is better than bare hands for many small mechanical tasks.

Prybar: The crowbar's smaller (40 cm) cousin, a prybar provides a +2 bonus to Muscle checks made to force open doors or containers. In combat, it functions as a baton.

Swiss army knife: The classic solution for mechanical improvisation is still useful in 2013. A standard Swiss army knife includes two knife blades, a corkscrew, flat and cross-headed screwdrivers, a wire stripper, bottle and can openers, a toothpick, and a pair of tweezers.

Armament Tools

Gun cleaning kit: A basic maintenance kit for small arms, containing cleaning rods, bore brushes, lubricant, solvent, cleaning patches, and nylon toothbrushes. A typical kit that's been in use for a while contains brushes and supplies appropriate for cleaning

Welding and Cutting Torches						
Powered Tools	Weight	Barter Value	Street Price	Power Req.		
Arc welder	30 kg	GG100	\$400	2 kW		
Oxy-fuel torch	20 kg	GG150	\$600	-		
Hydraulic Tools						
Powered Tools	Weight	Barter Value	Street Price	Power Req.		
Power unit	45 kg	GG160	\$8,000	see text		
Rescue cutter	20 kg	GG160	\$8,000	see text		
Rescue ram	15 kg	GG100	\$5,000	see text		
Generators						
Generator	Weight	Barter Value	Street Price	Fuel Cap	Fuel Cons	Output
Fixed, small	222 kg	GG460	\$3,700	* (D)	2 L/hr	6 kW
Fixed, medium	295 kg	GG810	\$6,500	* (D)	2.7 L/hr	12 kW
Fixed, large	1.4 tons	GG2,500	\$20,000	* (D)	11 L/hr	60 kW
Fixed, huge	1.8 tons	GG3,600	\$29,000	* (D)	16 L/hr	100 kW
Fixed, enormous	6.4 tons	GG16,000	\$125,000	* (D)	110 L/hr	800 kW
Portable, tiny	14 kg	GG190	\$760	3.8 L (G)	0.6 L/hr	1.25 kW
Portable, small	84 kg	GG500	\$4,000	16 L (G)	1.6 L/hr	5.4 kW
Portable, medium	550 kg	GG2,500	\$8,000	50 L (D)	2.5 L/hr	11.5 kW
Vehicle inverter	0.4 kg	GG25	\$50	-	-	0.3 kW
* Fixed generators do not have internal tanks; they are designed to be connected to external fuel sources.						
Alternate Power Sources						
Generator	Weight	Barter Value	Street Price	Output		
Bicycle generator	4 kg	GG850	\$850	see text		
Hydro generator	25 kg	GG1,150	\$2,300	see text		
Solar cell	54 kg	GG1,100	\$2,200	0.2 kW		
Wind turbine, small	6 kg	GG320	\$640	0.1 kW		
Wind turbine, medium	1.1 tons	GG13,000	\$26,000	10 kW		
Wind turbine, large	14.5 tons	GG120,000	\$240,000	250 kW		
Wind turbine tower, 20 m	2 tons	GG4,700	\$9,400	-		
Wind turbine tower, 40 m	26.5 tons	GG42,500	\$85,000	-		
Stills						
Still	Weight	Barter Value	Street Price	Input	Output	
Small	30 kg	GG140	\$700	1.75 kg	1 L	
Medium	150 kg	GG400	\$2,000	70 kg	40 L	
Large	1.2 tons	GG3,600	\$18,000	350 kg	200 L	
Industrial	16 tons	GG20,000	\$100,000	2 tons	1,100 L	

Table 7t: Tools and Power continued

weapons of 1d6 different calibers.

Gunsmith's tools: Most gunsmiths assemble their toolkits gradually as their skills grow. This represents a piecemeal collection typical for an experienced gunsmith, including watchmaker's screwdrivers, metal files, clamps, punches, a small hammer, and a micrometer calipers. It also contains a cleaning kit (above) with brushes and rods suitable for all small arms calibers and barrel lengths.

Ordinance tools: The equivalent of gunsmith's tools for heavy weapons, this kit resembles its smaller counterpart in everything but scale and the addition of specialized tools for checking the alignment of moving parts and sighting systems.

Reloading bench: All of the tools necessary for reloading small arms ammunition, including powder measures, a reloading press, a small scale, a case cleaner, and a few ballistics reference manuals. A typical reloading bench comes with the caliber-specific parts (dies) necessary for reloading 1d3 different calibers. Additional dies are available separately (0.05 kg, GG1, \$20) for every small arms caliber.

Other Specialist Tools

Demolition tools: A canvas shoulder bag containing all of the tools necessary for rigging and detonating explosives. A typical set includes pliers, a wire stripper/crimper, a small folding knife, a hand-cranked blasting machine (see p. 269), shears, measuring tape, a few nonmetallic simple tools, grease pencils and permanent markers, a dentist's mirror, and a compact explosives reference manual. A good luck charm is also common. The bag has space for additional supplies such as wire, igniters, and adhesive tape.

Locksmith's tools: Equally applicable for both legitimate and criminal locksmithing, this set contains the tools necessary for opening most mechanical locks. It contains a variety of rakes, torsion wrenches, picks, key extractors, car openers, and probes, as well as any other implements that the individual practitioner has added to suit his preferred techniques. It does not include a stethoscope, though locksmiths who expect to encounter combination locks may carry one.

Portable darkroom, basic: A set of chemical and optical equipment usable for developing 35mm film into standard prints. A skilled photographer using this apparatus can develop photos at a rate of one per three minutes (minimum one hour of work).

These items can pack down into a single oversized briefcase.

Portable darkroom, advanced: In addition to providing basic developing capabilities, the additional equipment included in this set allows enhancement and manipulation of photographs. It's also more efficient, allowing the development of up to one exposure per minute (minimum 30 minutes of work).

Powered Tools

Air compressor: A semi-portable air compressor suitable for inflating large vehicle tires or filling scuba tanks. This design includes its own dedicated gasoline engine (fuel capacity 4 liters, consumption 2 liters/hr). The compressor has a flow rate of 0.1 m³ per minute, which will fully pressurize a scuba tank in 20+1d10 minutes or inflate a vehicle tire in 1d6 minutes.

Aircraft tools: Aeronautical engineers can't make an aviation mechanic's life simple by using the same components required for ground vehicles. Most modern aircraft require a variety of specialized tools, sometimes even specific to the individual design. This collection represents a generalist's kit for performing most Mechanics/Aviation tasks.

Aircraft tools, model-specific: A manufacturer's recommended set of tools for working on a particular model of aircraft. This set enhances the basic aircraft toolkit, increasing all relevant bonuses by 2 when used with the intended aircraft.

Basic power tools: A collection of salvaged power tools that can supplement the basic general tools or mechanic's tools for a variety of tasks. A typical set includes an electric drill, powered screwdriver, circular saw, jigsaw, angle grinder or power sander, and shop light, as well as 1d3 other implements. The set has a 2 kW power requirement.

Cement mixer, portable: A 170-liter mixing drum mounted on a wheeled carriage (not suitable for towing as a trailer). An electric motor is built in, but the drum can also be turned by hand. Two characters can produce 100 liters of cement with two hours of hard work.

Chainsaw: Available in electric- and gasoline-powered models. A gasoline chainsaw has a 1-liter fuel tank and consumes 1 liter of fuel per hour.

Machine shop, portable: "Portable" is a misnomer for this heavy collection of metalworking tools. Designed to fit into a 5-ton cargo trailer with room for a single machinist to work, a portable machine shop contains all of the tools necessary for the fabrication of new metal or polymer parts out of bar stock. Typical equipment includes a milling machine, drill press, lathe, rotary metal saw, water cutter, and a small forge, as well as a ventilation fan, a few electric lights, and a collection of measuring tools and personal safety equipment. A portable machine shop assumes the presence of basic hand and power tools.

Rescue saw: A small gasoline engine (1-liter capacity, uses 4 liters per hour) connected to a 30 cm circular saw blade with carbide cutting tips. A rescue saw can cut anything up to light armor plating or concrete, though one scene of such use will blunt the blades.

Vehicle tools, model-specific: A manufacturer's recommended set of tools for working on a particular model of ground vehicle. Typically, such tools are available only for military vehicles, whose specialized engineering requirements result in designs that don't always conform to automotive industry standards. This set enhances the basic mechanic's toolkit, increasing all relevant bonuses by 2 when used with the intended vehicle.

Welding and Cutting Torches

Arc welder: This system uses electrical energy to heat metal rods, depositing a bead of molten metal between the surfaces to be welded. It requires consumable electrode rods to form the weld.

Oxy-fuel torch: A welding/cutting device that combines pressurized oxygen and acetylene (see p. 247) to produce a flame at approximately 1,000°C. The heat liquefies metal, allowing the user to either bond together two pieces or separate a single piece.

Hydraulic Tools

Power unit: A hydraulic pump capable of powering up to two hydraulic tools at a time, each connected to a 10-meter line (included). This design includes its own dedicated gasoline engine (fuel capacity 7.5 liters, consumption 2.5 liters/hr).

Rescue cutter: A typical "Jaws of Life"-style tool capable of shearing metal with 60 tons of cutting force. A skilled operator can remove an automobile's roof in about two minutes. A rescue cutter requires hydraulic power to operate.

Rescue ram: Typically used for prying apart vehicle wreckage, a rescue ram is 0.9 meters long when retracted, but extends to twice that length while exerting 7.5 tons of force. A rescue ram requires hydraulic power to operate. It does not extend rapidly enough to be useful for tactical forced entry.

Generators

Electrical power is in constant demand in 2013. The following equipment converts various other sources of energy into electricity. Unless otherwise noted, any of the following items that burn fossil fuels can be adapted to appropriate alternate fuels as the rules for vehicles (see p. 276). All fuel consumption ratings are per hour of use.

Fixed generator: A typical generator used for powering a building (or an entire facility). Fixed generators are designed for extended run times; "moderate use" is considered about 140 hours per week.

Portable generator, tiny: A suitcase-size gasoline-powered generator, technically man-portable if lashed to a pack frame. The typical prewar market for such devices was campers who wanted to maintain some of the comforts of home, such as electric lights and "portable" refrigerators. All portable generators are designed for temporary running, not long-term constant demands; "moderate use" is considered about 80 hours per week.

Portable generator, small: A wheelbarrow-sized chassis containing a generator adequate for powering a two-bedroom house during a short-term outage. Generators of this type were sold by the truckload in the pre-Y2k panic and saw renewed popularity in the years leading up to the Collapse.

Portable generator, medium: A one-ton cargo trailer with a permanently-affixed generator. This generator type was commonly used by construction companies on work sites. An external fuel source can be connected to supplement the internal tank.

Vehicle inverter: A favorite of casual outdoorsmen before the Twilight War, a vehicle inverter plugs into a passenger vehicle's cigarette lighter or 12V accessory outlet, converting the vehicle's DC power into a minimal supply of AC power. An inverter has two standard outlets and can provide power as long as the vehicle's engine is running.

Alternate Power Sources

Renewable (or "green") energy sources became popular in the early 21st century, due to both environmental concerns and a fear that the world's oil supply was approaching exhaustion. With cities receiving priority for power distribution, remote communities and farms experienced more frequent outages. The disruption caused by the Twilight War's early stages served to further exacerbate these problems, prompting a sudden surge in sales of the systems described here. In 2013, a renewable power generation system is both a blessing and a curse for a community. Keeping the lights on

- in both the literal and figurative senses - is a capability for which many survivors are willing to kill.

Bicycle generator: A small generator that converts simple mechanical energy to electrical power. It can be powered by a foot treadle, a hand crank, or, as the name suggests, a bicycle. In the latter installation, the bicycle is placed in a stationary frame, and its rear wheel is replaced with a mechanical linkage (included with the generator). Restoring the bicycle to normal use requires 15 minutes of work. Pedaling the generator is considered heavy work. The generator's output depends on the user's fitness: 0.1 kW per point of Muscle.

Hydro generator: This water-driven turbine can be installed on any waterway with at least a 5-meter depth. Power generation is equal to 0.2 kW per 1 km/hr of the water current's speed, to a maximum of 1.8 kW. Currents faster than 12 km/hr cause the generator to feather its blades and shut down to prevent damage.

Solar cell: A single industry-standard solar cell consists of a 1 m x 1.5 m pane, a pair of large specialist batteries, and a conversion system. Typically, multiple cells are installed as a single array, as the output of a single cell is minimal under even optimum sunlight.

Wind turbine, small: Designed for powering houseboats or motor homes, this turbine is semi-portable and can fulfill the basic battery charging needs for a small group's personal gear, assuming adequate wind. Some western nations began using turbines of this size to power roadside warning signs in the early 2010s, providing a readily-available source to savvy salvagers. A small wind turbine has a blade diameter of half a meter and must be mounted at least 3 meters off the ground.

Wind turbine, medium: This modernization of the venerable windmill is suitable for powering small farmsteads or driving mechanical pumps for crop irrigation. A medium wind turbine has a blade diameter of about 7 meters and must be mounted at least 20 meters off the ground to avoid ground-related turbulence. It is not portable - erecting or disassembling it requires at least a day of heavy work.

Wind turbine, large: Suitable for providing power for isolated installations or small communities, a large wind turbine has blades about 30 meters in diameter and requires a tower at least 40 meters tall. Turbines of this size were commonly deployed in "wind farms," arrays of dozens of individual generators connected to the same power distribution system.

Stills

A still is required for the creation of alcohol for either fuel or drinking (see p. 246). Most stills in operation in 2013 are recent one-off creations rather than prewar commercial products.

Wind Power

A wind turbine uses a semi-constant renewable power source, but this places it at the mercy of nature. Low wind won't turn the blades enough to generate usable current, while excessively high wind will cause the turbine's automatic self-protection systems to feather the blades, shutting down the generator to avoid damage. In game terms, calm air (wind speeds below 4 km/hr) generates no power at all. Mild wind conditions generate rated power, with peak efficiency occurring around 24 km/hr. Sustained moderate wind - 40 km/hr - over several days can inflict a point of Wear to a small or medium wind turbine. Strong wind - 63 km/hr or higher - engages the emergency cutouts, ending power output until the wind speed drops to safe levels again.

Still, small: A closet-sized still of the sort common for home beer brewing during the prewar era. It is technically portable, though any rough handling has a 50% chance of ruining the current batch.

Still, medium: A large homebrew (or small moonshine) still, typically housed in a ramshackle shed in a secluded rural area. A medium still can be reinforced for semi-mobile use on a truck or trailer (double weight).

Still, large: A typical still used in commercial microbreweries, or the postwar equivalent thereof. Not portable while operating, a large still can be disassembled or reassembled with about 20 man-hours of heavy work.

Still, industrial: A still suitable for sustained large-scale production of alcohol. Not portable by any stretch of the imagination; assembly or disassembly requires several weeks of work (and a suitable building to house the apparatus).

SENSORS AND SENSORY AUGMENTATION

Compared to most predators, humans may as well be deaf and blind. Technology can improve the range of a character's natural senses or provide him with information completely outside the capability of a living being.

Illumination

Fire was the first "technological" advancement that allowed man to push back the night and the things that hunted in it. Most characters are likely to prefer something a little more sophisticated than a burning branch.

Candle: Made from animal fats, candles are widely available in the postwar environment in virtually any agricultural area. This entry represents a typical candle with an 8-hour burn time; adjust weights and prices accordingly for smaller decorative tea-lights or massive week-long church candles.

Chemlight: Also known as a "cold light" or "light stick," a chemlight is a liquid-filled sealed plastic tube. A small capsule within the tube contains a second chemical. When the user bends the chemlight, the capsule shatters, allowing the two chemicals to mix. The resulting reaction produces steady light for about 8 hours, then gradually fades over the next 1d3 hours. Chemlights are available in a variety of colors, with white, red, green, and yellow being the most common. High-intensity and infrared versions are also available; the former emit bright light for a limited period (20+1d10 minutes), while the latter are visible only to night-vision optics.

Flashlight: A battery-powered electric light. Flashlights come in a variety of sizes and configurations. For game purposes, four basic designs exist. A micro light is the size of a pen or keychain fob, and provides illumination suitable only for reading maps or navigating a darkened hotel room. A hand flashlight is still small enough to be carried in a pocket but provides adequate illumination at Personal and Gunfighting range. A duty flashlight is a large, heavy light of the sort commonly issued to police, and can be used as a club if need be; it provides adequate illumination through CQB range. A tactical flashlight is the size of a hand flashlight but has the intensity of a duty flashlight, but it cycles through batteries at a much higher rate. Rechargeable models are also available in hand and duty sizes (3x barter value, 2x street price). Infrared versions of micro and tactical flashlights are available (10x barter value, 3x street price); their illumination is visible only through night-vision optics.

Headlamp: A high-intensity battery-powered LED light attached to a flexible head strap. These hands-free lights are commonly used by campers, paramedics and rescue workers, and

<i>Illumination</i>				
Light Source	Weight	Barter Value	Street Price	Power/Usage
Candle	0.1 kg	GG0.01	\$1	-
Chemlight, standard	Neg.	GG0.3	\$1.25	-
Chemlight, high-intensity	Neg.	GG0.6	\$2.5	-
Chemlight, IR	Neg.	GG2.4	\$5	-
Flashlight, micro	Neg.	GG2	\$20	1 micro/40 hrs
Flashlight, hand	0.1 kg	GG3	\$30	2 sm/8 hrs
Flashlight, tactical	0.1 kg	GG12	\$120	2 sm/30 min
Flashlight, duty	1 kg	GG8	\$80	3 med/6 hrs
Headlamp	0.1 kg	GG8	\$40	2 sm/4 hrs
Lamp, battery	1 kg	GG3	\$25	4 med/20 hrs
Lamp, oil	1 kg	GG2	\$40	0.1 L/30 hr
Searchlight, semi-portable	1.4 kg	GG8.75	\$75	1 lg/1 hr
<i>Magnification</i>				
Vision Enhancement	Weight	Barter Value	Street Price	Power/Usage
Binoculars, standard, Mag-2	1 kg	GG8	\$80	-
Binoculars, standard, Mag-3	1.2 kg	GG20	\$200	-
Binoculars, standard, Mag-4	1.4 kg	GG40	\$400	-
Binoculars, compact, Mag-1	0.2 kg	GG6	\$60	-
Binoculars, compact, Mag-2	0.3 kg	GG16	\$160	-
Laser designator	16 kg	GG7,500	\$30,000	1 lg spec/5 hrs
Spotting scope, Mag-5	5 kg	GG100	\$1,000	-
Telescope, astronomical, Mag-5	9 kg	GG15	\$750	-
Telescope, nautical, Mag-2	1 kg	GG3.25	\$65	-
<i>IR Night Vision</i>				
Vision Enhancement	Weight	Barter Value	Street Price	Power/Usage
Night vision binocs, Mag-1	1.2 kg	GG200	\$800	4 sm/40 hrs
Night vision binocs, Mag-2	1.4 kg	GG300	\$1,200	4 sm/40 hrs
Night vision viewer	1.5 kg	GG100	\$400	4 sm/40 hrs
NVGs, binocular	0.7 kg	GG450	\$4,500	4 sm/40 hrs
NVGs, monocular	0.4 kg	GG360	\$3,600	2 sm/40 hrs
NVGs, panoramic	0.8 kg	GG900	\$12,000	4 sm/40 hrs
<i>Thermal Imaging</i>				
Vision Enhancement	Weight	Barter Value	Street Price	Power/Usage
Thermal imager	2 kg	GG560	\$2,800	charge/6 hrs
Thermal imager, Mag-1	2.1 kg	GG850	\$3,400	charge/6 hrs
Thermal imager, Mag-2	2.1 kg	GG1,100	\$4,400	charge/6 hrs

Table 70: Sensors and Sensory Augmentation

anyone else who needs hands-free illumination.

Lamp, battery: A portable omni-directional light source, usually with a fluorescent rather than incandescent bulb.

Lamp, oil: Common for centuries, oil-burning lamps became quaint decorative novelties with the advent of the electric light bulb. They are now experiencing a resurgence, and their manufacture is not outside the reach of some backyard machinists and professional glassblowers. A typical oil lamp consists of a metal or glass reservoir, a wick, and a glass shield inside a metal frame. It will burn virtually any flammable liquid that the wick can soak up, but most commonly uses kerosene or vegetable oil.

Searchlight, semi-portable: This painfully bright hand-held searchlight can run on battery power or a car's accessory socket.

Vision Enhancement

Magnification

Every vision enhancement device capable of magnifying an

image has a Magnification (Mag) value, expressed as "Mag-#." Such a device reduces the apparent visual range to a target by a number of range bands equal to its Mag value. For example, Mag-3 binoculars bring a target three range bands closer for the purpose of assessing visual range penalties (see p. 74). If a target is at Extreme range (a -32 visual range penalty), an observer using the binoculars can detect and examine it as if it were at Medium range (a -4 visual range penalty). However, if a combination of close range and high Mag brings a target to Personal range or closer, the effective visual range is too close for any meaningful observation to take place.

Binoculars: Standard binoculars are built to withstand typical field conditions. Compact models are intended for casual birdwatching or opera viewing and are neither as powerful nor as rugged. For game purposes, both types are available in a variety of Magnification ratings.

Spotting scope: Typically used by sniper teams and naturalists, this is a compact, rugged telescope with an adjustable magnification of 20x to 60x. It includes an adjustable tripod.

Laser designator: A multi-function optical device used for guiding laser-homing missiles and bombs to their targets. A laser designator includes a Mag-3 spotting scope, a military GPS receiver, a Mag-3 thermal imager (see following), a laser rangefinder, and a laser designator. The device breaks down for transport into its tripod (5.2 kg), laser module (5 kg), and GPS and optics (5.8 kg). The optic module can be used separately like a bulky set of handheld binoculars. The system is powered by a rechargeable large specialist battery (1 kg, GG500, \$2,000).

Telescope, astronomical: A mid-range consumer telescope designed for stargazing. This device includes a tripod and an auto-tracking mount (uses 4 small batteries) which allows it to be locked onto a single object and follow it as the earth rotates. Its maximum usable magnification is 300x, though observation of moving targets is impractical at this power.

Telescope, nautical: A replica of a traditional 17th-century naval telescope. This ornate brass instrument has a fixed magnification of 12x.

Infrared (IR) Night Vision

Modern night vision equipment amplifies ambient infrared light to produce a monochrome image. A character using night vision optics treats dim or minimal light as if it were adequate light. However, exposure to adequate or brighter light effectively blinds him as the optics shut down to prevent damage. Total darkness requires the use of a source of infrared light to provide enough reflected IR to produce an image.

Night vision binoculars: These handheld binoculars combine low magnification with infrared imaging technology.

Night vision viewer: A non-magnifying infrared imaging device whose sole virtue is relatively low cost.

Night vision goggles (NVGs): Battery-powered night vision devices designed to be strapped to the wearer's head or mounted to the forehead of his helmet. NVGs are available in both monocular and (non-magnifying) binocular designs. Monoculars are lighter and less expensive, but restrict the wearer's field of vision more. A character wearing binocular NVGs suffers a -2 penalty to all Awareness- and OODA-based checks, including initiative. Monocular NVGs increase this penalty to -3. A character wearing NVGs cannot take advantage of any weapon optics (see p. 258) except reflex sights.

NVGs, panoramic: Rare and expensive, these binocular NVGs feature a wider range of vision, reducing the penalty to -1. They were issued only to special operations aircrews and were rare even before the Twilight War.

Thermal Imaging

Thermal imaging devices sense the infrared light emitted by objects and convert this into a false-color visual image. Hotter objects emit more IR energy, which makes them stand out as "brighter" in the image. A character using thermal optics treats all lighting conditions as adequate light, and completely ignores any visual penalties caused by smoke, dust, or other airborne particulates. However, viewing particularly intense heat sources (fires, flares, etc.) can "white out" the image. In addition, precipitation tends to equalize surface temperatures; a thermal imaging device suffers penalties one range band worse than normal when used in such conditions. Thermal imaging is completely incapable of discerning surface details such as actual colors, markings, or identifiable facial features.

Thermal imager: About the size of a digital video recorder, this is a portable thermal imager suitable for field use in a variety of roles. It's capable of minimal (1.5x) magnification and is powered by a rechargeable internal battery. It can detect human-sized heat sources out to Sniping range. Models with electronic magnification are available for a premium.

Photography

Stills

Camera, 35 mm: By the early 2010s, traditional film photography was the domain of professionals alone. Few manufacturers still produced 35 mm single-lens reflex (SLR) cameras for the entry-level consumer. Consumer models are likely to be several years old. For game purposes, consumer units cannot accept accessories from a lens kit (see below). They also have fewer manual settings, which reduces the user's ability to compensate for poor lighting conditions.

Camera, digital: The standard for still photography in the 21st century. A digital camera accepts a single memory card, onto which it can write several hundred images. Most digital cameras are also capable of shooting poor-quality video, with up to 30 minutes being stored on a card. As with 35 mm cameras, the differences between consumer and professional units are in image quality and accessory compatibility. A single set of batteries is good for approximately 500 exposures.

Lens set: Housed in a padded metal attaché case, this is a set of specialized lenses assembled to an individual photographer's needs and preferences. Most lens sets include 4-10x zoom lenses (Mag-1 and Mag-2), wide-angle lenses, and high-power lenses with magnification of 20x or greater (Mag-3 and Mag-4), as well as battery-powered flashes for intense illumination. These lenses will attach to any professional-grade film or digital camera.

Video

Camcorder: A consumer-oriented device suitable for recording family gatherings, children's sporting events, or amateur adult videos. A camcorder runs on a rechargeable large specialist battery (spares are 0.15 kg, GG30, \$75) and can record up to 50 hours of video to an internal hard drive.

Video camera, professional: A shoulder-carried camera of the type used by news and film crews around the world. This device can record up to four hours of high-definition video to a single data cassette, and runs on a rechargeable large specialist battery (spares are 1.5 kg, GG400, \$1,000).

Miscellaneous Sensors

Dosimeter: A small plastic badge containing a piece of radiation-sensitive film. As the film is exposed to radiation, it changes color, displaying a darkening that begins at one end and gradually extends upward. Dosimeters are not precise, but serve to alert the wearer when his cumulative dose exceeds an industrial standard for safe exposure. Dosimeters are manufactured in foil wrapping and have a 5-year shelf life.

Gas detector: This electronic monitoring device combines several different gaseous analysis instruments into a single package, providing detection capabilities for several hundred hazardous industrial and chemical warfare substances. Its major liability is a lack of stand-off capability - if it's sounding a warning, it's already inside the gas cloud, along with the individual holding it.

Geiger counter: This hand-held radiation detector gives an audible warning when local ambient radiation exceeds a user-defined level, as well as providing both a visual indication of current levels and the traditional nerve-wracking clicking. It can also record for up to 36 hours and can be connected to a computer for data transfer.

HAZMAT paper: A small sheet of paper treated with a set of reactive chemicals, arranged in a set of labeled squares. Each chemical changes color in response to the presence of a specific chemical hazard: nerve agent, mustard gas, chlorine, arsenic, hydrogen sulfide, or cyanide. If left exposed in the open air, the

Stills				
Photography Equipment	Weight	Barter Value	Street Price	Power/Usage
Camera, 35 mm, consumer	0.3 kg	GG5	\$100	-
Camera, 35 mm, professional	0.5 kg	GG25	\$500	-
Camera, digital, consumer	0.1 kg	GG25	\$200	2 sm/500 ex.
Camera, digital, professional	0.8 kg	GG175	\$1,400	4 sm/500 ex.
Lens set	3 kg	GG625	\$5,000	-
Video				
Photography Equipment	Weight	Barter Value	Street Price	Power/Usage
Camcorder	0.6 kg	GG100	\$800	charge/5 hrs
Video camera, professional	6 kg	GG3,000	\$27,000	charge/6 hrs
Miscellaneous Sensors				
Item	Weight	Barter Value	Street Price	Power/Usage
Dosimeter, box of 200	2 kg	GG300	\$300	-
Gas detector	0.5 kg	GG5,000	\$5,000	4 sm/12 hrs
Geiger counter	0.1 kg	GG400	\$400	4 sm/7 days
HAZMAT paper, 12 sheets	Neg.	GG50	\$25	-
Weather monitor	0.2 kg	GG40	\$160	1 med/7 days

Table 7v: Photography Equipment

paper will react when it comes in contact with vapor or droplets. If wiped across a contaminated surface, it will change color immediately.

Weather monitor: A hand-held station incorporating a thermometer, anemometer, barometer, and humidity meter.

COMPUTER HARDWARE AND SOFTWARE

The prewar world lived on its computers. Complex electronic systems ran homes, offices, vehicles, and virtually every piece of infrastructure upon which a modern citizen relied. In a matter of minutes, EMP destroyed virtually all of these delicate systems, paralyzing everything and everyone that relied upon them. Arguably, this contributed more to the Collapse than any single source of casualties or physical destruction. Computers, once so commonplace as to be beneath notice, are now rare and precious items. Those who can claim working computer technology have access to troves of information which has the potential to rebuild the world... or complete its destruction.

Computer Systems

Prior to the Collapse, computer hardware was one of the most rapidly-evolving areas of technology. Generations of hardware rapidly became obsolete as faster, smaller, and more energy-efficient replacements were introduced. In the postwar era, beggars can't be choosers, and equipment that would have been destined for the rubbish heap a few years ago is now a sought-after commodity.

Each of the following items is a complete and self-contained computing system, including one or more processors, hard drive or other internal data storage system, input devices, monitor, speakers, and network adapter. These computers are rated on a generational basis, as follows:

- *Archaic* systems are at least a decade old. While orders of magnitude slower than newer machines, they are still capable of basic data processing. An archaic system requires 5x the normal time for all tasks which rely on it.

- *Obsolete* systems are 5-8 years old and are unlikely to have been in current use at the time of the Twilight War. An obsolete system requires 3x the normal time for all tasks which rely on it.

- *Modern* systems were built in 2010 or later and are capable of handling most ordinary personal or business tasks. A modern system provides no bonus and inflicts no penalty.

- *State of the art* (SOTA) systems were the best on the market as of mid-2012. A SOTA system provides a +1 bonus to all tasks which make use of it.

- *Cutting-edge* systems were custom-built from hand-selected components within the year before the war. Most cutting-edge systems were the property of hobbyists or experimental labs. A cutting-edge system provides a +3 bonus to all tasks which make use of it.

Desktop: A standard non-portable personal computer of the sort common in millions of homes and offices around the world. Higher-rated desktop systems can also represent machines formerly used as Web or database servers.

Notebook: A standard portable computer intended for home, school, or office use, but highly vulnerable to harsh environments. Early generations were considered poor substitutes for desktop machines, but later notebooks commanded premium prices for their incorporation of desktop-equivalent performance into smaller components.

Notebook, ruggedized: Rare due to cost and limited demand, ruggedized notebook computers were built for hard use. A ruggedized system conforms to military and industrial standards for dust, impact/vibration, and moisture resistance, making it ideal for use in outdoor, maritime, construction, or laboratory environments. For purposes of Wear (see p. 184), a ruggedized computer considers all environments one degree less strenuous.

PDA/smartphone: Early personal digital assistants (PDAs) were little more than electronic address books and calendars, but later designs were capable of handling sophisticated, albeit task-specific, work. By the mid-2000s, the concept of the PDA had been subsumed into the "smartphone," which combined traditional PDA functions and cellular communication capability. Smartphones are now worthless as phones but still usable for basic computing functions.

Computer Systems				
Computer System	Weight	Barter Value	Street Price	Power/Usage
Desktop, archaic	30 kg	GG100	\$200	1.5 kW
Desktop, obsolete	15 kg	GG150	\$800	1.25 kW
Desktop, modern	10 kg	GG200	\$2,000	1 kW
Desktop, SOTA	11 kg	GG500	\$5,000	1.5 kW
Desktop, cutting-edge	12 kg	GG1,000	\$10,000	2 kW
Notebook, archaic	4.5 kg	GG100	\$400	charge/4 hrs
Notebook, obsolete	3.5 kg	GG200	\$1,000	charge/3.5 hrs
Notebook, modern	2.5 kg	GG300	\$3,000	charge/3 hrs
Notebook, SOTA	1.5 kg	GG600	\$6,000	charge/2.5 hrs
Notebook, ruggedized, obsolete	5 kg	GG500	\$2,500	charge/3 hrs
Notebook, ruggedized, modern	4 kg	GG1,000	\$5,000	charge/3 hrs
PDA, obsolete	0.1 kg	GG20	\$80	charge/8 hrs
Smartphone, modern	0.1 kg	GG100	\$400	charge/6 hrs
Smartphone, SOTA	0.1 kg	GG125	\$500	charge/5 hrs
Smartphone, GPS, modern	0.2 kg	GG125	\$500	charge/5 hrs
Smartphone, GPS, SOTA	0.2 kg	GG150	\$600	charge/4 hrs
Computer Peripherals				
Peripheral	Weight	Barter Value	Street Price	Power/Usage
Hard drive, external	0.2 kg	GG10	\$200	-
Hard drive, pocket	Neg.	GG5	\$100	-
Memory card	Neg.	GG2.5	\$50	-
Printer, portable	3 kg	GG20	\$400	charge/300 pg.
Router, wired	1kg	GG3	\$60	0.2 kW
Router, wireless	1 kg	GG5	\$100	0.3 kW
Scanner, portable	2 kg	GG4	\$80	0.2 kW
Computer Software				
Software		Barter Value	Street Price	
Business		GG100	\$2,000	
Cryptography		GG500	\$5,000	
CAD (per specialty)		GG250	\$2,000	
Diagnostic (per device family)		GG80	\$400	
Encryption		GG100	\$1,000	
Graphic design		GG35	\$700	
Navigation (per map set)		GG6	\$60	
Publishing		GG45	\$900	
Recording, audio		GG25	\$500	
Recording, video		GG75	\$1,500	
Reference (per topic)		GG10	\$200	

Table 7w: Computer Hardware and Software

Smartphone, GPS: This smartphone or PDA incorporates a civilian GPS receiver (see p. 225) into its construction. The device comes loaded with navigation software (see p. 241), which does not count against the normal one-program limit of a smartphone.

Peripherals

As with computers, most accessories were destroyed by EMP. Of those which survive, many are useless in the current environment. The following devices are likely to still be of some value to travelers with specialized needs.

Hard drive, external: This is a hard drive identical to that of a standard desktop system, enclosed in a portable housing the size of a paperback book. When connected to a computer, it draws power from the computer rather than relying on an outside source. Its data capacity makes it an ideal tool for backing up large amounts of data.

Hard drive, pocket: Smaller than an external hard drive in both size and capacity, this thumb-sized flash memory device still has room for a fair amount of information. These “pen drives” were a common means of carrying personal data in the decade before the war.

Memory card: An unprotected flash memory chip intended for use inside a device such as a digital camera or smartphone. Its capacity is equal to that of a pocket hard drive but it’s much more vulnerable to misadventure.

Printer, portable: Intended for use by travelers, this color inkjet printer runs on a rechargeable internal battery similar to that of a notebook computer. One ink cartridge (0.1 kg, GG4, \$80) prints approximately 300 pages of text or 50 full-page images.

Router: A device for connecting four or more computers into a data-sharing network. Routers are available in both wired and wireless models. Only modern or higher-rated systems can

connect wirelessly, and the effective range of a wireless network is approximately 30 meters. In game terms, a router enables additional users to apply their computers to a single task, providing the standard bonuses for help (see Chapter Three). Only one character may use a computer at a time, preventing additional helpers from aiding tasks performed with a non-networked computer.

Scanner, portable: This small flatbed scanner enables the user to make electronic copies of documents, or produce images of anything else that will fit on the scanning glass. It will accept paper up to the size of an A4 or letter sheet.

Software

In 2013, even the most powerful computer is little more than a curiosity without programs that have immediate practical uses. By the Twilight War, just about every conceivable task had some form of computer program to support it. The following programs are those with the most immediate value to survivors.

Like hardware, software is rated on a generational basis. A given piece of software's generation is the minimum hardware generation on which it will run (i.e. modern software will run only on modern, SOTA, or cutting-edge computers). In addition, when determining the bonus or penalty that a computer provides for a given task, use the lower-rated of the hardware or software being used (so using obsolete software on a SOTA system results in a x3 time penalty, not a +1 bonus). Prices given are for modern software. Assume 1/10 the listed price for archaic software, 1/4 for obsolete, 2x for SOTA, and 4x for cutting-edge.

Software has negligible weight, as data patterns on a disk don't have appreciable mass. If a character has installation media (e.g. CD-ROMs) for software, assume a weight of 0.1 kg.

Business: This suite of advanced business management tools includes software for tracking material inventory, processing payroll, and managing employee records. This can be of invaluable assistance in organizing large-scale reconstruction efforts and reducing the involved time and paperwork.

Software in Play

Computer-literacy isn't assumed for all characters. To start up a computer and use any software, including the standard package (see following), a character needs a Novice or better rating in Computing. To use any of the specialized software presented here, a character also must have either a Competent rating in a relevant skill or an appropriate degree. If he meets the prerequisites, he may use the items in question. In addition, if he is using SOTA or cutting-edge hardware and software, he may apply their listed bonus to all related tasks. He still suffers a time penalty for using archaic or obsolete computing equipment.

Standard Software

Every computer system includes a basic operating system, office suite (word processor, spreadsheet, and presentation programs), music and video players, and a few games and utilities. It is assumed that this software's generation matches that of the hardware on which it's installed.

Starting Equipment

Software's nonexistent weight makes it theoretically possible for a starting character to load up on high-value programs if he has a notebook computer in his personal gear. To forestall this, we recommend that a character begin play with no more than one piece of software on a smartphone, two on a laptop, or four on a desktop.

Cryptography: In addition to the basic functionality of encryption software (below), this set of programs also includes tools for analyzing and breaking codes. Cryptography software is not available for smartphones.

CAD: Computer-Aided Design software is standard in virtually any engineering workshop or design studio. A CAD package can be used to design virtually anything, from a simple bridge to an entire microprocessor. CAD software is available separately for architectural, mechanical, electrical, and electronic applications. It is not available for smartphones.

Diagnostic: Allows the user access to the internal functions of a computer-controlled piece of machinery. Typically, this is used to reprogram a device's operating parameters or diagnose mechanical or electronic problems. Diagnostic software is specialized and must be obtained separately for each single device or family of related devices (e.g. BMW automobiles, traffic signals, the Eurofighter Typhoon). This software comes with a wiring harness (0.1 kg) with which to connect the computer to the control system in question.

Encryption: Enables encryption of data and, with the proper cipher key, decryption of encrypted data. Modern and newer encryption software also enables on-the-fly encryption and decryption of live transmissions. This allows a user with an unencrypted radio to participate in encrypted conversations if the radio is patched into the computer running the software.

Graphic design: Tools for generating or modifying still images ranging from corporate logos to high-resolution photographs. Not available for smartphones.

Navigation: Satellite surveys and GPS allowed early 21st-century cartographers to create maps of amazing resolution, and computers provided voluminous storage space. Most navigation software was updated on an annual basis through 2011, which means any changes wrought by the Collapse aren't documented, but it's still invaluable for route planning. On its own, navigation software is a very detailed (albeit sometimes inaccurate) map that the user can annotate and update. When connected to a basic GPS receiver through the included data cable (negligible weight), the combination functions as a mapping GPS receiver. Navigation software must be acquired by area and type, as per any other map (see p. 241).

Programming: A programming suite enables the user to write new software to perform specific tasks. Not available for smartphones.

Publishing: This is a professional-grade suite of page layout and document management applications, enabling the user to prepare leaflets, magazines, or entire books for the press process. It can also be used for document forgery. Not available for smartphones.

Recording: Recording software is available separately in both audio and video varieties. Both versions perform the same basic function of taking raw data and converting it into a finished electronic media file. While not as full-featured as a professional studio, it does allow a sufficiently skilled user to create near-broadcast-quality recordings. Not available for smartphones.

Reference: Essentially, reference software is a portable encyclopedia or single-topic library. It must be acquired separately for general knowledge or for each specialized field (such as degrees, Artisan foci, base skills, and qualifications). Searching a reference database requires an Education check and 15 minutes; with success, the database provides a +2 bonus on appropriate EDU- and COG-based checks. Particularly desirable database topics can have barter values well in excess of those presented here.

<i>Books</i>				
Item	Weight	Barter Value	Street Price	
Novel, paperback	0.3 kg	GG0.25	\$10	
Novel, hardcover	1.2 kg	GG0.75	\$30	
Reference book, hardcover	2 kg	GG12.5	\$100	
Shop manual, paperback	0.5 kg	GG6.25	\$50	
Textbook, Novice	1.5 kg	GG25	\$100	
Textbook, Competent	1.6 kg	GG50	\$200	
Textbook, Professional	1.8 kg	GG50	\$200	
<i>Electronic Media</i>				
Item	Weight	Barter Value	Street Price	
Music CD	0.1 kg	GG0.15	\$15	
Shop manual, CD-ROM	0.3 kg	GG6.25	\$100	
Textbook, CD-ROM, Novice	0.2 kg	GG30	\$150	
Textbook, CD-ROM, Competent	0.3 kg	GG60	\$300	
Textbook, CD-ROM, Professional	0.4 kg	GG60	\$300	
Video DVD	0.1 kg	GG0.25	\$20	
Video game cartridge, portable	Neg.	GG0.1	\$50	
<i>Consumer Electronics</i>				
Item	Weight	Barter Value	Street Price	Power/Usage
CD player, personal	0.3 kg	GG1.25	\$20	2 sm/6 hrs
CD player/radio, portable	3 kg	GG3	\$120	6 med/5 hrs
Dictaphone	0.1 kg	GG6.25	\$50	2 sm/12 hrs
Digital media player, audio	0.1 kg	GG3.25	\$50	charge/20 hrs
Digital media player, video	0.1 kg	GG6.25	\$100	charge/20 hrs
DVD player, portable	1.4 kg	GG5	\$80	2 med/4 hrs
Game console, portable	1.3 kg	GG10	\$400	4 sm/2 hrs
Radio, outreach	1.2 kg	GG1	\$80	see text
Radio, personal	0.1 kg	GG0.25	\$10	2 sm/20 hrs
Radio, portable	1 kg	GG0.3	\$30	2 med/10 hrs
Razor, electric	1 kg	GG5	\$100	charge/45 min.

Table 7x: Luxury and Consumer Goods

LUXURY AND CONSUMER GOODS

Even after the Twilight War, humans struggle to maintain the comforts they enjoyed before the war. To some people this means mansions, power, and imported foods. To others, it's a favorite book or some other little luxury. The items in this section are but a small sampling of the things that characters might have made an effort to preserve.

Books and Electronic Media

Books can be both enjoyable and educational. While classic novels and other light reading can provide relief in the post-Twilight War world, an advanced chemistry textbook or a shop manual on steam plant design and engineering can be vital to rebuilding a community's industrial capacity (see Chapter Six for rules on using instructional material to improve a character's skills). In addition to printed material, data in electronic format (typically CD or DVD) is still valuable, though less useful due to the relative rarity of playback devices. Books, as always, require no batteries.

Consumer Electronics

Before the Twilight War, the ordinary citizen could hardly go five minutes without encountering an electronic device whose ostensible purpose was to make life easier. From washing machines to electric razors, these machines permeated every aspect of daily life. EMP was no more merciful to these items than

it was to survival necessities, and the tasks they once facilitated no longer require considerably more effort. Surviving consumer electronics now command premium prices, as many buyers see them as not just labor-saving or entertainment tools but scraps of civilization.

CD player, personal: The compact disc was a dying technology by the time of the Twilight War, just as its cassette tape predecessor was a generation before. CDs, however, are an optical storage medium, and immune to the EMP that wiped out downloaded music collections and flash memory.

CD player/radio, portable: A “boom box”-style combination AM/FM receiver and CD player.

Dictaphone: Any one of a variety of digital voice recorders used by professionals to take notes or record important conversations. Its maximum recording capacity is 20 hours of audio data.

Digital media player: The height of portable music before the Twilight War, digital media players in working condition are now much rarer than the older devices they had largely replaced. These devices are available in both audio and video varieties, respectively holding 400 hours of audio or a combination of 1,600 hours of audio or 200 hours of video. Both designs rely on internal rechargeable batteries.

DVD player, portable: About the size of a hardcover book, this entertainment console includes a flip-up screen, speakers, and a DVD playback system.

Game console, portable: This is a complete self-contained video game system, including screen, controller, processor, and speakers or headphones.

<i>Personal Accessories</i>			
Personal Accessory	Weight	Barter Value	Street Price
Contact lenses	Neg.	GG9	\$90
Eyeglasses, prescription	Neg.	GG15	\$150
Eyeglasses, reading	Neg.	GG0.25	\$10
Hearing aid	Neg.	GG10	\$100
Sunglasses	Neg.	GG2.5	\$50
Sunglasses, prescription	Neg.	GG20	\$200
<i>Timepieces</i>			
Personal Accessory	Weight	Barter Value	Street Price
Pocket watch	0.2 kg	GG4	\$40
Stopwatch	0.2 kg	GG3.75	\$30
Wristwatch, basic	0.1 kg	GG5	\$100
Wristwatch, complex	0.2 kg	GG15	\$300
Wristwatch, GPS	0.1 kg	GG150	\$300
<i>Miscellaneous Gear</i>			
Miscellaneous Item	Weight	Barter Value	Street Price
Duct tape, 50m roll	0.2 kg	GG0.2	\$5
Handcuffs	0.3 kg	GG42.5	\$85
Insect repellent	0.3 kg	GG0.3	\$12
Leg irons	1.2 kg	GG18	\$72
Scales, laboratory, digital	3.2 kg	GG25	\$250
Scales, laboratory, mechanical	6.8 kg	GG10	\$100
Weights, standard	exactly 0.111 kg	GG1	\$25
Zip ties, bag of 50	0.2 kg	GG0.5	\$5

Table 7x: Luxury and Consumer Goods continued

Radio, outreach: Before the Twilight War, a variety of radio receivers were being distributed in Third World nations to inform and educate citizens who may never have seen a television or a classroom. These designs are simple and rugged AM/FM receivers incorporating a hand crank and internal battery; 30 seconds of cranking charge the battery for 30 minutes of listening.

Radio, personal: Radio is the oldest form of portable entertainment, having outlasted a number of forms of recorded media that were once touted as its replacement. Although few stations are still on the air, many owners of working radios periodically check the airwaves out of habit or hope. This represents a typical handheld receiver, about the size of a deck of cards, capable of AM and FM reception. It has no external speakers, relying instead on the included headset.

Radio, portable: This larger AM/FM receiver has additional features such as electronic tuning, station presets, and a digital display. Its external speakers make it suitable for small groups of listeners.

Razor, electric: To some, a fresh, clean shave is just important enough to salvage a rechargeable electric razor from the ruins. This item includes a charging cable or dock, which requires about 30-40 watts and 6 hours for a full charge.

Personal Accessories

Contact lenses: A three-month supply of contact lenses for a specific prescription. Includes cleaning solution and a pocket case.

Eyeglasses, prescription: A set of corrective lenses for a specific prescription. See the Farsighted and Nearsighted disadvantages for effects.

Eyeglasses, reading: A simple set of magnifying lenses in a plastic or wire frame. These allow easier reading of fine print and close inspection of small details. If the wearer has the Nearsighted disadvantage, these mitigate its effects by one level.

Hearing aid: A small electronic device that fits in the ear

canal and amplifies sound to audible levels. If the wearer has the Hard of Hearing disadvantage, this device mitigates its effects by up to two levels. It requires a single micro battery, which provides 3 months of power.

Sunglasses: Designer frames matter little these days, but keeping the sun out of one's eyes can be important. Also available for specific prescriptions. Sunglasses reduce the level of ambient light (see p. 74) by one level.

Timepieces

Telling time is useful in everyday life, but it's vital for many basic forms of land and sea navigation, as well as for coordinating military operations in the absence of radio communication. Most of the following items are available in both electronic and mechanical versions, with the latter being more valued for their battery independence. Assume that any working digital timepiece has half the weight and barter value of its counterpart given here, but has 1d20 months of battery life remaining.

Pocket watch: A classic wind-up timepiece with basic hour, minute, and second hands. A pocket watch is not water-resistant and has only limited resistance to impact. Price includes either a metal lanyard or a leather belt case.

Stopwatch: Accurate to a tenth of a second, a stopwatch is used to time specific events, from races to chemical reactions to a torpedo's course.

Wristwatch, basic: A standard wind-up or electronic wristwatch with basic time and day functions, accurate to within 10 minutes per year. Designed for everyday wear, a basic wristwatch can handle brief water immersion to a depth of 10 meters. A "perpetual" design, which uses internal counterweights to wind itself as the wearer's body moves, costs 5x normal.

Wristwatch, complex: In addition to basic timekeeping functions, this heavier and more rugged wristwatch also features water resistance to a depth of 300 meters, an integral stopwatch. Specialized (and rare and expensive) designs may also have such

features as a flight/fuel calculator, an altimeter, a depth gauge, and so forth; see any catalog of fine timepieces for ideas. Perpetual designs are also available for 5x normal price.

Wristwatch, GPS: An electronic wristwatch incorporating the functions of a basic GPS receiver (see p. 225).

Miscellaneous Gear

Some gear just defies classification. The following items can be quaint curiosities or matters of life and death, depending on the situation and the GM's cruel whim.

Duct tape: Few engineers, techies, or geeks would be caught dead without at least one roll of this vital substance close to hand.

Handcuffs: Standard police-issue handcuffs for restraining a suspect. The set comes with 2 keys.

Insect repellent: Available in either aerosol spray or rub-on stick formula, this product is designed to repel midges and mosquitoes for about 6 hours per use. Each can holds enough repellent for 25 applications.

Leg irons: Like handcuffs, but for legs. The wearer suffers the effects of a moderate virtual leg injury to both legs.

Scales, laboratory: In the rare instances when "grams of gold" is a literal price rather than a convenient measure of relative value, these are used to determine the weight of gold being offered. Digital models are accurate to the hundredth of a gram, but rely on 2 small batteries (good for 1 year). Mechanical models are accurate to the tenth of a gram. Both have a maximum capacity of 4kg.

Weights, standard: Laboratory-grade 1 g, 10 g, and 100 g weights, now used to test a trading partner's scales to ensure that they're correctly balanced.

Zip ties: Thick plastic cable ties suitable for restraining wiring harnesses, sheaves of grain, wrists, or ankles. Zip ties are not reusable; once cinched tight, they must be cut off.

STORAGE

Liquid

Bulk tank: The efficient solution for storing large amounts of liquid. Small tanks are usually plastic containers enclosed in a protective metal frame, and are often carried in heavy pick-up trucks for agricultural use. Larger designs are entirely metallic and typically provide semi-portable storage for fuel at generators or field refueling points.

Drum: The ubiquitous "oil drum," available in metal or plastic.

Folding bladder: A flexible, clear plastic container with a carrying handle and pour spout. Awkward to carry when full, the bladder folds down to a fraction of its volume when empty.

Fuel bladder: The larger, sturdier cousin of the folding bladder, a fuel bladder is a reinforced rubber container designed for bulk transport of fuel under field conditions. It can survive a 100-meter fall from a slow-moving aircraft while filled and can be airdropped from greater heights with appropriate parachute equipment. It can also be used as a reserve fuel tank for a vehicle on the move (at the risk of obvious combat hazards).

Jerry can: The rectangular metal fuel canister seen on the backs of jeeps in thousands of movies.

Pump, hand: A one-man pump suitable for transferring

Liquid Storage			
Item	Weight*	Barter Value	Street Price
Bulk tank, 750 L	100 kg	GG20	\$400
Bulk tank, 1,000 L	130 kg	GG30	\$600
Bulk tank, 2,000 L	250 kg	GG37.5	\$750
Bulk tank, 4,000 L	520 kg	GG60	\$1,200
Drum, metal, 200 L	17 kg	GG10	\$45
Drum, plastic, 200 L	10 kg	GG15	\$65
Folding bladder, 20 L	0.3 kg	GG1	\$9
Fuel bladder, 300 L	70 kg	GG20	\$700
Fuel bladder, 1,100 L	250 kg	GG30	\$1,000
Jerry can, 20 L	2 kg	GG5	\$25
Pump, hand	11.3 kg	GG25	\$100
Pump, motorized	16 kg	GG25	\$230

* All weights are for empty containers, as contents' weight may vary by type.

Dry Goods Storage			
Item	Weight*	Barter Value	Street Price
Ammo can	3 kg	GG0.8	\$8
Cargo pallet	20 kg	GG0.75	\$15
Handgun case, hard	1 kg	GG20	\$40
Handgun case, soft	0.5 kg	GG15	\$30
Long gun case, hard	4 kg	GG40	\$80
Long gun case, MLBE	1.7 kg	GG50	\$100
Long gun case, soft	1.5 kg	GG32.5	\$65
Portable refrigerator	18 kg	GG950	\$1,900
Shipping container, 6 m	2.2 tons	GG50	\$2,000
Shipping container, 12 m	3.7 tons	GG75	\$3,000
Shipping container, 16 m	4.7 tons	GG90	\$3,500

Table 77: Storage Equipment

water, fuel, or other liquids between containers. It is designed for dispensing fuel from a 200-liter (55-gallon) drum and can be screwed into the drum's fill hole. Flow rate is 35 liters per minute. The pump comes with a 3-meter hose.

Pump, motorized: The electric counterpart of the hand pump delivers a flow rate of 50 liters per minute, but requires a 0.2 kW power supply.

Dry Goods

Ammo can: Used for shipping large quantities of ammunition to combat zones, an ammo can is a steel box with a hinged lid. Its rubber gasket is resistant to immersion, dust, and other environmental inconveniences, which leads to hundreds of secondary uses. Ammo cans come in varying sizes and capacities; an average one holds 800 rounds of 5.56x45mm ammunition and measures 30 cm long, 18 cm wide, and 22 cm tall.

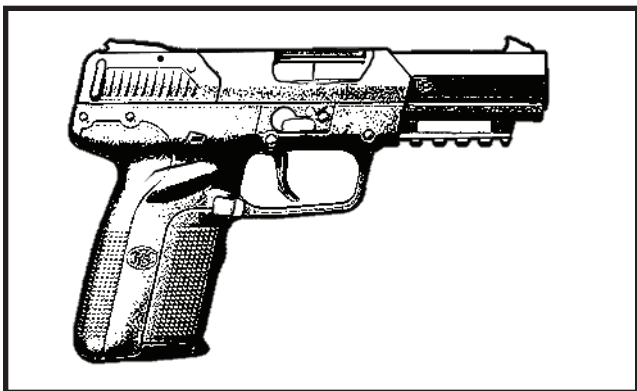
Cargo pallet: A flat one-meter square framework of wood, designed to hold up to 2 tons of cargo for shipping.

Handgun case: Designed to protect a Bulk 1 weapon from damage during transport, handgun cases are available in both hard- and soft-sided varieties. Hard cases provide Armor 1 and feature an integral combination lock. Both types have room for two magazines in addition to a single handgun. A weapon kept in a case is considered to be at least nominally protected from environmental extremes.

Long gun case: Long gun cases are available in a variety of sizes to accommodate weapons from Bulk 2 to Bulk 4. Like handgun cases, they are available in both hard- and soft-shell models. A long gun case typically has room for a single weapon, 3 magazines, and any optics or tools incidental to the weapon itself. A soft case can be fitted with a shoulder strap, though this is uncomfortable and unbalancing if used for long marches. Soft long gun cases are also available in MLBE designs, which feature 12 attachment points, usually used for additional magazines and tools of the sniper's trade.

Portable refrigerator: Designed for the transport of vaccines and donor organs, this 15-liter medical refrigerator can run off either standard AC power (drawing 0.1 kW) or four large batteries (good for 5 days). It is equipped with carrying handles and a lockable latch. Freezer models are also available (identical traits). For pharmaceuticals, assume that every 0.5 kg of total weight consumes one liter of storage volume.

Shipping container: The intermodal container is a daily sight in ports, rail yards, and truck depots around the world. A typical "conex" is 2.4 meters wide, 2.4 meters tall, and either 6, 12, or 16 meters long; its industrial-grade steel construction gives it Armor 1. Maximum load is appropriately 2.5 tons per meter of length.



CONSUMABLES

Modern technology, like an army, marches on its stomach. Most complex devices require some sort of consumable supply, whether for regular operation or periodic maintenance. The most common - and the ones whose lack is most heavily felt in 2013 - are food and fuel, but lubricants, abrasives, and photographic film are all in short and dwindling supply. This section contains the key consumables used by the rest of the equipment in the book, as well as some basic supplies necessary for repair and construction operations.

FOOD

One of the most basic survival necessities is also one that most survivors took for granted before the Collapse. As detailed in Chapters Four and Six, each character has a basic daily caloric requirement which can increase based on environment and exercise. For the sake of simplicity, food is listed here in terms of meals and supplements, rather than itemized as a diet guide.

Full Meals

In game terms, a "full meal" is roughly equivalent to a single prewar meal serving suitable for the average adult.

Camping food: Dehydrated, lightweight food sold to outdoorsmen, usually tasting better than military rations. Preparation requires 1 liter of water per meal. In a pinch, this food can be eaten unprepared, but digestive ailments may result. Most camping food has a shelf life of 1 to 2 years. This can also represent jerky, smoked fish, dried fruit, pemmican, and other well-preserved wild or fresh food.

Fresh food: Freshly-gathered or lightly preserved farm products: cultivated grains, fresh or preserved fruits and vegetables, salted or smoked meats, and the like. This is the most common fare in self-sufficient communities. Fresh food has a shelf life of about a year (excluding items such as milk, which go bad in a matter of days without preservative treatment or refrigeration).

Military ration: Prepackaged food sealed in individual plastic and foil pouches, intended to be prepared in the field. Most military rations include some form of chemical heater which requires a minimal amount of water for activation, but can be eaten cold if need be. These meals have a minimum 3-year shelf life and can last up to a decade if stored in cool temperatures. Weight given is for a "stripped" ration whose outer packaging has been discarded; factory packaging adds another 0.25 kg but makes the ration more likely to survive shipping.

Packaged food: Boxed dry or canned food of the sort found in groceries around the world before the Collapse. In other words, this is what you're used to eating for most meals. Packaged food has a shelf life of 1 to 3 years.

Wild food, balanced: A marginally healthy mix of roots, nuts, berries, leaves, and fresh meat. Groups which both hunt and forage can maintain themselves on such a diet for an indefinite period of time.

Wild food, forage-heavy: Wild food with minimal animal protein. Long-term consumption of only wild plants can lead to dietary deficiencies and related illnesses.

Wild food, meat-heavy: Mostly fresh meat, with little or no other components. As with a forage-heavy wild food diet, long-term consumption of only meat can lead to various medical complications.

Supplements

Coffee: The preferred stimulant of North America and most of Europe (see p. 172 for effects). Weight and prices are given before preparation.

Energy bar: One of any number of commercial products designed for a quick energy boost without a subsequent metabolic “crash.” Shelf life of energy bars is about 1 year.

Salt: A staple of primitive food preservation (see p. 197), salt is once again in universally high demand.

Survival ration: The most weight- and space-efficient emergency food on the prewar market, these compressed food bars are anything but luxurious. Taste and texture are both comparable to chalk, but the ration has a 5-year shelf life.

Tea: The stimulant of choice for most of Asia, Africa, and South America (see p. 172 for effects). Weights and prices are given before preparation.

Recreational Alcohol

Although alcohol is now in high demand as a fuel source, its pre-Collapse importance as a recreational chemical has by no means diminished. In game terms, the primary effect of alcohol is to artificially bolster a character's confidence. Consuming one dose of alcohol (“two drinks” in accepted pre-war shorthand) increases the character's CUF by 1, but reduces OODA by 1. The effect lasts for 1 hour. Each additional dose within this hour cumulatively reduces AWA, CDN, COG, and OODA by 1, but extends all effects by 1d2 hours. Prices given are for low-quality or mass-produced examples; on the prewar market, connoisseurs paid orders of magnitude more for exclusive brands and blends.

Beer: A beverage with relatively low (2% to 8%) alcohol content, produced via grain fermentation for a period of several weeks. One dose is 700 mL, or two prewar cans or bottles. Note that beer does not improve with age, and stocks of prewar production are likely (80% chance) to be undrinkable when opened. Fortunately for beer connoisseurs, its production is at least a cottage industry in virtually all grain-producing regions.

Spirits: Distilled products of virtually any fermentation process, with an high (30% or greater) alcohol content. One dose is 100 mL, or two prewar shot glasses. This category encompasses a wide array of alcohols, including whiskey, bourbon, vodka, rum, brandy, and tequila. Unlike beer and wine, spirits have enough alcohol content to be used in Molotov cocktails (see p. 263).

Wine: A fermented fruit product with a moderate (7% to 20%) alcohol content, produced over a period of months or years. One dose is 300 mL, or two prewar wineglasses. This category also includes champagnes and ciders.

FUEL

As detailed in Chapter Eight, almost all vehicles burn some form of fuel to provide motive power. Other internal and external combustion engines, such as portable electrical generators, also rely on fuel, as do some specialized tools.

Unless otherwise stated, all prices and weights for liquid and solid fuel are *only* for the fuel itself, not for any container. All prices and weights for gaseous fuel do include the metal bottles in which the fuel is distributed.

Liquid Fuel

Liquid fuel consists of either a mix of alcohols made from natural plant matter or fossil fuels refined from crude oils. Fossil fuel is becoming more and more scarce as current stocks are used and not replenished. What little crude oil is available is being channeled largely to lubricant production to keep surviving machinery running. Because of this, alcohol fuel - and technicians

Design Note: Fuel Prices

The values printed in this book are extrapolations from fuel prices in late 2007, assuming five years of continued price increases before the Collapse. Remember that street prices are intended to be representative of mid-2012 legal market prices. More than most of the other commodities in this chapter, fuel prices fluctuate widely from nation to nation, based on many economic factors. In the end, the GM should set prices and availability based on what sort of post-apocalyptic game he wants to run and how prevalent he wants vehicles to be.

who know how to distill it and convert engines to its use - is becoming more and more important to communities throughout the world.

Aviation Fuel: Aviation gasoline, jet fuel, and aviation kerosene are high quality fossil fuels. Most are formulated with additives to reduce the chances of icing or ensure purity. These fuels have significantly different chemical formulas; although an aviation engine can theoretically accept any aviation fuel, a mismatch risks damage. For game purposes, though, their traits are identical.

Biodiesel: An organic substitute for diesel fuel.

Diesel: Diesel fuel is a heavier fossil fuel used in diesel engines. It has a higher ignition point than other fossil fuels, so both a heat source and compression are required to ignite it.

Ethanol: Ethanol is created from natural materials which contain sugars. Usual sources include grains, fruits, and vegetables, which makes choosing between production of ethanol or food a devil's bargain. Its energy content is higher than methanol's, but lower than fossil fuel's. Although it's distilled from the same sources as recreational alcohol, ethanol fuel is not safe to drink; imbibers risk blindness, paralysis, and death.

Gasoline: Gasoline (aka “gas” or “petrol”) is a light, highly flammable fossil fuel.

Methanol: Methanol is created from wood, as well as from vegetable matter that doesn't contain significant sugars. Before the war, it was synthesized from natural gas, but this process requires catalysts which are now hard to obtain. Its energy density is the lowest of all liquid fuels, but its production doesn't consume food crops. Methanol is even less safe to drink than ethanol.

Solid Fuel

Solid fuels have been used since man discovered fire. Following the Collapse, the use of solid fuels for cooking and heating has undergone a resurgence. Some archaic (but now highly valuable) vehicle engines also burn solid fuels.

Coal: The difficulty of mining coal without 20th-century excavating equipment makes it much less common than wood. However, it burns hotter and longer than wood, making it more economical where it is available.

Hexamine fuel tablets: These small, waxy blocks are paraffin-based solid fuel intended for use in camp stoves. A single hexamine tablet burns for about 15 minutes and provides enough heat to cook a single meal or boil a half-liter of water. Hexamine is not suitable for vehicular use. Tablets were manufactured and sold in packets of 12.

Wood: Easily gathered in any forested area, wood is the most common solid fuel in use today.

Gaseous Fuel

Gaseous fuels such as methane and propane have been staples of cooking and heating for years. They have also found a use as fuels for some industrial equipment in situations requiring limited or controlled exhaust. Bottled gases are scarce in 2013,

as the technology to compress and liquefy the gases has been a low priority for recovery. However, prior to the Collapse, some farms and communities were experimenting with natural methane production from the decomposition of plant and animal waste.

Acetylene: Used in industrial operations requiring high burn temperatures, acetylene is highly flammable and very sensitive to changes in temperature and sudden shocks. It must be transported upright and left to settle before being used. Each cylinder provides 4 hours of use for equipment that requires it.

Bottled gas: This category includes a variety of gases (and liquids) used for heating and cooking, including propane and butane. Bottled gas was available in small quantities from camping shops, and in larger volumes from fuel stations and specialized distribution centers. Sizes are as follows:

- **0.5 liter and 2 liter:** Designed for use with camp stoves and lanterns. Fittings are incompatible with larger devices.
- **17.6 liter:** Typical size for an outdoor barbecue grill.
- **25.4 liter:** Standard for small industrial applications (i.e. forklifts).

Non-flammable gases: Oxygen, argon, carbon dioxide, and a range of other gases are used in cutting, burning, filling tires, neutralizing reactions, and filling self-contained breathing devices. Although non-flammable, these tanks may still explode if heated or punctured due to the high gas pressures they contain.

BATTERIES

A battery contains chemical energy which is converted on demand into electrical energy. In disposable batteries, once the chemical reaction has run its course, the battery is exhausted and is disposed of. In rechargeable batteries, this reaction can be reversed by subjecting the chemicals to a suitably strong current.

Micro: A button-sized battery used for the smallest of personal electronics, including wristwatches and hearing aids.

Small: This category represents the AAA, and AA battery sizes common in portable music players, game systems, cameras, and military vision devices.

Medium: This category represents batteries up to C- and D-cells, as well as a range of specialist types used in military communications equipment.

Large: This category represents heavy lantern batteries, as well as a range of specialist types used in military communications equipment.

Battery Chargers

Rechargeable batteries require special equipment that monitors and regulates the incoming charge. Simply hooking a rechargeable battery to some wires and hoping for the best tends to result in spectacular fires.

Solar charger: While never common for household or military use, solar chargers were popular within the camping community for their portability and independence from the electrical grid. A solar charger will function in any light, whether natural or artificial, and will charge in adequate or brighter light. It will charge one battery at a time: 2 hours for a small, 6 hours for a medium, and 18 hours for a large. A solar charger will not connect to a specialist battery.

Standard charger: This is a standard plug-in charger of the type common for home use. It will hold four small or medium batteries or a single large battery at once, and requires 0.2 kW of power. This will charge a small battery in 1 hour, a medium battery in 3 hours, and a large battery in 6 hours. A standard charger will also connect to a single specialist battery of any size.

PARTS

Maintaining and repairing equipment requires lubricants, fluids, and replacement parts of various sizes and shapes. As presented in Chapter Six, the Reflex System uses generic “units of parts” to represent the myriad of specific components available.

Electrical parts: Parts for vehicular or structural electrical systems: wiring, fuses, switches, relays, tape, insulation, connectors.

Electronic parts: Consumables for repairing solid-state electronics: transistors, resistors, diodes, solder, thermal paste, canned compressed air.

Maintenance supplies: All the necessities for keeping mechanical devices in working order: lubricants, cleaning chemicals, operating fluids.

Mechanical parts, small: Replacement parts for personal mechanical devices such as wristwatches, firearms, and camp stoves: springs, gears, pins, screws, bolts, rubber O-rings, wood and metal blanks for fashioning new parts.

Mechanical parts, medium: Replacement parts for consumer vehicles and devices of similar scale, such as home appliances and portable generators: tubes and pipes, fasteners and connectors, and metal and plastic blanks.

Mechanical parts, large: Replacement parts for commercial and combat vehicles and devices of similar scale; much the same as medium mechanical parts, but bigger and heavier.

MISCELLANEOUS CONSUMABLES

The following consumables are of less universal use and appeal, but still valuable in specific situations.

Biodiesel production chemicals: Acids and catalysts sufficient for refining 1 liter of biodiesel fuel (see Chapter Six).

Personal hygiene supplies: This is a collection of soap, shampoo, disposable razor blades, foot powder, toothpaste, and other necessities for maintaining a 21st-century standard of personal care for one month.

Seeds: Material necessary for planting a crop. Food crops and industrial crops (e.g. animal fodder, ethanol) are listed separately.

Welding rod: An electrode bar for use with an arc welder. One rod is good for 1d6x10 minutes of use.

Building Material

As described in Chapter Six, restoring old structures or building new ones requires a ready source of supplies. Building material is available in the following broad categories:

Light: Material suitable for temporary light shelters, interior home or office construction, or patch jobs and field repairs to exterior walls. A unit of light building material may include plastic sheeting, plywood sheets, nails, light lumber, acrylic glass, wire mesh, drywall, aluminum or tin sheeting, and similar substances.

Heavy: Material suitable for creation or reinforcement of light load-bearing structures. A unit of heavy building material might contain heavy lumber, light concrete mix, gravel, heavy-duty fasteners, and the like.

Industrial: Material suitable for building or repairing reinforced structures, resistant to heavy loads, combat damage, or industrial accidents. A unit of industrial building material might contain steel girders, heavy concrete mix with steel reinforcing rods, braided steel cables, immense timbers, and so forth.

<i>Full Meals</i>				
Item	Weight	Barter Value	Street Price	Nutrition
Camping food	0.5 kg	GG20	\$20	500 cal
Fresh food	1.8 kg	GG1.8	\$12	700 cal
Military ration	1 kg	GG16	\$14	1,250 cal
Packaged food	2.8 kg	GG4	\$8	600 cal
Wild food, balanced	3.6 kg	GG1.2	N/A	400 cal
Wild food, forage-heavy	4.8 kg	GG0.9	N/A	400 cal
Wild food, meat-heavy	2.4 kg	GG0.9	N/A	400 cal
<i>Supplements</i>				
Item	Weight	Barter Value	Street Price	Nutrition
Coffee, 50 servings	0.1 kg	GG4	\$8	N/A
Energy bar	0.1 kg	GG1	\$1	300 cal
Salt	1 kg	GG10	\$5	N/A
Survival ration	0.1 kg	GG2.5	\$2	800 cal
Tea, 50 servings	0.1 kg	GG5	\$10	N/A
<i>Recreational (Non-Fuel) Alcohol</i>				
Item	Weight	Barter Value	Street Price	Nutrition
Beer, 350mL bottle, new	0.4 kg	GG0.5	N/A	N/A
Beer, 350 mL bottle, prewar	0.4 kg	GG0.1	\$2	N/A
Spirits, 1-liter bottle, new	1.2 kg	GG5	N/A	N/A
Spirits, 1-liter bottle, prewar	1.2 kg	GG7.5	\$10	N/A
Wine, 750 mL bottle, prewar	1 kg	GG4	\$10	N/A
<i>Liquid Fuels (per liter)</i>				
Fuel	Weight	Barter Value	Street Price	
Aviation fuel	0.9 kg	GG4	\$3.20	
Biodiesel	0.9 kg	GG1	\$1.95	
Diesel	0.9 kg	GG2	\$2.25	
Ethanol	0.8 kg	GG1	\$1.65	
Gasoline	0.7 kg	GG2	\$2.05	
Methanol	0.8 kg	GG0.8	\$1.35	
<i>Solid Fuels</i>				
Fuel	Weight	Barter Value	Street Price	
Coal, 100 kg	100 kg	GG7.5	\$75	
Hexamine fuel tablets, 12-pack	0.2 kg	GG0.6	\$6	
Wood, 100 kg	100 kg	GG0.15	\$4.50	
<i>Gaseous Fuels</i>				
Fuel	Weight	Barter Value	Street Price	
Acetylene, cylinder	42 kg	GG100	\$400	
Bottled gas, tiny (0.5 L)	0.1 kg	GG12.5	\$50	
Bottled gas, small (2 L)	0.9 kg	GG15	\$60	
Bottled gas, medium (18 L)	9 kg	GG22.5	\$90	
Bottled gas, large (25 L)	13 kg	GG60	\$240	
Non-flammable gas, cylinder	44 kg	GG87.5	\$350	
<i>Batteries</i>				
Item	Weight	Barter Value	Street Price	
Small, 4-pack	Neg.	GG0.1	\$1	
Medium, 4-pack	0.1 kg	GG0.3	\$3	
Large	1.2 kg	GG0.4	\$4	
Rechargeable, small, 4-pack	Neg.	GG0.3	\$2	
Rechargeable, medium, 4-pack	0.1 kg	GG0.9	\$6	
Rechargeable, large	1.2 kg	GG1.2	\$8	
<i>Chargers</i>				
Item	Weight	Barter Value	Street Price	
Solar	0.6 kg	GG12.5	\$50	
Standard	0.2 kg	GG2	\$20	

Table 7z: Consumables

<i>Parts</i>			
Parts/Supplies	Weight	Barter Value	Street Price
Electrical	1 kg	GG20	\$100
Electronic	0.1 kg	GG25	\$50
Maintenance	2 kg	GG8	\$40
Mechanical, small	0.1 kg	GG5	\$25
Mechanical, medium	5 kg	GG100	\$500
Mechanical, large	15 kg	GG300	\$1,500
<i>Miscellaneous Consumables</i>			
Item	Weight	Barter Value	Street Price
Biodiesel production chemicals, 1 unit	Neg.	GG0.25	\$0.50
Personal hygiene supplies, 1 month	1.5 kg	GG3	\$30
Seeds, food crop, 1 hectare	125 kg	GG20	\$40
Seeds, industrial crop, 1 hectare	125 kg	GG15	\$30
Welding rod	0.1 kg	GG1	\$5
<i>Building material</i>			
Item	Weight	Barter Value	Street Price
Light, 1 unit	500 kg	GG12.5	\$250
Heavy, 1 unit	1 ton	GG100	\$2,000
Industrial, 1 unit	5 tons	GG250	\$5,000
<i>Photographic Supplies</i>			
Item	Weight	Barter Value	Street Price
Camera film, black & white, 36 shots	0.1 kg	GG2	\$10
Camera film, color, 36 shots	0.1 kg	GG2	\$10
Camera film, infrared, 36 shots	0.1 kg	GG4	\$20
Camera film, instant, 10 shots	0.1 kg	GG6.25	\$25
Developing chemicals, black & white	4.2 kg	GG75	\$150
Developing chemicals, color	4.2 kg	GG100	\$200
<i>Reloading Supplies</i>			
Item	Weight	Barter Value	Street Price
Brass, 100 units	0.9 kg	GG2	\$40
Bullets, 100 units	1.2 kg	GG15	\$30
Primers, 100 units	0.1 kg	GG6	\$6
Smokeless powder, 2,000 units	0.5 kg	GG25	\$25

Table 7z: Consumables continued

Photographic Supplies

In the absence of working digital cameras, older film cameras are enjoying a renaissance (albeit a small one, as most people have better things to do than commit photojournalism). They are common in every country, but due to radiation damage and a lack of new production, the film for them is becoming scarce.

Camera film: Standard photographic film for a 35 mm camera. Film is available separately for black & white and color exposures. Infrared film is also available, though rare; it produces images comparable to those seen through night-vision gear. All prices are for a single 36-exposure roll.

Camera film, instant: Film for an instant camera (see p. 238), including paper and chemicals in a self-contained pack. Instant film is available only for color exposures. Weight and price are for a 10-exposure pack.

Developing chemicals: Photographic development requires specialized fluids, papers, and fixative agents. One unit of developing chemicals provides sufficient supplies for developing up to 240 exposures. Costs and weights include containers and a large chest for keeping them organized. Developing chemicals must be acquired separately for color and black-&-white film (infrared film is developed with black & white chemicals as well).

Reloading Supplies

The following items are necessary for producing small arms ammunition, as per the rules in Chapter Six.

Brass: Empty casings ready to receive primers, powder, and bullets. Brass must be acquired for a specific caliber. One casing is required per cartridge produced.

Bullets: Projectiles for a specific caliber of ammunition. Bullets must be acquired in FMJ, JHP, or AP configurations (see p. 256 for the performance characteristics of each type). One unit is required per cartridge produced.

Primers: The part of a cartridge that goes “bang” first. For the sake of simplicity, the game assumes that primers come in pistol/SMG, rifle, and shotgun types, and that a given type is compatible with all calibers within that type. For example, a rifle primer can be used to reload any rifle cartridge from 5.45mm Soviet to .50 BMG. One unit is required per cartridge produced.

Smokeless powder: Propellant for cartridges, acquired in bulk lots of several hundred “units.” A single pistol-caliber cartridge requires a number of units of powder equal to its base Damage rating, a rifle cartridge requires (Damage x 2) units, and a shotgun shell requires (Damage x 4) units.

FIREARMS

Despite dwindling ammunition and spare parts reserves, the firearm is still the universal personal weapon in 2013. This section provides game traits and brief descriptions for the guns that characters are most likely to carry or encounter in their travels.

AUTOLOADERS

.22 target pistol (generic): The low price and light recoil of the .22 LR round have made it a global favorite for both competitive and recreational shooters. Although not considered reliably lethal against humans, it is sufficient to take down small game (which makes it a popular survival tool in 2013), and a sufficiently well-placed round can be fatal for a larger target. This represents a wide variety of common autoloaders; high-end competition-grade models bear higher price tags but identical traits.

.32 holdout pistol (generic): The .32 ACP cartridge (also known as 7.65x17mm) lacks the power of larger loads, but many European shooters still consider it acceptable for last-ditch self-defensive use. This represents a number of similar compact, easily-concealed designs.

.380 service pistol (generic): Available for over a century, the .380 ACP cartridge has largely been superseded by larger calibers. However, autoloaders designed around it are smaller and lighter than most modern service pistols, and so remain popular as concealed backup weapons. This represents a variety of common autoloaders, including Commander Bond's classic favorite, the Walther PPK.

9mm service pistol (generic): 9mm Parabellum (also called "9mm Luger") is the single most common pistol caliber in modern law enforcement and military use. Starting in the mid-1980s, high-capacity 9mm automatics became the sidearms of choice for police and soldiers across the western world. Magazine sizes vary widely; when encountering a non-specific 9mm service pistol, roll 1d10+9 to determine its capacity. Traits given are for one of the oldest still-extant 9mm service pistol designs, the Browning Hi-Power.

.357 SIG/.40 S&W service pistol (generic): Both .40 S&W and .357 SIG were attempts to merge the size and magazine capacity of 9mm with the ballistic performance of .45 ACP. Service pistols chambered for these calibers were popular for law enforcement and self-defense in North America but saw limited acceptance elsewhere. As with the generic 9mm service pistol, magazine sizes vary; when encountering a non-specific model, roll 1d6+9 to determine its capacity.

Beretta Model 92: Widely credited for jump-starting the popularity of the 9mm service pistol, the Model 92 was the standard sidearm of over 2,000 police agencies and militaries. The latter include those of the United States (in which it's designated "M9"), Italy, and France.

Colt Model 1911A1: Over a century old, the "Colt .45" had largely fallen out of favor for military use by the beginning of the Twilight War. It had, however, experienced renewed popularity in American law enforcement in the early 21st century, and was always a favorite among civilian enthusiasts. Shooters who prefer the size and energy of the .45 ACP round are willing to accept the weapon's greater weight, lower ammunition capacity, and greater recoil when compared to a modern 9mm service pistol.

FN Five-seveN: The companion pistol to FN's P90 uses the same unique 5.7mm cartridge, which boasts superior armor penetration when compared to conventional handgun rounds. Ammunition and the weapon itself were both scarce and expensive even before the Collapse, but the Five-seveN gives the well-equipped survivor a potent advantage at close range.

Weapon Traits

In addition to the basic numbers common to all equipment (weight and cost), weapons have some additional traits.

Caliber: Unique to firearms, this is the size of ammunition that the weapon requires.

Damage: The base Damage value of any attack made with the weapon.

Explosion/Effects: Unique to explosives, this indicates the weapon's radius, blast, and fragmentation effects, if applicable.

Penetration: The base Penetration value of any attack made with the weapon. Non-explosive ranged weapons have two Penetration values. The first is for attacks made at optimum range or closer, and the second is for attacks made past optimum range. This trait is not listed for explosives - see the explosion rules in Chapter Five for details.

Range: The optimum and maximum ranges of the weapon. Obviously, this trait is omitted for close combat weapons. If a weapon is capable of indirect fire, its maximum indirect fire range is indicated with a notation of "IN:" (for large weapons, this may be measured in kilometers rather than range bands).

Capacity: The ammunition load that the weapon is designed to carry or accept. Notations of (cy), (bt), and (in) respectively indicate cylinder, belt, or individual round feed mechanisms, which may affect reloading speed.

Speed: The weapon's tick cost for hip, snap, and aimed shots. A notation of "Operational" indicates that one complete attack and reloading cycle requires an operational action.

Glock 17: The gun that started the high-capacity polymer 9mm revolution. This Austrian-made autoloader is one of the most widely-used law enforcement sidearms in the world and also is in military use in several nations.

H&K Mk. 23: This immense, rugged handgun was commissioned by the United States' Special Operations Command (hence its military designation of *SOCOM*) as a sidearm for covert operations. Military-issue models were issued with a multi-light (see p. 260) with both visible and infrared capabilities, as well as a suppressor. Few still have these accessories in working condition; a complete set adds \$2,900 or GG1,825 to the gun's value.

Makarov PM: This Cold War veteran was the standard sidearm of the Warsaw Pact and its allies around the world, and tens of thousands remained in both service and private collections at the beginning of the Twilight War. As was typical of Soviet engineering, loose tolerances and rugged construction produced a weapon which, if not precise, was at least reliable.

Yarygin PYa: The replacement for the Makarov PM in Russian Army service, starting in the mid-2000s. Production was never sufficient to completely displace all extant Makarovs, but enough PYas were produced to ensure their distribution throughout the Asian and European theatres.

REVOLVERS

.38 Special (generic): Simple construction, reliability, and adequate (if not exceptional) lethality made .38 Specials the universal defensive firearms for the first half of the 20th century. Their popularity in civilian circles remained strong through the turn of the millennium, and tens of thousands are still in use in 2013. .38s are available in both "holdout" and service sizes; the former sacrifice cylinder capacity and range for the advantages of weight and ease of concealment.

Design Note: Firearm Choices

Entire books (both gaming and general reference) have been written on nothing but firearms. When we began winnowing the thousands of extant models to select the few for which we'd have space in *Twilight: 2013*, we quickly realized that many contenders would have the exact same traits when modeled within the Reflex System. Accordingly, we've chosen to represent these with "X generic gun" entries, rather than filling page after page with minutiae on 5.56mm assault rifles with identical game performance. The weapons that have received specific descriptions are either unique in their game traits or sufficiently iconic as to merit special attention. They are also, with a few exceptions, common enough to still be widely available in the postwar setting.

Hoplogists will notice that most of the weapons presented here are also somewhat dated. This is intentional for what is intended to be a representative sampling of the most common weapons in the post-apocalyptic world. The glacial speed at which military procurement systems operate means that few of the weapons in development as of this writing (late 2007) will become ubiquitous before the beginning of the Collapse. In the absence of ammunition and parts supply chains, cool and unique guns (or old guns rechambered for newer calibers) are likely to be discarded in favor of older but more common designs. We'll address the latest and greatest in future supplements.

.357 Magnum (generic): The .357 Magnum cartridge was designed in the 1950s as a higher-powered antipersonnel round than the handgun cartridges available at the time. Many revolver enthusiasts still consider it to be the optimum balance of firepower, economy, and controllability. As with .38 Special revolvers, .357s are available in both holdout and service models. Any .357 revolver can also accept .38 Special ammunition (use Damage and Penetration for the corresponding .38 Special revolver), though the reverse is not true.

.44 Magnum (generic): Although superseded by more powerful calibers in the late 20th century, .44 Magnum is still widely used for hunting. The weight and size of a revolver in this caliber make it less than optimum as a sidearm, and its recoil and dimensions make it uncomfortable for weaker or smaller shooters.

.454 Casull (generic): The choice of the sportsman who wants to hunt bear or rhinoceros without the annoyance of a rifle.

SUBMACHINE GUNS (SMGS)

9mm SMG (generic): The vast majority of submachine guns are chambered for the 9mm Parabellum cartridge. Features and quality vary widely, but the basic game traits are the same. This generic type represents such archetypal SMGs as the IMI Uzi, the venerable Sterling L2A3 and MP-40, and the ubiquitous H&K MP5 series.

CZ Skorpion: This Czech export was common among Warsaw Pact vehicle crews, paratroopers, and officers during the Cold War. Its compact size, high rate of fire, and light recoil made it popular with criminals as well. The Skorpion is sufficiently small that, when its folding stock is collapsed, it can be fired with one hand (use the Sidearm skill; Bulk becomes 1; Speed becomes 1/2/4; Recoil increases by 3). The Skorpion has no underbarrel accessory rail.

FN P90: The P90 was developed in the late 1980s in conjunction with 5.7mm cartridge. FN's intent was to corner the market on the PDW (Personal Defense Weapon), a lightweight and

compact automatic weapon suitable for vehicle crews and other rear-echelon troops for whom a full-sized assault rifle would be excessively bulky. This market failed to materialize, but many police departments and special operations units appreciated the P90's ergonomic and ballistic advantages. The P90 has no underbarrel accessory rail and cannot accept a folding stock.

H&K MP5K: The most compact variant of the MP5 series was designed for portability and concealment at the expense of long-range accuracy. Its short barrel and lack of a stock make it difficult to aim or control. Like the Skorpion, the MP5K can be fired one-handed (use the Sidearm skill; Bulk and Speed remain the same; Recoil increases by 4). The MP5K has no underbarrel accessory rail, but it has a built-in vertical foregrip (already factored into Recoil).

H&K UMP: Although never as widely-adopted as its MP5 predecessor, the newer UMP enjoyed popularity in the American law enforcement community for its lower price, modern features, and use of the .45 ACP cartridge. Versions chambered for 9mm Parabellum and .40 S&W are also available.

Izmash PP-19 Bizon: The preferred SMG of Russian and allied forces, the Bizon shares many design characteristics with AK-series assault rifles, simplifying maintenance and training. However, it departs from a traditional rifle-like layout in favor of a high-capacity helical magazine which attaches lengthwise under the barrel. The Bizon has no underbarrel accessory rail.

ASSAULT RIFLES

Assault rifle (generic): Under NATO standardization agreements, most western militaries adopted the 5.56x45mm cartridge for their assault rifles in the 1960s and 70s. A variety of specific designs were in use at the outbreak of the *Twilight War*. In addition to conventional rifles (e.g. H&K HK33 and G36, SiG 550, FN FNC), two major variations on the theme exist. Carabines are shortened versions of conventional rifles, trading range for weight savings. Bullpups (such as the L85A2 and FAMAS G2) move the action and magazine behind the grip, maintaining a normal barrel length while reducing overall length and increasing mechanical complexity.

Civilian Options

Fully automatic weapons are illegal for civilian ownership in most nations, and heavily regulated in those which do permit it. Street values given here are for law enforcement or military purchases. Civilians could expect to pay two or three times as much for an illegal transaction, or up to 10x as much for a legal one.

With this said, most of the SMGs and assault rifles described here were also produced in civilian-legal semi-automatic variants. For these weapons, use the printed street values and halve barter values. All other traits remain identical, with the obvious exception of rates of fire: remove all burst capability. Such a street-legal design can share all parts and magazines with its mil-spec counterpart. If a military SMG has Bulk 2, its civilian counterpart has Bulk 3 due to the legally-mandated longer barrel.

Converting a semi-automatic weapon to fully automatic fire is possible, albeit hazardous. The process requires one hour and a Mechanic/Machinist (CDN, TN -1) or Artisan: Gunsmithing (CDN) skill check. With success, the weapon gains the highest listed rate of fire for its military counterpart. With a margin of success less than 5, however, the gun also gains one point of Wear which can never be removed.

Battle rifle (generic): The first wave of NATO standardization occurred shortly after World War II, spurring militarization of the American .308 Winchester cartridge as the 7.62x51mm NATO cartridge. Assault rifles chambered for this heavier round are sometimes referred to as battle rifles. Few European militaries still issued them by the Twilight War, though they were still in service throughout the Third World. In addition, accurized and refurbished battle rifles were regaining popularity as designated marksman weapons. This generic listing represents such weapons as the CETME, FN FAL, H&K G3, and SIG 510.

AK-47: One of the most well-known firearms in the world, the AK-47 has seen use in innumerable conflicts since its first issuance in 1949. Despite the Soviet adoption of newer designs in the late Cold War, millions of examples are still in service in every corner of the world, with over 100 million built by the early 2010s. Abuse and neglect that would wreck any other gun will rarely faze an AK-47.

AK-74 series: This is a modernized version of the AK-47, chambered for the 5.45mm round but mechanically identical. The AKS-74U carbine variant features a side-folding stock and was widely used by airborne troops and security forces.

M16 series: The basic M16 design was the standard assault rifle of the United States military starting in the 1960s. Several major upgrades have been introduced since then, but the design remains fundamentally the same. Unlike most assault rifles, the most common modern versions are restricted to three-round bursts only and are incapable of fully automatic fire. However, the M4A1 carbine variant is fully automatic.

QBZ-95: The standard-issue assault rifle of the Chinese military is a bullpup design firing a proprietary 5.8mm cartridge. Its ballistic performance is comparable to that of most 5.56x45mm rounds, but the weapon features a complex (and difficult to maintain) buffering system that reduces perceived recoil. This weapon is rare outside the areas in which Chinese personnel operated during the war.

Steyr AUG: One of the first successful bullpup assault rifles, the Austrian-built AUG saw service with Austrian, Argentine, Irish, Australian, and Saudi forces, among others. Standard features include a Mag-1 telescopic scope (factored into Speed) and a vertical foregrip. The AUG can be reconfigured into an even more compact carbine arrangement with a 10-minute barrel change.

TARGET AND HUNTING RIFLES

All of the following items are common civilian weapons around the world.

Target rifle (generic): This small rifle and its .22 LR cartridge are the first firearms with which many young shooters learn the principles of marksmanship. Such weapons are suitable for taking some small game, such as squirrels and birds, but insufficient for hunting larger prey without considerable luck and skill. Both bolt-action and semi-automatic target rifles are available.

Small game rifle (generic): Otherwise known as a “varmint rifle” in the United States, this is a small-caliber rifle chambered for a caliber such as .223 Remington or .22-250. These rifles see frequent use in the removal of threats to crops or herds such as groundhogs, opossum, and coyotes. Small game rifles typically are not used for long-range antipersonnel work when larger calibers are available, as the lightweight bullets are more susceptible to crosswinds. However, some law enforcement agencies have adopted them due to the lesser potential for overpenetration.

Hunting rifle (generic): An archetypal rifle used by both sport and subsistence hunters around the world for taking medium-sized game. Almost all hunting rifles are bolt-action, as hunters rarely need the capability for rapid follow-up shots that a

Design Note:

Bolt Action vs. Semi-Automatic

A long-running debate among firearm enthusiasts is the superiority of bolt-action rifles versus semi-automatic designs, particularly in sniping roles. A bolt-action weapon has greater felt recoil, but its mechanism relies on the shooter to manually eject the spent casing and chamber the next round. This means that, unlike a semi-automatic rifle, a bolt action rifle's internal workings are not in motion during the milliseconds before the bullet leaves the end of the barrel. In a long-range precision shot, this additional motion can introduce a greater margin of error into a shot taken with a semi-automatic weapon.

For game purposes, the difference in accuracy between the two action types is too small to be meaningful in most cases. If the GM desires, our recommended Stage III option for bolt-action rifles is to apply a +1 bonus to aimed shots made beyond the weapon's optimum range.

Design Note: Optics

Many of the weapons in this section will be used as sniper rifles, and players will undoubtedly want to customize their characters' weapons with optics appropriate to their preferences. To facilitate this, the weights and prices given in the table do not include scopes, even though all modern sniper rifles are deployed with at least Mag-1 telescopic sights.

semi-automatic provides. Hunting rifles are chambered in a wide variety of calibers.

Big game rifle (generic): These rifles are prohibitively expensive, and rare outside Africa and the northern sub-polar regions. They are used for hunting particularly large or dangerous game: Cape buffalo, elephant, and the occasional Land Rover.

SERVICE RIFLES

The following bolt-action and semi-automatic rifles were issued in the first half of the 20th century. Long since obsolete, they were sold to allied nations or surplussed on the open market over the following 60 years. Consequently, they are now common in the hands of civilian survivors and local militia groups around the world.

Lee-Enfield No. 4 Mk. 1: The Rifle, No. 4, Mk. 1 entered mass production in 1941, replacing older relatives as the standard service rifle of the British Army.

M1 Carbine: Designed as a smaller, lighter complement to the M1 Garand (see following), some 6 million M1 carbines were produced during and after World War II. The last military surplus lots were sold on the United States civilian market shortly before the Twilight War. Despite its M-series designation, it is not an M1 Garand variant; the two rifles have no parts commonality.

M1 Garand: The standard American service rifle during World War II enjoyed a reputation for unstoppable reliability. As with the M1 carbine, postwar surplus sales and military assistance programs distributed the Garand around the world, and the last Garands in the American military inventory were sold to civilians in 2009. The rifle is now a common choice of survivalists and militia groups throughout the former United States.

Mauser Kar98k: Germany's standard infantry weapon during World War II was the *Karabiner 98k*, a highly accurate bolt-action rifle chambered for the 8mm Mauser round. After the war, many were taken into Soviet service and subsequently

distributed to emerging Communist states. For this reason, Kar98ks are common across Southeast Asia. Modern derivatives are also popular hunting rifles throughout Europe.

Mosin-Nagant: The Mosin-Nagant entered Russian service in 1891 and remained in use in various Warsaw Pact nations through the 1960s. With over 37 million produced, this rifle was widely exported to Soviet client states and, from them, around the globe. In Finnish service, they were reconditioned into front-line sniper rifles as late as the 1980s. Even in the early 21st century, Mosin-Nagants saw frequent combat use in the hands of insurgents across Central Asia.

SKS: This carbine enjoyed a limited service life in the Red Army, as it was replaced by the AK-47 within a few years of its 1945 debut. However, it stayed in reserve inventories for decades, and was widely exported by virtually every Soviet Bloc nation with any industrial capacity. Its simplicity of design, as well as its ammunition commonality with the AK-47, made it a well-regarded civilian firearm for both small game hunting and survivalism.

SNIPER RIFLES

In many cases, the primary difference between a hunting rifle and a sniper rifle is that one is used to shoot deer and the other is used to shoot humans. Until the middle of the Cold War, military snipers used either adaptations of civilian designs or accurized versions of their armies' standard infantry rifles. Only in the mid-1960s did purpose-built sniper rifles appear on the scene. All of the following weapons were designed and sold primarily for military or law enforcement users, but most were legal for civilians to acquire.

Sniper rifle (generic): The most common cartridge for sniper rifles around the world is 7.62x51mm NATO, in both bolt-action and semi-automatic configurations. Many of the former, such as the American M40 and M24, are simply militarized and accurized versions of civilian hunting rifles. Conversely, a fair number of the latter are built on older 7.62mm NATO battle rifles that have been refurbished and upgraded. A wide variety of customizations are present, few of which have any impact on game play.

Anti-material rifle (generic): The large-caliber anti-tank rifle first came into play in World War I, when a round in the 12-15mm range was sufficient to defeat even the heaviest armor on the battlefield. In the 1980s, a renewed military interest in sniping led to the development of a new generation of anti-material rifles (AMRs), most of which were chambered for existing heavy machine gun calibers. Although tank armor is now proof against such projectiles, AMRs appeared frequently in both antipersonnel and antivehicular roles on the battlefields of the Twilight War.

AI AW: Accuracy International's Arctic Warfare is a bolt-action rifle renowned for its resistance to harsh extremes of climate. It was the sniper rifle of UK forces, as well as those of several other EU nations, and enjoyed popularity with police marksmen around the globe despite its comparatively high price tag. The AW does not suffer increased maintenance requirements from hot, cold, or extremely cold temperatures. The less-common AWM (for "Magnum") variant is slightly larger and chambered for more powerful cartridges.

Barrett Model 82: This .50 caliber semi-automatic rifle reintroduced the anti-tank rifle to modern armies when it appeared in the early 1980s. The "Light Fifty" is in American service as the M107 and is also used by several Nordic NATO members, as well as a few police departments and well-funded rednecks. Several imitators from other companies share identical game traits.

Dragunov SVD: The world's first purpose-built designated marksman's rifle (as opposed to an adaptation of an existing service or hunting rifle) entered Soviet service in the early 1960s. The Red Army's intent at the time was to place an SVD in every rifle squad, capitalizing on the success of its World War II sniper program. The

SVD was still in widespread service at the outbreak of the Twilight War.

M14: The M14 was one of the shortest-lived battle rifles in US service, seeing less than a decade of use before being replaced by the M16. However, the US Army and Marine Corps have tenaciously clung to both the original M14 and its M21 sniper rifle variant (no game difference). During the early 21st century, M14s were used extensively throughout Southwest Asia as designated marksman rifles (DMRs).

M16 DMR: This represents several independent DMR variations of the M16 developed in the late 2000s. All share the same basic design characteristics, giving the M16 a heavier barrel and removing its burst capability. 5.56x45mm models have almost complete commonality with the parent design, while 7.62x51mm versions such as the M110 still share more than 80% of their parts and are difficult for the uninformed observer to visually distinguish.

SHOTGUNS

.410 shotgun (generic): A .410 caliber shotgun is appropriate for hunting only the smallest of game (and venomous snakes). The other primary prewar use of this size of shotgun was as a training tool for young or first-time shotgunners.

20 gauge shotgun (generic): This intermediate gauge is considered an acceptable, though not optimal, size for home defense or hunting small to medium game. With considerably less recoil than a larger shell, 20 gauge is suitable for smaller or weaker shooters.

12 gauge shotgun (generic): By far the most common type of shotgun, the 12 gauge is available worldwide for sporting, hunting, personal defense, and law enforcement purposes. The only shotguns in military use during the Twilight War were 12 gauge models.

10 gauge shotgun (generic): The largest commonly-used shotguns, 10 gauge weapons were primarily sold for hunting large birds (with shot) or land animals (with slugs). A few American police agencies used them as anti-vehicular weapons, but this was rare even before the war and unseen now. The scarcity of ammunition and the weapon's punishing recoil make it rare to find a shooter with both the resources and the strength to employ one.

Saiga 12: This magazine-fed weapon combines the loose tolerances and reliability of the AK-47 with the power of a 12 gauge shotgun. Never adopted for military use (though some private security firms did deploy it), it was popular in both Russia and the west as a hunting and home defense weapon. The modifications to the AK-47 platform left the Saiga 12 slightly less reliable than its parent weapon (which still puts it a cut above most semi-automatic shotguns), but its heavy mechanism reduces perceived recoil to create a more controllable combat shotgun. 20 gauge (Saiga 20) and .410 (Saiga 410) models are also available, albeit less common.

Sawed-Off Shotguns

The traits given in the table for the generic shotguns are for full-length hunting models, which have barrels at least 50 cm long and full stocks. Many owners will remove a stock or shorten a barrel to increase a shotgun's concealability at the expense of effective range (and legality). These modifications have the following effects:

Modification	Range	Speed	Recoil	Bulk	Weight
Remove stock	same	-1/-1/-2	+50%	3	-20%
Shorten barrel	Gunfighting/CQB	-1/-1/-2	+25%	3	-20%
Both	Gunfighting/CQB	-2/-2/-3	+75%	2	-40%

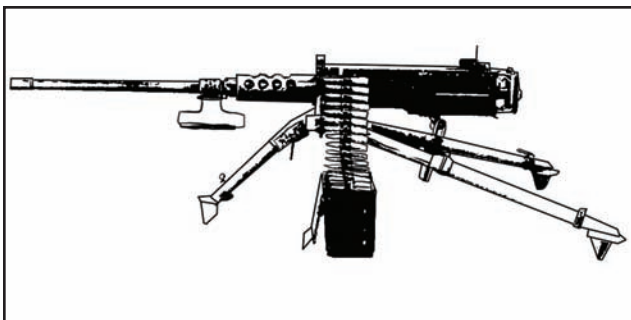
Table 7aa: Sawed-Off Shotgun

Autoloaders												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
.22 target pistol	.22 LR	10	3	x4/Nil	GF/CQB	S	1/2/4	3	1	0.5 kg	GG85	\$330
.32 holdout pistol	.32 ACP	7	4	x4/Nil	P/CQB	S	1/2/4	4	1	0.4 kg	GG100	\$400
.380 service pistol	.380 ACP	8	4	x4/Nil	P/CQB	S	1/2/4	5	1	0.7 kg	GG125	\$500
9mm service pistol	9mm P	13	4	x3/x4	GF/CQB	S	1/2/4	6	1	0.9 kg	GG130	\$520
.357 SIG service pistol	.357 SIG	12	5	x3/x4	GF/CQB	S	1/2/4	8	1	0.9 kg	GG120	\$720
.40 S&W service pistol	.40 S&W	12	5	x3/x4	GF/CQB	S	1/2/4	9	1	0.9 kg	GG130	\$650
Beretta Model 92	9mm Parabellum	15	4	x3/x4	GF/CQB	S	1/2/4	6	1	1 kg	GG160	\$650
Colt Model 1911A1	.45 ACP	7	5	x4/Nil	GF/CQB	S	1/2/4	7	1	1.1 kg	GG400	\$800
Colt Model 1911A1	.38 Super	9	5	x3/x4	GF/CQB	S	1/2/4	9	1	1.1 kg	GG400	\$1,600
FN Five-seveN	5.7mm FN	20	5	x2/x3	GF/CQB	S	1/2/4	4	1	0.7 kg	GG490	\$980
Glock 17	9mm P	17	4	x3/x4	GF/CQB	S	1/2/4	8	1	0.6 kg	GG225	\$450
H&K Mk. 23	.45 ACP	12	5	x4/Nil	GF/CQB	S	1/2/4	9	1	1.2 kg	GG375	\$1,500
Makarov PM	9mm Makarov	8	4	x4/Nil	GF/CQB	S	1/2/4	5	1	0.7 kg	GG80	\$325
Yarygin Pya	9mm Parabellum	17	4	x3/x4	GF/CQB	S	1/2/4	6	1	1 kg	GG200	\$400
Revolvers												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
.38 Special holdout	.38 Special	5 (cy)	4	x4/Nil	P/CQB	S	1/2/4	7	1	0.6 kg	GG140	\$550
.38 Special service	.38 Special	6 (cy)	4	x4/Nil	GF/CQB	S	1/2/4	6	1	1 kg	GG130	\$520
.357 Magnum holdout	.357 Magnum	5 (cy)	5	x3/x4	P/CQB	S	1/2/4	10	1	0.75 kg	GG165	\$650
.357 Magnum service	.357 Magnum	6 (cy)	5	x3/x4	GF/CQB	S	1/2/4	8	1	1.2 kg	GG175	\$700
.44 Magnum	.44 Magnum	6 (cy)	6	x3/x4	GF/T	S	2/3/5	12	2	1.5 kg	GG225	\$900
.454 Casull	.454 Casull	5 (cy)	7	x3/x4	GF/T	S	2/3/5	16	2	1.8 kg	GG275	\$1,100
SMG												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
9mm SMG	9mm Parabellum	30	4	x3/x4	CQB/T	S/B4	2/3/5	4	2	3 kg	GG375	\$750
CZ v.61 Skorpion	.32 ACP	20	4	x4/Nil	GF/CQB	S/B6	2/3/5*	2*	2*	1.3 kg	GG440	\$880
CZ v.83 Skorpion	.380 ACP	20	4	x4/Nil	GF/CQB	S/B6	2/3/5*	3*	2*	1.4 kg	GG440	\$880
CZ v.82 Skorpion	9mm Makarov	20	4	x4/Nil	GF/CQB	S/B6	2/3/5*	4*	2*	1.4 kg	GG440	\$880
FN P90	5.7mm FN	50	5	x2/x3	CQB/T	S/B6	2/3/5	2*	2	2.5 kg	GG750	\$1,500
H&K MP5K	9mm Parabellum	30	4	x3/x4	GF/CQB	S/B3/B5	2/3/5	3*	2	2.1 kg	GG4500	\$1,000
H&K UMP	9mm Parabellum	30	4	x3/x4	CQB/T	S/B2/B4	2/3/5	4	2	2.1 kg	GG475	\$950
H&K UMP	.40 S&W	30	5	x3/x4	CQB/T	S/B2/B4	2/3/5	6	2	2.1 kg	GG475	\$950
H&K UMP	.45 ACP	25	5	x4/Nil	CQB/T	S/B2/B4	2/3/5	7	2	2.2 kg	GG475	\$950
Izmash PP-19 Bizon	9mm Makarov	64	4	x4/Nil	CQB/T	S/B6	2/3/5	3	2	2.1 kg	GG625	\$1,250
Assault Rifles												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
Assault rifle	5.56x45mm	30	6	x2/x3	M/S	S/B3/B5	3/5/7	5	3	3.3 kg	GG600	\$1,200
Bullup assault rifle	5.56x45mm	30	6	x2/x3	M/S	S/B5	3/4/6	4	3	4.3 kg	GG900	\$1,200
Carbine	5.56x45mm	30	6	x2/x3	T/O	S/B5	3/4/6	5	3	2.6 kg	GG600	\$1,200
Battle rifle	7.62x51mm	20	8	x2/x3	M/S	S/B4	3/6/8	9	3	4 kg	GG900	\$1,800
AK-47	7.62x39mm	30	7	x2/x3	M/S	S/B4	3/5/7	7	3	3.8 kg	GG300	\$400
AK-74	5.45x39mm	30	6	x2/x3	M/S	S/B4	3/5/7	4	3	2.9 kg	GG260	\$520
AKS-74U	5.45x39mm	30	6	x2/x3	CQB/M	S/B5	3/4/6	4	3	2.3 kg	GG300	\$600
M16A4	5.56x45mm	30	6	x2/x3	M/S	S/B3	3/5/7	5	3	3.4 kg	GG475	\$950
M4A1	5.56x45mm	30	6	x2/x3	T/O	S/B5	3/4/6	5	3	2.5 kg	GG550	\$1,100
QBZ-95	5.8x42mm	30	7	x2/x3	M/S	S/B4	3/4/6	5	3	3.4 kg	GG1,050	\$1,400
Steyr AUG	5.56x45mm	30	6	x2/x3	M/S	S/B5	3/5/7	4	3	3.6 kg	GG975	\$1,300
Steyr AUG (carbine)	5.56x45mm	30	6	x2/x3	T/O	S/B5	2/4/6	4	2	3.3 kg	GG975	\$1,300
Target and Hunting Rifles												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
Target rifle, bolt action	.22 LR	5 (in)	3	x4/Nil	CQB/T	S	4/6/9	1	3	2.5 kg	GG55	\$230
Target rifle, semi-auto	.22 LR	10 (in)	3	x4/Nil	CQB/T	S	3/4/6	2	3	2.1 kg	GG60	\$240
Small game rifle, bolt action	5.56x45mm	6 (in)	6	x2/x3	M/S	S	5/8/11	5	4	3.1 kg	GG230	\$700
Hunting rifle, bolt action	6.5x55mm	5 (in)	8	x2/x3	M/EX	S	5/8/11	8	4	4 kg	GG230	\$700
Hunting rifle, bolt action	7.62x51mm	5 (in)	8	x2/x3	M/EX	S	5/8/11	10	4	3.3 kg	GG400	\$800
Hunting rifle, bolt action	.30-06	4 (in)	9	x2/x3	M/EX	S	5/8/11	11	4	3.4 kg	GG420	\$840
Hunting rifle, bolt action	.300 Winchester Magnum	3 (in)	10	x1/x2	M/EX	S	5/8/11	13	4	3.4 kg	GG425	\$850
Big game rifle, bolt-action	.460 Weatherby Magnum	2 (in)	12	x2/x3	M/EX	S	6/9/14	27	5	4.5 kg	GG750	\$3,000

Table 7bb: Firearms

Bolt Action Service Rifles												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
Lee-Enfield No. 4 Mk. 1	.303 British	10 (in)	8	x2/x3	M/EX	S	5/8/11	10	4	3.7 kg	GG335	\$670
Mauser Kar98k	8mm Mauser	5 (in)	9	x2/x3	M/EX	S	5/8/11	8	4	4.1 kg	GG435	\$870
Mosin-Nagant	7.62x54mm	5 (in)	8	x2/x3	M/EX	S	5/8/11	9	4	4.1 kg	GG100	\$200
Semi-Automatic Service Rifles												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
M1 Carbine	.30 Carbine	15	4	x3/x4	CQB/M	S	3/4/6	6	3	2.4 kg	GG150	\$600
M1 Garand	.30-06	8 (in)	9	x2/x3	M/EX	S	4/6/9	9	4	4.6 kg	GG150	\$600
SKS	7.62x39mm	10 (in)	7	x2/x3	M/S	S	3/5/7	6	3	3.9 kg	GG125	\$250
Bolt Action Sniper Rifles												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
Sniper rifle	7.62x51mm	10	8	x2/x3	M/EX	S	5/8/11	7	4	6.2 kg	GG2,000	\$4,000
Anti-material rifle	.50 BMG	5	16	x1/x2	O/EX	S	6/9/14	24	5	15 kg	GG5,700	\$5,700
AI AW	7.62x51mm	10	8	x2/x3	M/EX	S	5/8/11	7	4	6.5 kg	GG2,500	\$5,000
AI AWM	7mm Remington Magnum	5	9	x1/x2	M/EX	S	5/8/11	8	4	6.6 kg	GG2,000	\$5,000
AI AWM	.300 Winchester Magnum	5	10	x1/x2	M/EX	S	5/8/11	9	4	6.7 kg	GG2,200	\$5,400
AI AWM	.338 Lapua	4	10	x2/x3	M/EX	S	5/8/11	12	4	7.3 kg	GG2,600	\$6,400
Semi-Automatic Sniper Rifles												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
Sniper rifle	7.62x51mm	20	8	x2/x3	M/EX	S	4/6/9	8	4	5.1 kg	GG1,500	\$3,000
Barrett Model 82	.50 BMG	10	16	x1/x2	O/EX	S	5/8/11	24	5	14.1 kg	GG8,300	\$8,300
Dragunov SVD	7.62x54mm	10	8	x2/x3	M/EX	S	4/6/9	9	4	4.3 kg	GG400	\$800
M14	7.62x51mm	20	8	x2/x3	M/EX	S	4/6/9	8	4	5.2 kg	GG500	\$1,000
M16 DMR	5.56x45mm	30	6	x2/x3	M/S	S	3/5/8	4	3	3.8 kg	GG1,500	\$3,000
M16 DMR	7.62x51mm	20	8	x2/x3	M/EX	S	4/6/8	8	4	5.4 kg	GG1,500	\$3,000
Break Action Shotguns												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
20 gauge	20 gauge	2 (si)	9	x4/Nil	CQB/T	S/B2	4/6/9	14	4	2.6 kg	GG75	\$300
12 gauge	12 gauge	2 (si)	10	x4/Nil	CQB/T	S/B2	4/6/9	22	4	2.9 kg	GG85	\$350
Pump Action Shotguns												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
.410 bore	.410	5 (in)	8	x4/Nil	CQB/T	S	5/8/11	4	4	3.3 kg	GG160	\$635
20 gauge	20 gauge	4 (in)	9	x4/Nil	CQB/T	S	5/8/11	13	4	3.3 kg	GG135	\$545
12 gauge	12 gauge	7 (in)	10	x4/Nil	CQB/T	S	5/8/11	19	4	3.6 kg	GG210	\$420
10 gauge	10 gauge	4 (in)	10	x4/Nil	CQB/T	S	5/8/11	23	4	3.7 kg	GG365	\$730
Semi-Automatic Shotguns												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
20 gauge	20 gauge	5 (in)	9	x4/Nil	CQB/T	S	4/6/9	11	4	3.5 kg	GG150	\$600
12 gauge	12 gauge	7 (in)	10	x4/Nil	CQB/T	S	4/6/9	16	4	3.8 kg	GG180	\$680
Saiga 12	12 gauge	8	10	x4/Nil	CQB/T	S	3/5/8	17	3	3.6 kg	GG250	\$500
Saiga 20	20 gauge	5	9	x4/Nil	CQB/T	S	3/5/8	11	3	3.4 kg	GG200	\$400
Saiga 410	.410	4	8	x4/Nil	CQB/T	S	3/5/8	3	3	3.4 kg	GG175	\$350
Squad Automatic Weapons (SAW)												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
FN Minimi	5.56x45mm	200 (bt)	6	x2/x3	M/S	B5/B9	4/6/9	3	4	7.1 kg	GG1,500	\$6,000
RPK	7.62x39mm	75	7	x2/x3	M/S	B4/B8	4/6/9	6	4	5 kg	GG1,100	\$4,200
RPK-74	5.45x39mm	45	6	x2/x3	M/S	B4/B8	4/6/9	3	4	5 kg	GG1,200	\$4,600
General Purpose Machine Guns (GPMG)												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
FN MAG	7.62x51mm	100 (bt)	8	x2/x3	O/EX	B6/B11	5/8/11	6	5	10.2 kg	GG2,200	\$8,700
PKM	7.62x54mm	100 (bt)	8	x2/x3	O/EX	B4/B9	5/8/11	6	5	9 kg	GG1,400	\$5,500
Heavy Machine Guns (HMG)												
Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
Browning M2HB	.50 BMG	105 (bt)	16	x1/x2	S/EX	S/B4/B8	7/11/16	15	7	38 kg	GG3,200	\$12,700
KPV	14.5x114mm	100 (bt)	21	x1/x2	S/EX	S/B4/B7	8/12/18	19	8	49 kg	GG4,200	\$16,600
NSV	12.7x108mm	50 (bt)	16	x1/x2	S/EX	B5/B10	7/11/16	18	7	25 kg	GG2,700	\$10,800

Table 7bb: Firearms continued



MACHINE GUNS

Machine guns are drum- or belt-fed fully automatic weapons that are strictly military armament. In infantry formations, they are deployed at the squad or platoon level to provide sustained automatic fire support. For game purposes (and in many military doctrines), machine guns are subdivided into three categories:

- *Squad automatic weapons* (SAWs) or light machine guns (LMGs) are chambered for the same caliber as the force's assault rifles, such as 5.56x45mm or 5.45x39mm. In some cases, they are designed to accept the same magazines as those assault rifles. A single soldier is assigned a SAW, but his rifleman squadmates frequently carry additional ammunition for him. Unless otherwise noted, every SAW is equipped with a bipod (included in cost and weight). The Longarm skill governs attacks with SAWs.

- *General-purpose machine guns* (GPMGs) or medium machine guns accept heavier rifle-caliber ammunition, such as 7.62x51mm or 7.62x54mm. In practice, a GPMG has a two-man crew, with the assistant gunner responsible for carrying ammunition and keeping fresh belts ready to load. Unless otherwise noted, every GPMG is equipped with a bipod (included in cost and weight). The Support Weapons skill governs attacks with GPMGs.

- *Heavy machine guns* (HMGs) are too large to be man-portable under combat conditions. They are mounted on vehicles or in fixed defensive positions. A HMG must be fired from such a fixed mount - "offhand" use of it is impossible. The Support Weapons skill governs attacks with HMGs.

SAWs

FN Minimi: The Minimi was the standard squad automatic weapon of several NATO nations, including the US (in whose service it was designated the M249 SAW). In an emergency, it can feed from a standard M16-series assault rifle magazine, though this tends to destroy the magazine (10% chance).

RPK: The squad automatic weapon of the Red Army throughout the early Cold War, the RPK was still in service in 2013, used by both Russian client states and reserve forces. It was designed alongside later versions of the AK-47 and can accept any AK-47 magazine in addition to its 75-round drum.

RPK-74: This progressive development of the RPK is compatible with the AK-74.

GPMGs

FN MAG: The MAG was in service with most NATO members and several Asian nations as their standard GPMG (it's called the M240 in US service). In addition to use in infantry units, it was the standard secondary weapon on many western armored fighting vehicles.

PKM: The Russian counterpart to the MAG was widely exported throughout the Cold War as both an infantry and a vehicle weapon.

HMGs

KPV: Too large and heavy to be a viable infantry support weapon, this heavy machine gun was the primary armament of several Soviet-designed light combat vehicles. It was also employed as an anti-aircraft gun, as its exceptional range and power made it capable of knocking down low-flying drones and helicopters.

NSV: This older Soviet-era HMG was in the process of being phased out by the beginning of the Twilight War, but sporadic procurement of replacements left many examples in circulation. Postwar shortages of replacement parts have made NSVs more common than any of their intended successor designs.

M2HB: By the beginning of the Twilight war, the "Ma Deuce" had been in service throughout the western world for over eight decades. Modernization programs in the early 21st century reduced maintenance demands and weight, but the basic design remained the same.

SMALL ARMS AMMUNITION

Rifle and Pistol Ammo

By default, all values for pistol and rifle ammunition (including weapon data) are for "ball" or full metal jacket (FMJ) bullets. This is the simplest and most common kind of ammunition on the prewar market, usually consisting of a lead core completely enclosed in a copper jacket. Three additional types of pistol and ammunition are available for some calibers:

- *Armor piercing* (AP) ammunition uses a hard metal core or tip to enhance armor penetration at the risk of overpenetrating through soft targets. AP ammunition has a Damage rating 1 lower than normal, but has a Penetration rating one step better than normal. *AP ammunition's cost is 5x the base value for that caliber.*

- *Hollowpoint* (HP) ammunition exposes part of the bullet's lead core, allowing greater expansion in soft tissue. This does, however, reduce the projectile's ability to retain structural integrity on impact. HP ammunition has a Damage rating 2 greater than normal, but has a Penetration rating one step worse than normal. Because HP ammunition was banned for use in warfare under the Hague Convention of 1899, it was not commonly issued to military personnel. *HP ammunition's cost is 2x the base value for that caliber.*

- *Tracer* ammunition incorporates a small amount of incendiary material at the base of the bullet. When fired, this material ignites, and the light it produces appears on the human retina (and on most imaging devices) as a bright streak. This aids a shooter using automatic fire, and can have other tactical signaling uses as well. Typically, tracer ammo is mixed into ammunition belts for machine guns at a 1:4 ratio with regular ammo. When used in this or greater proportions, it provides an additional +1

Penetration

Penetration values are on a sliding scale. From worst to best, the possible values are Nil, x4, x3, x2, x1, and x½. Thus, if a round normally has Penetration x3, its AP variant has Penetration x2 and its HP variant has Penetration Nil.

Pistol Cartridges					
Caliber	Weight	Barter Value	Street Price	Type	Mag Wgt
.22 LR	0.4 kg	GG0.48	\$12	HP	0.1 kg (10)
.25 ACP	0.6 kg	GG5.4	\$54	HP	
5.7mm FN	0.7 kg	GG70	\$102	AP/HP	0.3 kg (20), 0.6 kg (50)
.32 ACP	0.8 kg	GG6.6	\$66	HP	0.3 kg (30)
.380 ACP	1.3 kg	GG4.8	\$48	HP	0.2 kg (8)
.38 Special	1.3 kg	GG2.4	\$60	HP	
.38 Super	1.6 kg	GG22	\$64	HP	0.2 kg (9)
.357 SIG	1.6 kg	GG30	\$75	HP	
.357 Magnum	1.6 kg	GG2.72	\$68	HP	
9mm Makarov	1.3 kg	GG6.8	\$68	HP	0.2 kg (8), 1.4 kg (64)
9mm Parabellum	1.7 kg	GG5.2	\$52	HP	0.3 kg (15), 0.7 kg (30)
.40 S&W	1.9 kg	GG12.8	\$64	HP	0.3 kg (13)
10mm Auto	1.9 kg	GG34.8	\$87	HP	
.44 Magnum	2.4 kg	GG10.8	\$108	HP	
.45 ACP	2.6 kg	GG3.44	\$86	HP	0.3 kg (7), 1.1 kg (25)
.454 Casull	3.4 kg	GG40	\$100	HP	
Rifle Cartridges					
Caliber	Weight	Barter Value	Street Price	Type	Mag Wgt
5.45mm Soviet	1.3 kg	GG5	\$50	AP/HP/T	0.5 kg (30), 0.9 kg (45)
5.56x45mm	1.4 kg	GG5	\$50	AP/HP/T	0.6 kg (30)
5.8x42mm	1.4 kg	GG18	\$90	AP/T	0.7 kg (30)
6.5x55mm	3.1 kg	GG50	\$124	HP	
7mm Remington Mag.	4 kg	GG47	\$117	HP	
7.62x39mm	2.2 kg	GG5	\$50	AP/HP/T	0.8 kg (30), 2.2 kg (75)
7.62x51mm	2.7 kg	GG8	\$80	AP/HP/T	0.4 kg (10), 0.8 kg (20)
7.62x54mm	2.9 kg	GG10.5	\$105	AP/HP/T	0.4 kg (10)
.30 Carbine	1.7 kg	GG5.5	\$55	HP	0.3 kg (15)
.30-06	3.3 kg	GG5.4	\$135	AP/HP	
.300 Winchester Mag.	4.1 kg	GG48	\$119	HP	
.303 British	3.3 kg	GG13.5	\$135	HP	
.338 Lapua	4.7 kg	GG61	\$152	HP	
.338 Winchester Mag.	4.7 kg	GG82	\$205	HP	
8mm Mauser	3.1 kg	GG18	\$180	HP	
.460 Weatherby Mag.	5 kg	GG144	\$360	HP	
.50 BMG	13 kg	GG163	\$815	AP/T	1.9 kg (10)
12.7x108mm	14 kg	GG146	\$730	AP/T	
14.5x114mm	20 kg	GG160	\$800	AP/T	
Shotgun Shells					
Caliber	Weight	Barter Value	Street Price	Type	Mag Wgt
.410	1.7 kg	GG6.88	\$172	-	
20 gauge	4 kg	GG5.76	\$144	-	
12 gauge	6 kg	GG2	\$200	-	0.6 kg (8)
10 gauge	8.4 kg	GG33.6	\$336	-	

Table 7cc: Ammunition

bonus to burst attacks. It has the same damage characteristics as FMJ ammunition of the same caliber. Although it's not intended for incendiary use, it can start fires at the GM's discretion. *Tracer ammunition's cost is 4x the base value for that caliber.*

Shotgun Ammo

Shotgun ammunition traits (and weapon data) are calculated for slug ammunition. A slug is a single large chunk of lead. For game purposes, it has the same general performance as a hollowpoint bullet. Because this is the default ammunition type for shotguns, weapon Damage and Penetration are already modified to reflect higher lethality and lower penetration.

In addition to slug, buckshot ammunition is also available for all shotguns. When firing buckshot, the weapon's base Damage is halved and Penetration drops to Nil, but the attack receives a +2 bonus and the attacker's margin of success is *doubled* for purposes of determining final Damage. *Buckshot costs the same as slug ammunition.*

The Small Arms Ammo Table

In the ammunition table above, prices and weights (except for Mag Weight) are given *per 100 rounds*. Street prices are extrapolations from late 2007 prices, reflecting the inflationary value of metals in the immediate prewar years. The "Type" column

Ammunition Nomenclature

Several common military calibers go by multiple names, which can be confusing for readers who are uninitiated into (or just uninterested in) firearms minutiae. We've tried to standardize terminology, but here's a brief run-down of the alternate terms you may hear flung around the gaming table.

- 5.45x39mm: Also known as "5.45mm Soviet" or just "5.45mm."
- 5.56x45mm: Also known as "5.56mm NATO." A military development of the .223 Remington hunting cartridge. For game purposes, the two are identical, and we haven't listed .223 Remington separately.
- 7.62x39mm: Also known as "7.62x39mm Soviet."
- 7.62x51mm: Also known as "7.62mm NATO." A military standardization of the .308 Winchester hunting cartridge. For game purposes, the two are identical, and we haven't listed .308 Remington separately.
- 7.62x54mm: Also known as "7.62x54mm Russian." Not the same as either of the previous two 7.62mm calibers, despite the close similarity in size.

indicates which special ammunition types are available for each caliber: armor-piercing (AP), hollowpoint (HP), and/or tracer (T). The "Mag Weight" column provides the weights for loaded magazines, with the parenthetical notation indicating capacity (e.g. "0.1 kg (10)" indicates a weight of 0.1 kilograms for a loaded 10-round magazine). Note that this includes the weight of the magazine itself.

FIREARM ACCESSORIES

A wide array of accessories was available to the early 21st century shooter. Most of the following items were legal for civilian purchase (though some required extensive application processes).

Ammunition Handling Items

The following items are used for storing ammunition or facilitating quick reloads.

Bandolier: An adjustable strap of webbing, usually about 2 inches wide, designed to be draped diagonally across the wearer's torso. It is adjustable to fit over either light clothes or combat webbing. On the strap are sewn a series of leather or elastic loops sized for ammunition. Bandoliers are available separately for 40mm grenades (capacity 10), shotgun shells (capacity 20), rifle or handgun cartridges (capacity 40), hand grenades (capacity 6), and rifle magazines (capacity 6).

Magazine, spare: An empty magazine (or drum, for some large-capacity weapons). Generally speaking, a magazine is built for a specific model of firearm, and will not fit into any other weapon. Assume that an empty magazine weighs 0.05 kg per 10 rounds (or fraction thereof) of capacity.

Side saddle: A nylon harness that attaches to the side of a longarm's stock, providing ready ammunition storage. The most common side saddles are for shotguns, holding 8 loose rounds. They are also available for assault rifles, holding a single spare magazine. A side saddle cannot be mounted on a folding stock (see following).

Telescopic Sights

The telescopic sights described in this section have innate magnification capabilities. These function in the same manner as the magnifying optics described earlier in this chapter (see p. 237): the sight reduces the apparent visual range to a target by a number of range bands equal to its Magnification value. For example, a Mag-3 telescopic sight brings a target three range bands closer for the purpose of assessing visual range penalties. If a target is at Extreme range (a -32 visual range penalty), a shooter using a rifle with this sight can detect, examine, and attack it as if it were at Medium range (a -4 visual range penalty). However, if a combination of close range and high Mag brings a target to Personal range or closer, the effective visual range is too close for any meaningful observation to take place, and any attack using the optic automatically fails.

The effects of magnification always apply to snap and aimed shots, but never apply to hip shots. By their nature, hip shots are wild, unaimed attacks that don't rely on a weapon's iron sights, let alone any more sophisticated accessories. Conversely, the position of a magnifying sight places it directly in the user's field of vision for a properly-aligned snap or aimed shot, so ignoring it (thus not applying its effects) effectively makes the attack a hip shot anyway.

Using magnifying optics for attacks does have a drawback: the optic limits the shooter's field of vision, thus increasing the Speed of any snap or aimed shot by its Mag value. Thus, a rifle with a base Speed 4/6/9 fitted with a Mag-3 telescopic sight gains a modified Speed of 4/9/12.

Magnification does not affect Speed penalties for attacks made inside a weapon's optimum range, nor does it affect attack penalties for attacks made beyond optimum range. The former are a function of the weapon's length and weight, while the latter descend from ballistic limitations that a mere set of lenses can't overcome.

Speedloader: A cylindrical device that holds one complete reload for a revolver. Using a speedloader allows a shooter to completely load his weapon with a single Reload action rather than loading loose rounds individually at a slower rate. Because of the broad similarities between revolver designs, a speedloader is not model-specific. One acquired for a given caliber and capacity (e.g. 5 rounds of .38 Special) will work with all revolvers that meet that description.

Stripper clip: A tool for rapidly loading a rifle with an internal magazine. It is a small metal clip that holds several rounds of ammunition side by side, allowing the shooter to shove them into the magazine at once rather than loading them individually. Using a stripper clip allows a shooter to completely load his weapon with a single Reload action rather than loading loose rounds individually at a slower rate. In the absence of a stripper clip, the shooter still can load the internal magazine normally. Stripper clips are available for the Also available for the Mosin-Nagant (5 rounds), Lee-Enfield No. 4 Mk. 1 (5 rounds), Mauser Kar98k (5 rounds), M1 Garand (8 rounds), and SKS (10 rounds).

Gunsights

All gunsights (or *optics*) augment or supplant a weapon's standard built-in "iron sights." Unless otherwise stated, a weapon can mount only one of the following accessories at a time. Attaching a gunsight requires the gunsmith to calibrate the sight so that its optical cues match the gun's actual point of impact. This is a Artisan: Gunsmithing (CDN) or Mechanics (CDN, TN -3) task that requires 30 minutes and the expenditure of 3d10 rounds of

<i>Ammunition Handling Items</i>				
Weapon Accessory	Weight	Barter Value	Street Price	
Bandolier (any type)	0.5 kg	GG1.75	\$35	
Magazine, spare	0.05 kg/10 rds.	GG0.2/10 rds.	\$20/10 rds.	
Side saddle (any type)	0.2 kg	GG1.25	\$25	
Speed loader (any type)	0.1 kg	GG1.5	\$15	
Stripper clip (any rifle)	Neg.	GG0.02	\$2	
<i>Telescopic Sights</i>				
Weapon Accessory	Weight	Barter Value	Street Price	Power Req.
Night	-	GG30	\$150	-
Night-vision	0.9 kg	GG375	\$1,500	4 sm/60 hrs
Night-vision, Mag-1	1.4 kg	GG500	\$2,000	4 sm/60 hrs
Reflex, powered	0.3 kg	GG100	\$400	2 sm/1 yr
Reflex, unpowered	0.2 kg	GG500	\$1,000	-
Reflex, powered, Mag-1	0.3 kg	GG150	\$600	2 sm/1 yr
Reflex, unpowered, Mag-1	0.2 kg	GG750	\$1,500	-
Reflex sight magnifier	0.1 kg	GG600	\$800	-
Telescopic, Mag-1	0.3 kg	GG75	\$150	-
Telescopic, Mag-2	0.4 kg	GG175	\$350	-
Telescopic, Mag-3	0.5 kg	GG225	\$450	-
Thermal	1.4 kg	GG3,000	\$12,000	2 med/8 hrs
Thermal, Mag-1	1.5 kg	GG3,250	\$13,000	2 med/8 hrs
<i>Rail Accessories</i>				
Weapon Accessory	Weight	Barter Value	Street Price	Power Req.
Laser sight	0.1 kg	GG75	\$300	1 micro/24 hrs
Laser sight, IR	0.1 kg	GG150	\$600	1 micro/24 hrs
Multi-light	0.2 kg	GG125	\$500	2 sm/2 hrs
Vertical foregrip	0.1 kg	GG2	\$40	-
Weapon light, small	0.1 kg	GG25	\$100	1 sm/1 hr
Weapon light, large	0.2 kg	GG50	\$200	2 sm/1 hr
Weapon light, IR, small	0.1 kg	GG40	\$150	1 sm/1 hr
Weapon light, IR, large	0.2 kg	GG75	\$300	2 sm/1 hr
<i>Miscellaneous Accessories</i>				
Weapon Accessory	Weight	Barter Value	Street Price	
Bipod	0.4 kg	GG1.25	\$50	
Folding stock	-	GG5	\$100	
Sling	0.2 kg	GG1	\$40	
Tripod, light	7 kg	GG10	\$200	
Tripod, medium	11 kg	GG15	\$300	
Tripod, heavy	20 kg	GG20	\$400	

Table 7dd: Firearm Accessories

ammunition. If the gunsmith does not have at least a Competent skill rating with the weapon in question, the check suffers a -3 penalty.

Unless otherwise stated, all of the following items are usable only in adequate or brighter lighting conditions.

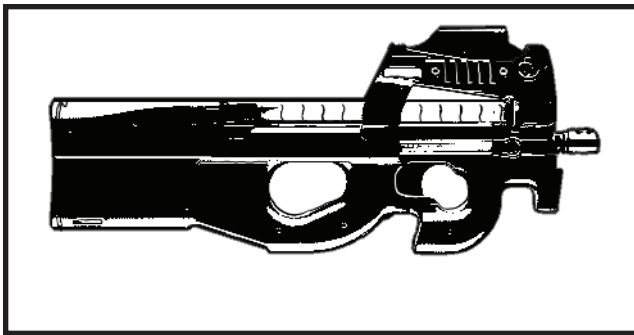
Night: Drop-in replacements for a weapon's iron sights that contain luminescent material, usually tritium. In low-light conditions, the resulting glowing dots are more visible than normal, reducing any range penalty for shots in dim or minimal lighting conditions by up to 2. Night sights do not require batteries, but have a life expectancy of 1d6+4 years before radioactive decay renders them useless. They are available for most handguns, submachine guns, shotguns, and assault rifles, but not usually for rifles or machine guns (x4 cost to represent rarity). Night sights can be mounted in conjunction with any other gunsight, but benefits do not stack.

Night-vision: The same basic technology as NVGs (see p. 238) in a weapon sight. Provides identical benefits for snap and aimed

shots, but increases the Speed of these attacks by 1. A night-vision sight may be mounted on any longarm. Low-magnification (Mag-1) versions are also available; the Speed increase from magnification stacks with the night-vision sight's basic Speed increase.

Reflex: Otherwise known as a "red dot" sight, this item superimposes a visual sighting aid (dot or cross-hairs) over the shooter's field of vision. This reduces the Speed of snap and aimed shots by 1 and provides a +2 bonus to snap shots. Reflex sights are available in both powered and unpowered varieties. An unpowered model uses prisms and works in minimal through excessive lighting conditions. A powered model works in all lighting conditions. Any firearm can accept a reflex sight, but mounting one on an autoloader requires a special bracket (weight 0.1 kg, barter value GG7.5, street price \$150).

Reflex, magnifying: A reflex sight with low (Mag-1) magnification. The cumulative effect is to provide a +2 bonus to snap shots and effective visual range for snap and aimed shots by one range band.



Reflex sight magnifier: A compact Mag-1 telescopic scope designed to be mounted in line with a reflex sight (an exception to the general rule of one gunsight per weapon). When both optics are used together, they function as a Mag-1 reflex sight. The magnifier pivots to one side (a 1-tick action) for close-range shooting, allowing normal use of the reflex sight without magnification.

Telescopic: The oldest firearm optic design uses magnifying lenses to enlarge the image of a target. Telescopic sights are available in a wide array of magnifications. For game purposes, they are rated by Magnification. A telescopic sight may be mounted on any longarm or any Size 2 revolver. Telescopic sights with illuminated reticles are also available (for an extra GG500 or \$1,000); these use a tritium vial or a set of prisms to make the sight usable in dim lighting conditions.

Thermal: The same basic technology as a thermal imager (see p. 238) in a weapon sight. Provides identical benefits for snap and aimed shots, but increases the Speed of these attacks by 1. A thermal sight may be mounted on any longarm. Low-magnification (Mag-1) versions are also available; the Speed increase from magnification stacks with the thermal sight's basic Speed increase.

Rail Accessories

Many modern firearms are constructed (or can be equipped after purchase) with *accessory rails*. These are industry-standard mounting points for a variety of accessories. Unless otherwise noted in an individual weapon description, assume that any autoloader has a single rail (under the barrel), and any submachine gun or assault rifle has three rails (underneath and on each side of the barrel). Attaching or removing a rail-mounted accessory requires one minute and a screwdriver. These items can also be attached to shotguns, but the process requires 30 minutes, a set of gunsmithing tools, and an Artisan (Gunsmithing) (COG, TN +4) skill check.

Laser sight: Projects a low-powered beam that parallels the barrel of the firearm (calibrating this after mounting follows the same rules as per optics). This enables an Unskilled character to attack as if he had a Novice skill rating. A skilled character receives a +2 bonus to hip and snap shots and a +1 bonus to aimed shots. A laser's effects apply only within the limits of its effective illumination range: Gunfighting in adequate light, CQB in dim or minimal light, or Tight in total darkness. A laser is never visible in excessive or blinding light.

Laser sight, IR: A laser sight emitting infrared rather than visible light. This is visible only to a character using NVGs or a night vision scope.

Multi-light: A single unit combining the effects of a laser sight and a small weapon light.

Vertical foregrip: A handle that attaches to the underside rail of a longarm. This provides additional leverage for a two-handed grip, reducing the weapon's base Recoil by 1 (not cumulative with a bipod or tripod) when the shooter uses a two-handed grip. It also has an internal storage compartment for two small batteries or a similar-sized item.

Weapon light: A high-intensity flashlight designed to be clamped to a rail. A small model is suitable for mounting on any

firearm; it provides adequate illumination through the Gunfighting range band. A large model can be mounted on any firearm of Bulk 2 or greater; it provides adequate illumination through the CQB range band. Infrared versions are also available; their illumination is visible only through IR night vision optics.

Miscellaneous Accessories

Bipod: A pair of folding legs that attach to the muzzle end of a rifle, SAW, or GPMG. These provide extra support and stabilization for the weapon. To benefit from a bipod, the shooter must be stationary, as well as prone or otherwise able to rest the bipod's feet on a solid object. Under such conditions, the shooter receives a +2 bonus to aimed shots and the gun's base Recoil is reduced by 2. However, the Speed penalty for attacks inside optimum range is doubled.

Folding stock: All longarms are assumed to have solid stocks unless their descriptions indicate otherwise. This modification replaces the standard stock with a folding one.

- For a Bulk 2 weapon (typically a submachine gun), when the stock is folded, Recoil increases by 50%. Optimum range is reduced by one range band. Aimed shots may not be made past CQB range. If a weapon's description contains a different effect (e.g. the Skorpion), use the weapon-specific rule rather than this general rule.

- For a Bulk 3 or larger weapon, when the stock is folded, the weapon's Bulk is reduced by 1. Speed is reduced by -1/-1/-2. However, Recoil increases by 50%, and snap and aimed shots may not be made past Tight range.

In both cases, the Recoil increase is calculated after applying other modifiers (burst fire, stance, etc).

Sling: A nylon strap that attaches to a longarm, enabling the user to hang it over his shoulder or across his chest. Carrying a longarm without a sling quickly becomes tiring and awkward.

Tripod: A three-legged support for a firearm (or other weapon or device). For game purposes, tripods come in three sizes. A light tripod is suitable for a SAW. A medium tripod is suitable for a GPMG or SAW. A heavy tripod is suitable for any machine gun, ATGM launcher, or automatic grenade launcher. Attaching a weapon to a tripod takes 5 minutes. Attaching a NATO-derived weapon to a Warsaw Pact-derived tripod, or vice versa, increases this to an hour and requires some minor metalworking to make the parts fit. A tripod provides the same effects as a bipod, except that the gun's base Recoil is halved.

CLOSE COMBAT WEAPONS

Blades and blunt implements have not been primary weapons of war for centuries, but they are no less lethal. In 2013, many simple items serve dual roles as everyday tools and emergency backup weapons. In addition, a few replicas (and fewer genuine originals) of antique arms are in circulation, and these can be just as deadly in the right hands.

Most of the weapons presented here should require neither introduction nor explanation for the experienced gamer. Exceptions, and items with special rules cases, follow:

Bat: Representative of any number of meter-long sporting implements.

Baton, telescoping: When collapsed, a telescoping baton performs like a sap. Readyng a telescoping baton automatically extends it if the wielder has a Novice or better Hand Weapons rating.

Bayonet: A military working knife designed to be attached to the end of an assault rifle or service rifle for use as a crude spear. This does not obstruct the muzzle and the gun can still fire normally. When used by itself, a bayonet's performance is represented by the working knife entry.

Design Note: Close Combat Weapon Choices

Yes, we've played *Dungeons & Dragons* too, and we know there are many more possible close combat weapons than those we've listed here. Our selections are based largely on practicality. A machete or hatchet is small enough to be carried as a secondary weapon. A halberd is not, and there are still enough firearms in use in 2013 that no pike square would survive the multiple exchanges of fire necessary to close to melee range. When AK-47s are available, who's going to take the time to train up pikemen?

We also know that chainsaws, hedge trimmers, dry-erase markers, and crème brûlée torches *can* be used in combat. Again, however, these are not *sensible* choices, particularly in a game in which more reliable, sane, and efficient alternatives are readily available. Don't be silly.

Brass knuckles: These supplement unarmed strikes. When a character using brass knuckles makes a Hand-to-Hand attack, use the traits of the brass knuckles rather than his bare hands. This can also represent weighted gloves or similar implements.

Knife, folding: Any one of thousands of single- or double-edged knives with blades between 8 and 12 cm.

Knife, working: A non-folding knife with a blade between 12 and 24 cm. This includes kitchen, survival, and fighting knives. If balanced for throwing, increase cost to GG1.6/\$80.

Pepper spray canister: A successful attack with this weapon inflicts no damage, but subjects the victim to one dose of pepper spray (see p. 180). Roll hit location normally; a direct hit to the head inflicts an additional -2 penalty on the victim's Resolve check. Unlike most close combat weapons, a pepper spray canister can be used against targets in the Gunfighting range band, albeit at a -4 penalty. A keychain canister holds 3 shots, a police canister holds 10, and an institutional sprayer holds 30.

Blunt Implements							
Weapon	Damage	Penetration	Speed	Bulk	Weight	Barter Value	Street Price
Bare hands	0	Nil	1/2/4	0	-	-	-
Brass knuckles	2	x4	1/2/4	0	0.1 kg	GG0.25	\$25
Sap/blackjack	2	x4	1/2/4	1	0.2 kg	GG0.3	\$30
Baton/club	3	x4	2/3/5	2	0.4 kg	GG0.4	\$40
Baton, telescoping	3	x4	2/3/5	2	0.5 kg	GG0.5	\$50
Hammer	4	x3	2/3/5	2	0.6 kg	GG0.6	\$30
Bat	5	x4	3/5/7	3	1 kg	GG0.2	\$20
Sledgehammer	8	x4	6/9/14	5	5 kg	GG0.7	\$35
Sharp Things							
Weapon	Damage	Penetration	Speed	Bulk	Weight	Barter Value	Street Price
Knife, folding	2	x2	1/2/4	1	0.2 kg	GG0.8	\$40
Knife, working	3	x1	1/2/4	1	0.5 kg	GG1.2	\$60
Machete	3	x2	2/3/5	2	0.7 kg	GG1	\$50
Sword, stabbing	4	x1	2/3/5	2	1.4 kg	GG5	\$250
Sword, slashing	5	x2	3/5/7	3	1.7 kg	GG5	\$250
Hatchet	5	x3	2/3/5	2	0.4 kg	GG0.6	\$30
Axe	9	x3	5/8/11	4	2.7 kg	GG0.6	\$30
Bayonet (Bulk 3 rifle)	4	x1	3/5/7	3	+0.5 kg	-	-
Bayonet (Bulk 4 rifle)	5	x1	4/6/9	4	+0.5 kg	-	-
Short spear	5	x1	4/6/9	4	0.7 kg	GG0.2	-
Pepper Spray Canisters							
Weapon	Damage	Penetration	Speed	Bulk	Weight	Barter Value	Street Price
Keychain	see text	-	1/2/4	0	Neg.	GG3	\$15
Police	see text	-	1/2/4	1	0.1 kg	GG5	\$25
Institutional	see text	-	2/3/5	2	0.3 kg	GG10	\$50
Improvised Weapon							
Weapon	Damage	Penetration	Speed	Bulk	Weight	Barter Value	Street Price
Blunt, tiny	2	x4	2/3/5	1	0.5 kg		
Blunt, small	3	x4	3/5/7	2	1.5 kg		
Blunt, medium	5	x4	4/6/9	3	3 kg		
Blunt, large	7	x4	5/8/11	4	5 kg		
Sharp, tiny	2	x2	2/3/5	1	0.2 kg		
Sharp, small	3	x2	3/5/7	2	0.5 kg		
Sharp, medium	4	x3	4/6/9	3	2 kg		
Sharp, large	5	x3	5/8/11	4	3 kg		
Thrown Weapons							
Weapon	Damage	Penetration	Speed	Bulk	Weight	Barter Value	Street Price
Dart, throwing	1	x3	1/2/4	0	0.1 kg	GG0.8	\$40
Knife, working	2	x2	1/2/4	1	0.5 kg	GG1.6	\$80
Short spear	4	x2	4/6/9	4	0.7 kg	GG0.2	-

Table 7ee: Close Combat Weapons

Short spear: This represents any number of well-balanced hunting or defensive implements between 1 and 1.5 meters long.

Sword, slashing: A one-handed fighting blade designed primarily for arcing blows (e.g. a scimitar).

Sword, stabbing: A one-handed fighting blade designed primarily for straight thrusts (e.g. a spatha).

Improvised Weapons

Sometimes, desperation is the mother of invention. For the sake of simplicity, the Reflex System groups improvised weapons into broad generic categories based on two criteria: size, and whether they inflict damage primarily by crushing or penetrating. When a character picks up a chair leg or broken bottle, the GM should choose one of the following sets of traits to represent the implement. Note that improvised weapons do not have costs, as they are assumed to be free (one way or another).

OTHER RANGED WEAPONS

Firearms are by far the most common ranged weapons, but they're not the only ones in use in 2013. Muscle-powered implements of various types are still in use in a variety of roles.

Thrown Objects

Anyone with a functioning arm can pick up and fling a solid object in the hopes of inflicting injury. As discussed in Chapter Five (see p. 148), this is a function of the Muscle and Coordination attributes, respectively used to determine range and accuracy.

Dart, throwing: Not a barroom dart, this is a small straight blade specifically designed for use as a weapon. This also encompasses similarly-sized exotic throwing blades such as shuriken.

The best accuracy comes from the balanced weapons described above, which are intended to be thrown. An unbalanced weapon, whether a close combat weapon or a found object, suffers an accuracy penalty equal to its Bulk (minimum penalty -2). For an unbalanced weapon, use the traits for its close combat equivalent, but Damage drops by 1 and Penetration becomes one step worse.

Hand Grenades

Hand grenades are thrown weapons whose primary effects come from explosions or the release of gas rather than direct impact. All hand grenades have Speed 1/2/4. Also, as implied in the rules for "cooking" hand grenades on p. 148, a character intending to throw a hand grenade must first use an Activate action (1 tick) to pull the pin and start the fuse. Under Stage I rules, you can ignore the separate

Ready and Activate actions and treat a thrown grenade attack as having Speed 3/4/6, which covers readying, arming, and throwing in a single action.

Concussion: A simple explosive charge inside a casing that disintegrates at detonation. A concussion grenade is intended for use in enclosed spaces to maximize its overpressure. Though it does not produce fragments, it is in no way less lethal.

Flash-bang: This less-lethal "diversionary device" temporarily incapacitates its victims via a blinding flash and deafening (albeit mostly harmless) explosion. For every character who suffers a head injury from a flash-bang, roll 1d10 (inside the primary radius) or 1d20 (inside the secondary radius). If the die result is 9 or less, the victim is stunned and unable to take any action for the rest of the exchange of fire. A flash-bang can also, at the GM's discretion, ignite flammable substances that are in contact with it when it detonates.

Fragmentation: The archetypal hand grenade uses a small explosive charge to disperse shards of metal.

Incendiary: Intended for thorough destruction of equipment, an incendiary grenade contains a metallic substance (usually thermite or thermate) which burns at 2,500°C. It does not have a bursting charge and inflicts no blast damage; the (small) radius of effect is due to random sputters of molten metal. A fragment from an incendiary grenade has Damage 6 and Penetration Nil in both the primary and secondary radii (but any body armor that stops it is destroyed and may ignite). An incendiary grenade and its fragments will burn underwater.

Smoke: A smoke grenade emits a cloud of colored smoke (following the rules for gas behavior in Chapter Five - see p. 157) that can be used for signaling or obscuration. The most common colors are green, yellow, red, and purple. Although it does not inflict damage, a smoke grenade uses an exothermic reaction to produce heat. Therefore, at the GM's discretion, it can start fires.

Tear gas: A tear gas grenade is identical in design to a smoke grenade but emits tear gas (see p. 181) instead of smoke.

White Phosphorus (WP): A WP grenade uses a small dispersion charge to spray fragments of white phosphorus, rather than shrapnel, throughout its area of effect. WP burns at 2,000°C. A WP fragment has Damage 8 and Penetration Nil in both the primary and secondary radii. Furthermore, it inflicts this damage *again* at the beginning of the next two exchanges of fire or pauses after it does its initial damage. Any body armor that stops a WP fragment is destroyed and may ignite, and the fragment will burn through the armor and subsequently damage the wearer. Digging a burning WP fragment out of a character requires a successful close combat attack (hopefully with a weapon rather than bare hands) on the affected location, suffering a -6 penalty for the size of the fragment and the victim's thrashings. A WP fragment will not burn underwater, but will spontaneously re-ignite upon exposure to open air.

Hand Grenade					
Hand Grenade	Damage	Explosion/Effects	Weight	Barter Value	Street Price
Concussion	7	Radius 3 m, Blast 7, Frag 0	0.4 kg	GG2	\$40
Flash-bang	2*	Radius 3 m, Blast 2*, Frag 0	0.4 kg	GG4	\$160
Fragmentation	3	Radius 7 m, Blast 3, Frag 7	0.4 kg	GG2	\$40
Incendiary	16*	Radius 1 m, Blast N/A, Frag 1*	0.9 kg	GG5	\$100
Smoke	N/A	Radius 12 m	0.5 kg	GG1	\$40
Tear gas	N/A	Radius 12 m	0.5 kg	GG3	\$60
WP	3	Radius 8 m, Blast 3, Frag 6*	0.9 kg	GG5	\$100
Improvised Grenades					
Hand Grenade	Damage	Explosion/Effects	Weight	Barter Value	Street Price
Molotov cocktail	5	Radius 1 m, Blast N/A, Frag 4	1 kg	GG0.6	\$6
Pipe bomb	3	Radius 5 m, Blast 3, Frag 5	1 kg	GG1	\$20

Table 7ff: Grenades

Conventional Bows											
Bow	Min. MUS	Cap.	Dam.	Pen.	Rng.	ROF	Speed	Bulk	Weight	BV	SP
Youth bow (14 kg)	3	1(si)	3	x2/x4 *	GF/CQB	S	3/5/7	3	0.7 kg	GG2.5	\$50
Hunting bow (20 kg)	6	1(si)	5	x1/x3 *	CQB/M	S	4/6/9	4	1 kg	GG26	\$260
Hunting bow (27 kg)	9	1(si)	7	x1/x3 *	CQB/M	S	5/8/11	5	1.1 kg	G30	\$300
Compound Bows											
Bow	Min. MUS	Cap.	Dam.	Pen.	Rng.	ROF	Speed	Bulk	Weight	BV	SP
Youth bow (14kg)	2	1(si)	3	x2/x4 *	GF/CQB	S	3/5/7	3	1.2 kg	GG17	\$170
Hunting bow (23 kg)	6	1(si)	6	x1/x3 *	CQB/M	S	4/6/9	4	1.8 kg	GG30	\$300
Hunting bow (32 kg)	9	1(si)	8	x1/x3 *	CQB/M	S	5/8/11	5	1.9 kg	GG40	\$400
Crossbows											
Bow	Min. MUS	Cap.	Dam.	Pen.	Rng.	ROF	Speed	Bulk	Weight	BV	SP
Hunting crossbow (80 kg)	6	1(si)	6	x1/x2 *	CQB/M	S	4/6/9	4	2.8 kg	GG65	\$650
Hunting crossbow (100 kg)	8	1(si)	8	x1/x2 *	CQB/M	S	4/6/9	4	2.9 kg	GG80	\$800

Table 7gg: Bows and Crossbows

Improvised Grenades

Molotov cocktail: An improvised incendiary grenade produced by sticking an oily rag in the neck of a bottle full of thickened fuel. Prior to throwing, the user ignites the “fuse.” Upon impact, the bottle shatters, splashing its now-burning contents over the target and its surroundings. A Molotov cocktail “fragment” has Damage 4 and Penetration x2, but continues burning for 1d6 exchanges of fire after impact.

Pipe bomb: A metal tube filled with black powder and whatever shrapnel material is available. A pipe bomb’s fuse must be lit manually, and it has a variable delay of 1d10-1 ticks (yes, there’s a 10% chance that a pipe bomb will explode in the user’s hand as soon as he lights it).

Bows and Crossbows

Although not firearms, the tools of the archer’s trade appear in this section as personal direct-fire ranged weapons. Militarily laughable, they are still viable hunting weapons, and a well-placed arrow *will* kill a human target. From a tactical perspective, the primary advantage of a bow or crossbow is its relative silence compared to that of a firearm.

Bow: A standard bow is little more than a well-crafted length of flexible wood or polymer with a sturdy string. In the real world, bows are rated in terms of *draw weight*. The Reflex System models this with the minimum Muscle rating required to use a given bow. All bows have Capacity 1 (si), ROF S, and Recoil N/A.

Bow, compound: An arrangement of cams and pulleys makes a compound bow more energy-efficient than a standard design. This enables an archer to use a compound bow with a higher draw weight than he could use in a conventional bow. Most modern bow hunters and competitive archers use compound bows.

Crossbow: A bow mounted on a rifle-like stock and linked to a trigger mechanism. A crossbow allows use of an even more powerful draw than a compound bow and can be kept loaded. The disadvantage is much longer reloading time: twice normal for the weapon’s Bulk.

Arrows and Bolts

Both arrows and bolts are available in two configurations: target and hunting. The basic weapon traits assume the use of modern hunting heads. If a character is using target arrowheads (which are inferior in every way for combat purposes), Damage is halved and Penetration is reduced by one step. If a character is making his own arrows from scratch and knapping flint or obsidian arrowheads, Damage remains the same but Penetration is reduced by one step.

Arrows and Bolts			
Projectile	Weight	Barter Value	Street Price
Arrow, hunting	0.1 kg	GG0.16	\$8
Arrow, target	0.1 kg	GG0.04	\$4
Bolt, hunting	0.1 kg	GG0.2	\$10
Bolt, target	0.1 kg	GG0.05	\$5

Table 7hh: Arrows and Bolt

HEAVY ORDNANCE

Armies operate on an entirely different scale of destruction than private citizens or law enforcement agencies. The following weapons are manufacturer primarily for military use and employed when firearms alone cannot provide sufficient applications of force.

Warhead Types

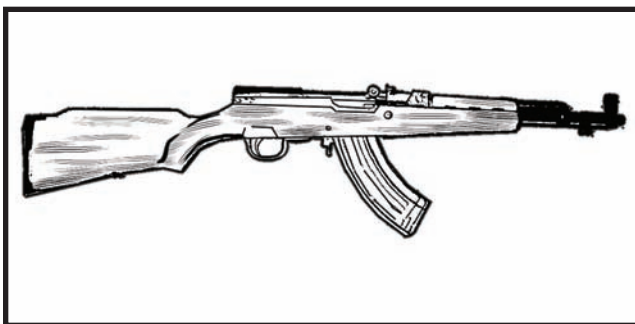
Many heavy weapons can accept multiple types of ammunition with wildly divergent effects. The Reflex System defines the following general types of warheads:

APDS: Armor-Piercing Discarding Sabot. This ammunition comes in several sub-varieties, including APFSDS (Fin Stabilized) and APFSDSDU (Depleted Uranium). Engineering specifics differ, but all are solid projectiles with no blast effect.

API: Armor-Piercing Incendiary. API ammunition does damage as a solid projectile and has no blast effect. As the name suggests, it is considered incendiary ammunition for the purpose of damaging vehicles.

Archery Ballistics

Arrows and bolts are both slower and heavier than bullets. Their added mass gives them the energy necessary to drive through soft body armor and light sheet metal, but they are also more prone to being broken up or deflected by impacts on harder objects. For this reason, all bows and crossbows are considered to have Penetration Nil when striking any vehicle, cover, or body armor trauma plate with Armor greater than 2. In addition, an arrow or bolt can never inflict more than a minor damage result on a vehicle, and the GM may call for a re-roll of any implausible result. Experiments with anti-vehicular ballistae are left to the individual GM’s limits of tolerance.



Chem: Chemical. Upon impact, this round disperses a cloud of its contents, which may be smoke, tear gas, or chemical warfare agents. The chemical payload is specified for each round.

Frag: Fragmentation. A small explosive charge that disperses a large amount of shrapnel. A fragmentation warhead does not do secondary blast damage.

HE: High Explosive. A standard omnidirectional explosive with no special properties.

HEAT: High Explosive Anti-Tank. A standard shaped charge with some secondary blast and fragmentation effects.

HEDP: High Explosive Dual-Purpose. An HE round incorporating a small secondary shaped charge effect.

Illum: Illumination. This round is a parachute flare which, when fired into the air, provides adequate illumination in the specified radius for the listed duration.

Stun: A less-lethal projectile, usually low-velocity and made of material that deforms on impact. Stun ammunition is a solid projectile with no blast effect. Against hard armor (vehicle, cover, or trauma plate), it has Penetration Nil. A character struck by a stun round suffers damage normally. However, until his next initiative check or the end of the combat scene, he suffers wound penalties to the affected hit location *two levels worse* than his actual current wound status. This means that a moderate head wound from a stun round will knock the victim unconscious.

WP: White Phosphorus. This round detonates on impact and sprays chunks of white phosphorus as its fragmentation effect, rather than standard fragments. See the rules for WP hand grenades for the special effects of this substance. WP is considered incendiary for the purpose of damaging vehicles. A WP warhead does not do secondary blast damage.

GRENADE LAUNCHERS

Grenade launchers are designed to provide both direct and indirect fire support at a squad or platoon level, placing stand-off explosive delivery capability in an individual soldier's hands. Note that hand grenades (see p. 262) are not suitable ammunition for grenade launchers, nor can launcher grenades be armed by hand and thrown. In addition, launcher grenades have a minimum arming distance and will not detonate if fired at targets closer than Tight range.

Shoulder-Fired

Shoulder-fired grenade launchers bear a vague resemblance to very large break-action shotguns.

Shoulder-fired launcher (generic): An obsolete Cold War design such as the American M79. By the time of the Twilight War, these were used mostly by well-armed survivalist enclaves and Third World armies.

Tactical launcher (generic): The politically correct name given to any one of a number of 37mm launchers sold to American police. 37mm grenade ammunition comes only in less-lethal

varieties, making these weapons optimal choices for agencies concerned with liability or misuse of ordnance.

Underbarrel

Underbarrel grenade launchers (UBGLs) are designed to be attached underneath the barrel of an assault rifle, adding weight and bulk to the grenadier's primary weapon but lessening his overall load. When a UBGL is attached to a rifle, the rifle's Bulk increases by 1 and its Recoil decreases by 2. A UBGL's Speed is always equal to 1 plus the Speed of the rifle.

AG36/M320: A Heckler & Koch in service with the German armed forces. Variants were also used by Dutch, UK (as the L17A2), and US (as the M320) forces. The M320 is fitted with a collapsible shoulder stock that allows it to be used independently of a rifle.

GP-30: The standard UBGL of Russian troops, capable of attaching to any AK-series assault rifle. The earlier BG-15 and GP-25 models are 0.2 kg heavier but otherwise have identical game traits.

M203: An older American design. Although replaced in US service by the M320, the M203 was still common in the armories of many nations to whom the United States had exported arms. The M203's design makes it slow to reload, requiring 6 ticks.

Automatic

Automatic grenade launchers (AGLs) are effectively very large machine guns with slow cyclic rates that use belted grenades for ammunition. They cannot be fired "offhand" and must be tripod- or vehicle-mounted.

AGS-17/AGS-30: The previous and current generations of Russian AGLs. Both are used extensively as infantry support weapons, particularly in vehicle mounts. The AGS-30 is significantly lighter than the AGS-17, and comes with its own proprietary tripod (the AGS-17 requires a Russian-made medium or heavy tripod).

Mk. 19/Mk. 47: The standard American AGLs saw extensive use in the urban combats common in the years leading up to the Twilight War. The Mk. 47 was intended to replace the earlier Mk. 19, which remained in second-line and fixed installation use during the war. The HK GMG, in service with several other NATO nations, weighs 29 kg but is otherwise identical to the Mk. 19.

ROCKET LAUNCHERS

Disposable Launchers

The following weapons are one-shot devices composed of a prepackaged launcher tube which contains a single rocket. They cannot be reloaded.

AT4: The Swedish-made AT4 (named as a pun on the rocket's diameter, 84mm) was the Twilight War-era light infantry support rocket launcher for a variety of European and South American, as well as the United States (designated M136). It is available in both HE and HEAT models, as well as with a newer and rarer improved HEAT warhead.

M72 LAW: This older American design was largely supplanted by the AT4, but gained a new lease on life in the early 21st century as a cheap and brutal tool for urban fighting. It was used in the Twilight War by American, Canadian, Finnish, Australian, and Turkish forces, among others.

RPG-18/RPG-22: The obsolete RPG-18 was almost a direct copy of the M72 LAW, while the newer RPG-22 was a scaled-up evolution.

Shoulder-Fired Grenade Launchers										
Grenade Launcher	Caliber	Capacity	Range	ROF	Speed	Recoil	Bulk	Weight	Barter Value	Street Price
Shoulder-fired launcher (generic)	40x46mm	1 (si)	M/O	S	3/5/7	-	3	2.7 kg	GG1,000	\$2,000
Tactical launcher (generic)	37mm	1 (si)	T/O	S	3/5/7	-	3	2.7 kg	GG125	\$500
M320 (unmounted)	40x46mm	1 (si)	M/O	S	3/5/7	-	3	1.5 kg	GG1,750	\$3,500
UBGLs										
Grenade Launcher	Caliber	Capacity	Range	ROF	Speed	Recoil	Bulk	Weight	Barter Value	Street Price
AG36/M320	40x46mm	1 (si)	M/O	S	1 + rifle	-	2	1.5 kg	GG1,750	\$3,500
GP-30	40mm Russian	1 (si)	T/O	S	1 + rifle	-	2	1.3 kg	GG1,500	\$3,000
M203	40x46mm	1 (si)	M/O	S	1 + rifle	-	2	1.4 kg	GG225	\$600
AGLs										
Grenade Launcher	Caliber	Capacity	Range	ROF	Speed	Recoil	Bulk	Weight	Barter Value	Street Price
AGS-17	30mm	30 (bt)	M/Ex	S/B3	6/9/14	17	6	18 kg	GG4,500	\$9,000
AGS-30	30mm	30 (bt)	M/Ex	S/B3	6/9/14	18	6	16 kg	GG7,000	\$14,000
Mk. 19	40x53mm HV	48 (bt)	M/Ex	S/B3	7/11/16	15	7	35 kg	GG8,000	\$16,000
Mk. 47	40x53mm HV	48 (bt)	M/Ex	S/B2	6/9/14	21	6	18 kg	GG12,000	\$24,000
Disposable Rocket Launchers										
Rocket Launcher	Damage	Explosion/Effects		Range	Speed		Bulk	Weight	Barter Value	Street Price
AT4 (HE)	18	Radius 18m, Blast 18, Frag 3		T/O	4/6/9		4	6.7 kg	GG190	\$1,500
AT4 (HEAT)	70	Radius 9m, Blast 9, Frag 1		T/O	4/6/9		4	6.7 kg	GG190	\$1,500
AT4 (HEAT, Improved)	90	Radius 9m, Blast 9, Frag 1		T/O	4/6/9		4	6.7 kg	GG310	\$2,500
M72 LAW (HEAT)	55	Radius 7m, Blast 7, Frag 1		T/O	3/5/7		3	2.5 kg	GG110	\$900
RPG-18 (HEAT)	60	Radius 7m, Blast 7, Frag 1		T/O	3/5/7		3	2.6 kg	GG100	\$800
RPG-22 (HEAT)	65	Radius 7m, Blast 7, Frag 1		T/O	3/5/7		3	2.8 kg	GG125	\$1,000
Reusable Rocket Launchers										
Rocket Launcher	Capacity	Range	Speed	Bulk	Weight	Barter Value	Street Price			
Carl Gustav	1 (si)	T/O	4/7/10	4	8.5 kg	GG1,350	\$5,400			
RPG-7	1 (si)	CQB/O	4/6/9	4	7 kg	GG150	\$600			
RPG-29	1 (si)	T/O	5/8/11	5	12.1 kg	GG900	\$3,600			
Guided Missiles										
Guided Missiles	Capacity	Range	Speed	Bulk	Weight	Barter Value	Street Price			
AT-7/AT-13	1 (si)	Per ammo	7/11/16	7	10.2 kg	GG15,000	\$120,000			
AT-14	1 (si)	O/Ex	8/12/18	8	37 kg	GG25,000	\$200,000			
MILAN	1 (si)	O/Ex	7/11/16	7	16.4 kg	GG19,000	\$150,000			
TOW	1 (si)	O/Ex	8/12/18	8	73 kg	GG28,000	\$225,000			
Mortars										
Mortar	IFR	ROF	Speed	Bulk	Weight	Barter Value	Street Price			
60mm	3.5 km	S*	Operational	6	21 kg	GG3,000	\$12,000			
81mm	5.5 km	S*	Operational	7	42.2 kg	GG4,250	\$17,000			
82mm	3 km	S*	Operational	7	56 kg	GG3,500	\$14,000			
120mm	7.5 km	S*	Operational	9	145 kg	GG5,500	\$22,000			

Table 7ii: Heavy Ordnance

Reusable Launchers

The following weapons are designed for repeated use. Unless otherwise specified, each one takes proprietary ammunition unique to its own design.

Carl Gustav: This Swedish-built rocket launcher first appeared in the late 1940s and remained in NATO service through the Twilight War, undergoing repeated refinements over its seven-decade history. In addition to conventional anti-vehicular work, it was also used extensively against bunkers and buildings. It is equipped with an integral Magnification 1 telescopic sight (factored into Speed).

RPG-7: If the Twilight War had a signature weapon, it would be the RPG-7. This Cold War-era Soviet light antitank rocket launcher was in the arsenals of over 50 nations and saw use in every major theatre and most of the minor ones. In some forces, particularly insurgents engaged in asymmetrical warfare, it became the primary infantry weapon, with groups deploying multiple RPG launchers with only a few riflemen for support. Two types of HEAT rounds are available: the widely-exported original, and the newer and less common enhanced warhead.

RPG-29: The latest evolution of the RPG-29 was sold to Russian allies (and insurgencies with mutual interests) throughout the Middle East and Eastern Europe, providing an unpleasant surprise for opposing armored forces. Its tandem-charge HEAT warhead is capable of penetrating the frontal armor of some main battle tanks, a capability previously believed to be the exclusive province of other tanks' main guns.

ANTI-TANK GUIDED MISSILES (ATGMs)

AT-7/AT-13 "Saxhorn": The AT-7 and AT-13 are two generations of the Soviet-era wire-guided ATGM fired from the same launcher. Most launchers in Russian and allied service were fitted with thermal scopes, though these optics were not often present or functional on export models. The launcher has Range Medium/Sniping with an AT-7 missile or Range Open/Extreme with an AT-13 round. It includes a tripod.

30mm grenades					
Grenade	Damage	Explosion/Effects	Weight	Barter Value	Street Price
HE	8	Radius 6 m, Blast 8, Frag 5	0.4 kg	GG15	\$30
37mm grenades					
Grenade	Damage	Explosion/Effects	Weight	Barter Value	Street Price
Chem (smoke)	-	Radius 5 m	0.2 kg	GG10	\$20
Chem (tear gas)	-	Radius 5 m	0.2 kg	GG15	\$30
Stun	3	N/A	0.2 kg	GG15	\$25
40x46mm grenades					
Grenade	Damage	Explosion/Effects	Weight	Barter Value	Street Price
Chem (smoke)	-	Radius 5 m	0.2 kg	GG10	\$20
Chem (tear gas)	-	Radius 5 m	0.2 kg	GG15	\$30
HE	8	Radius 5 m, Blast 8, Frag 4	0.2 kg	GG15	\$30
HEDP	15	Radius 5 m, Blast 8, Frag 4	0.2 kg	GG20	\$40
Illum	-	Radius 100 m, 1 minute	0.2 kg	GG10	\$20
Stun	3	N/A	0.2 kg	GG15	\$25
40x53mm high-velocity grenades					
Grenade	Damage	Explosion/Effects	Weight	Barter Value	Street Price
HE	8	Radius 5 m, Blast 8, Frag 4	0.4 kg	GG20	\$40
HEDP	15	Radius 5 m, Blast 8, Frag 4	0.4 kg	GG25	\$50
40mm Russian grenades					
Grenade	Damage	Explosion/Effects	Weight	Barter Value	Street Price
Chem (smoke)	-	Radius 5 m	0.3 kg	GG10	\$20
Chem (tear gas)	-	Radius 5 m	0.3 kg	GG15	\$30
HE	4	Radius 7 m, Blast 2, Frag 7	0.3 kg	GG15	\$30
Stun	4	N/A	0.3 kg	GG15	\$25
Carl Gustav					
Rocket	Damage	Explosion/Effects	Weight	Barter Value	Street Price
HE	20	Radius 20 m, Blast 20, Frag 3	3.1 kg	GG80	\$800
HEAT	80	Radius 5 m, Blast 10, Frag 1	4 kg	GG150	\$1,500
HEDP	25	Radius 20 m, Blast 20, Frag 2	3.3 kg	GG120	\$1,200
Chem (smoke)	N/A	Radius 20 m	3.1 kg	GG60	\$600
Illum	N/A	Radius 40 om, 1 minute	3.1 kg	GG75	\$750
RPG-7					
Rocket	Damage	Explosion/Effects	Weight	Barter Value	Street Price
Frag	14	Radius 15 m, Blast 4, Frag 6	2 kg	GG30	\$300
HEAT	55	Radius 4 m, Blast 7, Frag 2	2.6 kg	GG30	\$300
HEAT, Enh.	110	Radius 4 m, Blast 10, Frag 1	4.5 kg	GG75	\$750
RPG-29					
Rocket	Damage	Explosion/Effects	Weight	Barter Value	Street Price
HEAT	135	Radius 6 m, Blast 13, Frag 1	6.7 kg	GG110	\$1,100
ATGM Ammunition					
Missile	Damage	Explosion/Effects	Weight	Barter Value	Street Price
AT-7 (HEAT)	75	Radius 7 m, Blast 8, Frag 2	6.3 kg	GG750	\$6,000
AT-13 (HEAT)	165	Radius 20 m, Blast 20, Frag 3	13.8 kg	GG1,900	\$15,000
AT-14 (HEAT)	185	Radius 24 m, Blast 24, Frag 3	27 kg	GG2,500	\$20,000
MILAN-2 (HEAT)	140	Radius 18 m, Blast 18, Frag 3	6.7 kg	GG1,300	\$10,000
MILAN-3 (HEAT)	165	Radius 20 m, Blast 20, Frag 3	7.2 kg	GG1,900	\$15,000
TOW 2A (HEAT)	165	Radius 2 om, Blast 20, Frag 3	22.6 kg	GG1,900	\$15,000
TOW 2B (HEAT)	130	Radius 16 m, Blast 16, Frag 3	22.6 kg	GG2,200	\$17,000

Table 7jj: Heavy Ordnance Ammunition

AT-14: The AT-14 is a heavy laser-homing ATGM which replaced multiple earlier designs in infantry and vehicular use. The infantry launcher breaks down into the launch tube and tripod (26 kg) and laser designator (11 kg; see p. 238), and requires a heavy tripod (not included). In vehicle mounts, the tube and designator are permanently mounted.

MILAN: A 1970s-era European-built ATGM that a series of upgrades kept in service into the 21st century. This wire-guided ATGM saw worldwide use in the Twilight War, having been exported to over 40 nations that fought in every major theatre.

The launcher includes a tripod.

TOW: The BGM-71 TOW (Tube-launched, Optically-tracked, Wire-guided) was the United States' primary ATGM for ground forces, as well as a widely successful export product. This wire-guided missile was mounted on several IFVs, as well as deployed on lighter vehicles in infantry units. The launcher requires a heavy tripod (not included) or vehicle mount. Two TOW missiles are available. The TOW 2A mounts a standard

60mm Mortar shells					
Shell	Damage	Explosion/Effects	Weight	Barter Value	Street Price
HE	9	Radius 10 m, Blast 9, Frag 7	1.7 kg	GG50	\$500
Illum	N/A	Radius 400 m, 1 minute	1.7 kg	GG60	\$600
WP	4	Radius 6 m, Blast 4, Frag 6	1.7 kg	GG75	\$750
81mm or 82mm Mortar shells					
Shell	Damage	Explosion/Effects	Weight	Barter Value	Street Price
HE	14	Radius 14 m, Blast 14, Frag 7	4 kg	GG60	\$600
Illum	N/A	Radius 1 km, 1 minute	4 kg	GG75	\$750
WP	4	Radius 10 m, Blast 4, Frag 6	4.7 kg	GG90	\$900
120mm Mortar shells					
Shell	Damage	Explosion/Effects	Weight	Barter Value	Street Price
HE	28	Radius 22 m, Blast 28, Frag 8	13.7 kg	GG90	\$900
Illum	N/A	Radius 1.5 km, 1 minute	13.7 kg	GG120	\$1,200
WP	5	Radius 18 m, Blast 5, Frag 7	13.7 kg	GG140	\$1,400

Table 7jj: Heavy Ordnance Ammunition continued

Stage III Option: Command Guidance

Command-guided missiles rely on external control inputs from the time of launch to the time of impact. This means that someone must continue to sight on the target until the missile impacts or misses (unlike a self-guided or “fire and forget” missile, which steers itself after launch). For a wire-guided missile such as the TOW, this is the gunner. For a laser-homing missile, this is any character with an appropriately-tuned laser designator.

This rules option introduces a new 1-tick tactical action, Guide. When providing guidance for a missile that requires it, a character may take no other action from the time of launch (i.e. the end of the Attack action) to the time of impact. Assume that a command-guided missile travels at a rate of 1 range band per tick. Do not make the attack check for a command-guided missile until it reaches its intended target. If guidance is interrupted before this occurs, the attack automatically fails.

HEAT warhead, while the TOW 2B is a top-attack design. This latter missile flies over the target and detonates above it, directing the jet of its shaped charge downward. If an attack with a TOW 2B succeeds with a margin of success of 5 or more, roll 1d6 to determine hit location: 1-4 hull rear, 5-6 turret rear.

MORTARS

Mortars were the lightest and simplest indirect fire weapons used during the Twilight War, and the only artillery still in common use in 2013. Most mortars are muzzle-loading rather than breech-loading: to fire, the gunner simply drops the shell down the barrel and steps aside. Mortars cannot be used as direct fire weapons.

60mm: The standard light mortar for American (as the M224) and other NATO infantry units. Its ammunition is light enough that up to 6 rounds per operational action can be fired with the normal 3-man crew - roll attack and deviation separately for each.

81mm: A medium mortar design common in NATO forces, usually deployed in batteries of eight, each mortar served by a 5-man crew. It has a maximum rate of fire of 3 rounds per operational action.

Mortar Disassembly

All of the mortars presented here can be broken down into their individual components for transport. Disassembly or reassembly takes one operational action per 5 kg of total weight.

Mortar	Baseplate	Bipod	Sight	Tube
60mm	6.5 kg	6.9 kg	1.1 kg	6.5 kg
81mm	13.1 kg	12.2 kg	1.1 kg	15.8 kg
82mm	15 kg	22 kg	N/A	19 kg
120mm	61.7 kg	31.8 kg	1.1 kg	50 kg

Table 7kk: Mortar Parts Weight

82mm: The standard Soviet infantry mortar during World War II was replaced by newer designs, but the Red Army never throws away anything that might be useful. 82mm mortars were also extensively exported to Communist allies throughout the Cold War and were the favored indirect fire support for many insurgencies. Maximum rate of fire is 3 rounds per operational action with a full 5-man crew.

120mm: The largest mortars in modern use, 120mm models were common to all major participants in the Twilight War. They were normally mounted on dedicated carrier vehicles or towed on purpose-built wheeled carriages (400 kg, GG60, \$1,200), but could be dismounted for use from fixed positions. Maximum rate of fire is 2 rounds per operational action with a full 5-man crew.

DEMOLITION MATERIALS

The appeal of explosives for both tactical and engineering purposes far outstrips the small number of survivors who are trained in their handling and use. Any fool can stick a length of slow fuse into a keg of black powder, light it, and hope for the best. Utilizing explosives in a less hazardous (no demolition shot is “safe”) and more precise manner is a function of the Construction/Demolition qualification.

Mines

Mines are manufactured explosive devices designed to be put in place and left alone until triggered by a moving object that passes nearby. Before and during the Twilight War, mines were most often employed *en masse*, with hundreds or thousands used to create large minefields (see Chapter Five). Characters in 2013 are likely to have access only to limited quantities of mines. The

Design Note: Don't Be Stupid

Some of the text in this section contains approximate numbers or vague descriptions of techniques. These should not be taken as instructions for performing your own experiments with explosives. This is not a demolition manual, you are not a combat engineer, and we are not responsible for your terminal idiocy.

following basic types of mines were in widespread use during the Twilight War.

Antipersonnel mine: This mine is a fragmentation device, more likely to injure or cripple a target than to kill him. Its small explosive charge is detonated by direct pressure of 5 kg.

Antitank mine: An antitank mine relies on explosive overpressure, rather than fragmentation effect, to destroy its victim. Smaller models are “track breakers” intended to inflict mobility kills on armored vehicles, while larger designs are shaped charges which can penetrate even a main battle tank’s hull. An antitank mine is detonated by direct pressure of 150 kg.

Bounding mine: The “bouncing Betty” variation on the antipersonnel mine incorporates a small launching charge which hurls it to chest height (about 1.5 meters) before it detonates. It can be detonated by direct pressure or can be rigged with a tripwire.

Directional mine: While other mines are designed to be buried, a directional mine is a curved sandwich of fragmentation projectiles, a sheet of plastic explosive, and a steel backing plate. When detonated, it hurls its projectile load in a directed cone (though its immediate environment in any direction is unsafe). A directional mine can be set to detonate with a tripwire, or can be detonated on command with an included firing device and 30-meter wire. It inflicts primary effects in a 5-meter circular radius, *plus* a 60-degree cone extending 30 meters in the direction in which it fires, *plus* a 60-degree cone extending 10 meters *away* from the direction in which it fires. Secondary effects extend normally (i.e. twice the primary effect distance).

Design Note: Demolition Points

The DP values for explosives, as well as the damage numbers for munitions, are derived from the U.S. Army’s values for relative explosive effectiveness. These values, like many industrial measures of explosives, use trinitrotoluene (TNT) as their baseline. The smallest standard-issue block of TNT is a quarter-pound (113g) cylindrical charge. We assigned this a DP value of 1, then calculated the DP equivalence of each other quantity of explosive based on its weight and its per-weight TNT equivalence.

Example: An M67 fragmentation grenade’s explosive component is 6.5 ounces (184g) of Composition B, which has 1.35 times the explosive power of an equivalent weight of TNT. 184 grams of Composition B is therefore equal to 248 grams of TNT, so a fragmentation grenade has 2 DPs.

If you do the research and math, you’ll discover that many of the grenades, mines, and explosive projectiles in this chapter have damage values that don’t directly correspond to the basic rules for creating demolition charges. Where specific data was available on lethality, fragmentation radius, or armor penetration, we used this data (and another set of formulas) to ensure that weapon performance was as consistent as possible with the other real-world-based values for the things those weapons would be hitting.

Explosive Charges

All explosives are not created equal. With the exception of nuclear blasts (which are outside the scope of this chapter), all explosions involve the rapid expansion of gas, usually accompanied by a release of heat. The explosive materials used in both industrial and military demolitions accomplish this through chemical reactions which are triggered by heat, pressure, or a combination of the two. Different materials undergo these reactions at different rates and intensities.

In game terms, the relative “power” of a given quantity of explosive material is represented by its Demolition Point (DP) value. The total DPs involved in an explosion determine its Blast Damage, Fragmentation Damage, and Radius. A character who creates an explosive charge (see p. 270) can modify these basic characteristics, or can turn a standard charge into a shaped charge.

Note that large explosions are inefficient. Doubling a charge’s weight of explosive doesn’t double its effects, but rather increases them by a factor roughly equal to the square root of 2. Thus, increasing DPs don’t yield a directly proportionate increase in damage values.

Explosive Substances

The following list of common explosive materials includes industrial, military, and improvised substances.

ANFO: The thick semi-liquid mixture of ammonium nitrate and fuel oil was the most common explosive in large-scale industrial use before the Twilight War. Ammonium nitrate, comprising about 94% of the slurry, was a common agricultural fertilizer (whose sale was restricted in many nations). The remaining 6% of fuel oil was most commonly diesel fuel, but other flammable hydrocarbons could be substituted. Like ammonium nitrate, ANFO tends to absorb water and become inert, so characters using ANFO will likely have to find sealed prewar quantities of ammonium nitrate and mix their own. Once exposed to open air, a quantity of ANFO loses 10% of its DP per 1d3 days (assuming normal humidity).

Black powder: The original 15:3:2 combination of potassium nitrate, charcoal, and sulfur is still an effective, albeit low-powered, explosive despite being centuries old. In addition to use by antique firearm enthusiasts, small quantities were present in some time fuses and detonators. Black powder becomes useless if immersed in water.

Detonating cord: A core of stable chemical explosive wrapped in a waterproof reinforced plastic sheath. The resulting cord is about 5mm in diameter and can be strung, tied, or otherwise handled like any other thin rope (albeit it will support only about 75 kg). “Det cord” is intended for use in priming and detonating other charges, though combat engineers have improvised any number of other creative applications for it.

Dynamite, commercial: A suspension of nitroglycerin in various inert stabilizing agents, which fell out of large-scale industrial use by the mid-1990s. Dynamite was used in small blasting operations or in situations where a greater energy density than that of ANFO was necessary. Any commercial dynamite that characters encounter is likely to be old and therefore unstable. At the GM’s discretion, it can detonate if subject to extreme shocks (e.g. impact damage greater than 10). It can be immersed in water for 1d6 hours before it becomes useless.

Dynamite, military: A mixture of military chemical explosives and stabilizing agents, this has little in common with commercial-grade dynamite other than its appearance. It does not contain nitroglycerin and thus will not spontaneously explode if mis-handled. It can be immersed for 3d6+12 hours without harm.

Plastic explosive: A combination of a raw chemical explosive (most commonly RDX) with a binding and plasticizing agent. The resulting off-white doughy substance can be molded

Mines					
Mine	Damage	Explosion/Effect	Weight	Barter Value	Street Price
Antipersonnel mine	8	Radius 2m, Blast 4, Frag 6	1.6 kg	GG55	\$45
Antitank mine, blast	20	Radius 10m, Blast 20, Frag 3	13 kg	GG75	\$60
Antitank mine, shaped	40	Radius 5m, Blast 10, Frag 2	8 kg	GG95	\$75
Bounding mine	5	Radius 15m, Blast 5, Frag 7	3.6 kg	GG65	\$50
Directional mine	7	Radius *, Blast 7, Frag 8	1.6 kg	GG185	\$150
* See text for special rules.					
Explosive Substance					
Explosive Substance	DP	Weight	Barter Value	Street Price	
ANFO, 30-liter sack	20	25 kg	GG70	\$55	
Black powder, 1 can	9	1.8 kg	GG55	\$90	
Detonating cord, 100m spool	0.13/m	3.2 kg	GG125	\$100	
Dynamite, commercial, 1 stick	3	0.2 kg	GG4	\$3	
Dynamite, military, 1 stick	2	0.2 kg	GG7	\$5	
Plastic explosive, block	6	0.6 kg	GG75	\$60	
Plastic explosive, strip, 15m spool	7.5/m	11.3 kg	GG1,500	\$1,200	
TNT, small block	1	0.1 kg	GG25	\$20	
TNT, medium block	2	0.2 kg	GG45	\$35	
TNT, large block	4	0.5 kg	GG80	\$65	
Detonation System					
Detonation System	Weight		Barter Value	Street Price	
Blasting cap, electric	0.1 kg per 20		GG2.5	\$25	
Blasting cap, pyrotechnic	0.1 kg per 20		GG1.5	\$15	
Blasting machine	0.5 kg		GG12.5	\$250	
Fuse, instant, 100m spool	0.3 kg		GG5	\$100	
Fuse, timed, 100m spool	0.3 kg		GG5	\$100	
Igniter, pressure	Neg.		GG0.5	\$25	
Igniter, pressure/release	Neg.		GG0.8	\$40	
Igniter, pull	Neg.		GG0.5	\$25	
Igniter, pull/release	Neg.		GG0.8	\$40	
Timer	Neg.		GG2.4	\$30	
Wire, electrical, 100m spool	5 kg		GG0.06	\$30	
Wire, trip, 100m spool	0.4 kg		GG0.04	\$20	

Table 7II: Explosives

like modeling clay. Various compositions have different explosive characteristics; those given here are for the well-known Composition C4. Plastic explosive will detonate only if exposed to both heat and impact simultaneously (e.g. a blasting cap or det cord). Military plastic explosive is available in both blocks and strips. The latter are prepackaged on plastic spools and are about 8cm wide and 6mm thick, and both types have adhesive backing on one side.

TNT: Trinitrotoluene is the most common military explosive, and the standard against which all other explosions are gauged. Even nuclear warheads are measured in terms of thousands or millions of tons of TNT. Unpackaged TNT appears as a cluster of pale yellow needles or crystals. It cannot be formed or molded outside the production process, nor can an individual manufactured block be separated safely or easily. TNT is resistant to both water and impact, but will detonate if exposed to explosions or fire.

Detonation Systems

Most combat engineers prefer to detonate their explosives in a controlled manner, rather than simply setting blocks of C4 on fire and shooting them. Unless otherwise noted, all of the following items are consumed or destroyed when their attached charges detonate.

Blasting cap: An explosive charge about the size of a short pencil, used to initiate the detonation of a larger explosive. Two varieties of blasting caps are available. Electric versions are

detonated by an electric current, and can accidentally be detonated by exposure to RF radiation (if a radio within 10 meters is transmitting, roll percentile; detonation occurs if the result is less than the radio's range in km). Pyrotechnic versions are detonated with flame, and always explode upon exposure to any amount of incendiary damage. By itself, a blasting cap has Damage 9, Radius 0.25 m, Blast 5, and Frag 0 (and thus is hazardous only to the individual in whose pocket it detonates). Either type of blasting cap can be used to trigger a single charge of any explosive substance.

Blasting machine: A small box that uses either a plunger or a crank to generate an electrical charge. When triggered, the device releases this charge down an attached electrical wire, detonating one or more electric blasting caps. This sequence requires (20 minus character's Muscle) ticks. A blasting machine does not require batteries and is reusable indefinitely.

Fuse: A thin flammable line that can be used to trigger pyrotechnic blasting caps, black powder, det cord, and dynamite. Fuse is available in instant (burning at about 6 km/second) and timed (burning at exactly 1 cm/second or 0.4 cm/tick) varieties. Both are also available in plastic-sheathed underwater types (3x cost).

Igniter: A mechanical device designed to be attached to either a fuse or a pyrotechnic blasting cap. When a triggering condition is met, the igniter creates a spark, which will light the fuse or detonate the blasting cap. Several varieties of igniter are available:

- **Pressure:** Set for any triggering weight up to 250kg in 5kg increments. Triggering condition is pressure in excess of the set weight.

- **Pressure/release:** As a basic pressure igniter, but with an additional triggering condition of weight being released from the igniter (e.g. movement of concealing dirt or debris).

- **Pull:** Attached to a single tripwire. Triggering condition is the wire being pulled.

- **Pull/release:** Attached to up to three tripwires, which can be left slack or pulled taut. Triggering condition is a change in tension on one of the wires - either being pulled or released (e.g. cut).

Timer: A digital timer that can be set for any time delay up to 48 hours. When the time runs out, the timer releases an electric charge that will detonate up to 10 attached electric blasting caps. A timer is waterproof once set and closed, but cannot be set underwater. It does not beep while counting down its final seconds, nor does it have a flashing red LED display.

Wire, electrical: An insulated wire used to conduct an electrical charge to an electric blasting cap.

Wire, trip: A simple metal wire used to trigger igniters.

Building Bombs

A character with the Construction/Demolition qualification (or a lot of nerve and luck) can create explosive charges from raw materials and detonation systems. He can also emplace them against specific targets for optimum effect.

Creating an explosive charge requires a Construction/Demolition (CDN) skill check. This check suffers a cumulative -1 penalty for every full 10 DP of explosive used, as well as a -3 penalty for a shaped charge. The work requires 5 minutes per DP for a standard charge, or 10 minutes per DP for a shaped or fragmentation charge.

Emplacing a charge requires a Construction/Demolition (COG) skill check. As above, this check suffers a cumulative -1 penalty for every full 10 DP of explosive used. However, if the character made the charge himself, the check receives a bonus equal to his margin of success in creating the charge. Emplacement requires 1 minute (or operational action) per 10 DP or fraction thereof.

Basic Charges

A basic explosive charge's damage characteristics depend on the total DP of all explosive materials used in its construction. To determine Damage, calculate the square root of the DP, then multiply by 5. Radius is equal to Damage in meters. Blast is equal to Damage. Fragmentation Density is 4.

Example: Keith wants to take down a small bridge. He uses three blocks of plastic explosive in his demolition charge. Each block has 6 DP, for a total of 18 DP. The square root of 18 is 4.24. 4.24×5 is 21.2, so the charge has Damage 21, Radius 21m, Blast 21, and Frag 4. Keith's skill check suffers a -1 penalty for the amount of boom he's using. The work will take 90 minutes.

Shaped Charges

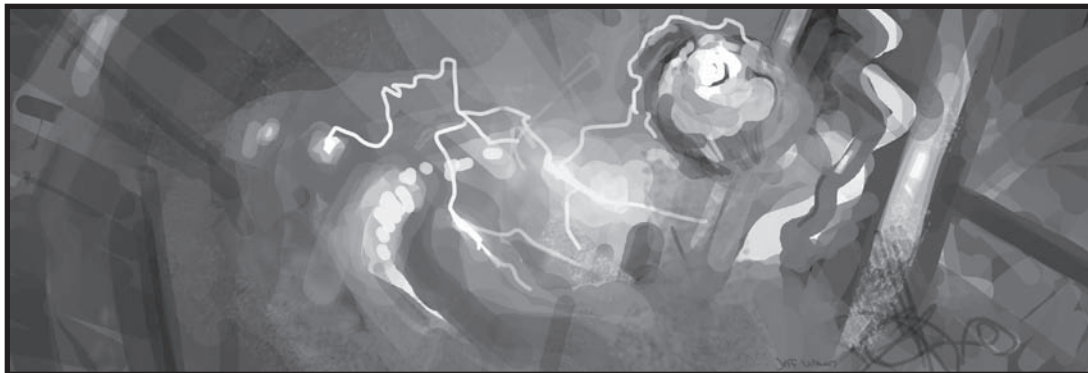
A shaped charge's Damage is doubled. However, its Radius and Blast are divided by 4, and its Fragmentation Density drops to 2.

Example: Keith converts his three blocks of plastic explosive into a shaped charge. The charge's Damage is doubled to 42. Its Radius drops to 5m, its Blast becomes 5, and its Frag becomes 2.

Fragmentation Charges

A fragmentation charge requires metal debris that can be packed around the explosive core. Converting a regular charge into a fragmentation charge halves its Damage and Blast, but increases its Fragmentation Density. Every half-kilogram of shrapnel per DP increases Frag by 1, to a maximum of 10. Thus, if a charge has 4 DP, it will have Frag 5 with 2 kg of shrapnel, Frag 6 with 4 kg of shrapnel, and so on.

Example: Keith needs to make a large antipersonnel charge. Again, he uses 18 DP worth of explosive, and packs 45 kg of nails and other debris around it (for 2.5 kg of shrapnel per DP). The charge's base Damage is 21, but this is halved because it's a fragmentation charge, dropping it to Damage 11. Blast is likewise halved to 11. Radius remains unchanged at 21m. Frag increases by 5, from 4 to 9.



CHAPTER 8

VEHICLES

AND TRAVEL

I haven't seen a paved road in months. Out here, the governments only put real highways where they wanted people to travel. Kurdistan straddles the former borders of Iraq, Turkey, and Iran, and none of those nations were real keen on seeing a lot of traffic from their neighbors.

The platoon still has enough vehicles to move everyone at once, but fuel is in short supply. Despite enough good intentions to pave a six-lane turnpike to hell, the Kurdish government hasn't gotten oil production back on line, and what we're hearing from headquarters is a minimum of another year. We have enough diesel for the thirsty Strykers to get our happy selves back to Arbil in the event of a sufficient emergency, but regular jaunts around the countryside are right out. Even the nigh-indestructible four-wheel-drive Toyotas, which practically sip gasoline by comparison, don't see a lot of use.

So today's expedition is something out of the ordinary. The general safety rule is *"never drive faster than you can see,"* but we're barreling through a late spring snowstorm at a speed everyone but Big Jim considers insane. Unfortunately, Big Jim is the one driving.

The captain has Third Squad on point because our Stryker's in better shape than the one First has retained, and because Big Jim really is the best driver in the platoon. The platoon's moving because this really is a "sufficient emergency." Somewhere in what used to be Iran is a mixed bag of a couple hundred Canadian, Australian, and British troops who are on their last legs after evacuating Afghanistan. Unfortunately for them, they're attracting the attention of every armed Iranian within fifty miles. There's one, count it, one pass through the mountains that's melted clear so far, and we're the only friendly unit in position to hold that door open for them.

Suddenly, Demon lets out the godawful howl that earned her her name. A split-second later, everyone's screaming in counterpoint as 17 tons of Stryker breaks traction and goes sideways on a thin layer of ice. Somehow, Big Jim manages to wrestle it back under control before we go off a cliff.

"Dude, what the hell?" asks Little Jim.

"Snow leopard!" Big Jim shouts back. *"Had to hit the brakes, it was right there in the road!"*

There's a momentary silence as everyone digests that.

"Bollocks," Streeter puts in. *"Snow leopards don't range this far west. Are you sure you didn't see a goat?"*

"It was not a goat!"

Then Sergeant Kim gets that look in her eye and glances at me. *"We were somewhere around Kirkuk when the drugs began to take hold..."*

And I fire right back, *"We can't stop here! This is cat country!"*

We're still snickering a few minutes later when the first RPG hits.

The machine does not isolate man from the great problems of nature but plunges him more deeply into them.
— Antoine de Saint Exupéry, *Wind, Sand and Stars*

In the early 21st century, most citizens of industrialized nations took reliable motorized transportation for granted. Refined petrochemicals were readily available, as was a massive logistical base devoted to producing, selling, and maintaining vehicles of all types and sizes. Rapidly-increasing fuel prices were seen as an inconvenience (and a major political factor), but were rarely an insurmountable obstacle to travel. One of the central factors in the Collapse was the shutdown and destruction of fossil fuel production and distribution, a global loss that brought worldwide commerce to the proverbial screeching halt.

In 2013, no one takes travel for granted. Without the skills necessary to create fuel or maintain and repair vehicles, many people travel at the speed they can march, carrying no more cargo than what they can bear on their own backs. Working animals, once seen as rustic curiosities or the tools of “primitive” rural residents, are now in high demand. Those fortunate travelers who own working vehicles and can keep them fueled often find their wealth makes them targets for anyone who sees a financial, military, or personal advantage in taking their transport from them. This chapter addresses the current state of the world’s highways and byways and provides rules for vehicle operations.

TRAVEL

Getting from Point A to Point B is not as easy or safe in 2013 as it was only a year or two previously. Fuel, vehicle reliability, and route conditions were all factors that did not concern the prewar traveler, but are now critical to any journey. In addition, a plethora of hazards force time-consuming alternate routes preferable only because of their relatively lesser dangers.

TRAVEL BASICS

The basic road travel speeds for characters, mounts, and vehicles all assume movement in good weather conditions on paved roads. Most highways haven’t seen repair crews since before the nuclear exchanges. While it hasn’t been long enough for road surfaces to significantly deteriorate from use and weather effects, military action and civil disorder both took their toll on the world’s transportation infrastructure. Accordingly, the travel speeds given in this book are slower than prewar standards; this accounts for not only rest breaks but detours around roadblocks, downed bridges, and other obstacles.

Under these normal conditions, a group moves at the safe speed of its slowest member. No skill check is required for such travel, so long as each vehicle operator has at least a Novice rating in the appropriate skill (see Unskilled Drivers, following). The group may move indefinitely, subject to fuel and fatigue limitations.

Pushing

Characters often encounter situations in which safe speeds aren’t fast enough. Travel movement above a vehicle’s safe speed is considered *pushing* — in the sense of both the vehicle’s limits and the driver’s luck.

A vehicle may be pushed to an absolute maximum speed of three times its safe speed. For every hour of travel in which a driver pushes, he must succeed in a control check. This check takes place at standard difficulty for speeds up to twice safe speed, and at TN –2 for speeds between twice and three times safe speed. If the check succeeds, nothing untoward occurs. If the check fails, the vehicle suffers a mishap (see p. 276).

Control Checks

Vehicle operation is subject to several different skills and qualifications, depending on what type of vehicle a character is attempting to drive, ride, or pilot. Rather than list all of the relevant skills every time such a task comes up in this chapter, we use the generic nomenclature of *control check* to refer to a skill check with the appropriate skill for the vehicle in question. Unless otherwise stated, all control checks occur at standard difficulty. The governing attribute for control checks with each vehicle skill is:

- Aquatics: MUS for manually-propelled boats and sailboats, CDN for motorized ones.
- Aviation: CDN.
- Driving: CDN.
- Freefall: MUS.
- Mounts: MUS.
- Seamanship: COG.
- Special Vehicle: Dependent on vehicle type, but usually CDN or COG.

Any remotely-controlled maneuver (i.e. use of the / Remote qualification) substitutes COG for the normal governing attribute.

Unskilled Drivers

Circumstances may force characters to take control of conveyances that they don’t know how to drive. If a character attempts travel without at least a Novice rating in the appropriate skill for his vehicle, all travel movement is considered pushing, even when traveling at safe speed or less.

Forced Marches

Unlike vehicles, characters only have one travel speed: the sustained speed at which the character can march. Human endurance is more limited than a vehicle’s, so there is no direct equivalent to flooring the accelerator. Instead, when a character attempts to push himself, the player must make an environment-appropriate skill check — either Fieldcraft (RES) or Streetcraft (RES) — for each hour of forced marching. With success, the character’s travel speed for that hour increases by a percentage equal to 10 times the margin of success. With failure, the character exceeds his physical limits or misses a hazardous step and suffers damage equal to the margin of failure to a randomly-determined location.

Cross-Country Travel

Paved roads are the most efficient travel arteries for ground vehicles, but they aren’t necessarily the safest. Characters who want to avoid local attention are well-served by taking more circuitous routes. Unfortunately, going cross-country imposes a significant speed penalty for most vehicles, as even the flattest plain is bumpier and more treacherous than a well-graded highway.

The base cross-country movement speeds for vehicles assume flat, open country. Various terrain types can further reduce a vehicle’s safe speed. The speed reduction table indicates the fraction of safe speed at which each vehicle type moves over more difficult terrain. “N” indicates normal movement speed with no penalty, while a dash indicates the terrain in question is impassable.

If an unpaved road (or a formerly paved road subjected to years of neglect) is available, these penalties do not apply and vehicles may move at their normal cross-country speed.

Adverse Conditions

Poor visibility and uncertain surfaces can have a significant impact on travel speeds. The speed reduction table provides modifiers for various conditions. When multiple factors apply, use the most severe speed reduction, then reduce safe speed by an additional 1/4. If this reduces a vehicle's safe speed to zero, movement is impossible until conditions improve.

Terrain					
Condition	Human	Animal	Std.	OR	Trk
Woods	N	N	1/2	3/4	3/4
Swamp	3/4	1/2	—	1/4	1/2
Sand	3/4	3/4	1/4	1/2	3/4
Hills	3/4	3/4	1/2	3/4	3/4
Mountains	1/4	1/4	—	1/4	1/4
Bad Surfaces					
Condition	Human	Animal	Std.	OR	Trk
Flooding	3/4	3/4	3/4	N	N
Ice	1/2	1/2	1/4	1/2	3/4
Snow, <10cm	3/4	N	1/2	3/4	N
Snow, 10+ cm	1/2	3/4	1/4	1/2	3/4
Visibility					

Flat penalty of -1/4 per two range bands by which visual range is reduced (see p. 74).

Table 8a: Cross-country Speed Reduction

Familiarity

The basic travel speeds assume travelers are in unknown territory and are maintaining a certain safety margin in case of unexpected hazards. If a group is familiar with its route, safe speed for vehicles and travel speed for characters is increased by 1/4. For game purposes, each driver must have traveled through the area regularly for at least three months to be considered familiar with it.

Scouting Routes

Explorers into unfamiliar areas may use recent reconnaissance to gain the same benefits. Scouting a route requires a character to travel along it at 1/2 normal speed, moving covertly and making detailed observations (this speed reduction is not cumulative with weather penalties – use the slower of the two). After every day's worth of scouting, make a terrain-appropriate skill check: Fieldcraft (AWA) or Streetcraft (AWA). With success, the character may act as a guide. While traveling through that area, he and a maximum number of other characters equal to his Cognition are considered to be familiar with it. This benefit lasts for a number of days equal to the margin of success.

Aquatic Travel

Travel by boat follows the same basic rules as land travel. However, terrain factors are obviously different. The rules presented here assume travel on inland lakes and waterways or in coastal waters. Due to lack of fuel and navigational aids, deep ocean travel is extremely rare in 2013 and, in any case, is better handled as a plot device than a daily consideration.

When traveling on the water, the primary factors reducing safe speed are the presence of collision hazards and, as with land travel, visual impairment. The following table addresses these factors. As previously stated, "N" indicates normal movement

Design Note: Travel Speeds

The base travel speeds for most vehicles seem rather low, given that most of us are accustomed to traveling on limited-access expressways at speeds in excess of 100 km/hr. However, the roads of 2013 are considerably more hazardous and congested than the ones on which you're accustomed to traveling.

In all but the most extreme climates, transportation infrastructure hasn't had time to suffer weather-induced deterioration. The majority of dangers come from the debris of the Collapse. Mass panic caused accidents and traffic jams that were never cleared. Communities barricaded their main approach routes against refugees. Demolition crews dropped bridges, collapsed tunnels, blocked harbors, cut rail lines, and sealed choke points to enact quarantines or foil military advances. In many cases, the most direct prewar routes are now impassable, requiring travelers to find time-consuming alternate courses. Few local governments have resources to expend on non-critical public works, so only the arteries essential to defense and trade are likely to be cleared or repaired in the foreseeable future.

Even supposedly open routes have their own share of hazards. The Twilight War is still smoldering in many corners of the world. Even without its impetus, no few survivors find it expedient to prey on outsiders. Border checkpoints, "toll booths," paranoid and violent isolationism, and simple banditry are all dangers to the unwary traveler.

speed with no penalty, while a dash indicates the condition in question is impassable.

Hazards	
Condition	Reduction Factor
None	N
Storm/flood debris	3/4
Spring thaw/floating ice	1/2
Low water/exposed rocks and sandbars	1/2
Very low water/summer drought	1/4
Deliberate man-made obstructions	1/4
Solid or pack ice	—
Weather	
Condition	Reduction Factor
High winds/choppy water	1/2
Windstorm/pounding waves	1/4
Hurricane	—
Visibility	

Flat penalty of -1/4 per two range bands by which visual range is reduced (see p. 74).

Table 8b: Aquatic Speed Reduction

Sails

Sailing vessels are subject to an additional limiting factor: the availability of wind. A sailing vessel's safe speed indicates the maximum easily controllable speed. However, it isn't automatically capable of attaining this speed. The maximum speed a sail-powered craft can achieve is equal to either three times its safe speed or the current wind speed, whichever is less. If the vessel is traveling against the wind (for example, moving west against an easterly wind), this maximum speed is halved due to the inefficiency of such travel.

VEHICLES

A vehicle in good working condition is the most valuable portable property available to most characters or groups in **Twilight: 2013**. The following sections provide the framework for describing and using vehicles within the Reflex System.

TRAITS

Like other equipment, each vehicle has a set of numerical and descriptive traits that represent its capabilities in game terms. Not all vehicles have all of the following traits.

Configuration: The physical layout of the vehicle, which determines the applicable combat hit location table. Possible configurations are:

- **Standard:** The archetypal vehicle: a roughly rectangular box on wheels, with no turret or other distinguishing external features. Almost all civilian ground vehicles are of standard configuration, as well as some military vehicles.

- **Turreted:** The vehicle has a large, prominent turret containing its main armament and multiple crew members. Most tanks and IFVs have a turreted configuration.

- **Crew In Hull (CIH):** The vehicle has a relatively small turret, either remotely-operated or seating a single crew member. This configuration is common to military vehicles that mount light defensive armament.

- **Flush Deck:** A watercraft configuration in which the vessel's equipment and working spaces are contained entirely within its hull. Rowboats, motorboats, barges, and similar simple watercraft have flush deck configurations.

- **Superstructure:** A watercraft configuration for vessels whose architecture includes a built-up structure above the level of the deck, such as freighters and patrol boats.

Suspension: The arrangement of wheels or tires that the vehicle uses for motive power. Possible suspension types are Standard Wheeled (Std), Off-Road Wheeled (OR), and Tracked (Trk). A vehicle's suspension type affects its cross-country movement speed on various terrains.

Buoyancy: Exclusive to watercraft, this trait represents the amount of water the vessel can take on before it sinks (see p. 277).

Crew: The number of crew positions in the vehicle. If the vehicle has additional passenger seating (as opposed to cargo space that passengers can occupy), this is represented by an additional "plus" notation. For example, "2+2" means "two crew positions and two passenger seats."

Cargo: The weight of cargo the vehicle can carry, along with a brief description of any special storage arrangements or other considerations.

Weight: The vehicle's weight with a full load of fuel, ammunition, and crew, but no cargo or passengers.

Maintenance: The vehicle's maintenance requirement in hours per period of use, as described in the Wear and Maintenance rules in Chapter Six.

Travel Speed: These are the vehicle's safe road and cross-country speeds in kilometers per hour, represented as a split number. For example, "75/30" indicates a safe road speed of 75 km/hr and a safe cross-country speed of 30 km/hr. For watercraft, a single value is given.

Vehicular Equipment

Several of the vehicles described in this chapter share items of equipment that, while different in specific models, follow the same rules for game purposes.

Amphibious running gear: A vehicle with this auxiliary system is capable of waterborne movement at ¼ its normal cross-country speed. Damage to the system indicates that the secondary propulsion (i.e. propellers) is disabled or that low hull hits have compromised the vehicle's flotation ability.

Firing port: An aperture in an vehicle's hull through which a passenger can stick a personal weapon and fire blindly. When attacking through a firing port, a character still receives full cover from the vehicle's armor, but may only make hip shots. Unless otherwise noted, a firing port will only accept a firearm of Bulk 3 or less. Firing ports are not considered weapons systems for damage purposes, but are listed under that heading for the sake of simplicity.

NBC defense system: A Nuclear, Biological, and Chemical protection system. When all of the vehicle's access points (including firing ports) are closed, the system is sealed, with a filtered air pump creating overpressure to prevent outside contamination from entering the cabin. If the vehicle's armor is penetrated, the system is compromised (but armor repairs will restore integrity). Damage to this auxiliary system renders the filtration and overpressure components inoperable.

Self-recovery winch: A permanently-affixed winch with 100m of steel cable, sufficient to pull the vehicle out of a ditch or bog. Unless otherwise stated, the winch's maximum load is 10% greater than the vehicle's laden weight (i.e. weight plus cargo capacity). This item cannot be used to extricate another stuck vehicle with a weight exceeding 25% of the vehicle's own.

Weapon mount: Any pintle mount, ring mount, or other mounting point that can accept a variety of infantry support weapons. Unless otherwise stated, a weapon mount is equivalent to a heavy tripod in terms of the weapons it will accept. Typically, a weapon mount is affixed adjacent to a specific crewman's hatch, and that crewman must expose himself from the waist up to use the weapon. If a weapon mount is described as having a gun shield, this provides the character with cover for all hit locations except the head (50% coverage), assuming an attack from his front quarter.

Combat Speed: These are the vehicle's safe road and cross-country speeds in meters per exchange of fire, again represented as a split number. For watercraft, a single value is given.

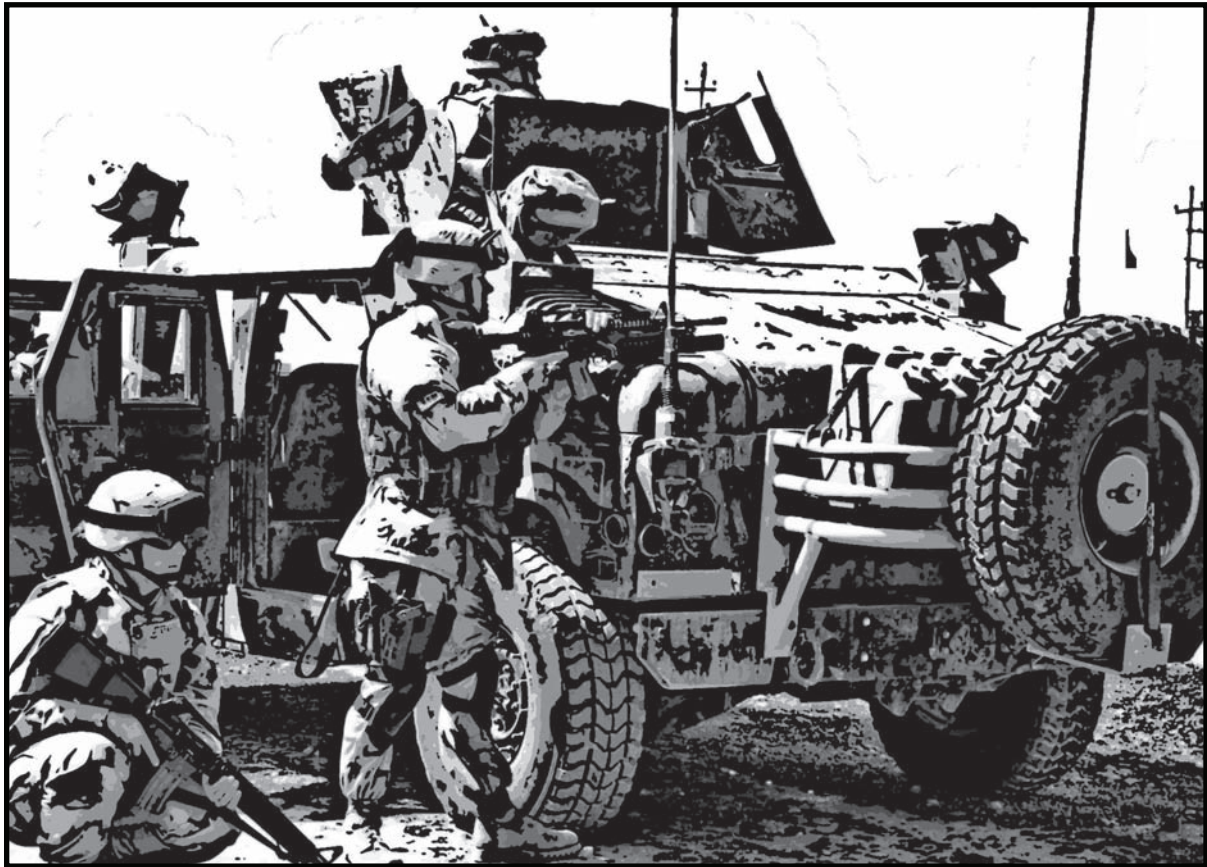
Fuel: The volume of fuel the vehicle's tank holds, as well as the type or types of fuel its vehicle's engine can burn *without modification*. See the following Fuel section for details.

Fuel Consumption: The number of liters of fuel the vehicle consumes per hour of travel at its safe speed. Idling consumes half this amount per hour, while pushing consumes twice the normal amount.

Systems

The following traits detail the equipment that is mounted on the vehicle in its factory-fresh configuration. Vehicles that have been in PCs' hands for any length of time are likely to vary from these defaults due to modifications and battle damage.

Armament: All weapon systems that are permanent features of the vehicle, as well as any mounting points.



Ammo: The standard amount of ammunition that the vehicle's internal magazines or stowage spaces are designed to hold.

Comm: All communication systems integral to the vehicle.

Sensors: All sensor systems integral to the vehicle, from headlights to chemical warfare detectors.

Aux: All auxiliary systems innate to the vehicle but not appropriate for one of the previous categories. This can include cargo-handling cranes, mine clearance plow blades, medical support equipment, or any other significant features.

Armor

All most vehicles provide some measure of protection to their contents and occupants, if only by virtue of their solid construction. Combat vehicles are designed from the ground up to be resistant to certain levels of damage. Each hit location's Armor value is listed separately, using the following abbreviations: (H)ull, (T)urret, (Susp)ension; (F)ront, (S)ide, (R)ear. Thus, "HR 3" indicates the vehicle's rear hull facing has an Armor value of 3.

Special Armor

Two special types of vehicular armor exist. Both are designed to provide superior protection against explosive weapons.

Spaced armor uses offset layers of metal to prematurely detonate incoming warheads. When a vehicle with spaced armor is struck by an explosive projectile, there is a 50% chance that the margin of success is not added to the attack's damage value. Spaced armor is denoted with a "-Sp" suffix.

Composite armor uses sandwiched layers of different materials (typically metal and ceramic) to diffuse the power of an explosion. When a vehicle with compound armor is struck by an

explosive projectile, the attack's Penetration is considered to be x2, not the usual x1. Composite armor is denoted with a "-Cp" suffix.

FUEL

In many parts of the world, coming by vehicles is easy in 2013. With a little bit of luck and effort, any competent mechanic who knows the right place to look can acquire a civilian vehicle and restore it to working order. Military equipment is harder to acquire because of attrition, but most former war zones contain at least a few salvageable combat vehicles. However, even the fastest muscle car or most formidable main battle tank is little more than shelter and storage space without the fuel. This is the limiting factor in vehicular operations after the Collapse.

By default, most vehicles are designed and manufactured to use one specific source of stored energy. Many of these can be adapted to other fuel types, while a rare few are capable of consuming variable types of fuel without modification. The following rules address both standard and alternate fuels.

Gasoline (G)

The most common prewar fuel source for consumer vehicles, gasoline was globally ubiquitous before the Collapse. From a chemical perspective, it's a refined petroleum derivative, usually enhanced with related chemicals to improve its overall energy density. A gasoline-powered vehicle uses an electric spark to ignite a tiny volume of vaporized fuel, then captures the energy of the resulting explosion and uses it for motive power or electrical generation.

Alcohol Conversion

The process of converting a gasoline-powered vehicle to pure alcohol fuel was anything but common before the Twilight War. Over the past two years, however, experimentation and communication have made the knowledge sufficiently widespread for the GM to assume any mechanic worthy of the name knows what to do. Mechanically, this is a supply-dependent Mechanics (COG, TN -1) skill check requiring eight hours and four units of appropriate parts. Reversing the process follows the same system.

Diesel (D)

Like gasoline, diesel fuel is a petroleum product. It was the prewar choice for commercial transport and military vehicles, but was not accepted in all regions as the preferred choice for consumer vehicles. In general, diesel engines tend to offer greater pulling power but lesser acceleration when compared to gasoline engines. A diesel engine relies on the rapid compression of air and vaporized fuel for its ignition source, and this makes gasoline and diesel fuel mutually exclusive in any engine designed explicitly for only one of the two.

Biodiesel

Biodiesel is an alternative fuel similar in physical properties to standard diesel fuel, but derived from vegetable oils or animal fats rather than crude oil. Because of its close similarity to standard diesel fuel, diesel engines can use biodiesel without modification. This made biodiesel an attractive option in some locales in the decade before the Collapse. Unlike diesel fuel, biodiesel can be synthesized relatively easily, given a sufficient source of raw materials (see page 191).

Alcohol Fuels (A)

Alcohol fuel was in use for well over a century prior to the Collapse, but only gained global attention and popularity in the last decade as an alternative to gasoline. Two main types of alcohol fuel exist in 2013: *ethanol*, produced from grains and sugars, and *methanol*, produced from wood. Both of these fuels are less energy-dense than gasoline, but the relative ease of production has made them the dominant vehicular fuels in areas with the agricultural and labor surpluses necessary to produce them.

Unless otherwise stated, any vehicle designed for gasoline can be converted to use alcohol fuel as per the Alcohol Conversion sidebar. The primary drawback to this fuel source is its lower economy per volume. A vehicle burning ethanol has its Fuel Consumption multiplied by 1.7, while one using methanol has its Fuel Consumption multiplied by 2.25.

Hybrids (-H)

After the turn of the millennium, “hybrid” vehicles gained prominence as a partial solution to energy needs. In a hybrid, a conventional gasoline or diesel engine is paired with a set of batteries and an electric motor. Surplus energy from the engine and brakes is stored in the batteries, then later retrieved and applied via the motor. The net effect is a significant increase in overall fuel economy. In the postwar world, hybrid vehicles in working condition are immensely valuable because of this efficiency. However, few were made with any kind of off-road capability or cargo capacity sufficient to meet the needs of most PC groups.

A hybrid vehicle still requires either gasoline or diesel fuel as per its basic engine. The increased efficiency provided by the additional components is already factored into its Fuel

Consumption. Due to the greater complexity of a hybrid’s electrical system, any attempt to repair or modify its engine uses the lesser of the character’s Electronics or Mechanics skills.

Multifuel Engines

Most vehicles are designed for one specific type of fuel. Some rare designs, however, are capable of accepting multiple grades of petroleum distillate. The Fuel trait of such a vehicle will list all possible fuels. If a vehicle has a multifuel engine, no mechanical work is necessary to convert it between the listed fuel types. The vehicle’s Fuel Consumption assumes use of petroleum distillates; if alcohol is used instead, adjust Fuel Consumption accordingly.

Solid Fuels (S)

Coal and wood were considered archaic power sources for prewar vehicles, but some watercraft (and rail locomotives) still make use of solid-fueled external combustion engines. Because of the relatively unsophisticated nature of such engines, any vehicle designed to burn coal can also accept wood, and vice versa, with no modification or ill effect. The only difference is the relative efficiency of the two power sources. Fuel Consumption values assume coal will be used. If wood is used instead, multiply the vehicle’s Fuel Consumption by 2.5.

Aviation Fuels

Although air travel is still possible in the world of **Twilight: 2013**, it’s sufficiently rare as to be outside the scope of this core rulebook. However, it’s within the realm of possibility for characters to stumble upon an abandoned remote airstrip with a reserve of fuel and a flyable aircraft. Two main types of aviation fuel were in widespread use pre-Collapse: aviation gasoline (avgas) and jet fuel.

Avgas (AvG)

Aviation gasoline is simply gasoline with a higher energy density, which is necessary to ensure efficiency in getting an aircraft off the ground. Prewar, it was also used in auto racing. From a game perspective, any gasoline engine can also accept avgas, operating at its standard efficiency. However, the reverse is not true: engines designed for avgas will not accept standard automobile gasoline. It is theoretically possible to convert small avgas-powered engines, such as those found in private propeller-driven airplanes, to use carefully-purified alcohol fuel. However, this halves the aircraft’s cargo capacity, triples its Fuel Consumption, and restricts it to a ceiling of 3,000 meters above sea level.

Jet Fuel (AvJ)

Various blends of jet fuel exist, each optimized for different engine designs or operating environments. For game purposes, all jet fuel is the same: a petroleum distillate closely related to kerosene, providing fuel efficiency equal to that of gasoline. This fuel cannot be used in any vehicle not specifically designed to accept it, and aircraft turbines cannot generate enough power for flight if fueled with anything but jet fuel.

MISHAPS AND CRASHES

A *mishap* occurs when a driver exceeds his vehicle’s safe performance envelope and fails to maintain control of it (i.e. fails a skill check). The nature and severity of the mishap depend on the type of vehicle and the check’s margin of failure.

Ground Vehicles

Lost Time (MoF 1-3): No damage, but lose travel distance this hour equal to twice the margin of failure in kilometers.

Stuck (MoF 4-6): No damage aside from cosmetic, but distance traveled this hour is equal to half the vehicle's safe speed. Furthermore, the vehicle is immobilized by terrain. If extrication equipment (e.g. a self-recovery winch, another vehicle with sufficient towing capacity) is available, unsticking the vehicle is a matter of an hour's work and a successful Construction or Mechanics (COG, TN +2) check. If only manual labor and insufficient tools are available, this effort requires a total margin of success on Construction or Mechanics (MUS) checks equal to the vehicle's weight in tons, with each attempt requiring one hour. In either case, there's also a 50% chance of the vehicle gaining one point of Wear.

Suspension Damage (MoF 7-8): The vehicle suffers the effects of a minor suspension hit and gains one point of Wear. Distance traveled this hour is equal to half the vehicle's safe speed.

Engine/Transmission Failure (MoF 9-10): The vehicle's engine is disabled as per the Engine damage result. In addition, the vehicle gains one point of Wear. Distance traveled this hour is equal to half the vehicle's safe speed.

Collision (MoF 11-12): The vehicle suffers collision damage at its current speed. If the damage reduces its safe speed or immobilizes it, distance traveled this hour is equal to half its pre-collision safe speed.

Rollover (MoF 13-14): As per Collision, but increase the vehicle's effective speed by 50% for damage purposes. There is a 25% chance of the vehicle landing back on its wheels or tires. If not, getting it upright again requires an effort as per the Stuck result above.

Totaled (MoF 15+): The vehicle is destroyed. Every occupant suffers falling damage as if falling from a height in meters equal to the vehicle's current speed in km/hr. Roll percentile for every item of cargo; if the die result is less than the vehicle's current speed, that item is lost or destroyed.

Water Vehicles

Lost Time (MoF 1-3): As per Lost Time for ground vehicles.

Run Aground (MoF 4-6): As per Stuck for ground vehicles.

Fouled Rudder (MoF 7-8): The vessel suffers the effects of a Steering hit and gains one point of Wear. Distance traveled this hour is equal to half the vessel's safe speed. Clearing whatever is stuck in the steering mechanism requires an hour of work and a successful Mechanics (MUS) skill check.

Engine/Rigging Failure (MoF 9-10): As per Engine/Transmission Failure for ground vehicles.

Collision (MoF 11-12): As per Collision for ground vehicles.

Holed (MoF 13-14): The vessel's hull is destroyed (flotation hits equal to three times its base hit capacity). The pilot may allow it to sink or run it aground to keep it from sinking.

Sunk (MoF 15+): The vessel is destroyed and sinks within minutes. Every occupant must succeed with an Aquatics (MUS, TN +1) check to swim to safety; otherwise, he is trapped in the wreckage and drowns. All non-buoyant cargo goes down with the vessel.

Crash Damage

Crash damage occurs when a vehicle impacts another solid object, either intentionally or deliberately. In combat, the base damage value is equal to the vehicle's speed in meters per exchange of fire. During travel movement, the base damage value is equal to the vehicle's speed in kilometers per hour multiplied by 0.4. Subtract the vehicle's weight in tons from this damage, then apply the result as combat damage. The vehicle's armor does not protect from crash damage. For each hit (major or minor), roll 1d6. On a 1-2, apply it as a suspension hit. On a 3-6, apply it as a hull hit.

Example: *Matt catastrophically fails a control check while pushing his truck at 110 kilometers per hour. 110×0.4 is 44. The truck weighs 8 tons, so the final damage value is $(44 - 8)$ 36. Per the combat rules, this generates two major damage results. The GM rolls 1d6 twice for results of 2 and 5. Matt's truck suffers one major suspension hit and one major hull hit.*

Watercraft

When a watercraft suffers crash damage, the damage is always treated as a waterline hit.

VEHICLES IN COMBAT

Humans have employed vehicles in combat roles for millennia, starting with the first cavalry and charioteers. Compared to the capabilities of an individual combatant or small infantry unit, vehicles offer significant advantages in terms of speed, endurance, protection, armament, and carrying capacity. This makes them both valuable assets and high-priority targets on the modern battlefield, and even more rare and precious in the resource-limited environment of 2013. The following sections expand on the basic combat rules in Chapter Five to integrate vehicles into the Reflex System's skirmishes.

ACTIONS AND VEHICLES

Every vehicle needs a crew: one or more characters dedicated to operating it both in and out of combat. Most of the standard combat actions in Chapter Five are as appropriate to vehicle operations as they are to personal activity. Shooting, reloading, communicating, and making emergency repairs are all common actions for vehicle crews in a fight. However, some actions require special consideration.

Driving in Combat

Unlike personal movement, which is blocked out in 5-tick intervals for ease of play, vehicular movement occurs over the course of an entire exchange of fire. A character who is controlling a vehicle in combat rolls initiative normally. However, every action (except Wait) he takes during that exchange of fire suffers a cumulative -1 penalty to any required roll. These actions also impose penalties on his driving (see Tactical Movement, following).

Example: *Matt is involved in a car chase on a winding country road, driving his Ford Falcon with one hand and returning fire with the other. After making three attacks, he runs out of ammunition (he started the exchange of fire with a partial magazine). Matt then takes a Reload action. As his fourth action of the exchange of fire, any associated skill check will suffer a -4 penalty. Reloading doesn't require a skill check, so Matt has no problem there.*

TACTICAL MOVEMENT

As with travel movement, each vehicle has safe tactical speeds for paved roads and cross-country movement. The same factors limiting these speeds during travel also limit them during combat. Tactical speeds are given in *meters per exchange of fire* and assume that the vehicle is in motion through the entire exchange of fire.

The driver of a vehicle declares his vehicle's movement for the exchange of fire at the beginning of his initiative. Within reason, movement at the vehicle's safe tactical speed or less requires no control check. However, at the GM's discretion, tight quarters, hazardous terrain, or attempts at special precision may require a

control check. A control check is *always* required for movement over the vehicle's safe speed; this occurs at TN -1 for speeds up to twice safe speed and TN -3 for speeds between twice and three times safe speed. The driver makes this control check on Tick 1, after he's taken any other actions for that exchange of fire. Each additional action applies a cumulative -1 penalty to his control check. Failure results in the driver losing control of his vehicle. During the next exchange of fire or pause, the vehicle continues on a randomly-determined course (or a course subject to the GM's cruel whim) at the same speed. Depending on the terrain, nearby scenery, and the GM's sadism, this can result in anything from getting bogged down in a marsh to colliding with another vehicle to running straight into a minefield.

Example (continued): *Matt has taken four actions while driving: three attacks and a reload. This applies a cumulative -4 penalty to his control check. As he's also pushing his vehicle to its maximum speed (three times its safe speed), he's also rolling against TN -3. Matt had better roll well...*

ATTACKS

Attacking from a Moving Vehicle

The faster a vehicle moves, the rougher its ride is. This interferes with all attacks made from it. If the vehicle is moving at its safe speed or less, all attacks from it suffer a -2 penalty. If it's moving at twice its safe speed or less, all attacks suffer a -4 penalty. If it's moving at more than twice its safe speed, all attacks automatically fail.

Some combat vehicles feature stabilization systems on their main weapons, enabling them to fire on the move. Such systems reduce movement penalties. A stabilization system rated as

"standard" reduces the vehicle's effective speed by one level, while one rated as "good" reduces effective speed by two levels. Stabilization applies only to the weapon incorporating the system, not all weapons on the vehicle.

Attacking a Vehicle

The basic mechanic for attacking a vehicle is the same as for attacking a character. All standard modifiers apply. Note that personal-scale weapons (e.g. firearms) do receive bonuses for attacking targets larger than those for which they were designed, as per the standard target size rules (see p. 74). Support and vehicular weapons receive no such bonuses, as they were built for precision on a vehicular, as opposed to human, scale.

Hit Location

Like characters, vehicles have hit locations. Almost all vehicles have armor in each hit location. In addition, a vehicle's *facing* is important. A "soft-skinned" vehicle is equally unarmored on all sides, but a combat vehicle typically carries its heaviest armor in front, moderate armor on its sides, and relatively light armor on the rear.

If an attacker is directly facing one side of a vehicle, the face the attack strikes is fairly obvious. If the attacker has a three-quarter view of the vehicle, however – in other words, is facing a corner and can see two sides – then the attack has a chance of striking either face. For the sake of simplicity, assume all such attacks have equal (50/50) chances of striking either facing. The GM is the final arbiter of such geometry.

After determining the facing the attack strikes, roll 1d6 for hit location on the table appropriate to the vehicle's configuration. If the attack strikes the left or right side, add 1 to the die roll. If the vehicle is behind cover, approximate how high the cover extends on the vehicle. The table is arranged in rough physical order, so greater die results indicate strikes closer to ground level.

Example: *Simon fires a rocket at an enemy BTR-80 and hits. From his position, he has a clear view at the left rear corner of the vehicle. The GM decides to roll 1d6, stating the shot strikes the vehicle's rear on a 1-3 and its left side on a 4-6. The die comes up 4, indicating a hit on the BTR's left side. Simon then rolls 1d6+1 for a side hit, receiving a die result of 5. The BTR is a CIH-configuration vehicle, so a 6 (5 on the die, +1 for a side hit) indicates a suspension hit. If the attack had come from the front, the roll would have been 1d6, and a 5 on the die would have indicated a hull hit.*

Turrets

Facing can become a headache when dealing with hit location on turreted vehicles. The vehicle's hull orientation is not always the same as its turret orientation. In such cases, determine facing based on the orientation of the vehicle's hull. At the GM's discretion, an attack striking the turret may impact a different facing (thereby encountering a different Armor value).

Called Shots

An attacker may declare a called shot against a vehicle in the same manner as against a character. A called shot against a vehicle's hull or superstructure incurs a -1 penalty. A suspension or waterline attack suffers a -2 penalty from the side and a -3 penalty from the front. A turret attack suffers a -2 penalty for a standard turret or a -3 penalty for a remote (unmanned) turret.



Die	Standard	Turreted	CIH	Flush Deck	Superstructure
1	Hull	Turret	Hull	Hull	Superstructure
2	Hull	Turret	Turret	Hull	Superstructure
3	Hull	Hull	Hull	Hull	Hull
4	Hull	Hull	Hull	Hull	Hull
5	Hull	Hull	Hull	Hull	Hull
6	Suspension	Suspension	Suspension	Waterline	Waterline
7	Suspension	Suspension	Suspension	Waterline	Waterline

Table 8c: Vehicle Hit Location

Stage III Option: Small Arms and AFVs

All AFVs are not built to shrug off anti-tank ordnance, but most are designed to provide at least a modicum of protection against ordinary bullets. Accordingly, good shot placement is of little value against a solid sheet of armor plate. When an attack with a standard firearm (anything up to an anti-material rifle or heavy machine gun) strikes an AFV, compare the vehicle's Armor value, modified as normal for Penetration, to the attack's *base* Damage. If the Damage doesn't exceed the modified Armor, the attack fails to penetrate, regardless of the margin of success.

Stage III Option: Catastrophic Kills

As with the character injury rules in Chapter Five, the vehicle damage rules here do not allow for the instant and total destruction of a vehicle. Also as with character injuries, this is an intentional design decision.

For groups that want to allow for the possibility of instant destruction of a vehicle (and the death of everyone within it), we recommend a catastrophic kills result from a final damage value of 80 or greater with an explosive or incendiary weapon. In such an event, the vehicle explodes (see p. 282).

Attacks on Crew

Because of the visibility of a soft-skinned vehicle's crew, an attacker can attempt to shoot through the windows to attack a crew member directly. In such a case, resolve the attack with the vehicle providing partial cover. If the attack succeeds and the hit location indicates a covered area of the target's body, apply the vehicle's Armor normally.

Crew members inside AFVs cannot be targeted directly because of the greater degree of protection these designs offer. See the following section for the differences between soft-skinned vehicles and AFVs.

Some crew positions may place crew members partially or totally outside the vehicle's armor. The most common case is an external weapon mount, which is affixed to the outside of the vehicle and requires the gunner to stand up (typically in a hatch) to fire it. This exposes the gunner's chest, head, and arms. Again, this enables attackers to target him normally, even if the vehicle is an AFV. If the weapon mount is listed as "protected," it includes a gun shield with Armor 4. This provides cover for all but the gunner's head from the front, and has a 50% chance of covering the arms and chest from the side.

DAMAGING A VEHICLE

When an attack strikes a vehicle, determine its final damage value in the same manner as any other attack: multiply the Armor value of the hit location by the attack's Penetration, then subtract the result from the attack's base Damage and add the attack's margin of success. In algebraic terms, this is (Damage + Margin of Success – [Armor x Penetration]).

Unlike a character, a vehicle has no wound thresholds. Instead, the final damage value of the attack determines whether the vehicle suffers minor or major damage. A minor hit represents damage to a system that isn't essential to moving and fighting, while a major hit represents damage to a more critical system.

Damage Value	Damage Results
1-10	1 minor
11-20	2 minor
21-40	1 major
41-60	2 major
61+	3 major

Table 8d: Vehicle Damage Values

"Soft-Skinned" Vehicles vs. AFVs

In addition to providing basic Armor values, the Reflex System differentiates between "soft-skinned" vehicles and armored fighting vehicles (AFVs).

In military parlance, "soft-skinned" refers to any vehicle with a design that does not incorporate armor. Individual Armor entries in vehicle traits will indicate that appropriate vehicles are soft-skinned. Such a vehicle's body panels and structural members offer some protection to occupants and systems, but windows, air intakes, and the like are significant weak points. Whenever a soft-skinned vehicle suffers a hit, there is a 50% chance that the attack passes through one of these weak points and the vehicle's armor does not apply against that attack.

By comparison, AFVs are purpose-built designs that surround all components with substantial protection. Unless otherwise stated, any vehicle without a soft-skinned notation is considered an AFV. Because of the nature of their armor - solid slabs of metal, ceramic composite, or polycarbonate glass analogs - AFVs do not have weak spots to speak of. Their armor always applies against attacks, and characters who are fully within them cannot be targeted directly.

Damage Results

Each minor or major damage result requires a random roll to determine which vehicle component suffers damage. The following tables contain both major and minor hits for vehicles of all configurations. All rolls are d10.

Minor Damage	
Die	Hull
1-2	Crew
3-4	Passenger
5-6	Cargo
7	Aux
8	Comm
9	Sensor
10	Major hull
Major Damage	
Die	Hull
1-4	Engine
5-7	Fuel
8-9	Weapon
10	Ammo

Table 8e: Standard Configuration Damage Results

Minor Damage			
Die	Turret (Turreted)	Turret (CIH)	Hull
1	Crew	Crew*	Crew
2	Crew	Crew*	Crew
3	Crew	Comm	Passenger
4	Comm	Comm	Passenger
5	Comm	Sensor	Cargo
6	Comm	Sensor	Cargo
7	Sensor	Sensor	Aux
8	Sensor	Traverse	Comm
9	Traverse	Traverse	Sensor
10	Major turret	Major turret	Major hull
Major Damage			
Die	Turret (Turreted)	Turret (CIH)	Hull
1	Crew x2	Crew*	Engine
2	Crew x2	Crew*	Engine
3	Weapon	Weapon	Engine
4	Weapon	Weapon	Fuel
5	Weapon	Weapon	Fuel
6	Weapon	Weapon	Fuel
7	Ammo	Ammo	Aux
8	Ammo	Ammo	Ammo
9	Ammo	Ammo	Ammo
10	Minor hull	Minor hull	Ammo

* For a CIH vehicle with an unmanned turret, any Turret/Crew result instead strikes the remote operation systems (e.g. the weapon servos or camera).

Table 8f: Turreted Configuration Damage Results



Minor Damage		
Die	Hull	Waterline
1	Crew	Crew
2	Crew	Cargo
3	Cargo	Cargo
4	Passenger	Aux
5	Passenger	Flotation
6	Aux	Flotation
7	Aux	Flotation
8	Comm	Flotation
9	Sensor	Flotation
10	Major hull	Major waterline
Major Damage		
Die	Hull	Waterline
1	Crew x2	Crew x2
2	Crew x2	Engine
3	Crew x2	Engine
4	Weapon	Engine
5	Weapon	Fuel
6	Weapon	Fuel
7	Ammo	Steering
8	Ammo	Steering
9	Cargo x2	Ammo
10	Fire	Minor hull

Table 8g: Flush Deck Damage Results

Minor Damage			
Die	Superstructure	Hull	Waterline
1	Crew	Crew	Cargo
2	Crew	Crew	Cargo
3	Aux	Cargo	Aux
4	Aux	Cargo	Aux
5	Comm	Passenger	Flotation
6	Comm	Passenger	Flotation
7	Sensor	Aux	Flotation
8	Sensor	Aux	Flotation
9	Weapon	Aux	Flotation
10	Major superstructure	Major hull	Major waterline
Major Damage			
Die	Superstructure	Hull	Waterline
1	Crew x2	Crew x2	Crew x2
2	Crew x2	Crew x2	Engine
3	Crew x2	Crew x2	Engine
4	Weapon	Weapon	Engine
5	Weapon	Weapon	Fuel
6	Weapon	Weapon	Fuel
7	Ammo	Ammo	Steering
8	Ammo	Ammo	Steering
9	Fire	Cargo x2	Ammo
10	Minor hull	Fire	Minor hull

Table 8h: Superstructure Configuration Damage Results

Example: A BTR-80 suffers a turret hit with a damage value (after Armor takes effect) of 49. This indicates two major damage results. The BTR has a CIH configuration, so the attacker rolls 1d10 twice on the Turreted and CIH Configuration table, using the Turret (CIH) column and the major damage results. The die results are 4 and 10. The 4 indicates a randomly-selected weapon

system in the turret is disabled, while the 10 indicates secondary damage to the vehicle's hull as a minor damage result. The attacker rolls 1d10 again for the minor hull damage. A die roll of 3 indicates a Passenger result.

Vehicle Systems

When a bullet pierces a character's lung or a blade severs a finger, his overall physical condition deteriorates due to pain and shock. Vehicles, however, are collections of independent devices, and damage to one of these doesn't always affect the ability of the rest to function. For game purposes, each major component of a vehicle is considered a separate *system*. The results of the minor and major vehicle hit tables indicate damage to individual systems within the vehicle.

Like any other piece of equipment, a vehicle system has three damage states: working, disabled, and destroyed. Whenever a working system suffers a hit, it becomes disabled. An already-disabled system that sustains another hit is automatically destroyed. For game purposes, both disabled and destroyed systems are unusable. The difference is that a disabled system can be repaired, but a destroyed system is only fit for spare parts or scrap.

If a roll indicates a system the vehicle never had, re-roll that result. However, if a roll indicates a system previously destroyed, the result stands and the hit serves only to further pulverize the debris.

Ammo

Randomly select the ammunition supply of one of the vehicle's weapons. The weapon itself does not sustain damage, but the storage and feed mechanism for its ammunition suffers the hit. In addition to mechanical damage, roll 1d10x10 to determine the percentage of remaining ammunition destroyed.

If the hit comes from an incendiary or explosive damage source and the ammunition in question is likewise incendiary or explosive, roll percentile. If the result is less than or equal to the attack's final damage value, the vehicle explodes. If explosive or incendiary ammo storage is damaged by a vehicle fire, it automatically explodes.

Aux

Randomly select one of the vehicle's auxiliary systems. If the vehicle has no such systems, treat this as a Cargo result.

Cargo

Randomly select 1d3 items in the vehicle's cargo area. Each item becomes damaged, or is destroyed if it was already damaged.

Comm

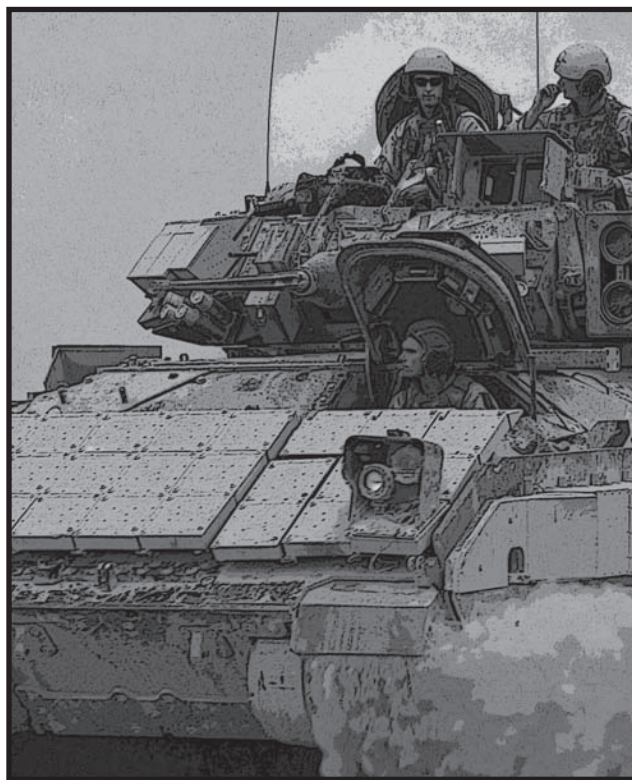
Randomly select one of the vehicle's communication systems. An entertainment system is *not* considered a communication system, regardless of the size of its subwoofers.

Crew

Randomly select one occupied crew position. The character in it suffers a single injury to a random location. Roll 1d10 to determine the severity of the injury: 1-3 slight, 4-6 moderate, 7-8 serious, 9-10 critical. On a result of 9 or less, the severity of the injury is reduced by one stage if the victim is wearing body armor covering the affected hit location.

Engine

The vehicle loses all motive power. It may only roll downhill or float along with the current. Any other systems dependent on the vehicle's engine for electrical power become unusable.



Fire

The vessel automatically catches fire (see Vehicle Fires, following).

Flotation

The vessel is holed at or below its waterline. In addition to the effects of the waterline hit (see Waterline Hits, following), the vessel loses the same amount of buoyancy at the end of every exchange of fire until it sinks or is run aground.

Fuel

The vehicle's base fuel capacity is reduced by 1d10x10%. Any fuel in excess of the newly-reduced capacity is lost.

If the hit comes from an incendiary or explosive damage source, roll percentile. If the result is less than or equal to the attack's final damage value, the vehicle catches fire. For the purposes of this roll, the final damage value is modified by some fuel sources: -50 for wood, -40 for coal, +10 for diesel, and +20 for aviation gas or jet fuel.

Passenger

Randomly select 1d3 occupied passenger positions. Each affected character suffers the effects described in the crew damage result (above).

Sensor

Randomly select one of the vehicle's sensor systems.

Steering

A watercraft has no suspension as such, but its rudder mechanism can be damaged. The vessel can still move (assuming it hasn't suffered an Engine damage result), but only in a straight line. All control checks automatically fail.

Traverse

The vehicle's turret is jammed and can no longer turn independently. Any further attacks with a turret-mounted weapon require the driver to turn the entire vehicle.

Weapon

Randomly select one of the vehicle's weapons that is mounted in the affected location. If the weapon is stabilized, there is a 25% chance of the stabilization system, rather than the weapon, suffering the effects of the hit.

Suspension Hits

A vehicle's *suspension* is treated somewhat differently from other components, as it is both a system and a hit location. When a vehicle suffers a suspension hit, reduce its base speed by 25% for each minor damage result and 50% for each major damage result. Thus, a vehicle suffering two major damage results to its suspension is completely immobilized. In addition, a vehicle suffering from *any* suspension damage loses any bonus to control checks it might otherwise have provided.

Waterline Hits

Whenever a vessel suffers a hit to the Waterline location, it loses Buoyancy equal to the final damage value of the attack. This represents loss of structural integrity - in other words, water being inside the vessel, rather than outside where it belongs.

When a vessel loses one-third of its Buoyancy, it can no longer be pushed. In addition, there is a 50% chance of all cargo stored below deck becoming submerged. Effects of this immersion depend on the cargo in question.

When a vessel loses two-thirds of its Buoyancy, its engineering spaces are flooded and it has taken on too much additional weight for wind propulsion. It automatically sustains an Engine damage result. In addition, all cargo stored below deck is submerged.

When a vessel loses all its Buoyancy, it sinks. Any character still on board must succeed in an Aquatics (MUS, TN +1) skill check or go down with the ship. If a character is below deck when this occurs, his check suffers a -4 penalty.

Vehicle Fires

A vehicle can catch fire as a result of a fuel hit, a hit with an incendiary weapon, or, in the case of a watercraft, damage to any one of a myriad of flammable components. When a vehicle catches fire, it burns until it's destroyed or until the fire is extinguished.

A vehicle fire starts in a specific hit location: hull, turret, waterline, or superstructure. At the end of every exchange of fire, the fire has a 50% chance of spreading to every other hit location on the vehicle not yet on fire (except the suspension). After this check is made, *every* burning location suffers one minor damage result from the fire.

A crewman or passenger can attempt to extinguish a fire in one hit location as an operational action. Flailing about with a wet blanket or similar improvised solution has a percentage chance of success equal to the character's CUF. Use of a hand-held fire extinguisher triples this chance.

Vehicle Explosions

Many vehicles carry the seeds of their own destruction. Ammunition and fuel damage, whether from direct attacks or vehicle fires, can result in explosions. When a vehicle explodes, it is destroyed. All crew and passengers are killed. After combat ends and the fires are extinguished, there is a 30% chance that each system is merely disabled and can be salvaged.

Simple Vehicles

Motorcycles, personal watercraft, and snowmobiles are all rather minimalist in their construction. Each of these vehicles consists of little more than engine, drive train, steering mechanism, and a seat for a single operator and maybe one or two passengers. Attacks on a simple vehicle treat it and its rider(s) as a single human-sized target.

A simple vehicle struck by an explosive projectile is destroyed automatically, and each of its riders suffers normal explosive damage at zero distance. When a simple vehicle is struck by a ballistic (i.e. non-explosive) projectile, roll 1d6 to determine the hit's effects.

On a result of 1, the attack strikes the vehicle's suspension. Resolve damage normally according to the vehicle's Armor value for its suspension. However, if the damage result after armor is greater than zero, the vehicle's suspension is disabled and the vehicle is immobilized until repaired.

On a result of 2, the attack strikes the vehicle's engine. Resolve damage against an Armor value of 2. If the final damage result is greater than zero, the vehicle suffers the normal effects of an Engine hit result.

On a result of 3, the attack strikes the vehicle's fuel tank. Resolve damage against an Armor value of 1. If the final damage result is greater than zero, the vehicle suffers the normal effects of a Fuel hit result.

On a result of 4 through 6, the attack strikes one randomly-selected rider. Resolve it as a standard hit on a character.

Extremely Simple Vehicles

Bicycles, canoes, and kayaks are as minimal as something can be and still be considered a vehicle. Attacks on an extremely simple vehicle treat it and its rider(s) as a single human-sized target.

As per simple vehicles, an extremely simple vehicle struck by an explosive projectile is destroyed automatically, and each of its riders suffers normal explosive damage at zero distance. When an extremely simple vehicle is struck by a ballistic (i.e. non-explosive) projectile, roll 1d6 to determine the hit's effects.

On a result of 1 through 3, the round strikes the vehicle itself. Resolve this as per the normal rules for damaging a simple item (see p. 154), using the vehicle's dominant construction material.

On a result of 4 through 6, the attack strikes one randomly-selected rider. Resolve it as a standard hit on a character.

VEHICLE TRAITS

CONSUMER VEHICLES

Consumer vehicles, as the category suggests, were widely available for individual purchase prior to the Collapse.

Simple Vehicles

The following vehicles are treated as simple vehicles (see p. 282).

Bicycle

A bicycle is only a vehicle in the most basic sense, as it typically includes nothing except a mechanism to enhance the rider's own muscle power for more efficient propulsion. Riding a bicycle is no less fatiguing, in terms of hours of heavy work, than marching. However, it is a more efficient means of travel over appropriate terrain.

A bicycle can accommodate only its rider. It has a cargo capacity of twice the rider's Muscle in kilograms, in addition to any equipment he carries on his person (subject to normal encumbrance rules). Bicycles are available in two varieties: street and mountain. Most postwar cottage industry production focuses on mountain bikes.

Street Bike: Suspension Std.; Weight 9 kg; Maintenance 1; Travel Speed (6 + Fitness)/1; Combat Speed (17 + [Fitness x3])/3. Street price \$250; Barter value GG50.

Mountain Bike: Suspension OR; Weight 14 kg; Maintenance 1; Travel Speed (5 + Fitness)/(4 + Fitness); Combat Speed (14 + [Fitness x3])/(11 + [Fitness x3]). Street price \$350; Barter value GG70.

Motorcycle, Cruiser

A large, moderately comfortable motorbike designed for long cross-country journeys on good roads.

Barter Value: GG2,100
Street Price: \$17,000
Suspension: Std
Crew: 1+1
Cargo: 50 kg
Weight: 370 kg
Travel Speed: 53/5 km/hr
Combat Speed: 147/14 m
Fuel: 25 L (G)
Fuel Cons: 5 L/hr
Maintenance: 2
Armor: Susp 1

Equipment
Sensors: Headlight.

Motorcycle, Off-Road

A typical "dirt bike" used by recreational riders and, rarely by the Twilight War, military scouts.

Barter Value: GG1,400
Street Price: \$5,500
Suspension: OR
Crew: 1+1
Cargo: 25 kg
Weight: 130 kg
Travel Speed: 40/12 km/hr
Combat Speed: 111/33 m
Fuel: 24 L (G)
Fuel Cons: 6 L/hr
Maintenance: 2
Armor: Susp 1

Equipment
Sensors: Headlight.

Snowmobile

Optimized for snow and ice, a snowmobile uses skis for steering and tracks for propulsion. On any surface other than snow and ice, control checks suffer a -2 penalty.

Barter Value: GG625
Street Price: \$5,000
Suspension: OR
Crew: 1+1
Cargo: 50 kg
Weight: 340 kg
Travel Speed: 43/21 km/hr
Combat Speed: 120/58 m

Fuel: 50 L (G) or 50 L (D)
Fuel Cons: 5 L/hr
Maintenance: 2
Armor: Susp 2

Equipment
Sensors: Headlight.
Aux: Heated seats and handlebars.

Passenger Vehicles

Economy Car

A small, light commuter vehicle whose main prewar advantages were low price and high fuel efficiency. Hybrid versions were also available, having become substantially popular due to oil price increases in the late 2000s.

Barter Value: GG2,100 (hybrid GG3,500)
Street Price: \$17,000 (hybrid \$21,000)
Configuration: Standard
Suspension: Std
Crew: 1+3
Cargo: 150 kg (hybrid 100 kg)
Weight: 1.1 tons (hybrid 1.2 tons)
Travel Speed: 48/5 km/hr
Combat Speed: 133/14 m
Fuel: 50 L (G) (hybrid 50 L (GH))
Fuel Cons: 3.6 L/hr (hybrid 2.3 L/hr)
Maintenance: 3 (hybrid 6)
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 2.

Equipment
Sensors: Headlights.

Full-Size Car

A standard passenger car designed to seat five adults in relative comfort. Most corporate and government fleet vehicles were of this type. Diesel-powered designs were popular in Europe but never widely accepted in North America. In the early 2010s, several hybrid models were introduced, building on the popularity of hybrid economy cars.

Barter Value: GG3,250 (hybrid GG5,500)
Street Price: \$26,000 (hybrid \$33,000)
Configuration: Standard
Suspension: Std
Crew: 1+4
Cargo: 350 kg (hybrid 250 kg)
Weight: 1.6 tons (hybrid 1.7 tons)
Travel Speed: 66/5 km/hr
Combat Speed: 183/14 m
Fuel (G): 60 L (G) (hybrid 60L (GH))
Fuel (D): 60 L (D) (hybrid 60 L (DH))
Fuel Cons (G): 6.1 L/hr (hybrid 4.1 L/hr)
Fuel Cons (D): 4.2 L/hr (hybrid 2.8 L/hr)
Maintenance: 4 (hybrid 8)
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 2

Equipment
Sensors: Headlights.

Muscle Car

A large, powerful car designed for straight-line acceleration and top speed. In 2013, muscle cars are impractical, but popular with survivors of a certain mindset.

Vehicles and Encumbrance

Most vehicles are stable by design, but a few rely on the rider's own sense of balance for stability and control. This latter category includes bicycles, motorcycles, snowmobiles, canoes, kayaks, and personal watercraft, as well as mounts. An encumbered character is less able to maintain his balance and suffers a penalty to control checks: -1 for moderate encumbrance, -2 for heavy encumbrance, and -4 if overloaded.

Barter Value: GG3,500
Street Price: \$30,000
Configuration: Standard
Suspension: Std
Crew: 1+3
Cargo: 150 kg
Weight: 1.6 tons
Travel Speed: 75/5 km/hr
Combat Speed: 209/14 m
Fuel: 60 L (G)
Fuel Cons: 6.1 L/hr
Maintenance: 4
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 2

Equipment
Sensors: Headlights.

Sports Car

A light, swift, agile, and now *extremely* impractical vehicle. In any opposed control check, a sports car provides its driver a +2 bonus.

Barter Value: GG5,000
Street Price: \$60,000
Configuration: Standard
Suspension: Std
Crew: 1+1
Cargo: 50 kg
Weight: 1.2 tons
Travel Speed: 90/1 km/hr
Combat Speed: 250/3 m
Fuel: 50 L (G)
Fuel Cons: 6.2 L/hr
Maintenance: 6
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 2

Equipment
Sensors: Headlights.

Jeep

A light 4x4 vehicle designed for extensive off-road use. Formerly a military staple, jeeps were supplanted by light tactical vehicles in the 1980s.

Barter Value: GG5,000
Street Price: \$20,000
Configuration: Standard
Suspension: OR
Crew: 1+3
Cargo: 250 kg
Weight: 1.2 tons
Travel Speed: 40/11 km/hr
Combat Speed: 111/31 m
Fuel: 50 L (G)
Fuel Cons: 4.8 L/hr

Maintenance: 4
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 3

Equipment
Sensors: Headlights.
Aux: Self-recovery winch (1.5-ton limit, not suitable for towing).

Light SUV

Despite "Sports" and "Utility," few of these vehicles actually had any off-road capability greater than a passenger car's. A few manufacturers offered hybrid versions.

Barter Value: GG2,750 (hybrid GG4,800)
Street Price: \$22,000 (hybrid \$29,000)
Configuration: Standard
Suspension: Std
Crew: 1+3
Cargo: 350 kg (hybrid 300 kg)
Weight: 1.8 tons (hybrid 1.9 tons)
Travel Speed: 59/8 km/hr
Combat Speed: 164/22 m
Fuel: 60 L (G) (hybrid 60 L (GH))
Fuel Cons: 4.9 L/hr (hybrid 3.8 L/hr)
Maintenance: 4 (hybrid 8)
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 2

Equipment
Sensors: Headlights.

Heavy SUV

Unlike their smaller brethren, most heavy SUVs had at least moderate off-road capabilities. Luxury models traded this advantage for leather seats and premium sound systems (double Street Price and change Suspension to Std; no other game effect).

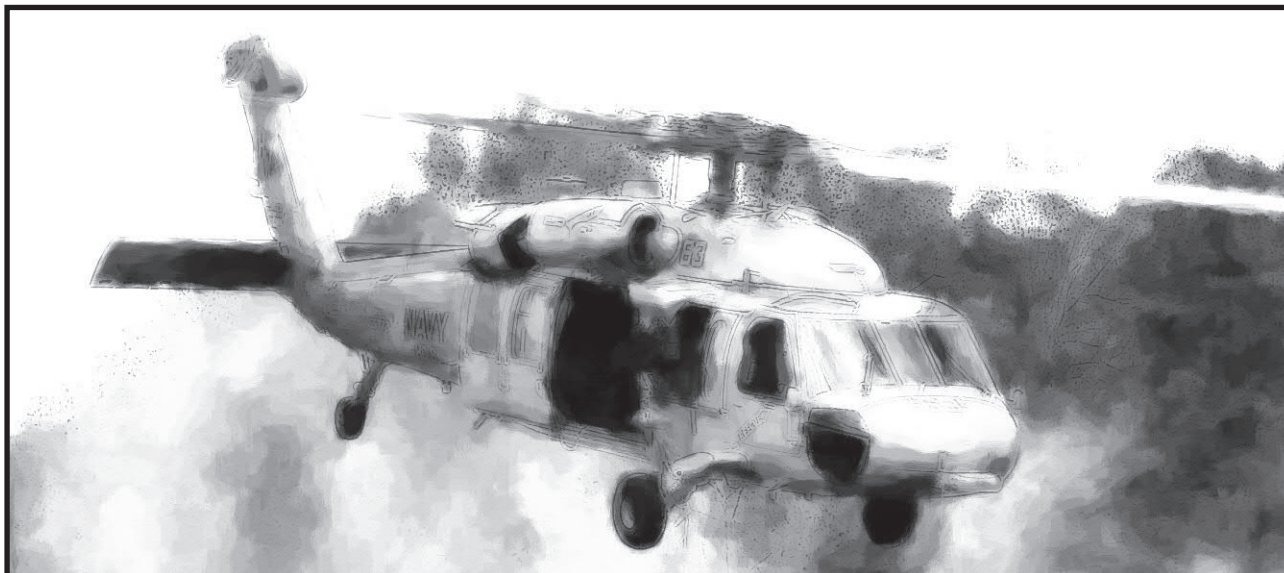
Barter Value: GG4,500
Street Price: \$36,000
Configuration: Standard
Suspension: OR
Crew: 1+4
Cargo: 500 kg (+4 tons towed)
Weight: 2.1 tons
Travel Speed: 59/8 km/hr
Combat Speed: 164/22 m
Fuel: 70 L (G) or 70 L (D)
Fuel Cons: 6 L/hr (G) or 5.4 L/hr (D)
Maintenance: 4
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 3

Equipment
Sensors: Headlights.

Light Pickup

A small utility truck, seen worldwide in a variety of roles. Cargo carried in the bed is exposed and can be targeted independently of the vehicle.

Barter Value: GG1,750
Street Price: \$14,000
Configuration: Standard
Suspension: OR
Crew: 1+2
Cargo: 500 kg (+2 tons towed)
Weight: 1.5 tons
Travel Speed: 48/8 km/hr
Combat Speed: 133/22 m



Fuel: 60 L (G)
Fuel Cons: 4.6 L/hr
Maintenance: 4
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 3

Equipment
Sensors: Headlights.

Heavy Pickup

A larger, heavier pickup, sold mostly on the North American market. This entry represents a “king cab” model with a second row of seats. Standard-cab models have Crew 1+2 and Cargo 1,000 kg.

Barter Value: GG2,750
Street Price: \$22,000
Configuration: Standard
Suspension: OR
Crew: 1+4
Cargo: 750 kg (+4.5 tons towed)
Weight: 1.9 tons
Travel Speed: 48/8 km/hr
Combat Speed: 133/22 m
Fuel: 70 L (G) or 70 L (D)
Fuel Cons: 9 L/hr (G) or 8 L/hr (D)
Maintenance: 4
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 3

Equipment
Sensors: Headlights.
Aux: Self-recovery winch (3-ton limit, not suitable for towing).

Van

A large box on wheels with an engine, available in both cargo and passenger models.

Barter Value: GG4,000
Street Price: \$32,000
Configuration: Standard
Suspension: Std
Crew: 1+1 or 1+9
Cargo: 1.5 tons or 300 kg
Weight: 3.5 tons
Travel Speed: 53/8 km/hr
Combat Speed: 147/22 m

Fuel: 80 L (G) or 80 L (D)
Fuel Cons: 11 L/hr (G) or 10 L/hr (D)
Maintenance: 4
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 2

Equipment
Sensors: Headlights.

COMMERCIAL VEHICLES

The heavier end of the civilian market is represented by a variety of cargo and mass transit vehicles. Some of the following archetypal designs are common in military service as well.

Truck, 2.5-ton

A commercial delivery truck, typically used for intra-city transport. Military versions are the core of transportation units in armies worldwide.

Barter Value: GG4,000 (military GG4,500)
Street Price: \$30,000 (military \$36,000)
Configuration: Standard
Suspension: Std (military OR)
Crew: 1+2
Cargo: 2.5 tons (+6 tons towed)
Weight: 6.5 tons
Travel Speed: 30/5 km/hr
Combat Speed: 83/14 m
Fuel: 190 L (D)
Fuel Cons: 24 L/hr
Maintenance: 8
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 3

Equipment
Sensors: Headlights.
Aux (civilian only): hydraulic lift on tailgate (750 kg capacity).

Truck, 5-ton

A progressively heavier cargo vehicle. As with the 2.5-ton truck, available in both civilian and military iterations.

Truck Variations

The 2.5-, 5-, and 10-ton trucks described here are available in a variety of configurations. Traits are given for standard open-bed trucks. For closed cargo boxes or bulk liquid tank trucks, add 10% to the vehicle's weight. The capacity of a bulk liquid tank is respectively 2,200, 5,500, or 9,500 liters, and standard cargo-handling equipment is replaced with an electric pump with a flow rate of 100 liters per minute.

Barter Value: GG5,000 (military GG6,000)
Street Price: \$40,000 (military \$48,000)
Configuration: Standard
Suspension: Std (military OR)
Crew: 1+2
Cargo: 5 tons (+11 tons towed)
Weight: 9 tons
Travel Speed: 30/7 km/hr
Combat Speed: 83/19 m
Fuel: 240 L (D)
Fuel Cons: 30 L/hr
Maintenance: 8
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 3

Equipment

Sensors: Headlights.

Aux (civilian only): hydraulic lift on tailgate (1 ton capacity).

Technicals and Gun Trucks

For decades prior to the Twilight War, the *technical* was a feature of brush wars around the world. Insurgents without access to actual combat vehicles have improvised by taking pickup trucks, welding on metal plates for "armor," and cobbling together a gun mount in the bed. The result is better than a soft-skinned combat vehicle, but only barely. The gunner is fully exposed in the bed, and the vehicle is still considered soft-skinned despite its upgraded Armor value.

A *gun truck* is a technical writ large. Originally developed by transportation units in Vietnam for convoy escort duty, this is a 2.5-ton or 5-ton military cargo truck that's received similar field-expedient treatment, usually featuring heavier armor and multiple gun mounts. A gun truck's high sides do provide protection for the gunners, but it lacks overhead armor. Although a gun truck is considered soft-skinned, attacks will strike the armor 75% of the time rather than the base 50%.

PCs with suitable supplies and tools (at minimum, mechanic's tools and a cutting/welding torch) can convert an existing vehicle into a technical or gun truck. This is an incremental Mechanics/Machinist (MUS) check with a period of 5 man-hours of work and a target total of 3 for a technical, 6 for a 2.5-ton gun truck, or 10 for a 5-ton gun truck. Conversion of other vehicles is possible only at the GM's discretion.

Technical Traits: Converting a consumer vehicle to a technical reduces its cargo capacity by 500 kg, increases all hull Armor values by 1, and adds one crew position with a weapon mount.

Gun Truck Traits: A gun truck loses 80% of its cargo capacity. If it's built on a 2.5-ton chassis, it gains two crew positions with weapon mounts, and all hull Armor values increase by 2. A 5-ton gun truck gains four crew positions with weapon mounts, and all hull Armor values increase by 3.

Truck, 10-ton

A yet heavier cargo truck, also available in civilian and military versions.

Barter Value: GG7,500 (military GG8,500)
Street Price: \$60,000 (military \$70,000)
Configuration: Standard
Suspension: OR
Crew: 1+2
Cargo: 10 tons (+11 tons towed)
Weight: 19 tons
Travel Speed: 30/7 km/hr
Combat Speed: 83/19 m
Fuel: 480 L (D)
Fuel Cons: 60 L/hr
Maintenance: 8
Armor (soft-skinned): HF 2, HS 2, HR 1, Susp 4

Equipment

Sensors: Headlights.

Aux: cargo-handling crane (3-ton load limit).

Bus, Coach

A standard long-distance coach designed for intercity travel.

Barter Value: GG4,200
Street Price: \$420,000
Configuration: Standard
Suspension: Std
Crew: 1+45
Cargo: 3 tons
Weight: 13.5 tons
Travel Speed: 43/2 km/hr
Combat Speed: 120/14 m
Fuel: 480 L (D)
Fuel Cons: 38 L/hr
Maintenance: 8
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 3

Equipment

Sensors: Civilian mapping GPS, headlights

Aux: Chemical toilet.

Motor Home

Mobile living quarters come in a variety of sizes. The following traits represent a medium-sized family unit built on a minibus chassis.

Barter Value: GG8,000
Street Price: \$70,000
Configuration: Standard
Suspension: Std
Crew: 1+4
Cargo: 500 kg
Weight: 4 tons
Travel Speed: 35/4 km/hr
Combat Speed: 97/12 m
Fuel: 100 L (D)
Fuel Cons: 8 L/hr
Maintenance: 6
Armor (soft-skinned): HF 1, HS 1, HR 1, Susp 3

Equipment

Sensors: Civilian mapping GPS, headlights.

Aux: Diesel generator (1.25 kW, 2 L/hr), living quarters for 6 (chemical toilet, kitchenette, shower, water heater).

Semi-Tractor

The backbone of commercial ground transport in most developed nations. The following traits are typical for a long-haul “sleeper” cab containing a small bunk area.

Barter Value: GG7,000
Street Price: \$125,000
Configuration: Standard
Suspension: Std
Crew: 1+2
Cargo: 250 kg (+41 tons towed)
Weight: 11 tons
Travel Speed: 43/4 km/hr
Combat Speed: 120/11 m
Fuel: 950 L (D)
Fuel Cons: 17 L/hr
Maintenance: 12
Armor (soft-skinned): HF 2, HS 2, HR 1, Susp 4

Equipment

Comm: Vehicular CB radio
Sensors: Civilian mapping GPS, headlights.
Aux: Sleeping quarters for 2 (bunks and very small appliances).

Trailers

The following containers on wheels are designed to be towed behind any vehicle with a towing capacity listed. Unless otherwise noted, traits are given for open flatbed trailers. Increase weight by 10% for an enclosed van-type trailer.

Cargo Trailers

Light cargo trailers are designed to be towed behind pickups or SUVs, while medium and heavy designs are intended for use with commercial trucks. When towing a cargo trailer, a vehicle’s fuel consumption is doubled.

Semi-Trailers

The following heavy trailers can be pulled only by a semi-tractor. Fuel economy when towing a full load is already factored into the tractor’s traits.

MILITARY VEHICLES

Militaries have used of self-powered vehicles since the debut of motor transport that could move more weight than a horse could carry. In comparison to civilian vehicles, military models tend to be more rugged, expensive, and maintenance-intensive, but will withstand abuse that would obliterate a civilian design in days.

Truck, Tactical

Most armies use some variant of an unarmored 4x4 truck for patrol and light transport operations. The following generic traits can be applied to model the American HMMWV, the British Land Rover WMIK, the Russian UAZ-469, the Swiss Mowag Eagle, and other similar designs.

Barter Value: GG6,250
Street Price: \$50,000
Configuration: Standard
Suspension: OR
Crew: 1+5
Cargo: 1.25 tons
Weight: 2.4 tons

Equipment Listings

Some vehicle descriptions include notations of (C), (D), (G), or (L) with specific items. These respectively indicate that the equipment is mounted for the use of the vehicle’s commander, driver, gunner, or loader, respectively. In all cases, the vehicle descriptions here reflect depot-fresh configurations. Few combat vehicles exactly match these traits after the Twilight War.

Travel Speed: 40/10 km/hr
Combat Speed: 111/28 m
Fuel: 90 L (D)
Fuel Cons: 8 L/hr
Maintenance: 6
Armor (soft-skinned): HF 1, HS 1, HR 1; Susp 3

Equipment

Armament: Weapon mount.
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights.
Aux: Self-recovery winch.

Truck, Tactical, Up-Armored

In response to various asymmetrical warfare experiences in the 1990s and 2000s, many militaries procured bolt-on armor kits for their existing tactical trucks. These were more effective than “technical” conversions, but significantly impacted payload and fuel economy. In addition, the armor sometimes buckles under damage, trapping the crew inside the vehicle. Because the windows are replaced with polycarbonate laminate that does not open, models intended for use in hot environments also feature air conditioning, which is not standard equipment for most military vehicles.

Barter Value: GG8,750
Street Price: \$70,000
Configuration: Std
Suspension: OR
Crew: 2 (driver, gunner) +2
Cargo: 500 kg
Weight: 3 tons
Travel Speed: 40/10 km/hr
Combat Speed: 111/28 m
Fuel: 90 L (D)
Fuel Cons: 11 L/hr
Maintenance: 8
Armor: HF 4, HS 4, HR 4; Susp 3

Equipment

Armament: Protected weapon mount.
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights.
Aux: Self-recovery winch.

Armored Car

A 4x4 wheeled vehicle with sloped armor and run-flat tires. Armored cars frequently were deployed as reconnaissance assets or rear area security vehicles, but the years before the Twilight War increasingly saw them employed in convoy escort and patrol roles. Police special tactics units in some urban areas also used armored cars (usually without weapon mounts). The following traits represent designs such as the French VBL, the American Cadillac

Cargo Trailer	Barter Value	Street Price	Susp.	Cargo	Weight	Maint.	Armor
Light	GG250	\$2,500	Std	1 ton	200 kg	1	HF 1, HS 1, HR 1, Susp 2
Medium	GG400	\$4,000	OR	2.5 tons	600 kg	2	HF 1, HS 1, HR 1, Susp 3
Heavy	GG800	\$8,000	OR	5 tons	1 ton	2	HF 1, HS 1, HR 1, Susp 4
Semi Trailer	Barter Value	Street Price	Susp.	Cargo	Weight	Maint.	Armor
Flatbed	GG200	\$20,000	Std	35 tons	6 tons	2	Susp 4
Tank	GG500	\$50,000	Std	27k liters	7 tons	4	HF 2, HS 2, HR 2, Susp 4
Van	GG300	\$30,000	Std	30 tons	5 tons	3	HF 1, HS 1, HR 1, Susp 4

Table 8i: Trailers

Gage Peacekeeper, and the Polish Dzik series. Most armored cars are amphibious at ¼ their cross-country speeds.

Barter Value: GG32,500
Street Price: \$65,000
Configuration: Std
Suspension: OR
Crew: 3 (driver, gunner, commander)
Cargo: 600 kg
Weight: 3.5 tons
Travel Speed: 35/10 km/hr
Combat Speed: 97/28 m
Fuel: 100 L (D)
Fuel Cons: 12 L/hr
Maintenance: 8
Armor: HF 3, HS 2, HR 2; Susp 3

Equipment

Armament: Weapon mount (usually equipped with a general-purpose machine gun).
Comm: Military vehicular radio.
Sensors: Headlights, searchlight (G).
Aux: Amphibious running gear.

Mine-Protected Vehicle

During the 1990s and 2000s, several peacekeeping operations saw increased loss rates of soft-skinned vehicles due to IEDs. Mine-Protected Vehicles (MPVs) were a response to this trend. High suspensions, V-shaped hulls, and heavier underbody armor all were design features meant to mitigate the effects of ground-level explosions. When sustaining direct explosive damage from beneath, an MVP's hull resists the attack with Armor 12. In addition, all Armor values are tripled against blast and fragmentation damage.

Barter Value: GG25,000
Street Price: \$125,000
Configuration: Standard
Suspension: OR
Crew: 2+4
Cargo: 2.2 tons
Weight: 8.9 tons
Travel Speed: 40/8 km/hr
Combat Speed: 111/22 m
Fuel: 210 L (D)
Fuel Cons: 20 L/hr
Maintenance: 10
Armor: HF 4, HS 3, HR 3; Susp 4

Equipment

Armament: Protected weapon mount.
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights.

Aux: Self-recovery winch.

BTR-80

The BTR-80 is a Russian-made 8x8 APC in use with most former Warsaw Pact countries and many Third World nations. Crew hatches are present on the turret and above the driver's and commander's seats, and passenger doors are located on both sides of the hull, between the forward and rear pairs of axles.

Barter Value: GG40,000
Street Price: \$80,000
Configuration: CIH
Suspension: OR
Crew: 3 (driver, gunner, commander) +7
Cargo: 2.3 tons
Weight: 13.6 tons
Travel Speed: 27/20 km/hr
Combat Speed: 75/56 m
Fuel: 300 L (D)
Fuel Cons: 40 L/hr
Maintenance: 12
Armor: HF 9, HS 4, HR 4; TF 8, TS 4, TR 4; Susp 5

Equipment

Armament: KPV; coaxial PKM (G); 7 firing ports (1 front [C], 3 left, 3 right).
Ammo: 500 rounds of belted 14.5mm ammo; PKM ammo carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights; IR searchlight on turret
Aux: Amphibious running gear; NBC defense system; self-recovery winch.

M1126 Stryker ICV

The M1126 Infantry Carrier Vehicle is the most common configuration in the Stryker family of eight-wheeled APCs. At the outbreak of the Twilight War, it was solely in U.S. Army service, and was one of the cornerstones of American light infantry doctrine. The M1126's remote weapons mount (considered an unmanned turret for game purposes) will accept an FN MAG, Browning M2HB, or Mk19 AGL. Access is through four roof hatches and a rear personnel door.

Barter Value: GG1,000,000
Street Price: \$2,000,000
Configuration: CIH
Suspension: OR
Crew: 2 (driver, commander) +9
Cargo: 1.8 tons
Weight: 16.5 tons
Travel Speed: 33/15 km/hr
Combat Speed: 97/42 m
Fuel: 200 L (D)

Fuel Cons: 35 L/hr
Maintenance: 14
Armor: HF 10, HS 6, HR 6; TF 2, TS 2, TR 2; Susp 5

Equipment

Armament: Modular remote weapons mount (see text; standard stabilization).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio; tactical data link.
Sensors: Headlights; night vision gunsight (C); night vision system (D).
Aux: NBC defense system; self-recovery winch.

Wz551

This Chinese-built 6x6 APC saw use throughout Southeast Asia during the Twilight War. Traits are typical of a variety of locally-manufactured wheeled APCs throughout the world.

Barter Value: GG100,000
Street Price: \$200,000
Configuration: CIH
Suspension: OR
Crew: 2 (driver, commander) +11
Cargo: 1.6 tons
Weight: 14.7 tons
Travel Speed: 30/15 km/hr
Combat Speed: 83/42 m
Fuel: 290 L (D)
Fuel Cons: 24 L/hr
Maintenance: 12
Armor: HF 4, HS 3, HR 3; TF 3, TS 3, TR 3; Susp 5

Equipment

Armament: NSV; coaxial PKM (G); 8 firing ports (4 left, 4 right; frontmost on each side will accept a SAW or GPMG). Mounted machine guns are not actual Soviet designs, but are close Chinese copies.
Ammo: 1,000 rounds of belted 12.7mm ammo; 1,000 rounds of belted 7.62x54mm ammo.
Comm: Military vehicular radio.
Sensors: Headlights; night vision system (C, D).
Aux: Amphibious running gear.

FV510 Warrior

The Warrior is a British-built tracked APC, under-armed by modern IFV standards and mounting a dangerously problematic main gun. A normal battle load contains enough supplies to keep the vehicle's infantry squad in combat for 48 hours without resupply, though the Warrior's own endurance is considerably more limited. Access is through a rear door and individual crew hatches atop the hull and turret.

Barter Value: GG1,415,000
Street Price: \$2,830,000
Configuration: Turreted
Suspension: Trk
Crew: 3 (driver, gunner, commander) +7
Cargo: 1.5 tons
Weight: 24 tons
Travel Speed: 25/16 km/hr
Combat Speed: 70/44 m
Fuel: 770 L (D)
Fuel Cons: 170 L/hr
Maintenance: 24
Armor: HF 6, HS 4, HR 3; TF 6, TS 2, TR 2; Susp 5

L21A1 RARDEN

This 30mm autocannon is the primary weapon of the FV510 and several other British-made combat vehicles. Unlike most autocannon, it is not belt-fed, but accepts up to three 3-round clips (one 6-tick Reload action loads a single clip). The feed mechanism is problematic - whenever an attack action results in the ammunition supply dropping to 3 rounds or less, there is a 50% chance of the weapon jamming, requiring a full operational action to clear.

Capacity: 9 rounds
Range: Open/Extreme.
ROF: S/B2
Speed: 8/12/18

Ammunition

L21A1 Rarden ammunition weighs 0.7 kg per round, 2.3 kg per clip, or 33 kg for a case of 12 3-round clips. Costs are per case.

Round	Damage	Penetration	Explosion/ Effects	Barter Value	Street Price
APDS	27	x1/x1	-	GG1,750	\$3,500
HE	10	-	Radius 5m, Blast 10, Frag 4	GG450	\$900

Table 8j: L21A1 30mm Autocannon Traits

L94A1

The Fv510 Warrior's secondary weapon is an electrically-driven 7.62mm chain gun. For game purposes, the L94A1 is identical to the FN MAG, except that it requires 0.4 kW of electrical power to operate (as per the M242 Bushmaster). Under normal circumstances, the vehicle's engine provides this power as part of its normal operating load.

Equipment

Armament: 30mm RARDEN autocannon, coaxial L94A1 chain gun (G).
Ammo: 228 rounds of 30mm; 2,200 rounds of belted 7.62mm NATO.
Comm: Military vehicular radio.
Sensors: Headlights; thermal and night vision system (D); thermal and night vision gunsights (C, G); laser rangefinder; military GPS receiver.
Aux: NBC defense system.

M113

Since its introduction in the 1960s, the venerable M113 has undergone several upgrades, been exported and license-built around the world, and served as the basis for dozens of specialist vehicles. This entry represents the most recent upgraded APC variant, with lighter modern armor reducing overall weight and restoring the original design's amphibious capability. Access is through top hatches for the driver and commander, a rear troop ramp, and a large troop hatch on the rear deck. The M113 lacks NBC seals, but is equipped with filtered breathing mask systems for the crew and passengers.

Barter Value: GG630,000
Street Price: \$1,260,000
Configuration: Standard

Suspension: Trk
Crew: 2 (driver, commander) +11
Cargo: 2 tons
Weight: 12.3 tons
Travel Speed: 22/15 km/hr
Combat Speed: 61/42 m
Fuel: 360 L (D)
Fuel Cons: 36 L/hr
Maintenance: 14
Armor: HF 6, HS 4, HR 4; Susp 5

Equipment
Armament: Protected weapon mount (C; usually equipped with M2HB).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights.
Aux: Amphibious running gear; NBC defense system.

BMP-2

The widely-exported BMP-2 is a well-rounded IFV dating to the late Cold War. Variants were license-built in Czechoslovakia and India, and the vehicle saw Twilight War service throughout Africa, Asia, and Eastern Europe.

Barter Value: GG950,000
Street Price: \$1,900,000
Configuration: Turreted
Suspension: Trk
Crew: 3 (driver, gunner, commander) +7
Cargo: 1.7 tons
Weight: 14.3 tons
Travel Speed: 22/15 km/hr
Combat Speed: 61/42 m
Fuel: 460 L (D)
Fuel Cons: 130 L/hr
Maintenance: 18
Armor: HF 4, HS 3, HR 3; TF 5, TS 3, TR 2; Susp 5

2A42

The 30mm 2A42 is the main weapon of the BMP-2 and several other Soviet-designed combat vehicles and helicopters.

Capacity: In the BMP-2, the 2A42 feeds from two separate belts with a total capacity of 500 rounds. This enables the gunner to switch between two different ammunition types as a 1-tick action.
Range: Open/Extreme.
ROF: S/B2/B4
Speed: 8/12/18

Ammunition

30mm 2A42 ammunition weighs 0.8 kg per round, or 32 kg for a case of 33 linked rounds. Costs are per case.

Round	Damage	Penetration	Explosion/Effects	Barter Value	Street Price
APDS	21	x1/x1	-	GG1,500	\$3,000
API	18	x1/x2	-	GG450	\$900
Frag	5	-	Radius 10m, Blast 5, Frag 6	GG350	\$700

Table 8k: 2A42 30mm Autocannon Traits

Equipment
Armament: 2A42 autocannon; AT-14 launcher; coaxial PKM (G).
Ammo: 1,000 rounds of 30mm; 5 AT-14 missiles; 2,000 rounds of belted 7.62x54mm.
Comm: Military vehicular radio.
Sensors: Headlights; night vision gunsight (G); laser rangefinder.
Aux: Amphibious running gear; NBC defense system.

M2A3 Bradley IFV

The standard IFV of the U.S. Army. In some battles, Bradleys' TOW launchers were responsible for more armor kills than the main guns of allied tanks, much to the tank crews' chagrin. The A3 version of the Bradley was the most recent standardized design, adding additional C3 electronics and armor upgrades. Access is via a rear passenger hatch and individual topside crew hatches. The gunner must exit via his hatch to reload the TOW launcher tubes; consequently, reloading takes twice as many ticks as normal.

Barter Value: GG1,600,000
Street Price: \$3,200,000
Configuration: Turreted
Suspension: Trk
Crew: 3+6
Cargo: 1.5 tons
Weight: 33 tons
Travel Speed: 22/12 km/hr
Combat Speed: 66/33 m
Fuel: 750 L (D)
Fuel Cons: 190 L/hr
Maintenance: 16

M242 Bushmaster

The 25mm Bushmaster is an automatic cannon in widespread use on American and NATO fighting vehicles. It requires an external power source; if the vehicle's engine is shut down or disabled, the M242 will not fire. In theory, enterprising characters could re-engineer the gun to run off another power source (0.75 kW required).

Capacity: In its M2 Bradley mounting, the Bushmaster is fed from two separate ammunition supplies (a 70-round box and a 230-round box), allowing the gunner to switch between two different ammunition types as a 1-tick action. The version mounted on most patrol boats (see p. 295) feeds from a single 150-round box.
Range: Sniping/Extreme.
ROF: S/B2
Speed: 8/12/18

Ammunition

M242 Bushmaster ammunition weighs 0.5 kg per round, or 18 kg for a case of 30 linked rounds. Costs are per case.

Round	Damage	Penetration	Explosion/Effects	Barter Value	Street Price
APDS	22	x1/x1	-	GG1,500	\$3,000
API	20	x1/x2	-	GG500	\$1000
HE	10	-	Radius 5m, Blast 10, Frag 4	GG400	\$800

Table 8l: M242 25mm Autocannon Traits

Armor: HF 14-Sp, HS 12-Sp, HR 6; TF 12-Sp, TS 6-Sp, TR 4-Sp; Susp 5

Equipment

Armament: M242 Bushmaster (good stabilization); TOW launcher (2 launch tubes); coaxial MAG (G).

Ammo: 900 rounds of 25mm; 7 TOW missiles; 2,200 rounds of belted 7.62mm NATO.

Comm: Military vehicular radio; tactical data link.

Sensors: Headlights; night vision system (D); thermal and night vision gunsights (C, G).

Aux: Amphibious running gear; NBC defense system.

M577 TOC

The M577 Tactical Operations Center is a command vehicle built on the M113 chassis. It is not a combat vehicle, instead being designed to function as a command center or mobile field office. It features a considerably higher profile than its parent design, as the passenger bay is expanded to allow staff to stand upright and to accommodate an array of communications equipment. The secondary generator is sufficient to run all onboard electronics; it feeds from the vehicle's own fuel tank but can be dismounted for noise reduction. Standard cargo includes a base station aerial, a folding map table and chairs, and a small military tent (typically used to expand the TOC's workspace). Weapons are not typically fitted, though some vehicle commanders improvised machine gun mounts at their hatches. As with the M113, the M577 (or locally-produced equivalents) was in service worldwide. The latest American upgrade, the M1068 SICPS (Standard Integrated Command Post System), has identical traits except for a few items of equipment.

Barter Value: GG900,000

Street Price: \$1,800,000

Configuration: Standard

Suspension: Trk

Crew: 4 (driver, commander, 2 radio operators) +2

Cargo: 1.5 tons

Weight: 12.7 tons

Travel Speed: 22/15 km/hr

Combat Speed: 66/42 m

Fuel: 500 L (D)

Fuel Cons: 36 L/hr

Maintenance: 18

Armor: HF 6, HS 4, HR 4; Susp 5

Equipment (M577 TOC)

Comm: 4x military vehicular radio; stationary shortwave radio.

Sensors: Headlights; military mapping GPS.

Aux: 4.2 kW generator (consumes 1.5 L/hr); A-frame crane (200 kg capacity); amphibious running gear; NBC defense system; 2x modern notebook computer with dot-matrix printer; photocopier.

Equipment (M1068 SICPS)

Comm: 4x military vehicular radio; stationary shortwave radio; tactical data link.

Sensors: Night-vision system (D); headlights; military mapping GPS.

Aux: 4.2 kW generator (consumes 1.5 L/hr); A-frame crane (200 kg capacity); amphibious running gear; NBC defense system; 3x modern ruggedized notebook computer with scanner, laser printer, and wired router.

M88A2 HERCULES

The Heavy Equipment Recovery Combat Utility Lift and Evacuation System is a typical ARV (Armored Recovery Vehicle), used to recover and repair armored vehicles that have become disabled in the field. The passenger spaces are most commonly used by the crew of such a vehicle while it's being towed. The M88's large fuel tanks and onboard pump enable it to refuel other vehicles. Standard cargo includes one set each of basic hand tools, basic power tools, mechanic's tools, and model-specific vehicle tools appropriate to the force the HERCULES was last assigned to support.

Barter Value: GG500,000

Street Price: \$2,100,000

Configuration: Standard

Suspension: Trk

Crew: 3 (driver, commander, mechanic) +4



Cargo: 800 kg (+70 tons towed)
Weight: 70 tons
Travel Speed: 16/8 km/hr
Combat Speed: 44/22 m
Fuel: 1,520 L (D)
Fuel Cons: 160 L/hr
Maintenance: 18
Armor: HF 6, HS 4, HR 4, Susp 6

Equipment

Armament: Weapons mount (C; typically M2HB)
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights.
Aux: A-frame crane (35-ton capacity); bulldozer blade (front); horizontal winch (70-ton capacity); secondary winch (3-ton capacity); fuel pump.

TPz Fuchs (NBC Recon)

The Fuchs is a German-built 6x6 wheeled vehicle available with close to 100 different equipment packages. This entry represents the NBC reconnaissance variant, which several NATO, European Union, and Middle Eastern forces used (and still use) to scout areas for contamination. The onboard systems are capable of sampling and identifying virtually all biological warfare agents, chemical weapons, and hazardous industrial chemicals, as well as radioactive fallout, but require specific training to use (e.g. Special Equipment: NBC Detection Gear or a similar skill). The Fuchs' weapon mount allows it to be armed for self-protection, but many NBC recon units were unarmed to discourage crews from risking their valuable vehicles in combat.

Barter Value: GG1,100,000
Street Price: \$2,200,000
Configuration: Standard
Suspension: OR
Crew: 3 (driver, commander, sensor operator) +3
Cargo: 2 tons
Weight: 20.3 tons
Travel Speed: 35/10 km/hr
Combat Speed: 97/28 m
Fuel: 290 L (D)
Fuel Cons: 40 L/hr
Maintenance: 12
Armor: HF 4, HS 3, HR 3; Susp 4

Equipment

Armament: Weapons mount (C; typically MAG).
Ammo: Dependent on mounted weapon (if any); carried as cargo.
Comm: Military vehicular radio; tactical data net.
Sensors: Biological hazard sensor (50m range); headlights; military mapping GPS; radiation sensor (500m range); remote chemical hazard sensor (5 km range); weather sensors.
Aux: Amphibious running gear; NBC defense system; 3x modern ruggedized notebook computer.

Leopard 2

The Leopard 2 was the backbone of EU armored forces during the war, serving with several European nations. It also saw use in Canadian, Chilean, Singaporean, and Australian formations. This design is typical of NATO main battle tanks from the late Cold War era and is one of the more common western main battle tanks, with about 3,500 in service or reserve at the outbreak of the Twilight War.

L44 120mm Cannon

Rheinmetall's L44 is the main weapon of the Leopard II, the American M1A2 Abrams, and several other main battle tanks. The upgraded L55 is fitted to some newer Leopard IIs; it is identical for game purposes.

Capacity: 1. Reloading requires one operational action on the part of the loader, gunner, or commander. The loader can declare this action before the gunner fires, completing the action after the weapon cycles.

Range: Sniping/Extreme.

ROF: S

Speed: 11/17/25

Ammunition

120mm cannon ammunition weighs 22.3 kg per round. Costs are per individual round.

Round	Damage	Penetration	Explosion/Effects	Barter Value	Street Price
APDS	176	x1/x1	-	GG1,100	\$2,200
HEAT	115	-	Radius 10m, Blast 14, Frag 3	GG400	\$800

Table 8m: L44 120mm Cannon Traits

Barter Value: GG2,000,000

Street Price: \$4,000,000

Configuration: Turreted

Suspension: Trk

Crew: 4 (driver, gunner, loader, commander)

Cargo: 100 kg internal + 500 kg in bustle rack

Weight: 62.3 tons

Travel Speed: 24/15 km/hr

Combat Speed: 67/42 m

Fuel: 1,160 L (D)

Fuel Cons: 140 L/hr

Maintenance: 26

Armor: HF 160-Cp, HS 24, HR 11; TF 100-Cp, TS 24, TR 20; Susp 6

Equipment

Armament: L44 120mm cannon (good stabilization); coaxial MAG (G); weapons mount (C; typically MAG).

Ammo: 42 rounds of 120mm ammo; 4,800 rounds of belted 7.62mm NATO ammo.

Comm: Military vehicular radio; tactical data net (Canada and EU only).

Sensors: Headlights; night vision system (D); thermal and night vision gunsights (C, G).

Aux: NBC defense system.

T-55

The most widely-used MBT of the 20th century, the Soviet-built T-55 was obsolete by the time of the Twilight War. However, as armies across Asia, Europe, Africa, and South America proved, even an obsolete tank can be lethal when opposing equally elderly designs or modern but lightly-armored vehicles. A pair of 200-liter drop tanks mounted on the rear deck extended the T-55's range, but these were such inviting targets that few still-operational machines retain them in 2013. Traits given are for the "basic" T-55; various nations upgraded their vehicles with night-vision or thermal optics, appliqué armor, weapon stabilization, and other systems.

D-10 100mm Cannon

This WWII-vintage rifled cannon is the T-55's main weapon.

Capacity: 1. Reloading requires one operational action on the part of the loader, gunner, or commander. The loader can declare this action before the gunner fires, completing the action after the weapon cycles.

Range: Sniping/Extreme.

ROF: S

Speed: 11/17/25

Ammunition

100mm cannon ammunition weighs 25 kg per round. Costs are per individual round.

Round	Damage	Penetration	Explosion/ Effects	Barter Value	Street Price
APDS	108	x1/x1	-	GG450	\$900
HE	12	-	Radius 10m, Blast 14, Frag 3	GG150	\$300
HEAT	75	-	Radius 15m, Blast 10, Frag 2	GG200	\$400

Table 8n: D-10 100mm Cannon Traits

Barter Value: GG600,000

Street Price: \$1,200,000

Configuration: Turreted

Suspension: Trk

Crew: 4

Cargo: 100 kg internal plus 600 kg in bustle rack

Weight: 41 tons

Travel Speed: 17/12 km/hr

Combat Speed: 47/33 m

Fuel: 560 L (D) (+2x200 L drop tanks)

Fuel Cons: 27 L/hr

Maintenance: 18

Armor: HF 40, HS 16, HR 12; TF 41, TS 26, TR 12; Susp 6

Equipment

Armament: D-10 100mm cannon; coaxial PKM (G); pintle mount NSV (C).

Ammo: 43 rounds 100mm; 3,000 rounds belted 7.62x54mm; 1,000 rounds belted 12.7mm.

Comm: Military vehicular radio.

Sensors: Headlights; night vision system (D); night vision gunsights (C, G).

Aux: Radiation shielding.

T-72

The most common tank on the battlefields of the Twilight War, the T-72 was a global export of the Soviet Union and its Russian successors, and was also copied throughout Asia and the Middle East. Although a generation older than the most current designs, its low cost and ease of maintenance kept it in service around the globe. Like many later Soviet MBTs, it uses a mechanical autoloader in place of a fourth crewman, resulting in a slightly slower rate of fire.

Barter Value: GG1,250,000

Street Price: \$2,500,000

2A46M 125mm Cannon

This 125mm smoothbore cannon is the primary weapon of the T-72 and several other Soviet-designed tanks.

Capacity: 1. Once triggered by the gunner (a 1-tick action), the T-72's autoloader will execute a Load action in 9 ticks. The autoloader has a 22-round capacity.

Range: Sniping/Extreme.

ROF: S

Speed: 11/17/25

Ammunition

125mm cannon ammunition weighs 25 kg per round. Costs are per individual round.

Round	Damage	Penetration	Explosion/ Effects	Barter Value	Street Price
APDS	166	x1/x1	-	GG900	\$1,800
HE	18	-	Radius 20m, Blast 18, Frag 5	GG300	\$600
Frag	3	-	Radius 10m, Blast 14, Frag 3	GG400	\$800

Table 8o: 2A46M 125mm Cannon Traits

Configuration: Turreted

Suspension: Trk

Crew: 3

Cargo: 75 kg internal plus 700 kg in bustle rack

Weight: 41.5 tons

Travel Speed: 20/11 km/hr

Combat Speed: 56/31 m

Fuel: 1,000 L (D) (+400 L drop tank)

Fuel Cons: 135 L/hr

Maintenance: 26

Armor: HF 100-Cp, HS 16, HR 10; TF 70, TS 24, TR 20, Susp 6

Equipment

Armament: 2A46M 125mm cannon; coaxial PKM (G); pintle mount NSV (C).

Ammo: 40 rounds 125mm; 2,000 rounds belted 7.62x54mm; 300 rounds belted 12.7mm.

Comm: 2x military vehicular radio.

Sensors: Headlights; laser rangefinder; night vision system (D); thermal and night vision gunsights (C, G).

Aux: Autoloader; NBC defense system.

WATERCRAFT

Simple Watercraft

The following craft are treated as simple vehicles (see p. 282).

Kayak

A covered craft designed to be paddled through rough water. The following entries represent one- and two-man kayaks. Costs and weights include one double-bladed paddle per occupant.

One-Man Kayak

Barter Value: GG60
Street Price: \$1,200
Crew: 1
Cargo: 35 kg
Weight: 35 kg
Travel Speed: 3 km/hr
Combat Speed: 8 m
Maintenance: 1

Two-Man Kayak

Barter Value: GG100
Street Price: \$2,000
Crew: 1+1
Cargo: 100 kg
Weight: 45 kg
Travel Speed: 3 km/hr
Combat Speed: 8 m
Maintenance: 1

Canoe

An open-topped vessel intended to be paddled on calm water. Traits are presented for a typical modern canoe made of fiberglass and resin. Costs and weight include two paddles.

Barter Value: GG50
Street Price: \$1,000
Crew: 1+1
Cargo: 100 kg
Weight: 50 kg
Travel Speed: 3 km/hr
Combat Speed: 8 m
Maintenance: 1

Personal Watercraft

Effectively a motorcycle for the water, a personal watercraft uses a small internal combustion engine to drive a water jet, resulting in swift and noisy propulsion. A personal watercraft has a dead man's switch that cuts off the engine if the rider loses his seat.

Barter Value: GG750
Street Price: \$12,000
Crew: 1+1
Cargo: 50 kg
Weight: 250 kg
Travel Speed: 25 km/hr
Combat Speed: 70 m
Fuel: 30 L (G)
Fuel Cons: 5 L/hr
Maintenance: 2

Small Craft

Day Sailer

An inexpensive 6-meter-long sailboat with a single mast and an open top, intended for daytime recreational use on calm water.

Barter Value: GG5,000 (GG11,250 with electronics)
Street Price: \$20,000 (\$45,000 with electronics)
Configuration: Flush Deck
Crew: 1+2
Cargo: 200 kg
Weight: 260 kg
Travel Speed: 5 km/hr
Combat Speed: 14 m

Maintenance: 2

Armor (soft-skinned): Hull 0, Waterline 1

Equipment

Comm (rare on civilian models): Vehicular shortwave radio.
Sensors (rare on civilian models): Mapping GPS; navigational radar.

Motorboat

A small motorized vessel of the sort used for recreation and as the waterborne equivalent of a pickup truck. This archetypal entry encompasses civilian bass boats, police and military RHIBs (Rigid Hull Inflatable Boats), and everything in between.

Barter Value: GG5,000 (GG11,250 with electronics)
Street Price: \$20,000 (\$45,000 with electronics)
Configuration: Flush Deck
Crew: 1+3
Cargo: 200 kg
Weight: 1.2 tons
Travel Speed: 20 km/hr
Combat Speed: 56 m
Fuel: 450 L (G)
Fuel Cons: 20 L/hr
Maintenance: 3
Armor (soft-skinned): Hull 1, Waterline 1

Equipment

Comm (rare on civilian models): Vehicular shortwave radio.
Sensors (rare on civilian models): Mapping GPS; navigational radar.

Speedboat

An excessively overpowered vessel of the sort used for thrill-seeking, offshore racing, and drug smuggling. A speedboat has a slender, low-drag hull with a minimal cabin (shelter but no sleeping accommodations).

Barter Value: GG24,000
Street Price: \$120,000
Configuration: Flush Deck
Crew: 1+3
Cargo: 200 kg
Weight: 4.5 tons
Travel Speed: 60 km/hr
Combat Speed: 167 m
Fuel: 820 L (G)
Fuel Cons: 100 L/hr
Maintenance: 6
Armor (soft-skinned): Hull 1, Waterline 1

Equipment

Comm: Vehicular shortwave radio.
Sensors: Civilian mapping GPS; navigational radar.

Cabin Cruiser

A motorized craft with sleeping accommodations and several days' endurance. Cabin cruisers are designed for inland and coastal use, but are theoretically capable of making short open ocean voyages in good weather. The following entry represents a typical 10-meter family-sized vessel, or an equivalent charter fishing boat.

Barter Value: GG12,000
Street Price: \$120,000

Configuration: Superstructure

Crew: 1+5

Cargo: 500 kg

Weight: 7 tons

Travel Speed: 17 km/hr

Combat Speed: 47 m

Fuel: 750 L (D)

Fuel Cons: 40 L/hr

Maintenance: 5

Armor (soft-skinned): Hull 1, Superstructure 1, Waterline 1

Equipment

Comm: Vehicular shortwave radio.

Sensors: Civilian mapping GPS; navigational radio.

Aux: Living quarters (4 bunks, shower, chemical toilet, kitchenette, 200L fresh water tank).

Yacht (Ocean Sailboat)

An oceangoing sailing craft. Yachts of this sort were traditionally the playthings of the wealthy, but lower-end models were within the reach of upper middle-class incomes. A typical yacht (traits given are for an “entry-level” 20m hull) is capable of making an ocean crossing, assuming a competent crew and good navigational data. The vessel is fitted with an auxiliary diesel engine that also functions as a 10kW generator, providing power for climate control, electronics, the desalination plant, and all of the amenities of a small home.

Barter Value: GG37,500

Street Price: \$375,000

Configuration: Superstructure

Crew: 3 (helmsman, 2 deckhands) +7

Cargo: 2 tons

Weight: 21 tons

Travel Speed (sails): 7 km/hr

Travel Speed (diesel): 4 km/hr

Combat Speed (sails): 21 m

Combat Speed (diesel): 11 m

Fuel: 460 L (D)

Fuel Cons: 20 L/hr (2.5 L/hr if used only as generator)

Maintenance: 6

Armor (soft-skinned): Hull 2, Superstructure 1, Waterline 2

Equipment

Comm: Vehicular shortwave radio.

Sensors: Civilian mapping GPS; navigational radar.

Aux: Living quarters (5 double berths, shower, toilet, galley, 700L fresh water tank); desalination system (100 L/day capacity).

Towboat

A vessel with a shallow draft and oversized engines, designed for commerce on inland waterways. A towboat’s own cargo capacity is limited, but it’s intended to push a “raft” of barges (see following). Speeds given are for zero to four barges. For every additional barge in the raft (to a maximum of 30), reduce travel speed by 0.1 km/hr and combat speed by 0.25 m. A towboat is not designed for extended habitation without resupply, as the prewar commercial environment ensured frequent stops in river ports. The following traits also apply to tugboats, which are intended to pull, rather than push, their rafts, thereby providing less control over the loads.

Barter Value: GG130,000

Street Price: \$2,100,000

Configuration: Superstructure

Crew: 2 (helmsman, lookout) +7 (cook, cargo handlers, engineer, etc.)

Cargo: 5 tons

Weight: 120 tons

Travel Speed: 6 km/hr

Combat Speed: 17 m

Fuel: 20,000 L (D)

Fuel Cons: 160 L/hr

Maintenance: 24

Armor (soft-skinned): Hull 3, Superstructure 2, Waterline 5

Equipment

Comm: Vehicular shortwave radio.

Sensors: Civilian mapping GPS, navigational radar, searchlights (2x, mounted on superstructure).

Aux: Living quarters (bunks for 7, shower, toilet, galley, 400L fresh water tank).

Barge

An unpowered flat-bottomed cargo hull, designed to be pushed in front of a towboat or pulled behind a tugboat. Multiple barges are cabled together to form a “raft,” which is moved as a single unit. Each barge has a narrow walkway around the top of its hull, allowing crew movement for inspection and cargo-handling. The following traits are typical for a hopper-style bulk cargo barge; liquid tankers are identical save for cargo capacity (5 million liters). A standard barge measures 60 meters long by 10 meters wide.

Barter Value: GG40,000

Street Price: \$750,000

Configuration: Flush Deck

Crew: 0

Cargo: 2,100 tons

Weight: 1,050 tons

Maintenance: 3

Armor (soft-skinned): Hull 3, Waterline 6

Patrol Boat

A military craft used for patrols of coastal waters, as well as fisheries protection, customs, search and rescue, and law enforcement duties. A patrol boat is designed to operate close to a fixed base rather than on an extended cruise. Nominal endurance was limited to 3-5 days, but extended patrols of up to several weeks were common in the pre-Collapse years. The vessel is 35 meters long and draws 2 meters of water under her keel.

Barter Value: GG3,500,000

Street Price: \$7,000,000

Configuration: Superstructure

Crew: 8+12 (8 crew on duty, 8 off duty, 4 passengers)

Cargo: 5 tons

Weight: 170 tons

Travel Speed: 19 km/hr

Combat Speed: 53 m

Fuel: 37,000 L (D)

Fuel Cons: 230 L/hr

Maintenance: 30

Armor: Hull 2, Superstructure 4, Waterline 3.

Equipment

Armament: 2A42 or M242 Bushmaster autocannon (good stabilization and Armor 4 gunshield) on foredeck; 2x heavy machine gun on port and starboard bridge rails.

Ammo: 1,500 rounds autocannon ammo; 5,000 rounds belted HMG ammo.

Comm: Satellite communication system; vehicular CB radio,

vehicular shortwave radio; vehicular shortwave radio with military encryption.

Sensors: Military mapping GPS; surface search and navigation radar; 6x searchlight.

Aux: Crane (2-ton capacity); motorboat; living quarters (2 single berths, 9 double berths, full restrooms, galley); desalination plant (1,800 L/day capacity with 3,600 L fresh water tank); huge fixed generator (for auxiliary electrical power when not under way).

BEASTS OF BURDEN

A chapter dedicated predominantly to vehicles may seem an odd place to put the rules for working animals. However, beasts of burden serve many of the same purposes as do mechanical conveyances. They allow characters to move farther, faster, and with heavier loads than those same humans could afoot. As supplies of fuel and spare parts dwindle, beasts of burden become more and more valuable, as do individuals who can raise and train them.

From a game perspective, a *beast of burden* is any animal whose function is primarily transportation of characters or equipment, rather than as an adversary or food source. A *mount* is an animal that carries a character on its back, while a *pack animal* carries cargo and a *draft animal* pulls a wagon, sledge, or other means of transport.

ANIMAL TRAINING

The scarcity of beasts of burden means many characters must train their own. Appropriate domestic animals - horses, oxen, donkeys, camels, and so forth - have one of four training ratings, as follows. Unless the GM is particularly generous or oblivious, wild animals such as deer and wildebeest cannot be domesticated and trained by PCs.

Untrained

An Untrained animal can be led around the countryside but is useless for any real work. It will violently resist any attempt to fit it with a pack saddle or harness it to a cart or wagon, to the point of injuring itself in its attempts to win free. In theory, a skilled rider can mount it and force it to go somewhere. This requires an initial Mounts (MUS, TN -3) check, opposed by the animal's Muscle check, to show it who's boss. Failure results in the character being thrown as per the Rider Thrown mishap result. With success, subsequent travel movement is considered pushing regardless of speed, and any mishap is treated, again, as a Rider Thrown result. Combat movement is effectively impossible as the animal panics and flees headlong.

Training: Domestic animals raised in captivity have this training rating by default. Those born in the wild - in other words, feral - must first be captured, which is likely to be an adventure in and of itself. Getting a feral animal to this level of compliance is an incremental Animal Husbandry (RES) or Mounts (RES) action with a target total of 6 and a period of two weeks.

Docile

A Docile animal will serve as a beast of burden, wearing a pack saddle or pulling a vehicle without complaint (so long as it isn't stressed past its physical limits). While not particularly happy about bearing a rider, it will do so for short distances: travel movement is considered pushing regardless of speed, but control checks receive a +2 bonus. Combat movement remains impossible; a Docile animal automatically becomes uncontrolled

at the beginning of combat.

Training: Making an Untrained animal Docile is an incremental Animal Husbandry (RES) or Mounts (RES) action with a target total of 4 and a period of one week.

Riding

A Riding animal will bear one or more riders, subject to its physical limits. It is accustomed to having humans on its back and will perform travel movement normally. If necessary, it will also bear a pack saddle or pull a vehicle, though it won't necessarily be happy.

Training: Making a Docile animal into a Riding animal is an incremental Mounts (RES) action with a target total of 6 and a period of two weeks.

Cavalry

A good cavalry mount isn't quite worth its weight in gold, but with most combat vehicles destroyed or immobilized by lack of fuel, the value is close. A Cavalry-trained animal is capable of functioning in combat without undue penalties, so long as it's under a trained rider.

Training: Training up a Riding mount into a Cavalry mount is an incremental Mounts (RES) action with a target total of 6 and a period of one month.

MOUNTED TRAVEL

A beast of burden functions as a vehicle for the purposes of travel. Each beast of burden has a single safe travel speed rating, which functions the same as the corresponding rating for any other vehicle. The Speed Reduction Table (see p. 273) lists terrain effects on animal mobility. Beasts of burden can be pushed just like vehicles. If a rider or teamster fails a control check during travel, a mishap occurs, using the following results.

Beast of Burden Mishaps

Lost Time (MoF 1-3): The animal refuses to be pushed. Travel for this hour is equal to its safe speed.

Mired (MoF 4-6): Poor direction gets the animal stuck in soft ground or shifting debris. Distance traveled this hour is equal to half the animal's safe speed. Make a Mounts (MUS, TN +3) skill check; with failure, the work required to unstuck the animal inflicted a slight wound to it.

Animal Exhausted (MoF 7-10): The animal is pushed beyond its endurance. Distance traveled this hour is equal to the desired speed, but until it receives at least 10 hours of rest, all further attempts to push it suffer a -2 penalty. This penalty is cumulative with repeated results.

Rider Thrown (MoF 11-12): The rider is thrown and suffers impact damage appropriate to the height of his fall: one meter for a donkey or similarly-sized mount, two meters for a horse, or three meters for a camel or elephant. Add twice the mount's safe speed (modified for terrain) to the base impact damage. Distance traveled this hour is equal to the animal's safe speed.

Animal Lamed (MoF 13-14): The animal suffers a moderate injury. Until this wound is healed, the animal's safe speed is halved. The rider must succeed with a Mounts (MUS, TN +3) skill check or suffer the results of the Rider Thrown mishap. Distance traveled this hour is equal to half the animal's safe speed.

Animal Killed (MoF 15+): The animal suffers an injury that is fatal within minutes or requires a mercy killing. The rider must succeed with a Mounts (MUS, TN +1) skill check or suffer the effects of the Rider Thrown mishap. Distance traveled this hour is equal to half the animal's safe speed.

Endurance

A beast of burden can travel at its safe speed for up to 12 hours before fatigue hampers its ability (and willingness) to continue. Every subsequent hour of travel is considered pushing, and the associated control check suffers a cumulative penalty of -1 per additional hour. These effects persist until the animal receives at least 10 hours of downtime for rest and feeding. If the animal is being pushed at up to twice its safe speed, each hour of travel counts as three. If it's being pushed at up to three times its safe speed, each hour of travel counts as six. Each combat scene counts as one full hour of travel for endurance purposes.

MOUNTED COMBAT

Although mounts are animals and therefore normally treated as NPCs, they function as vehicles when being ridden in combat. Only a mount with a Riding or Cavalry training level can be used in this manner - a less-trained animal automatically panics, becoming uncontrolled as soon as combat begins.

A mount with a Riding training level is unaccustomed to combat and requires the rider to exert a significant amount of control. Whenever the rider attempts any action other than Wait - effectively, does anything other than try to control the animal - he must make a control check. This replaces the normal control check that the driver of a vehicle must make at the end of an exchange of fire. If the control check fails, the animal immediately becomes uncontrolled. If the rider doesn't have at least one hand free for the reins, this check suffers a -3 penalty.

A mount with a Cavalry training level has enough prior combat experience (either real or simulated) to remain relatively calm when bullets are flying. So long as the current threat level doesn't exceed the mount's CUF (either a fixed value of 5 or its rider's own CUF, whichever is higher), the rider may take actions without making control checks as described above. If the threat level exceeds the mount's CUF, it behaves as a Riding mount.

Uncontrolled Mounts

An uncontrolled mount is interested only in self-preservation. It will attempt to move away from combat at its best possible speed. A rider may still act, but all actions suffer a -3 penalty in addition to any other penalties normally applied while mounted. Attempting to regain control of the mount is a 6-tick action and a control check. With success, the mount comes back under control. With failure, the animal remains uncontrolled. With a margin of failure of 5 or more, the rider is thrown, suffering damage as per the equivalent travel mishap result.

Mounted Actions

All physical actions taken while mounted suffer a penalty determined by the mount's speed: -1 if the mount is stationary, -4 if it's moving at its safe speed or less, and -6 if it's moving at twice its safe speed or less. Physical actions attempted at speeds over twice safe speed automatically fail. These penalties are reduced by 1 for Cavalry mounts.

Attacking Mounts

For combat purposes, a mount and its rider are considered separate targets. However, because of their proximity to one another, an attack missing one such target with a margin of failure of 1 or 2 will strike the other. Resolve damage as a successful attack with a margin of success of 0.

If a mount suffers a moderate or worse injury, the rider must succeed in a Muscle check or be thrown, suffering damage as per the equivalent travel mishap result. If the injury is critical,

the mount automatically falls down, though the rider still avoids damage with a successful check.

Draft Animals

All of the preceding rules for mounts in combat are equally applicable to draft animals, except for targeting and damage. The components of a rig - one or more draft animals, plus an animal-drawn conveyance - are targeted separately. Draft animals suffer damage as any other animal NPC, while the vehicle itself suffers damage as per any other vehicle-drawn trailer.

Pack Animals

Beasts of burden without direct controllers (either riders or teamsters) automatically become uncontrolled at the beginning of combat. The only exception to this rule is Cavalry-trained pack animals tethered to a controlled mount or rig. These remain controlled as long as their "leader" is controlled.

ANIMALS AND COMMERCE

Game traits for animals are provided in Chapter Nine. The following section provides additional game material related to animals functioning as vehicles and the equipment that goes along with them.

Animal Pricing

The following values assume an animal with a Riding training level. Divide by 2 for a Docile training level or by 5 for Untrained. Multiply by 5 for Cavalry.

Animal	Barter Value	Street Price
Camel	GG1,500	\$3,000
Donkey/Mule	GG250	\$500
Elephant	GG5,000	\$10,000
Horse, draft	GG900	\$1,800
Horse, riding	GG500	\$1,000
Ox	GG250	\$500

Table 8r: Animal Training - Animal Conditions

Animal-Drawn Conveyances

Carriage

A four-wheeled vehicle used for passenger transport. A carriage can be either enclosed or open-topped. A carriage requires two horses; if pulled by one, listed speeds are halved. Most prewar carriages were luxury vehicles used for parades or tourism, luxuriously appointed and wildly impractical for the current travel environment.

Barter Value: GG250

Street Price: \$5,000

Configuration: Standard

Suspension: Std

Crew: 1+6

Cargo: 300 kg

Weight: 1 ton

Travel Speed: 60% of animal's normal travel speed

Combat Speed: 60% of animal's normal combat speed

Maintenance: 2

Armor (soft-skinned): HF 1, HS 1 (HS 0 if open-topped), HR 1, Susp 1

Cart

A two-wheeled open box used for light cargo transport. A cart is designed to be pulled by a single beast of burden.

Barter Value: GG50

Street Price: \$500

Configuration: Standard

Suspension: OR

Crew: 1

Cargo: dependent on animal: camel 350 kg, donkey/mule 250 kg, elephant 500 kg, horse 300 kg, ox 400 kg

Weight: 200 kg

Travel Speed: 50% of animal's normal travel speed

Combat Speed: 50% of animal's normal combat speed

Maintenance: 1

Armor (soft-skinned): HF 0, HS 0, HR 0, Susp 1

Wagon

A four-wheeled cargo box designed for a two-animal team (or a single elephant). If pulled by one animal, reduce cargo and speed by 60%. A four-animal team increases cargo by 60% but has no effect on speed.

Barter Value: GG300

Street Price: \$1,500

Configuration: Standard

Suspension: OR

Crew: 1

Cargo: dependent on animal: camels 1 ton, elephant 2 tons, horses 1.5 tons, oxen 2.5 tons

Weight: 200 kg

Travel Speed: 40% of animal's normal travel speed

Combat Speed: 40% of animal's normal combat speed

Maintenance: 2

Armor (soft-skinned): HF 0, HS 0, HR 0, Susp 1

Domestication and Training

At the GM's discretion, a character may attempt to domesticate or train an animal other than a beast of burden. Domesticating a wild animal is an incremental Animal Husbandry (RES) action with a period of one month and a target total of 3. Each period requires the trainer to work with the animal for at least 10 hours. If the trainer fails to meet this requirement, the check for that period automatically fails and the total of successful checks is reduced by 1. If the total is ever reduced to 0 (after being higher than 0), the animal can never be domesticated. Modifiers to each check apply as follows:

<i>Animal Age</i>	
Factor	Modifier
Newborn	+3
Very young (not weaned)	+2
Young (weaned)	+1
Adult	-1
Elderly	-2

<i>Animal History</i>	
Factor	Modifier
Abused by humans	-4
Formerly domestic	+2
Feral with former domestic parents	+1
Captive born but never domesticated	none

<i>Animal Type</i>	
Factor	Modifier
Herbivore	+2
Omnivore	none
Carnivore	-2
Primate	+1
Common domestic species	+2
Species rarely domesticated (bear)	-3
Species never domesticated (alligator, tiger)	-5

Table 8p: Animal Training - Animal Conditions

A trainer working with a domesticated animal can teach it certain tasks or tricks, such as fetching, staying, guarding, attacking, or disarming. Teaching an animal to perform a task on command is an incremental Animal Husbandry (PER) action with a period of one week and a target total of 5 plus the number of tasks the animal already knows. Again, modifiers depend on the animal in question:

Condition	Modifier
Task reinforces animal's natural behavior	+2
Task opposes animal's natural behavior	-4
Animal's Cunning 4 or lower	-1
Animal's Cunning 8 or higher	+1

Table 8q: Animal Training - Misc Conditions

Note that this is a vast simplification of a complex and controversial field of study. All animal training occurs at the GM's discretion, and may be easier, harder, or impossible depending on the animal in question.

CHAPTER 9

GAMEMASTER'S

TOOLKIT

In the end, enough of us are left to bury our dead. But it's a near thing.

Before someone bombed the crap out of it, the pass was home to a small village, long since abandoned. It was perfect for an ambush. The only thing that saved us was Big Jim's driving. If we'd arrived ten minutes later, the other side would have been finished setting up, with all their heavy weapons aimed straight down our throats.

We don't actually have to dig the graves in the half-frozen earth. The surviving Iranians handle that for us, supervised by a squad of Canadian artillerists who would just as soon let the prisoners dig a few extra for themselves. But, once the hulk of First Squad's Stryker cools enough for us to recover the remains, we wrap each of our friends in a poncho liner, lower him gently into the grave, and cover him with the soil he defended to the last. Then the captain and Sergeant Scott move down the line, enacting the ritual we all know too well: boots for the last march, rifle muzzle-down for an end to the fighting, helmet and ID tags to give a name to the fallen.

As the captain borrows Little Jim's Bible, the rest of the survivors fall into a loose semblance of ranks. As usually happens, I find myself off to one side with Adela, Sergeant Scott, and the rest of the folks who don't share the faith. Sergeant Scott bows his head and murmurs a brief Asatru invocation, which always gives me a shiver. Then he nudges me. "Monk, get your camera ready."

"What-?" I stare at him.

"Just do it."

So, with numb hands, I dig the SLR out of its makeshift case. And, in the failing mountain twilight, I do the kind of shooting I prefer, even if it's not subject matter I particularly want to record.

After, as I'm kneeling to label the exposed film and re-package the camera, a shadow falls over me. I look up at the captain's drawn, weary face. "Captain?"

"Monk, you ever wonder why you're here?" He's swaying with exhaustion and blood loss.

"Uh... sir?" Suddenly, I'm certain that photographing the memorial service was a step over an invisible line that I should not have crossed.

"You know I got no use for the media, Monk. Never did. But Scott talked me into keeping you on. He said we needed every hand we could get, even if you couldn't shoot. But he also said we needed someone to remember the dead, to keep the book." He gestures with his good hand at the line of eighteen graves, already crusted with fresh snow. "Your stories... you're the one who's gotta make it home, Monk. To tell our families what it was like for us." He pauses, turns to go, turns back with a last thought. "The President was wrong, you know. We aren't on our own. We're all in this together."

And he leaves me there with a camera full of answers and a notebook full of thin red lines.

... to read fiction means to play a game by which we give sense to the immensity of things that happened, are happening, or will happen in the actual world. By reading narrative, we escape the anxiety that attacks us when we try to say something true about the world. This is the consoling function of narrative - the reason people tell stories, and have told stories from the beginning of time.

— Umberto Eco, *Six Walks in the Fictional Woods*

The title of this chapter is somewhat misleading, because this entire book was written as a toolkit for the gamemaster. Some of the tools are explicit. The “GM Hint” and “Design Note” sidebars explain why we wrote the rules the way we did and how you can adjust them to suit your group’s own style of play. Most of them are implicit, because you’ll be using the base rules as much as the players will. The contents of this chapter, however, are written primarily for the poor sap with the responsibility of running the game for his friends. Nothing is explicitly forbidden to players, but the advice and rules herein will be most useful to the GM.

PRACTICAL ADVICE

FOR NOVICES

Chances are, **Twilight: 2013** is not your first role-playing game. We assume you are familiar with the basic concepts of role-playing – what players do, what the gamemaster does, what might happen in a typical gaming session, and so forth. But **Twilight: 2013** might be the first game (or one of the first) you’ve decided to run for your friends. With the turtle in mind, we present some simple, concrete advice for novice gamemasters. Veteran GMs should feel free to skip this section, although even they might find some useful tips here.

It’s worth mentioning right up front that GMing is a tough job. If most of your gaming experience is as a player, roleplaying has a whole other side you haven’t yet seen. The basics are similar: the GM creates characters, just like the players, and reacts to situations during game sessions – but the differences are where the real challenge arises. In addition to what you do during sessions, you are also responsible for creating the material of which those sessions are composed: developing scenarios for the player characters (PCs) to play, building non-player characters (NPCs), constructing the challenges within those scenarios, drawing maps, and handling the hundreds of little details of a story.

As the GM, you are scriptwriter, storyteller, statistician, actor, amateur historian, event director, adversary, and impartial arbiter. In addition to creating scenarios, playing all of the non-player characters, dealing with surprises your players throw your way, and adjudicating any rules disputes, you are also the de facto leader of your gaming group (at least when it comes to gaming). Without you, there is no game. Your job is more challenging than being a player, but ultimately more rewarding as well. There is no feeling quite like seeing what happens when you turn your players loose on your creations – the world, people and grim adventures of **Twilight: 2013**.

EVERYONE SHOULD HAVE FUN

Let’s start out with the most basic – and most important – piece of GMing advice of all: When you sit down with your group, the goal is for everyone to have fun. That includes you, the GM, as well as all of your friends, the players. It sounds obvious, but it can be an easy thing to forget – and it leads into a great rule of thumb: When in doubt, just ask yourself, “What could I do right now to make the game more fun?”

Design Note: “GM”

Previous editions of **Twilight: 2000** used the term “referee” to denote the individual responsible for running the game. We feel this places implicit emphasis on the role of this individual as an arbiter of disputes. While that’s certainly one of the major tasks confronting anyone who chooses to run a game, it’s not the only one, nor is it necessarily the most important. In our opinion, “gamemaster” is much more accurate when considering the totality of the job. With that being said, it’s just a name – call yourself “referee,” “dungeon master,” “storyteller,” or “Lord Humongous” if it works better for you.

You and your players have fun in somewhat different ways. Your players will enjoy the game because it is geared toward them, toward their tastes and their characters’ abilities – because they are center stage, and they have plenty of opportunities to do cool things in every session. As the GM, your fun comes from two primary sources: preparing for the game – building and bringing to life the post-apocalyptic world of **Twilight: 2013**, populating it with colorful characters, and coming up with scenarios for your players to tackle – and seeing what your players do with the game you have prepared. In other words, as the GM you will have fun because your players are having fun, which leads to another good rule of thumb: Make the game fun for your players, and it will also be fun for you.

FIRST THINGS FIRST

So how do you make the game fun for your players? Here is a straightforward plan of attack for most **Twilight: 2013** groups.

Get Organized

The first step is to organize your game. You don’t need to worry about every little detail at this point, but a bit of effort now will save you a lot of heartache down the road. For starters, you need a group – at least two players, and probably no more than six unless you’re an excellent multitasker. Four players are the “sweet spot” for most GMs.

Once you have a group, you need to work out how often you will play. There are two considerations here: everyone’s schedules, and your spare time. You need to pick a night (or day) when everyone is free, obviously, but you also need to leave enough room between games to ensure you have enough free time to prepare for the next session. Playing once every two weeks is a good baseline – or once a week if you are ambitious (or in college and surviving on energy drinks and ramen noodles).

Once you have the schedule pretty much settled, find out what kind of campaign your players are most interested in. This is best handled informally – just ask them what aspects of the **Twilight: 2013** setting interest them the most, and take a few notes in the process. You may find your players do not all agree on what they find most appealing, and that’s just fine. As long as they are not in complete opposition, you will be able to work in everyone’s preferences.

Create the Plotline

Unlike a movie, novel or TV show, the plotline in a role-playing campaign is not fixed. It can and will change over time based on the actions of your players. Even if you wind up in a very different place than you expected at the outset, there still needs to be a plotline for you to follow. Without some idea of where the campaign is headed, you will be flailing around in the dark when you sit down to prep for individual game sessions, and flailing's not much fun.

The most important consideration when creating the plotline for your campaign is simple, but it can be easy to overlook: The game should be about the player characters. Even though the complex, multi-faceted **Twilight: 2013** game world does not revolve around the PCs, your campaign should – they are the main characters in the campaign, and are always in the spotlight. Every other aspect of campaign and scenario creation flows from this one principle. If you make the game about the PCs, you'll quickly see the other elements fall into place.

Tailor the Story to the PCs

Because you made sure to discuss the nature of the campaign before your players created their characters (as previously discussed in *Get Organized*), you now have access to the ultimate tool for creating a campaign tailored to the PCs: the player characters themselves. The kinds of characters your players created will tell you a lot about what sorts of challenges they would like to face in the game and what interests them the most.

A player who creates a battle-hardened mercenary with a “Damn the torpedoes!” attitude, for example, is telling you he would like to have plenty of opportunities to charge in recklessly, guns blazing, and have a shot at making it out alive. In contrast, a player who creates a stealthy sniper is going to be more interested in tactics, planning and finding ways to take control of the battlefield. Those two characters are also pretty different, but it is not too hard to create scenarios that both of their players will enjoy.

Be Fair

Nothing kills a campaign faster than a GM who is out to get the PCs – or the players. Role-playing games are fundamentally cooperative, not adversarial, and this is worth keeping in mind at all times as the GM. Even though a large part of your job consists of coming up with challenges for the PCs to face – most often in the form of combat – you don't “win” by killing the PCs. Everyone wins when the whole group has fun; consequently, you need to be fair.

When you write your scenarios, pay careful attention to the strengths and weaknesses of the PCs. If no one in the party is good at moving silently, for example, designing an entire scenario around stealth would be unfair. Creating occasional encounters where the party would benefit from being stealthy, however, is just fine – you don't need to ignore their weaknesses, just don't always target them directly.

This extends to interpreting the rules, as well. One of the great things about role-playing games is that the GM (you) can react to unexpected situations and make judgment calls about the rules on the fly. If something outside the rules arises, just consider the most fundamental principle of GMing – that the goal is to make the game fun for everyone – and decide what happens with that in mind. Remember, of course, that many players require a little bit of plausibility in their fun, so don't go too far overboard.

Make Mistakes

As a GM, you are guaranteed to make mistakes. Every GM, no matter how experienced he is, makes mistakes. The first time this happens, most likely in front of your entire group, it can feel

awful. You may think you are a terrible GM, or your friends will laugh at you, and want to end the session right then. Resist the temptation to retreat.

Instead, take a deep breath, say, “Oops, I screwed up. Let's take a five-minute break so I can figure this out,” and let your players go grab snacks and hit the restroom. Come up with a quick solution to whatever went wrong, share it with your players, and move on. You're not likely to lose any friends over your mistake, no matter what it was – at the end of the day, it's just a game.

Best of all, you will learn something from every single GMing mistake you make. Look at your collection of mistakes as a valuable tool and you will have the right mindset.

No Hell Without Hope

The world of **Twilight: 2013** is a pretty grim place, as it should be. Life for the PCs should never be a picnic – but neither should it be so unrelentingly FUBAR that you wind up playing **The Road Warrior** rather than **Twilight: 2013**. As the GM, one of your goals is to convey the chaos and darkness of the setting to your players, balanced by the understanding that non-stop darkness is not fun for most groups.

It's something of a fuzzy target, but an ideal session of **Twilight: 2013** should be unnerving, tense and exciting (like a good thriller), not gruesome, brutal and frightening (like a good horror movie) – although moments of brutality are fair game. At the end of the day, role-playing is a leisure activity. Everyone in your group probably works or goes to school, and spending every Friday night mired in a world on the wrong side of the fine line between “grim but exciting” and “everything sucks and I want to die” is the last thing they want to do.

RULES VERSUS GUIDELINES

Throughout this book and countless others like it, there's a strong emphasis on rules. A player must roll so-and-so when his character attempts such an action; a character can not take Action A if he's under Effect Z. Hard-and-fast rules are wonderful for computers, which only operate in black, white, and pre-calibrated shades of grey, but humans are more able to perceive exceptions and special cases. Accordingly, you should treat every “rule” in this book as a guideline when appropriate. The printed rules should never supersede the application of good judgment and common sense. Don't be afraid to change or ignore any rule that's getting in the way of the story or the group's fun.

CAMPAIGN TYPES

When you're deciding what sort of **Twilight: 2013** campaign to run, there are three considerations to take into account: *campaign length*, *independence* and *mobility*. Your campaign will be easily described by these elements. Making those three choices up front will help your players create fun characters and provide you with lots of ideas for how to structure the campaign.

CAMPAIGN LENGTH

All campaigns can be broken down into two categories based on length: limited or open-ended. There is also a third option, one-shots, although one-shots aren't actually campaigns.

Types of Campaign

Here's a quick list of the different campaign types. When creating your campaign, choose one type from each of the three categories:

Length

- Limited
- Open-ended
- One-shot

Independence

- Mission-based
- Independent

Mobility

- Fixed
- Mobile

Limited Campaigns

Much like a TV series, a limited campaign is intended from the start to last for a certain number of sessions. This estimate may not be exact – you might plot out 10 sessions and wind up needing 12 to tell the whole story – but the defining feature of a limited campaign is a predetermined endpoint. “Limited” has nothing to do with the nature or scope of the plot – you can run any kind of campaign you like in a limited format.

Running a limited campaign has several advantages. First and foremost, you can plan ahead. Because you have a very good idea where the game is headed, you can use foreshadowing to set up future events and plant hooks for the PCs to notice throughout the campaign. You are also forced to employ tighter plotting and keep things moving, because you do not have a never-ending supply of game time to work with.

Second, limited campaigns can be designed to end with a bang. Because you know in advance roughly how the campaign will end, everything you do leads up to the climax. There is still a chance that school, work, or some other real-life concern will prevent your campaign from reaching its endpoint, of course, but that chance is much smaller when everyone knows the planned date of the finale.

Third, a pre-set schedule is easier for players. Most adults have multiple obligations and can't always attend a perpetual weekly gaming night. The ability to plan ahead is one of the main reasons limited campaigns tend to be a better option for groups with older players.

Finally, it's also possible to engineer a limited campaign to be resumed later if everyone is enjoying the game. Just as TV shows progress in seasons, each with a premiere episode and a finale, your limited campaign can have a finale that leaves the door open for another limited campaign to pick up where the first one left off.

The disadvantages of a limited campaign are tied to its finite running time. Because you have only a limited number of sessions in which to tell your story, you must employ tight plotting. During play, you also need to keep events moving so that you don't fall too far behind schedule or waste a night on irrelevancies.

Open-Ended Campaigns

This is the default campaign format for many groups, and is sometimes called an extended campaign. With this format, everyone wants to play *Twilight: 2013*, so you outline a few adventures, start playing, and just continue playing until you need a break or real life intrudes and forces you to end the campaign.

You can look at an open-ended campaign as the continuing adventures of the PCs – as long as everyone is into it, you just keep going episode after episode.

The primary advantage to this format is its very organic nature. Rather than needing to plot things out several sessions in advance, you're free to take the campaign in any direction you and your players are interested in exploring.

Second, it's also easier to tell long-term stories in this type of campaign. Without a fixed time limit, you have plenty of breathing room to allow the characters – both PCs and NPCs – to grow as the game progresses.

Unfortunately, this approach also has some downsides. The unfortunate reality of increased responsibilities in adulthood often results in less time for gaming – and an increased likelihood that an open-ended campaign will be forced to end abruptly and on an unsatisfying note.

Open-ended campaigns can also suffer from muddled plotting and slow pacing. Because you don't need to hit all of the campaign's high notes in quick succession, it can be very easy to stretch things out too much, even if you are not trying to do so.

One-Shots

One-shots aren't campaigns at all. Rather, they are single-session games – essentially self-contained scenarios. One-shots are popular at gaming conventions, because they are the simplest way for a GM and a group of strangers to sit down and share a fun four hours together. They're also a good way to introduce *Twilight: 2013* to your group. If you want to run a full campaign but all of your players are not sold on the concept, try running a one-shot instead. If everyone likes it, you can use the introductory session as the basis for the campaign, or you can start fresh with new PCs.

One-shots *must* be fast-paced. You have zero time to waste on item management, lengthy battle planning, clue-hunting, and other time-consuming activities. A good one-shot is designed to be played in one sitting, however long your group's typical sessions may last. It needs a well-defined beginning, middle and climactic end, and – of course – lots of action.

Unlike a regular campaign, where your players create their own characters, with a one-shot you should always create the PCs yourself. Such control allows you to ensure that they will be compatible with each other. Every character will have her niche in the party (one heavy weapons specialist, one sniper, one mechanic, etc.), and the party as a whole will be guaranteed to have all of the skills and abilities they need to complete your planned scenario.

INDEPENDENCE

In the context of the world of *Twilight: 2013*, “independence” means whether or not the PCs answer to someone else. A squad of soldiers, for example, report to their superior officers. A group of civilians defending a walled enclave from hostile forces answer to the community leaders. By way of contrast, a party of mercenaries (even if all of them are ex-soldiers) switches employers on a regular basis – or answers to no one. Ditto with a party of bandits, criminals, or free traders, all of whom most likely act on their own. The basic division here is whether the PCs choose their missions or have their missions chosen for them.

Mission-Based Campaigns

The PCs in a mission-based campaign answer to a higher authority, be it a military chain of command, a civil leadership council, or a crime syndicate boss. They have a well-defined reason for sticking together as a party, and most scenarios will begin with them receiving a mission to undertake. While the classic *Twilight:*



2000 setup for a mission-based campaign would involve a team of military PCs following orders from their superior officers, you have plenty of other options. Civilian authorities remain in control in many areas, and they can provide the PCs with resources and objectives. Similarly, some communities have risen from the ashes to form ragtag local governments, and these communities can also make good “employers” for the team.

The main advantage to running a mission-based campaign is the structure this model provides. Your players will never be in doubt about what they should be doing – they will be on missions with clearly-defined goals, although the specifics of how they complete their missions will likely be up to them. This might sound limiting at first, but it can actually be quite liberating. Instead of worrying about prepping material never to see the light of day, you know what you create will get used in the game. Instead of wondering what to do next, your players will always have a goal toward which to work. This frees the whole group to focus on the fun. On the whole mission-based campaigns are less work for you as the GM.

Independent Campaigns

In an independent campaign, the PCs are simply independent, free to choose the paths they take. Of course, if they don’t choose a path at least within shouting distance of what you’ve prepared, there won’t be much of a campaign at all. There is an element of give and take here, with your players implicitly agreeing to play through the scenarios you create, while you implicitly agree to create scenarios they will enjoy playing. This is why it’s so critical to discuss the type of campaign you will be playing together as a group before the game begins – and before your players create their characters.

Independent campaigns work best with experienced players. The PCs need to be proactive, not reactive – deciding what they want to do, rather than waiting for you to present them with a situation where they can react. Inexperienced players are more likely to flounder, hoping they will find the path rather than creating a path themselves. Similarly, if you are new to GMing, you will likely find this type of campaign more challenging to

run. GMing an independent campaign requires you to throw out lots of plot hooks for your players to grab onto, and to be able to improvise substantial chunks of a session once they choose a hook to pursue.

MOBILITY

The third basic division in campaign types is mobility: whether the PCs have a fixed home base or roam the post-Collapse landscape without a regular roof over their heads. The biggest distinction between these two types of campaign – fixed or mobile – comes down to resources: in a post-apocalyptic world, there is no guarantee of food, clean water, fuel, ammunition and other vital supplies being available to the PCs. This distinction snowballs into a host of other concerns and will be a major factor in determining the shape and nature of your campaign. While basic resources are not a concern in most other role-playing games, they are of tremendous importance in **Twilight: 2013**.

Fixed Campaigns

When you run a fixed campaign, the PCs will spend most of their time within a predetermined area. This allows you to devote more prep time to detailing the region’s NPC inhabitants and unique features, and to fully explore all aspects of the setting. Because the PCs will not be roaming far and wide to keep their larder stocked with food and water (as well as other supplies), you will need to find a plausible way to bring these resources to them.

For this reason, fixed campaigns work best as mission-based games. This combination provides you with an organization possessing resources it can share with the PCs (perhaps this is the primary reason the PCs are helping them), as well as a base of operations from which the party can mount their missions. Because the PCs (and players) are also likely to be invested in the survival of their home base, this also opens up a greater variety of scenarios than a mobile campaign – defending “home” against a siege, for example.

Mobile Campaigns

The PCs in a mobile campaign travel the world, whether on foot or in a variety of salvaged vehicles. Mobile campaigns feature more variety, as every scenario can take place in a different setting, but often sacrifice depth, as there's rarely time to go into too much detail about every setting and its cast of characters. Mobile campaigns often mesh better with the independent game model... unless the PCs are part of a larger military movement or refugee migration.

In a mobile campaign, acquiring the resources they need to survive will always be a primary concern for the PCs. Mobile campaigns do not have to be darker and more grim than their fixed counterparts, but they tend to be – simply because the PCs are forced to answer the question “What are we willing to do to stay alive?”

CAMPAIGN CONCEPTS

If the basic campaign types can be thought of as “how the game's going to work,” the campaign concept is “what the game's going to be about.” The default **Twilight: 2000** campaign was a military-focused one, usually involving an isolated group of American and allied personnel stranded in a devastated Eastern Europe and striving to return home. There's nothing at all wrong with this. We couldn't have written this book without feeling a great amount of nostalgia for the original GDW products, and we fully expect a large number of readers to return to the game's roots in irradiated Poland. However, our intent has always been for this edition to address *all* of the Twilight War's survivors - and to provide the tools with which to tell their stories.

Homeward Bound

The United States deployed troops to three major combat theatres and several minor ones over the course of the Twilight War. With the dissolution of the federal government, most of these personnel want nothing more than to return to whatever remains of their homes and families. This is easier said than done, of course. Supplies are short, transoceanic transportation is unlikely to be waiting in port, and most of the units are cut off from support and in hostile territory. As in so many previous wars, the choices are march or die. Previous editions' modules provide a wealth of material for possible encounters and adventures along the way. This campaign model is a typical epic journey, in which the destination is much less important than the trip itself.

This concept isn't restricted to American forces, of course - we're simply citing them as one example. Many nations sent troops far from home before the Collapse. The epic journey can work equally well for any nationality.

War Without End

The end of civilization didn't necessarily bring all of the world's conflicts to a close. Hatred has its own inertia. Surviving remnants of armies, governments, insurgencies, and ethnic groups are all perfectly willing to continue the Twilight War to the knife. In a campaign focusing on the fights amidst the ruins, the PCs are still active combatants, presumably (though not always) supported by some higher structure still issuing orders.

Soldiers of Misfortune

Post-Cold War drawdowns in forces around the world left a large number of professional soldiers looking for other work. As conflicts flared again in the 2000s, nations found their now-reduced militaries stretched to the breaking point and looked

for outside assistance. This environment was nothing less than a renaissance for the mercenary profession. Private Military Contractor (PMC) corporations flourished, attracting both cannon fodder and veteran talent by offering wages and benefits in excess of those available through regular militaries. Thousands of men became “free lances” in the oldest, most literal sense.

With the Collapse, the reason for most mercenaries to fight - money - disappeared. PMCs in combat zones find themselves in the same situation as the troops they were supplementing: cut off from home. However, as they were not fully integrated into military command structures, they now lack the support and higher authority on which most stranded soldiers rely. In many cases, their actions during the war may also have made them stand out from the regular troops, for good or ill, and the locals may have something to say.

One advantage to a PMC campaign is the plausibility of available gear. While some corporations standardized on the equipment of the militaries they were supporting, others exploited their independence from the military procurement systems and supply chains to adopt the newest and greatest toys. “Gunfonder” players who enjoy wielding heavy firepower but want to escape the constraints of standard-issue weapons and vehicles may find a PMC campaign an appealing option.

False Dawn

For groups wanting to begin play in a familiar setting, one option is to start in 2011 or 2012 rather than 2013. In such a campaign, PCs are created without the benefit of a Last Year phase, but also begin play with a much greater amount of equipment and logistical support. Playing though the Twilight War and the Collapse requires a certain amount of willingness to ignore player knowledge, as anyone who's read the first two chapters of this book knows what's coming. The key to a game like this is to keep the focus on events the characters can affect on a local and personal scale. They can't stop the Collapse, but they may be able to mitigate its effects on their surroundings.

Thin Red Line

From an international relations perspective, militaries ostensibly exist as a means of projecting force to accomplish political goals. However, many soldiers see themselves as the defenders of their nations' citizens. In this sort of campaign, the citizens are directly reliant on their protectors for their immediate physical safety. PCs are military personnel, either regular or irregular, who have accepted the responsibility of protecting a specific community or locale. They may be part of a larger formation that has settled into a cantonment, or simply a ragged band of stragglers who've gotten tired of running. They could even be uninvited warlords if the players are of a sufficiently dictatorial bent.

A variation on this theme has the PCs protecting a mobile community, such as a refugee column, traveling through hostile territory. The group may have a destination in mind, or they may simply be trying to stay one step ahead of capture or genocide. This is an excellent way to integrate special operations troops - who would have been sent into hostile areas to extricate citizens - with civilian specialists in noncombat fields.

Neighborhood Watch

Even at the height of World War II, only a small percentage of the world's population was directly involved in military operations and support. The Twilight War occurred much more rapidly, with no time for massive military build-ups or drafts on the scale seen in the previous century. Accordingly, the vast majority of survivors are ordinary citizens who never saw battlefields. This isn't to say they were untouched, though - no one can truly claim

that distinction.

There's ample reason for characters in any area of the globe to band together for mutual assistance and protection. Without reliable long-distance communication or transportation to bring news from outside, local problems become the biggest ones in the characters' world. This isolation may be as much of a stress factor as the loss of industrial capability and modern conveniences, as most characters will have grown up in the age of instantly-available information.

A civilian-dominated campaign is likely to have a majority of PCs who aren't trained for combat. The GM must be careful not to overwhelm the characters with excessively capable opponents. Conversely, players in such a campaign should show some restraint in not creating plumbers and suburban housewives with excessive combat capabilities.

Free Traders

Rail lines are cut, planes are grounded, and superfreighters are beached or sunk. In 2013, commerce is once again in the hands of individual entrepreneurs. A game focusing on this aspect of the world puts the PCs on the road or river, moving precious goods and even more valuable information between isolated communities. Military and civilian characters are equally able to handle such a task and might take up the trader's life for a variety of reasons. Commerce doesn't even have to be the major focus of the game - a mobile lifestyle and a high-value cargo or vehicle will be more than enough impetus for all sorts of encounters. This campaign could go for months without ever bringing the ostensible financial dimension into focus.

Hunting the Horsemen

This sort of campaign puts a much more sinister spin on the Twilight War. The chain of events leading to Armageddon involved several low-probability incidents and a plethora of bad decisions on the part of world leaders. A sufficiently paranoid observer might conclude more was at work here than simple entropy: events were orchestrated to result in a global war. PCs might have been in positions to see part of the pattern before the war, or they may uncover evidence after the fact. Either way, the big questions are whether the parties responsible for motivating the world to smash itself are still at work to finish the job, who they really are... and what the PCs intend to do about it.

A variant on this might use the "False Dawn" premise above to start as early as late 2011, with the PCs involved in intelligence or special operations work before the hypothetical conspiracy wholly unfolds. While it's unlikely that a small group can bring the whole machine to a halt, they just might be able to change the course of history enough to save some of what's important to them.

Into the Longest Night

This campaign requires a fair amount of additional work on the part of the GM, as it deals with subjects the core Reflex System rules most assuredly don't address (but future supplements might...). Over the last few centuries, increases in human scientific and technological knowledge - and population - drove most of the ancient evils of the world into hiding. Now, without the need to hide from well-organized and capable adversaries, the creatures of the night are reclaiming what once was theirs. *Nosferatu* warlords reassert their control over the Balkans, *rakshasas* hunt straggling bands of soldiers through the Kashmiri mountains, and hungry ghosts haunt the radioactive ruins of shattered cities. The PCs may have been aware of the hidden world before the Twilight War, or they may only have learned of its existence when the predators became bolder after the great die-off. Either way, they now must deal with it, one way or another.

Avatars

Part of the allure of the post-apocalyptic setting is the backdrop; it's fundamentally *our* world. It's not hard to watch news footage of a distant war and imagine the same conflict coming to our neighborhood - and to us personally. In an avatar campaign, each player uses the character creation rules to model himself in game terms and then plays himself in a post-apocalyptic world. To minimize the tendency to over-represent personal skills and achievements, the GM should carefully review each character sheet. It may help to have each player leave the room while the rest of the group votes on whether or not he's depicted himself accurately. In most groups, this will also result in a civilian-heavy campaign - or perhaps not, given how many military veterans are fans of **Twilight: 2000**.

This campaign variation is recommended only for especially mature groups because of the potential for offense and unease. Particular problems may result from the issues of character death and permanent injury. Be sure there's a clear dividing line between the people sitting around the table and the events happening in the game.

STARTING THE CAMPAIGN

The key element in starting a successful campaign is dialogue. Before the game begins, you and your players should all get together and talk about what kind of game you'd like to play.

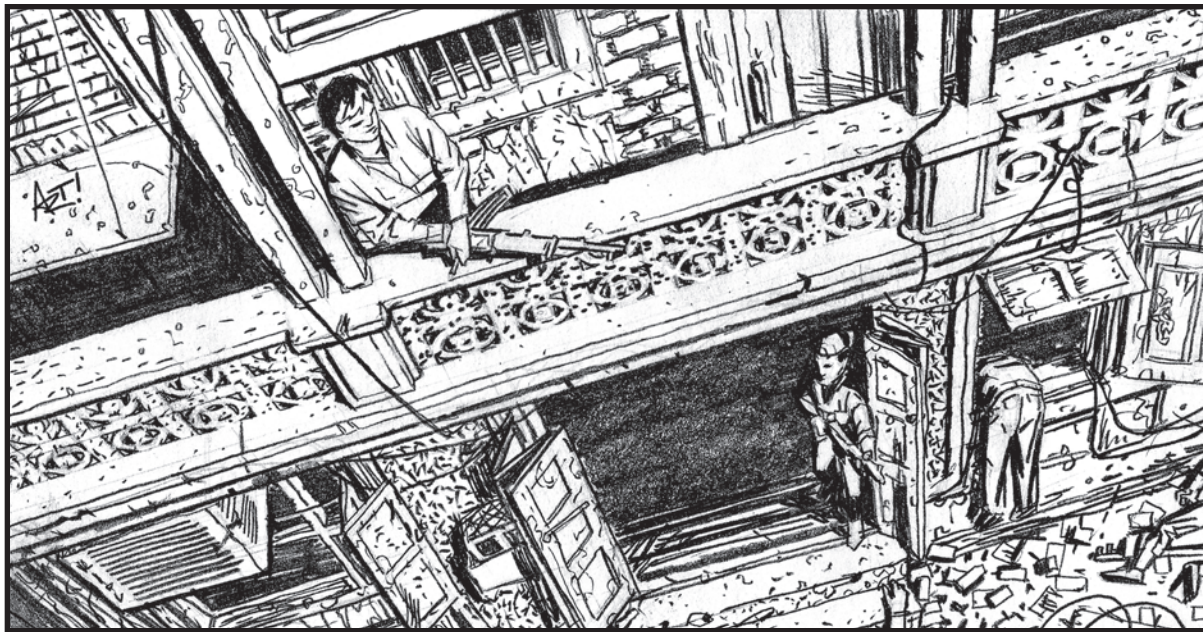
If your players aren't familiar with the premise of *Twilight: 2013*, start by giving them a quick rundown on it. Then briefly mention the different types of campaign (limited, mobile, etc.) and see what sounds good to them. You should have at least one idea for a campaign in mind already, so that you can suggest it to your players - but don't get too attached to your own idea, as they may come up with something better.

The Reflex System has three stages of complexity: basic, standard and advanced. You should already be familiar with the essential differences between the three stages. If you are most comfortable running a particular stage, just let your players know which stage you will be using. If you're comfortable running any of the stages, let your players choose their favorite. Similarly, there are a few permutations within the character generation rules - be sure to let your players know which options you will and will not be using.

With those decisions made, it's time to move on to character creation. This is likely to work best as a group effort. When your players create their characters together, in the same room, with your help, you're all stacking the deck in favor of a successful campaign. Conversely, if everyone goes off on his own with a copy of the rules and creates a character without consulting the rest of the group, you're increasing the chance your campaign will fall apart after a few sessions due to lack of team cohesion or an absence of critical skills.

By creating the PCs as a group, your players will be able to connect their backgrounds. Hopefully, they will create hooks for you to use dependent on other PCs, shared NPCs or aspects of the campaign that you have all agreed upon. Most importantly, your input will ensure that their PCs are a good fit for the type of campaign you have chosen. For example, a team of five snipers or five mechanics is not likely to succeed against most challenges.

Team equipment selection is part of this process, and you should place appropriate limits on the nature and amount of gear the team is allowed to have. Don't let your players acquire gear that is wildly inappropriate for the campaign, nor allow them access to every single thing they want. However, do not place unnecessary limits on what they can and can't purchase. As with many aspects



of GMing, you are striving for balance in this area.

Once the team has been created, you should look over the PCs with two questions in mind: “Are these characters going to be fun to play in this campaign?” and “Can I make any suggestions to improve these characters?” Your goal while reviewing the PCs is not to weaken or “nerf” the team, but to give your players the benefit of your GMing experience, your familiarity with the Reflex System rules, and your knowledge of the campaign.

As a final preparatory step, you should make sure every PC has at least one or two background hooks you can use – unresolved elements of that character’s past with the potential to surface during play. Every player has his own approach to creating and developing his character, and some players don’t like to create too much material up front, but as the GM you need a certain amount of material to work with. It’s perfectly reasonable to ask a player whose character has a very light background to give you one or two hooks.

PLANNING SESSIONS

There is an art to planning game sessions. Fortunately, it is not a difficult art to master if you keep a few things in mind. When the time comes to plan a session for your campaign, you will already have several powerful tools in hand: the player characters, whose strengths and weaknesses signal what your players are most interested in doing during the game; a specific type of campaign, which tells you a lot about what will happen during game sessions; and a basic plotline for the campaign – a loose roadmap full of ideas for individual sessions.

Just Enough Preparation

When you sit down to prepare for an upcoming game session, your goal should be to prep just the right amount of material. Everything you prepare should be used, and you should not need anything you did not prepare. Real life, of course, rarely works out this way. You will find yourself prepping material your players bypass and needing to create things on the fly when they do something unexpected. But it’s still a good goal to keep in mind, as

it will help you avoid wasting your precious preparation time.

Write an Outline

Begin by outlining the upcoming session. A good general rule is to try to create a one-session scenario – in other words, a complete adventure that can be played in one evening. If things don’t go as planned and you wind up calling it a night before the end of the scenario, that’s no problem – it just means you have less work to do next time.

When writing your outline, imagine you only have time to tell the coolest parts of a story. Those are the focal points for the session. Everything else – hours of uneventful travel, minor events getting the PCs from one exciting scene to the next – can either be filled in later or glossed over entirely. You want to spend the most time on the meat of the session: the scenes where the PCs have a chance to shine.

Your initial planning should provide you with a list of potential scenes and encounters. Just remember: the plot is a guideline, not a straitjacket. If you think of something better five sessions into the campaign, don’t hesitate to scratch out future events and change what is going to happen.

Include Lots of Action

In most **Twilight: 2013** campaigns, you should include plenty of fast, furious action. Assuming your players created a team of mercenaries, soldiers, criminals, or other badasses, you will want to make sure you deliver in this department. A good rule of thumb is to include one major fight and one minor fight in every session, linked together by non-combat encounters serving either to advance the overall plot or to highlight different aspects of the PCs.

Try to vary the kinds of fights the PCs are involved in. If the last major combat was a pitched battle in the ruined streets of a devastated city, with lots of dirty, bloody close-in fighting, don’t follow it up with another close-quarters urban combat. Even if the enemies are different, it will feel very similar. Instead, consider making the next major battle a longer-range engagement, where the PCs have time to plan, set up ambushes for their opponents, and take up sniper positions before the battle begins.

There is an exception to this guideline: games based around teams composed mostly or entirely of characters with limited combat abilities. Teams like this tend to take on different kinds of adventures, and throwing lots of fights their way can lead to a dead team pretty quickly. If your players create a team like this, you can and should include *some* action, but it should not be the focus of the game.

Give Everyone a Chance to Shine

Every session should have at least one opportunity for every PC to do something he's good at. When you are coming up with encounters for the next session, keep this in mind at all times. As you develop "spotlight moments" for each PC, jot them down in your session outline. If you finish your outline and don't have at least one cool moment planned for each PC, you are not done with your session prep.

Your players created characters they thought would be fun to play. You can ensure each of your players has fun by giving him a scene or encounter in which to play that character in his intended manner. Even though moments like this also happen organically, with no planning on your part, you cannot count on fate – which is why it is so important to build them into your sessions.

Surprises

No matter how well prepared you are for a session, your players will do things you did not expect them to do. Welcome to half the fun of being a GM. When those situations arise, you will need to think on your feet and come up with a response that's fun for the whole group. Even though you can't plan for these kinds of surprises, you can give yourself a leg up by trying to think of different ways your players might tackle the encounters that you write.

For example, if they're ambushed while driving through hostile territory, they have at least two options: stop and fight off the ambushers, or stay in their vehicles and try to outrun them. In this case, it would be worth prepping for both possibilities. If your players do something you didn't think of – like trying to bargain with the ambushers, trading them ammo for safe passage – you will need to improvise.

SAMPLE SESSION OUTLINE

Here is a very rough sample session outline incorporating all of the elements discussed in this section. The campaign revolves around the remnants of a British military platoon trapped in Eastern Europe, trying to bring order to the region against impossible odds. There are four PCs with two vehicles, moving from place to place and responding to problems as they crop up. In this session, they will try to aid a besieged town by supplying the defenders with ammunition, which they first need to acquire. In terms of type, this campaign is limited, independent and mobile.

Opening scene: The PCs enter the city. They meet their arms dealer contact and haggle for ammo.

Minor battle: The deal goes sour; the arms dealer's thugs attack the party. They're incompetent but well-equipped. Close-quarters firefight. If the arms dealer is left alive, she will bargain for her life with extra ammo and guns. *Ellen's moment:* Expert with a pistol (ideal for close combat).

Bridge scene: Ammo acquired, the PCs return to their vehicles and head out. Bandits in vehicles try to run them off the road in the rain. They can stand and fight or try to get away. *Brad's moment:* Fancy driving.

Major battle: Bandits defeated or avoided, the PCs break through the siege and resupply the defenders with ammo. Lots of

ways to tackle this, and the PCs have plenty of time to plan.

Leann's moment: Tactics and battle planning.

Shawn's moment: Run-and-gun fighting.

Alternate plan: If they go for stealth rather than force, increase the chance of discovery right before they get to the walls, letting Leann and Shawn fight the rearguard action.

Denouement: The team breaks the siege or is defeated, retreating to fight another day. If victorious, there's a celebration; if defeated, they lose significant resources.

As you can see, all sorts of things are missing from this outline. To run this session, you'd also need to create a few NPCs (the arms dealer and leader of the besieging force, at a minimum); note the stats for the thugs, bandits, and siege forces; detail the extra arms the dealer would use to barter for her life; jot down notes about how you would describe the different scenes... But the basics are all there. You could use this outline to build a session, and you would be off to a good start.

BALANCING CHALLENGES

Heroic acts mean the most in the face of equally heroic challenges. One of the great secrets of GMing is this: *your players want you to make their characters suffer*. They may claim to be perfectly happy with an unbroken string of unmitigated easy successes, but deep down inside, they're hungry to see their PCs pushed to their limits. The more desperate a situation is, the more your players will enjoy retelling the story of how their characters snatched victory from the jaws of defeat – and how they managed to triumph over the worst odds a megalomaniacal sadist of a GM could throw at them. Accordingly, it's your job to make sure this happens. Every major crisis the PCs face needs to be difficult enough to make the players sweat, but not so difficult that they leave the table with no hope of success (unless it's a no-win situation preparing them for an epic long-term effort). It's a delicate balancing act.

Know Your Enemies

We don't actually recommend treating your players as your enemies. Targeting the players leads to all sorts of adversarial behavior when you should be cooperating to jointly create an enjoyable gaming experience. If you know exactly what your players want out of the game, you can provide it for them (assuming their demands are reasonable). If everyone at the table is interested in watching his character progress from a clueless civilian to part of the town's battle-hardened, self-taught first line of defense, then you'll probably want to season those PCs in a series of gradually more difficult fights rather than sending them on a series of diplomatic missions to nearby survivor communities.

We just said you shouldn't treat the *players* as your enemies. Their *characters*, however, are another story entirely. As the GM, you control every part of the PCs' world. You can threaten them with hurricanes, plagues of locusts, hordes of regressed primitives wielding golf clubs, rains of blood, nuclear warheads... the list of torments is only limited by your imagination. However, your players are almost certain to not have fun if you only give them challenges their characters can't handle. If the team has no doctor, don't send them on a medical aid mission. Instead, strive to give the PCs problems at least one or two of them are equipped to solve. Remember, every character should get at least a little bit of "screen time" in which his capabilities are critical to solving a challenge that the team faces.

Combat

In the Reflex System, *every* fight has the potential to kill one or more PCs. However, there's a world of difference between the combat capabilities of a suburban housewife and those of a special operations veteran. Because of the potential for character death, combat encounters require exceptionally careful tuning.

The best way to balance combat is to match the PCs against appropriate numbers of NPCs of the proper quality and combat readiness (see p. 311 for the details of NPC creation). In general, an appropriate challenge for each PC is a single NPC with equal combat skills, combat readiness, and equipment. Thus, if a four-character team averages two or more Professional combat skills each and CUF and OODA of 4, four Experienced combatant NPCs with similar armament are an appropriate match.

Numbers count. For each reduction in NPC quality, add one NPC. Thus, one Experienced NPC equals two Regular NPCs or three Green ones.

Gear also helps. If the NPCs have equipment significantly worse than the PCs, add one NPC per PC. Conversely, if they vastly outstrip the PCs with the quality of their gear, reduce their numbers by about half.

All of these equivalences assume both sides of a fight start on equal footing. Surprise can be a significant force multiplier, as can the advantage of defending from a fixed, fortified position. If the NPCs enjoy either of these advantages, reduce their numbers to compensate; if the advantages go to the PCs, throw more opponents at them.

Finally, all of these notes are ultimately just rules of thumb. Combat scenes are sort of like cooking: start with the recipes, but eventually you'll develop an intuitive feel for the amount of blood and lead to throw into the pot.

Adjusting on the Fly

It's entirely possible to under- or overestimate your PCs and not realize it until they're about to handily overpower your planned opposition or die messily. In either event, don't be afraid to adjust your plans behind the scenes to bring the encounter closer to the desired result. If the PCs are going through enemies like popcorn, bring in a couple of squads of unexpected reinforcements. If the game is about to falter because the player of a critical specialist is gone for the evening, let the remaining PCs find an NPC who they can persuade to provide services the missing character normally handles. As long as you don't contradict anything already established (or if none of the players catches you), they'll assume you had things planned to happen that way all along.

If you *do* break continuity and your players catch you, smirk knowingly. Yes, they knew the precise troop complement of Firebase Butterfly, so where did the reinforcements come from? Isn't it a little *too* convenient to find a Pakistani nuclear physicist in the middle of Bulgaria? Players tend toward paranoia and will assume their characters missed a key clue somewhere or have run afoul of a massive conspiracy. The effort they will expend trying to figure out what they missed should give you enough time to figure out how to get the story back on track. If one of the players comes up with a better explanation for the plot twist than what you'd improvised, run with his idea and throw him a Survival Point for "correctly deducing the plot." He'll feel a sense of accomplishment and you'll have new material to use.

The No-Win Situation

This is a particularly dangerous narrative tool for you to use, because it has the potential to cataclysmically end your campaign. In fact, that's what it's designed to do. A no-win situation is best reserved for climactic points in the campaign - and groups whose collective ingenuity and luck outstrips your own. When crafting a

no-win situation, you create a (plausible, within the context of the story) scenario in which you cannot find any reasonable means for your PCs to succeed. Then you unleash it on them, trusting in your players to find something you missed and exploit it to the fullest. See our previous comments about your players wanting to work for their successes. This is likely to succeed only if your play group is dominated by non-linear thinkers (or a bunch of bastards with loaded dice).

Note the difference between a well-crafted no-win situation and an intentional TPK (Total Party Kill, a term borrowed from fantasy gaming because it fits so well here). The former incorporates several decision points before the PCs are irrevocably screwed, or at least provides them with opportunities to see their doom before it lands on them. The latter is a perfectly-camouflaged ambush in a box canyon, using a 10:1 numerical advantage and large quantities of explosives, and is the antithesis of good GMing.

REWARDS

Life isn't always fair. People rarely get what they deserve. One of the reasons we play games is their rules. Well-designed games give us a concrete set of expectations, letting us know the consequences of most actions and events. They also provide consistent rewards for specific acts, which gives us a sense of control perhaps lacking in our real lives.

In the Reflex System and other roleplaying games, the best-defined and -regulated rewards are character improvement. As detailed at the end of Chapter Six, specific events during play provide opportunities for PCs to increase their traits, becoming more capable over time. However, this is not the only type of reward you can confer on players, and may not even motivate some members of your group at all.

Goods and Services

"We kill them and take their stuff." Looting fallen enemies is an archetypal element of most roleplaying games. It's certainly not unexpected behavior in a lawless post-apocalyptic world with dwindling material resources, and is often the sole compensation for supplies, equipment, and even characters expended in a fight. With this said, vanquishing enemies isn't the only way characters can acquire new equipment. In most cases, it isn't even the best way.

Payment in Kind

In the absence of electronic banking and government-backed currencies, local economies have reverted to barter systems. NPCs are much more likely to pay for services rendered in goods or services rather than gold or meaningless paper money. If the PCs are of a mercenary mindset, this can be brokered up front, perhaps with partial payment in advance ("We'll take care of your bandit problem, but we're going to need repairs for our vehicles first."). Alternately, if the beneficiaries of a given action are honorable and generous, they may spontaneously offer the PCs whatever hospitality they can muster. This can also happen if the locals are just paying Danegeld in the hopes the PCs will go away.

A caveat: the lot of the mercenary is often an unhappy one if the paymaster has second thoughts between signing the contract and finishing the deal. Throughout history, free lances have been "rewarded" with betrayal and nonpayment. If the PCs are dealing with an untrustworthy party, they may need to collect their reward at gunpoint (possibly after an ambush intended to put them out of the paymaster's misery). Of course, some players will enjoy the moral satisfaction of successfully turning the tables on such a double-crosser.

The Supply Sergeant

Many play groups won't want to deal with the minutiae of tracking beans, bullets, and biodiesel. If the campaign is mission-based, the PCs' backer can be assumed to be responsible for supplying provisions. This doesn't mean that the PCs will necessarily have everything they want, but their commanders are likely to have a vested interest in keeping them as well-supplied as the organization's resources allow. In such a campaign, additional rare and valuable equipment can be issued on a per-mission ("You're going to need this thermal imager to locate the bandit hideout.") or permanent ("This is our last functioning BTR-80. Try not to lose it.") basis, once the PCs prove they're competent and responsible.

Salvage

The rapid die-off of the Collapse means a large amount of property has been abandoned and is just sitting around the wasteland waiting to be picked up. Little of it is in like-new condition, but a group with the right technical skills should be able to recondition a lot of what they find. If they don't have those skills but do have transport capacity, they may also decide to become middlemen, going into hazardous areas and bringing out supplies and equipment to sell or trade to merchants and salvage brokers. Any such operation is likely to face competition at one time or another. Depending on the in-game situation and the campaign's tone, this could be an economic war, run-of-the-mill banditry, or even accidental discovery of a conspiracy or covert operation in the salvage zone.

Minions

Semi-permanent assistance can also be a reward. If an essential skill is lacking in the team, an appropriate NPC might be willing to join up and provide this skill in exchange for a share of the loot, assistance with his own agendas, or just protection and hot meals. Motivations for such an act are as diverse as humans are, and the addition of a regular NPC comrade should be a matter of roleplaying first and foremost. In a mission-based game, higher authority might assign a specialist to supplement or assist the team. In such an event, it's worth taking care to ensure that the players don't treat the NPC as cannon fodder (unless that's his only role in life).

Learning Experiences

Most RPGs take a budgetary approach to experience. Success earns a character a fixed number of points. Depending on the system, the player either accrues these points toward a threshold total (attainment triggers a significant increase in overall capability - "gaining a level"), or he spends them to buy improvements to selected traits.

The Reflex System uses a different mechanism to represent a character's learning processes, one in which the most used skills are the most likely to advance. This can be a liability in sessions featuring little dice-rolling, or in which a given character has little to do because the plot doesn't focus on his areas of competence. In such cases, it's within the GM's power to award one or two learning experiences per PC as rewards for roleplaying, or for other significant contributions to the group's success not involving a lot of skill checks. These should never be more common than learning experiences from normal play. We recommend using them sparingly as a mechanism to keep disadvantaged PCs from falling behind the rest of the group in overall competence.

Downtime

It may take players a while to get accustomed to one of the aspects of **Twilight: 2013**: by default, their characters are responsible for their own upkeep. Without a fixed base of support or specialists providing services, they must handle their own medical, maintenance, and supply needs. Chapter Six contains rules for repairing vehicles, raising and hunting food, reloading ammunition, and caring for sick and injured comrades. While you don't have to use all of these tools, some groups may want to focus on the necessities of survival, out of either masochism or a desire for adherence to the genre.

Most of these tasks will take a significant amount of time. It's hard to maintain a constant adventuring schedule when you're trying to tune the truck and harvest the grain. A long block of downtime can give the PCs the opportunity to take care of healing up without having to go into battle already injured.

In addition to providing time for maintenance (in all its forms), downtime can also provide opportunities for players to improve their PCs. At the beginning of play, it's unlikely that every character will have all of the skills the group considers essential for survival. Downtime is a chance for training, allowing players to help make each others' characters more capable. If the medic gives everyone first aid lessons and the sniper provides marksmanship pointers, the team is a little more well-rounded when the next session begins with "three weeks later, somewhere in the Pyrenees..."

Other long-term projects should also take place largely off-screen, and downtime allows progress to occur between sessions. If the group has become the protectors of a small village, a couple of days of game time between sessions isn't enough to train the local militia and get the old grain mill operational, but a month of downtime is enough to at least get a good start.

Most downtime activities can be handled outside of the regular schedule of gaming sessions. Email is an excellent tool for such administrative work.

Plot and Story

"We do it for the jazz." While some players are motivated by numerical advantages they can track on character sheets and notepads, others roleplay for the chance to do cool stuff and re-tell the stories later. For these players, rewards can come in the form of opportunities to shine.

"My name is Inigo Montoya..."

Okay, so perhaps a *Princess Bride* reference will be a little disruptive in a gritty post-apocalyptic game session (but still better than yet more damn *Monty Python* quotations). The fact remains: inside a great many gamers are frustrated actors awaiting their starring roles. Although it may seem foreign to readers whose gaming preferences are rooted in early wargaming experiences, such players derive a great deal of satisfaction from getting deeply into character. These are the gamers who want to pound on the table while delivering blistering ultimatums, leap to their feet and exhort an invisible audience of NPCs to stand and fight against impossible odds, and casually drawl unthinkable provocations in the last moments before the dice hit the table for initiative.

For the GM, it's usually easy to identify these players within a few sessions. They're the ones who speak in the voices of their characters ("Sir, with respect, I believe in my professional judgement that this plan constitutes an excessive risk to several critical resources!") rather than as detached third parties ("My character tells the general he's a nutter."). While some of them can be dedicated number-crunchers, they're generally less interested in fuel consumption ratios and weapon optimization than in playing out the negotiations with the local bandit warlord.



The good news is it's easy to please these guys without the faintest risk of unbalancing the game by introducing excessively powerful equipment. Simply give them opportunities to do what they're trying to do anyway, and allow their interrogations and monologues to have more of an impact on the game than a straight dice roll would. At a minimum, if you're going to require them to roll, give them a moderate bonus (+2 or +3, or negating a larger penalty).

Remember, for players like this, the spotlight time itself is almost as much of a reward as their roleplaying's impact on the campaign. However, they are likely to want to see their efforts have *some* meaningful effect.

Now Your Ass Belongs to Me

The world of **Twilight: 2013** is a violent and brutal one, holding to one of the most universal truths across all RPG settings. For the sake of character survival, most players will build their PCs with at least a modicum of combat capability (unless you're

specifically running a civilian noncombatant campaign). Some, however, will build their characters with the goal of doing cool stuff in combat (as opposed to just crushing all opposition with minimal effort). These players are similar to the aforementioned frustrated actors because they also want spotlight time, but rather than constantly roleplaying dramatic dialogue, they're looking for opportunities to describe their characters' physical actions. Usually, but not always, this takes the form of flashy combat maneuvers that would look good on film.

As with the frustrated actor, this type of player - call him the frustrated action hero - wants to succeed, but probably will be satisfied with the opportunity to make the attempt. Don't hand him success on a platter, but don't penalize him for his actions as long as they stay within the bounds of plausibility. If he manages to pull off his stunts, his reward will be the opportunity to tell the "no shit, there we were" stories - or, better yet, to hear the other players recounting his actions.

One last note: this is the type of player who is most likely to dramatically sacrifice his PC in an attempt to save the rest of the team or take down a major adversary. This decision usually occurs because the player thinks his character's chosen death is dramatically appropriate and will have a significant impact on the scene, if not the campaign. If you see this decision coming, try to ensure that the sacrifice isn't wasted. Death is cheap and easy in **Twilight: 2013**, but even the dirtiest war has heroes who earn posthumous honors.

Membership Is Its Own Reward

If you're truly fortunate, one or more of your players is the proactive but cooperative type who'll take some of the weight off your shoulders. If such a player has an idea for expanding the game world, turn him loose and encourage him to submit his ideas to you. Let him write up the battalion cantonment, the nearby village where his grandfather grew up, or the PCs' favorite local roadhouse, then incorporate his work into the campaign (with, of course, a few of your own twists to ensure surprise). For a player like this, being able to put his character in the middle of a setting he helped create can be rewarding in and of itself - all the more so if the character subsequently has the opportunity to take command of the cantonment, defend the village, or purchase the roadhouse.

Player-Defined Goals

As your campaign world comes to life over the course of the first sessions, your PCs will gradually make their mark on it - and vice versa. Your players will find problems they want their characters to solve, objectives they personally want to complete. If you had them discuss character histories before play began, they may already have defined their PCs' long-term goals. In the archetypal **Twilight: 2000** campaign, "find a way home from Poland" is the driving force behind a lot of decisions.

While you can't eat praise and moral satisfaction doesn't keep you warm at night, most PCs (and, by extension, their characters) will feel a certain fulfillment from accomplishing difficult goals they set for themselves. You wouldn't have accepted the thankless job of GMing if you didn't have a story to tell, but the gaming experience is a cooperative one. By giving your players the opportunity to tell their characters' own stories - and making them work to achieve the goals they set - their self-made success will be its own reward.

CHARACTER MORTALITY

There's no denying it: the Reflex System is a high-lethality game engine. Players who are accustomed to systems wherein PCs can suffer repeated massive injuries with no lasting effects will be

in for an unpleasant surprise in their first couple of combat scenes. It may be worthwhile to run a “practice session” of combat at the beginning of a campaign, just to make new players aware of the hazards of combat and get them started thinking tactically. If you plan to use Survival Points during play, run the test session without them so players have a stronger appreciation for their value.

As GM, you’re going to have to decide how and when to kill PCs (or, to put it another way, how much provocation is required before a PC “deserves to die”). As a matter of random chance during any combat? As a consequence of excessive stupidity in lethal situations? Only as the climax of an act of deliberate and heroic self-sacrifice? Death is an important dramatic tool. Make your decision, and be sure your players know the size of the sword you’re hanging over their characters’ heads.

Even with players who intellectually know their characters might die suddenly and messily, a word of caution is in order. Many players become strongly attached to their characters, particularly after investing a large amount of play time in them. It’s hard to kill a character without making the player feel like his fun is being ruined. If a player isn’t prepared for (and accepting of) character death, expect all manner of argument and disruption when events or the dice go against him.

Limiting Lethality

If you want to run a less lethal game than the default, try one or more of these rules changes. As always, be sure to discuss this with your players ahead of time so they know what to expect, particularly if you’re enacting any changes in the middle of an ongoing campaign. Be aware that reduced lethality will significantly change the tone of the game, as players will be more likely to take risks and engage in gratuitous heroic behavior if they know their PCs are likely to survive.

- Use the Survival Points rules (see p. 86). The most important use of SPs in many situations is their ability to mitigate injuries, and this alone will have a significant impact on PC survival rates.

- Reduce the penalties inflicted by injuries by one level. This will allow slightly-injured characters to act without penalty and extract themselves from bad situations before they’re hit even worse.

- Reduce the TNs for the Fitness checks necessary to avoid shock and instability. We don’t recommend a total elimination of instability unless you’re playing a simplified Stage I game or the instant death rules (see p. 154) are in effect. Instability is the only real way for characters to die in combat outside of instant kills, and there should still be *some* risk to gunfights.

Dying AFK

In computer gaming parlance, “AFK” means “Away From Keyboard,” and is used to indicate a player has stepped away from his desk for a moment. This can be hazardous in multi-player online games, as the world doesn’t have a “pause” key. A player who goes AFK in a hostile environment can return to a dead character in the time it takes to retrieve a soda from the refrigerator.

In the world of tabletop roleplaying, the equivalent of going AFK is missing a session. Many players will have perfectly valid reasons to not show up for one evening. In such an event, the missing player’s character can be ignored, assumed to be elsewhere, or run by the GM as a supporting NPC. Whichever option is taken, the unmanned PC should have a reasonable degree of plot immunity from death. A player should always be involved in the bad decisions (or bad rolls) leading to his character’s demise. Killing a player’s character without giving him a chance to avoid or

mitigate this fate can be offensive and insulting. To many players, it feels like a petty punishment for missing a session. Don’t do it.

Fresh Meat for the Grinder

Character death shouldn’t evict the luckless player from the group. Most players will want to keep gaming with their friends. However, continued play requires a new character. The following tips may be helpful in assimilating a new character into the group.

- The player should be encouraged to build a character who’s substantially different from his previous one. Death shouldn’t be a revolving door spitting out a series of identical Special Forces operatives carrying anti-material rifles with sequential serial numbers. Even if the departed PC filled a specific niche within the team, there are multiple character creation paths to most necessary skill sets.

- The new character should have a plausible reason to link up with the surviving PCs. This may be an existing connection in character history, mutual goals, or (in the case of a mission-based campaign) orders assigning him to the team as a replacement. Meeting in roadhouses is somewhat overdone. The whole group should discuss matters to determine the best method for introducing a new character and giving him an immediate reason to trust and work with the other PCs.

- If the group has regular supporting NPCs attached, the player can take over one. This provides a ready-made niche, identity, and history of association with the other PCs. If the player takes this option, give him the traits of the NPC and let him go to work. If the NPC was standard rather than star, send the player to Chapter Four with the NPC’s sheet as a guideline.

- If the group is in the middle of a complex situation, a new PC can be the sword to sever the proverbial Gordian knot. As GM, you can suggest that a certain skill set may be essential to overcoming an upcoming challenge. It doesn’t hurt to bribe a player with a few extra benefits if he builds his character to fit your grand scheme.

NON-PLAYER CHARACTERS

The player characters are the heroes (or at least the protagonists) of the piece, but even in a depopulated post-apocalyptic setting, they’re not the only people in the world. NPCs serve as the allies, adversaries, and innocent bystanders the PCs encounter throughout their travels.

NPC DESCRIPTIONS

Unless they’re firing blindly through walls, characters will notice the appearance of NPCs well before their game-related traits become relevant. After the first look, many interactions with non-hostile NPCs can be resolved entirely through roleplaying, without ever needing to refer to numbers or dice. Thus, an NPC’s appearance and social behavior can be as important as the numbers defining his capabilities.

Like the rest of the GM’s narrative tasks, coming up with rich and relevant NPC descriptions is more art form than science. Accordingly, there are no hard-and-fast rules governing this task. Some GMs will prefer to describe NPCs on the spot, while others are more comfortable pulling an appearance and set of mannerisms from a predetermined list. The balance between inspiration and preparation is entirely up to the individual GM. However, some

general advice is in order.

Many experienced gamers will expect the amount of detail the GM gives an NPC's description to be directly proportionate to the NPC's importance to the story. A wise GM can apply this in social engineering to point the players (and thereby their PCs) to the NPCs who are of the most immediate interest. Conversely, lavishing detail on an NPC whose only purpose is to give the PCs a single trivial piece of information may lead the players to invest extra effort on a relatively inconsequential minor character.

Visual appearance is the first thing most characters will notice, but sound and smell are also important factors in social interaction (touch and taste less so, unless it's that kind of game). These subtle cues aren't as overtly obvious as visual ones, and the GM may be justified in asking players to make Awareness checks to see if the PCs pick up on them. This gives more alert PCs a chance to shine, as the smell of gasoline or the rattle of loose brass in a pocket may tip them off that their new friend is more than he seems.

Behavioral cues are also important, and the oft-neglected Personality attribute is a good means for conveying this information to the players. This attribute governs social interaction and perception, so successful Personality checks can provide valuable insight. The guard commander's taking a hard line, but he just rubbed his thumb across his first two fingers – does that mean he's open to a bribe?

As with real life, common connections tend to cement memories and lead to emotional investment in other individuals. PCs should not be exceptions to this, though we've certainly seen enough of the Standard Black-Garbed Lone-Wolf Orphan Navy SEAL Sniper character archetype to know better. For those players who put a bit more thought into their character's descriptions and motivations, the GM should provide the occasional reward. Observation or casual conversation can reveal something about an NPC that provides a PC with a hook on which to build rapport. Does this girl have an accent from back home? Is a copy of the character's favorite novel on the merchant's desk? If a player actively pursues such an advantage through roleplaying, it doesn't hurt to give him a slight (+1 or +2) numerical advantage in related social task checks.

GM Hint: Creating NPCs

The guidelines for NPC creation should not be taken as inflexible rules. Rather, they're intended to provide a framework for quickly determining an NPC's traits based on a terse description. Remember that players also read this chapter, and tailor your NPCs to present a level of challenge or assistance appropriate to the PCs' abilities.

Note that contacts and other allied NPCs should almost never overshadow the PCs when the time for heroic action comes. Unless the players actively want to keep their characters out of a given situation, you should arrange matters so NPCs lack the critical abilities necessary to solve a problem, or are more urgently needed elsewhere. Remember: PCs are stars, NPCs are supporting cast.

Obviously, there are exceptions to this statement. Contacts called in specifically to cover a vital skill the PCs don't have should perform up to expectations. Also, NPCs can serve as sacrificial victims. If a particularly critical task is going to require the death of a PC and the player isn't comfortable sacrificing his character for the greater good, an appropriately-placed NPC (preferably one to whom the PCs have some sort of attachment) can step in to die heroically.

NPC TRAITS

Of course, PCs' interactions with NPCs won't be limited to the social level. The progression from roleplaying to tossing dice is where NPC traits become relevant.

In theory, you could use the character creation rules in Chapter Four to generate complete life path histories, traits, and values for every NPC the PCs are likely to encounter. In practice, this would create such an immense workload that no sane GM could manage it. Thus, most NPCs don't receive the same level of mechanical detail player characters do. They instead receive only what they need to fulfill their designated walk-on roles: a bare minimum of numerical information.

Quality

An NPC's quality is a relative measure of his experience and competence that determines the acceptable ranges for several other traits. Quality is measured on a descriptive scale. Note this isn't necessarily a measurement of combat experience unless combat is the NPC's chosen profession – a world-class neurosurgeon is likely to be a high-quality NPC with abysmal combat capabilities. From highest to lowest, possible NPC qualities are:

- **Green:** The NPC is young and inexperienced or has led an exceptionally sheltered life without much opportunity to learn useful skills. Alternately, he was highly experienced before the Collapse, but everything he knew is now completely irrelevant (many former urban professionals fit this criterion). Green NPCs make up about 25% of the total population.

- **Regular:** The NPC is of average competence, probably on a par with a well-rounded starting player character in his twenties. Roughly 40% of the total population can be considered Regular.

- **Experienced:** Through long experience, above-average innate aptitude, or fortunate survival of many lethal situations, the NPC stands a cut above his peers. Approximately 25% of the total population is Experienced.

- **Veteran:** Broadly-experienced and well-trained, the NPC is a significant challenge for a highly-skilled starting character assuming a conflict in the NPC's area of specialty (use common sense: a veteran lawyer won't stand a chance in a gunfight with PCs, but will mop the floor with most of them in a courtroom). Veteran NPCs comprise about 10% of the population.

- **Elite:** The best of the best, the NPC is a world-class authority in his chosen field of endeavor. This is one of the most capable allies or dangerous adversaries the PCs will ever encounter. Less than 1% of the population can be considered Elite.

Attributes and Key Skills

An NPC's quality determines his attribute values and skill ratings. The GM should assign these as appropriate.

For attributes, a range of points is provided; the total of all ten of the NPC's attributes should fall within this range. Combat-capable NPCs should lean toward the higher end of the range, with the extra points going into CUF and OODA; noncombatants aren't likely to have values above 3 in either of the derived attributes.

A little discretion is called for when assigning skills. Most PCs will have ratings in at least 12 to 15 skills, which is a little excessive for an NPC who may only be on-screen for a few exchanges of fire. An enemy militiaman's farming background and exquisite taste in watercolors may be interesting from a social perspective, but he's much more likely to be shooting at the PCs than discussing

landscape lighting with them. Accordingly, it's only necessary to determine the NPC's ratings in the three to six key skills directly relevant to his role in the story. The following ratings are recommended maximums; not all of these key skills must be this high.

NPC Quality	Attributes	Key Skills' Ratings
Elite	76-84	Master
Veteran	70-78	Expert
Experienced	64-72	Professional
Regular	58-66	Competent (one at Professional)
Green	52-60	Novice (one at Competent)

Table 9a: NPC Attributes and Skills

Wound Thresholds

Determine an NPC's base wound threshold in the same manner as a PC's: $(10 + [2 \times \text{FIT}] + \text{MUS}) / 4$. However, an NPC's damage is tracked on a single scale, rather than separately per hit location. His thresholds are the same as a PC's limb thresholds: Slight is 1, Moderate is base, Serious is 1.5x base, Critical is 2x base. Most NPCs die easier than PCs.

There's one exception case. If you're making a veteran or elite combatant NPC, calculate his thresholds on the torso progression: Slight 1, Moderate base, Serious 2x base, Critical 3x base. These are hard bastards and should not go down easily.

If the NPC is not intended to be a combatant, it's acceptable to skip this step and assume one solid hit will take him out of a fight.

NPC SQUADS

Tracking more than a dozen or so participants in a combat scene can be a grueling task for the GM. One way to streamline this process is to merge NPCs into *squads*. For game purposes, an NPC squad is a group of identical NPCs who collectively act as a single combatant.

Squad Traits

Each NPC squad is based on a single NPC archetype (see the previous section for examples). This archetype's quality, attributes, skills, and wound thresholds transfer directly to the squad. In addition, the squad has a new trait, *Size*, representing the number of individual NPCs in the squad. *Size* has various effects on the squad's actions, traits, and checks, as described in the remainder of this section.

Squad Equipment

For game purposes, each member of a squad has identical basic equipment: personal weapons, ammo, body armor, and incidental gear. This is an oversimplification for game purposes. In reality, few infantry squads will match this precisely, especially those belonging to the piecemeal forces common in 2013.

If a squad is equipped to a military standard, it will possess support weapons in addition to personal weapons. Assume one support weapon (squad automatic weapon or heavier) for every five NPCs in the squad.

Squads in Combat

A squad functions as a single combatant. Rather than making a separate initiative check for each squad member, the GM makes a single initiative check for the squad as a whole.

Design Note:

Automatic Fire and Squads

Yes, technically, PCs standing too close together are also at risk for stray bullets. However, we chose to apply this rule only to squads because we didn't want to see whole PC groups wiped out with a single well-placed burst. If you're really masochistic, feel free to apply this rule to anyone standing within 3 meters of a PC who takes a burst.

Squad Leaders

One member of each squad is considered the *squad leader*. In real world military terms, this is the NCO in charge of the squad. In game terms, this is an NPC who adheres to the squad's basic archetype, but with the addition of Command and Tactics skills one level higher than normal. If the squad leader is incapacitated (see *Attacking a Squad*, below), the squad's performance suffers, as described in the following rules.

Squad Morale

A squad is assumed to have CUF equal to the archetype's base CUF plus half the squad's *Size*. If the squad leader is incapacitated, the bonus drops to one-quarter the Squad's *Size*.

Example: A *Size 13* squad is built on an NPC archetype with CUF 5. The squad has CUF 12 (5 + 7). If the squad loses a member, its *Size* drops to 12, and its new effective CUF is 11 (5 + 6). If that member was the squad leader, the squad's new effective CUF is instead 8 (5 + 3).

Squad Attacks

Whenever a squad takes an attack action, it makes a number of separate attacks equal to half its *Size* (rounded down). The other half of the squad is presumed to be hunkering down under cover, reloading, or out of line of sight of any worthwhile target. Each squad attack may be directed against a different target, or the squad may combine multiple attacks on a single target.

If a squad has one or more support weapons, half of those support weapons (again, rounded down, to a minimum of 1) can attack on any given action.

A squad's attack action has a tick cost equal to the *highest* tick cost of any individual attack.

Example: A *Size 13* squad is equipped with AK-47 assault rifles (Speed 3/5/7), a PKM machine gun (Speed 5/8/11), and a GP-30 grenade launcher (Speed 4/6/8). The squad attacks. Of the 13 members, 6 can attack. Of the two support weapons, the GM decides the PKM can attack. This leaves 5 other squad members who can attack with the squad's basic AK-47s. The machine gunner makes a snap shot (Speed 8). Each of the riflemen makes an aimed shot (Speed 7). The squad's attack action has a tick cost of 8. The riflemen derive no benefit from the "wasted" tick.

Attacking a Squad

An attack directed against a squad is resolved as an attack on one member of the squad. Although a squad functions as a collective unit, it is still composed of individual NPCs. If attacking different members of a squad would result in different modifiers (e.g. some squad members' positions are obscured by smoke), assume each attack uses the most advantageous possible set of modifiers - for the attacker. Easier targets tend to get shot at first.

When an attack on a squad succeeds, roll 1d10. On a result of 1, the attack strikes the squad leader. On a 2 or 3, it strikes

Experience	Attributes	OODA/CUF	Skills	Wounds	Speed
Elite	9	12	Master	1/9/18/27	Sprint 15m, Run 11m, Trot 8m
Veteran	8	10	Expert	1/9/16/23	Sprint 14m, Run 11m, Trot 8m
Experienced	7	7	Professional	1/8/12/16	Sprint 14m, Run 10m, Trot 8m
Regular	6	5	Competent	1/7/11/14	Sprint 13m, Run 10m, Trot 8m
Green	5	3	Novice	1/6/9/12	Sprint 13m, Run 10m, Trot 7m

Table 9b: Quick and Dirty NPC Squads

a squad member carrying a randomly-selected support weapon. On a 4 or more, it strikes a rank-and-file squad member. An attacker may increase his attack's tick cost by 2 to specifically pick out the squad's leader or the bearer of a support weapon; consequently the 1d10 roll is unnecessary.

Dispersion and Area-Effect Attacks

Squads with superior military training tend to spread out in order to mitigate the effects of explosions and automatic weapons. Assume a dispersion interval of one meter per level of experience (e.g. one meter for a Green squad, two meters for an Experienced squad, and so forth).

When an explosive weapon is used in a successful attack on a squad, the squad's dispersion determines how many squad members are affected. If a map is in play, measuring the explosion's radii should be simple. If no map is in use, assume one squad member is within one meter of the blast. For every multiple of the dispersion interval that falls within the blast radius, one more squad member is affected.

Example: *An Experienced squad (3-meter dispersion) is caught in the blast of a fragmentation grenade (Radius 7m). One squad member is the primary target. Two more squad members, dispersed at 3 and 6 meters, suffer primary blast effects. An additional two squad members, dispersed at 9 and 12 meters suffer secondary blast effects. The remaining squad members are dispersed at 15 or more meters from the primary target and are unaffected.*

Automatic fire can also affect multiple members of a squad. When a burst strikes a squad, roll 1d10 for each bullet that *doesn't* strike the primary target. Each die with a result less than (6 minus the squad's dispersion interval) indicates a bullet that strikes *another* squad member. Assume each of these secondary hits has a MoS of 1d3.

Example: *An Experienced squad (3-meter dispersion) is hit with a burst attack from a machine gun. Five bullets don't strike the primary target. The attacker rolls 5d10. Each die that comes up 3 or less is a hit on another squad member.*

Quick and Dirty Squads

If you don't want to bother with the NPC archetypes presented in this chapter, assume any given squad of 2013-era irregular combatants has basic traits determined by its level of experience (see Table 9b).

STAR NPCs

Some rare characters are exceptions to the general guideline of treating NPCs as two-dimensional spear-carriers and secretaries. NPCs who are intended to have significant recurring roles as close friends, allies, or nemeses are considered *star NPCs*. Such an NPC should be created as a fully-detailed character, using the character creation system in Chapter Four. More important, however, a star NPC should have every bit as much

history, personality, and motivation as a PC. This is a character the GM should expect to depict for a minimum of several sessions (unless the PCs summarily and ignominiously execute him), and who will be a major plot element or sidekick.

As with normal NPCs, describing and roleplaying star NPCs is a matter of GM preference. However, given the greater visibility of star NPCs, it's wise to invest a fair amount of detail in their appearance and mannerisms.

CONTACTS

During character creation, a PC gains contacts – NPCs he knows who are willing to provide various benefits – based on his age and professional experience. The resulting list is fairly vague, providing only a list of NPC roles and qualities. It's up to the player to further refine these nebulous friends during play.

Information Contacts

An information contact's primary trade is in useful data. Some information contacts may be rare specialists with detailed knowledge of narrowly-focused topics, while others are generalists whose knowledge base is shallower but broader. From a game perspective, information contacts are useful as investigative shortcuts, or as warning systems to keep PCs from making catastrophic blunders.

Many information contacts are still active in their fields – at least, as much as the exigencies of survival allow. The postwar information environment requires such individuals to either stay on the move in order to maintain their avenues of communication, or to have access to rare surviving telecommunication hubs. Such NPCs are likely to consider the PCs part of their information networks and will want to be compensated with an equal exchange of data. Alternately, some information contacts will have abandoned their prewar pursuits in favor of more practical work, and are likely to need other favors more urgently.

An information contact's quality determines the extent and value of information he can provide:

A **Green** information contact knows basic principles of a subject or can provide a frequent visitor's knowledge of a given place. He probably wants to know more – and may be willing to reward the PCs for additional information as best he can – but is currently only good as a starting point for further investigation. Example information: a metal sample is some kind of advanced alloy not normally used industrially; the city of Srinigar, India was completely depopulated by plague; a map of prewar highways through the Pyrenees; an introduction to the local priest.

A **Regular** information contact has a college-level education in a subject or a long-term resident's knowledge of a given place. His data is both more detailed and more current than intel from a Green information contact, but it's still not going to reveal major secrets. However, it might lead the PCs directly to investigating some of those secrets. Example information: the metal sample is a tungsten alloy typically used in armor-piercing penetrators; Srinigar was wiped out by a biological weapon; the local militia's best estimates of routes that are still passable and free of marauders;

an explanation of the local political structure and how the Catholic church is the power behind the scenes.

An **Experienced** information contact is not just a collector of data, but an analyst. He knows how to assemble disparate pieces into a coherent hole, and can extrapolate causes and effects. The danger here is that he sometimes goes in the wrong direction because he doesn't have enough data to really see the big picture. Still, his information does tend to be at least mostly correct and can have significant implications. Example information: the alloy is only manufactured by Russia; an Indian weapons lab in Srinigar was hit by a Pakistani air strike and accidentally released the virus; the local militia's scouting schedule and confirmed routes through the passes; biographical profiles on the regional bishop and his major subordinates.

A **Veteran** information contact has access to timely and accurate data – in a prewar sense, “actionable intelligence.” His information is both more complete and more reliable than data from an Experienced information contact, and it is likely to have major implications. Example information: the alloy is mildly radioactive in a way that makes it likely to have been part of a bunker-busting tactical nuclear warhead's penetrator cap; the Indian military government is staging an expedition to salvage the lab; the militia scout commander is being paid off by the marauders to not send patrols into certain locations; evidence that Catholic officials are engaged in a large-scale covert search for something believed to be lost in the region.

An **Elite** information contact has the education and insight necessary to draw frightening, perhaps earth-shattering, conclusions. Used properly, clues given by this contact can pave the way for an entire campaign. Example information: analysis showing the metal was manufactured within the last year; a map of Srinigar showing the precise location of the lab; the timetable of the marauder's planned raids on the region; the cockpit data recorder of a transport that crashed with part of the Vatican Library on board.

Reinforcement Contacts

Reinforcement contacts are the only contacts who will be willing to fight alongside PCs for any reason other than personal survival or the highest of ideals. These contacts are almost always combat-capable (with appropriate attributes and skills). Those who are not combatants have some other valuable skill equally critical in a given fight, such as trauma medicine or electronic warfare.

No special rules apply to the help a reinforcement contact provides. His attributes and skills are determined according to his quality. His grade and amount of equipment is roughly equal to the PCs, perhaps with a couple of higher-end items appropriate to his specialty.

Service Contacts

Service contacts' primary value is in the tasks they can perform for the PCs, rather than what they can tell or give the PCs. These contacts tend to be trained professionals or have lifetimes of experience in their chosen fields. In practice, a service contact is likely to specialize in a skill not present among the PCs – otherwise, the PCs wouldn't need to call on him in the first place, and the player wouldn't spend an undefined contact.

Service contacts follow the standard rules for NPC creation, with one exception. A service contact of Experienced or higher quality receives one key skill at one rating higher than the normal maximum for his quality. Thus, an Experienced service contact has one skill with an Expert rating, and an Elite service contact has one skill with a Legendary rating.

Instructors

Some service contacts are willing not only to do, but to teach. At the GM's discretion, any service contact may be designated as an instructor. In such an event, the NPC does not receive the aforementioned bonus to one of his key skills, but he does have Instruction as a key skill at the maximum rating for his quality. The NPC is assumed to be willing to instruct all of the PCs in any of his key skills (see p. 199 for details on teaching).

Trade Contacts

A trade contact has access to supplies and/or equipment he's willing to provide to the PC. This is rarely an outright gift. More likely, the contact is willing to loan items to the PC with the understanding they'll be returned or replaced, or to sell them at or below market rates. Most trade contacts are merchants of one form or another, either roving traders or salvagers or stationary shopkeepers. The Persuasion skill governs barter and is almost always a key skill for a trade contact. Because of their material wealth, trade contacts are frequent targets for individuals who'd rather fight or steal than pay, so they tend to surround themselves with trusted and well-compensated guardians.

A trade contact's quality determines the extent of his inventory. Note that no trade contact has access to everything listed at his quality level. The following lists are examples, not comprehensive manifests. The GM is the final arbiter of what a trade contact has in stock or what he can get on short notice.

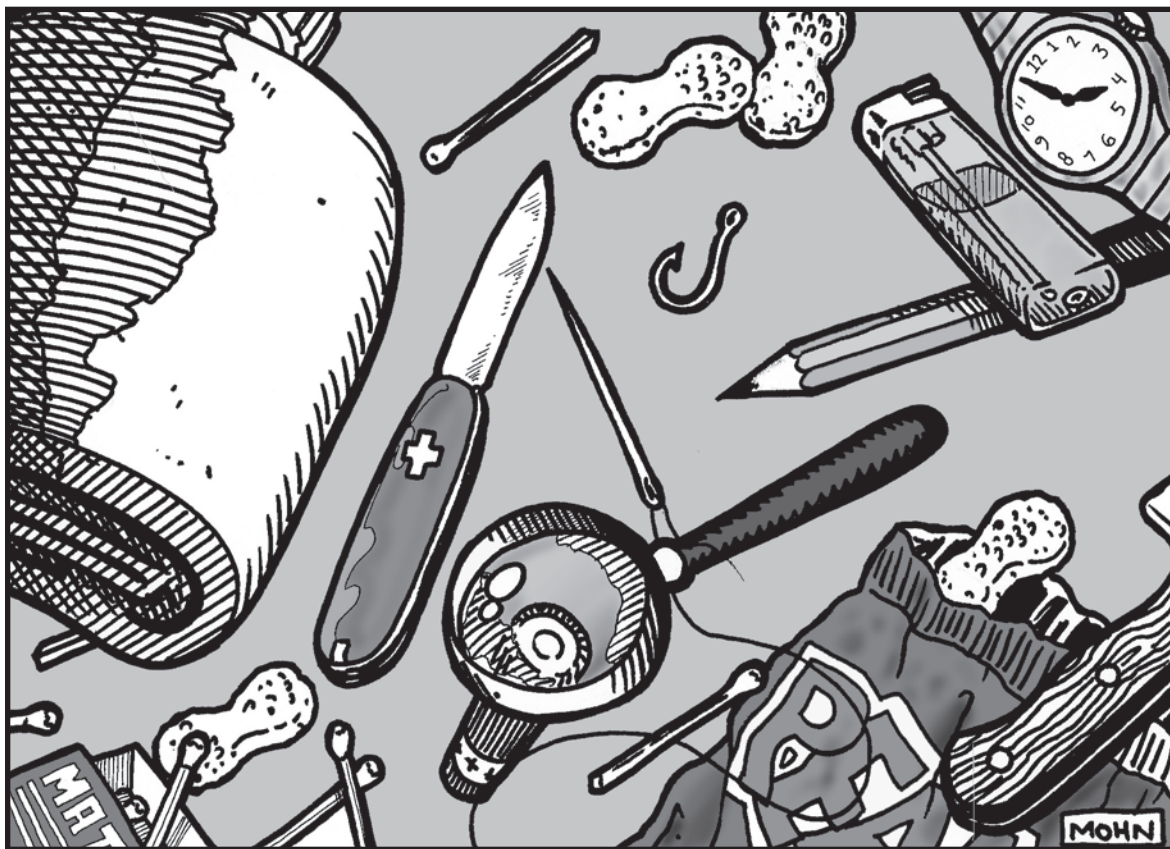
NPC Quality	Equipment
Green	Pre-war consumer gear or supplies, Common handcrafted tools or art, Common bulk materials or natural resources
Regular	Civilian weapons, Small arms ammunition, Military-issue personal gear, Fresh food, Uncommon bulk materials or natural resources
Experienced	Alcohol fuel, Civilian ground vehicles, Military small arms, “Dumb” support weapon ammunition, Consumer electronics, Basic pharmaceuticals, Prewar long-duration rations
Veteran	Petroleum fuel, Military support vehicles, Large cargo vehicles, Guided weapon ammunition, Military electronics, Specialty pharmaceuticals, Body armor, Precious metals
Elite	Aviation-grade petroleum fuel, Combat vehicles, Civilian aircraft, Unique art objects, Classified or experimental electronics

Table 9c: NPC Equipment

Activating Contacts

During character creation, contacts are vague and undefined. They remain like this until a PC needs to call on one for assistance. When this occurs, the player must provide the GM with a definition of the contact, typically including a name, a brief description of how the character and the contact know each other, and a general idea of what sort of assistance the contact is in a position to render. These details should somehow be related to the contact's category and quality. The contact should also have a plausible reason to be in the local area or otherwise accessible to the PC.

The player then makes a Cognition check to determine how long the PC spends locating the contact: (1d6 + margin of failure) days for failure, (15 – margin of success) hours for success. The GM may choose to provide a bonus to this check based on how good of a story the player spins. If events prevent the character from locating the contact before this time has passed, the contact remains defined but isn't available at the moment; the PC will have to look him up at a later time.



Example: The team is stranded in rural Germany with several severely wounded members. Erin is in desperate need of medical assistance to patch her injured colleagues back together, and she has an undefined veteran service contact available. Erin's player chooses to define the contact as Doctor Robert Lyons, an orthopedic surgeon who used to live in Erin's apartment building and who was in Bonn for an exchange program when the Twilight War broke out. After giving it some thought, the GM agrees this is plausible enough and the good doctor is probably somewhere in the area. Erin's player handily succeeds at the Cognition check with a margin of success of six. Nine hours later, Erin locates the village where Dr. Lyons has set up a local clinic.

Using Contacts in Play

The guiding principle for using contacts is that they are people, just as the PCs are, with their own agendas and needs. Contacts are assumed to be on a friendly and equal social footing with player characters, rather than superiors or subordinates. Accordingly, most exchanges of goods and services between contacts and PCs should be relatively fair and balanced. When first defined, each contact owes no favors to the PC, and vice versa – the scales are even. Once contacts come into play, though, the GM should keep notes on those to whom the PCs owe outstanding debts. Remember that from the NPC's perspective, the PC is his contact, and he expects a mutually beneficial relationship. A contact calling in a marker can be the beginning of an entire story, and a contact whose goodwill the PCs have abused one too many times can flat-out refuse to provide help regardless of what the dice say.

The process of defining a contact should give the GM a good idea of what the contact is capable of doing. Generally

speaking, a contact can provide varying degrees of assistance within the limits of his capabilities. To get assistance, the character must persuade the contact to provide it. This requires, unsurprisingly, a Persuasion (PER) check. TN is modified depending on the degree of assistance requested:

- **Trivial (TN +2 or better):** The contact can provide the assistance with negligible effort or expense, and will be doing something he enjoys anyway. Examples: Introducing the team around a friendly and peaceful community, providing obscure academic information from the contact's area of expertise.

- **Easy (TN Standard):** Helping the PCs won't strain the contact's resources or schedule, and has only the most remote possibility of negative consequences. Examples: Giving the team accommodations for a single night, conducting a short-term research project, bringing the team along to an exclusive social event (as long as they clean up well).

- **Onerous (TN -2):** The requested help involves potential complications for the contact, be they of a legal, financial, or personal nature. Examples: Performing back-alley trauma surgery on a wounded character, knowingly assisting misdemeanor-class criminal activity, loaning the team a high-value item of personal property.

- **Hazardous (TN -4):** If the contact provides the assistance, he will seriously jeopardize his own financial security, health and safety, or personal relationships, or those of one or more loved ones. Examples: Hiding the team from a house-to-house search by the secret police, giving a PC an organ transplant intended for the contact's sister, knowingly

assisting a nonviolent felony, accompanying the team on a combat mission.

- **Lethal (TN -6):** Providing the assistance makes it likely the contact will be severely injured or killed or will suffer an equivalent personal loss. Examples: Publicly betraying the regional head of a violent organized crime syndicate, confessing to a capital offense, knowingly assisting a violent felony, accompanying the team on a suicide mission.

Contacts, although divided into four broad categories, are well-rounded human beings (though NPC traits may not reflect this). Many of the examples of help given here could come from a contact of any category. The category system serves as a general guideline for the broad areas of assistance that contacts are *most likely and most able to provide*.

Also note that Reinforcement contacts expect to be engaged in dangerous activities. Accordingly, the base TN for soliciting combat-related help from such a contact is increased by 3 (so getting a Reinforcement contact to come along on a suicide mission is a check at only TN -3).

Finally, if the balance of favors owed currently is weighted toward the PCs, this skill check receives a bonus determined by the degree of obligation the contact owes the team: +1 for trivial, +2 for easy, +3 for onerous, +4 for hazardous, or +5 for lethal. Conversely, if the PCs already owe the NPC, the skill check is subject to a penalty of equivalent magnitude.

Burning Contacts

Because a contact is assumed to be a friend of a PC, he usually has the best interests of the PC in mind, though all but the most altruistic contacts have their own self-interest to look out for as well. Accordingly, if a contact refuses to provide assistance because of a failed Persuasion check, the in-game result is not hostility toward the PCs. Rather, the contact doesn't agree that the assistance is something he can conveniently or safely provide.

Invariably, some players won't understand this (or will just be juvenile about the situation), and will resort to having their characters stick guns in the face of any contact who's less than wholly cooperative. This sort of behavior tends to sour a friendship in a hurry. If any character tries to forcibly coerce a contact in any way, from implied threats to outright violence, the NPC stops functioning as a contact.

An Intimidation check (RES; TN and modifiers as per original Persuasion check) may induce the contact to provide the desired assistance, but he'll never again willingly help any member of the team in any way. Some contacts, particularly those with espionage and military themes, may go so far as to consider this sort of behavior a hostile betrayal of trust and respond accordingly.

SAMPLE NPCs

The following generic NPCs are among the most common archetypes inhabiting the world of **Twilight: 2013**. They can be used as-is for brief encounters or modified to taste.

Civilian NPCs

Desperate Housewife

Before the Collapse, the biggest problems were the mortgage and the kids' soccer games. In the absence of grocery stores, running water, and basic law and order, her priorities have shifted a little. So far, she's kept the children mostly fed, and they haven't asked too

many questions. She'd rather hide from strangers, but she'll fight like the proverbial cornered rat to defend what's left of her family.

Quality: Green.

Attributes: Awareness 6, Cognition 6, Coordination 6, Education 6, Fitness 5, Muscle 4, Personality 7, Resolve 5; CUF 2, OODA 3.

Skills: Agriculture Novice, Driving Novice, Hand Weapons Novice, Streetcraft Competent.

Wound Thresholds: Slight 1, Moderate 6, Serious 9, Critical 12.

Movement: Sprint 12m, Run 9m, Trot 7m, Walk 4m, Stagger 2m, Crawl 1m.

Grizzled Farmer

This quintessential rugged individualist may be a retired veteran of some distant war, or he might just have been hunting these hills all his life. He's been working the land on his ranch since before most folks around here were born. A wise - if not cantankerous - old bastard, he has seen it all. The locals depend on him as a shining beacon of stability in the swirling sea of chaos following the Collapse. He is a practical yet reluctant leader. He won't scare easily and he doesn't suffer fools lightly.

Quality: Elite.

Attributes: Awareness 9, Cognition 7, Coordination 6, Education 8 (Agribusiness Management, Environmental Science), Fitness 7, Muscle 8, Personality 9, Resolve 9; CUF 6, OODA 6.

Skills: Agriculture Master, Animal Husbandry Master, Command Professional, Longarm Competent, Mechanics Professional, Medicine/Veterinary Competent.

Wound Thresholds: Slight 1, Moderate 9, Serious 18, Critical 27.

Movement: Sprint 14m, Run 11m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Neo-Tribalist

The neo-tribalist has reverted back to the hunter-gatherer existence. She has forsaken her cotton blend clothing for animal skins. She's given up her day job, involuntarily, to live in this new world. She's adept at gathering plants and hunting small animals to help her family live. She'll run at the first sign of danger, but don't corner her.

Quality: Regular.

Attributes: Awareness 7, Cognition 6, Coordination 6, Education 5, Fitness 7, Muscle 7, Personality 4, Resolve 6; CUF 3, OODA 3.

Skills: Aquatics Competent, Archery Competent, Climbing Competent, Fieldcraft Professional, Hand Weapons Competent.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 14m, Run 10m, Trot 7m, Walk 4m, Stagger 2m, Crawl 1m.

Overworked Doctor

A talented plastic surgeon, he ran more of an assembly line than a medical practice. He was always sure to reconcile naked avarice with requisite charity work - performing burn grafts and repairing congenital disfigurements - but he became a doctor for the money. Now he's up to his armpits in emergency obstetrics, sucking chest wounds, and diseases nobody has seen in a hundred years. What he wouldn't give for a routine rhinoplasty.

Quality: Veteran

Attributes: Awareness 8, Cognition 9, Coordination 9, Education 11 (Biology, Human Anatomy x2, Reconstructive Surgery x2), Fitness 6, Muscle 6, Personality 7, Resolve 8; CUF 3, OODA 6.

Skills: Artisan (Prosthetic Implants) Expert, Command Professional, Medicine/Surgery Expert, Persuasion/Psychiatry Competent, Special Equipment (Diagnostic Instruments)

Professional.

Wound Thresholds: Slight 1, Moderate 7, Serious 11, Critical 14.
Movement: Sprint 13m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Paramedic Out of His Depth

He's not a doctor, but he plays one in the apocalypse. He's the closet thing to a medical professional this settlement has seen in months. Pediatrician, OB/GYN and meatball surgeon - he is a one-stop doc-in-the-box. His supplies are running dangerously low, but he speaks enough of the native tongue to understand some of the village elder's home remedies. Lately, it seems his guys are getting perforated just as fast as he can patch them up, so when he makes his rounds he goes loaded for bear.

Quality: Experienced

Attributes: Awareness 7, Cognition 6, Coordination 6, Education 7 (EMT-B), Fitness 7, Muscle 7, Personality 6, Resolve 8; CUF 7, OODA 5.

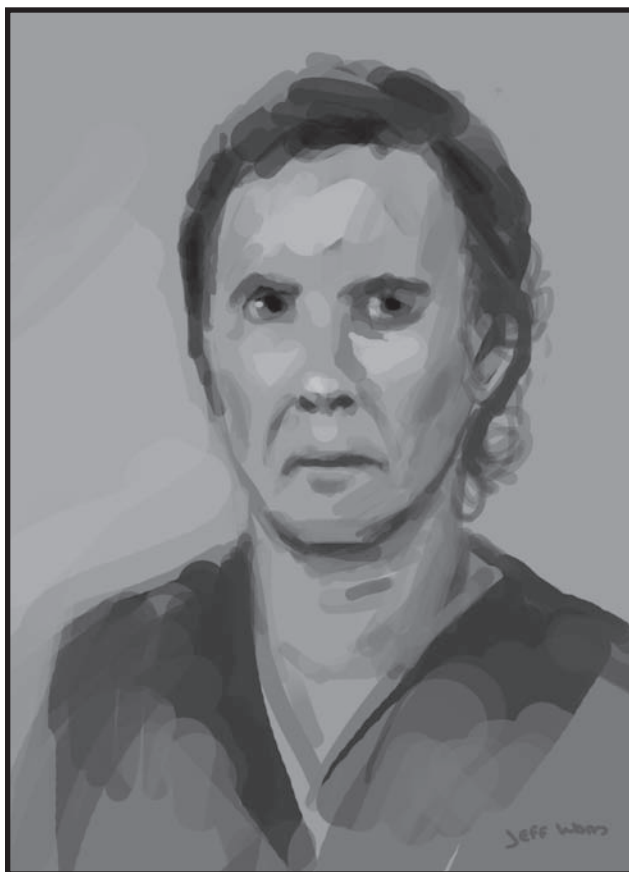
Skills: Instruction Competent, Medicine Professional, Persuasion Professional, Sidearm Novice, Streetcraft Competent.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 14m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Refugee Homesteader

No longer sitting in front of his computer screen at a 9-to-5 job, this homesteader is working a plow behind a mule. At least he knew how to ride before the war, though he's not doing much in the way of polo now. His skills working with phones and data no longer apply, and he's resigned to working with his hands in the fields. He's learning quickly - but he has to learn or he won't eat.



Quality: Green.

Attributes: Awareness 4, Cognition 8, Coordination 5, Education 8 (Computer Programming, Information Technology), Fitness 6, Muscle 6, Personality 6, Resolve 5; CUF 1, OODA 2.

Skills: Agriculture Novice, Aquatics Novice, Hand Weapons Novice, Longarm Novice, Mounts Competent.

Wound Thresholds: Slight 1, Moderate 7, Serious 11, Critical 14.

Movement: Sprint 13m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Roving Trader

A pre-war wrecking yard owner, she and her associates were foresighted enough to "secure" an automotive supply warehouse in the early days of the Collapse. She's now established an inland circuit, moving machine parts, trade goods, and occasional people back and forth in a manner almost approaching economic viability. Her caravans are well-defended and the locals along her route eagerly anticipate her arrival. Besides matching available talent with those in need, she also deals in information, a commodity which fetches quite a premium.

Quality: Experienced

Attributes: Awareness 8, Cognition 8, Coordination 7, Education 8 (Automotive Technology, German Literature), Fitness 8, Muscle 6, Personality 8, Resolve 7; CUF 3, OODA 3.

Skills: Artisan (Welding) Professional, Driving/Heavy Competent, Language (any) Novice, Mechanics Professional, Mounts/Teamster Novice, Persuasion Professional.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 13m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Savvy Craftsman

One of the most indispensable citizens of any settlement, the craftsman can manufacture almost anything. He uses his pre-war trade or side hobby to make a living in the new world. Need brake rotors machined? Need a new firing pin for your crew-served weapon? How about your boots resoled? He knows his craft is indispensable and he is worth his weight in gold.

Quality: Regular.

Attributes: Awareness 6, Cognition 7, Coordination 6, Education 7 (Mechanical Engineering), Fitness 5, Muscle 5, Personality 6, Resolve 6; CUF 1, OODA 2.

Skills: Craftsmanship (Any) Professional, Electronics Competent, Mechanics/Machinist Competent, Streetcraft Competent.

Wound Thresholds: Slight 1, Moderate 7, Serious 11, Critical 15.

Movement: Sprint 13m, Run 10m, Trot 7m, Walk 4m, Stagger 2m, Crawl 1m.

Small-Town Cop

In happier times, his only concern was meeting his quota for speeding tickets and keeping the college students' beach parties in check. There might have been the occasional drug raid or domestic violence call, but this rural town was generally a nice place to live. The Sheriff saw to that - but, with him out of the picture, the locals now look to this deputy to preserve what remains of the social order. He may have bit off more than he can chew.

Quality: Experienced

Attributes: Awareness 7, Cognition 6, Coordination 8, Education 7 (Criminal Justice), Fitness 8, Muscle 7, Personality 7, Resolve 7; CUF 5, OODA 7.

Skills: Driving/Motorcycle Professional, Forensics Novice, Hand Weapons/Grappling Professional, Intimidation Professional, Sidearm Competent, Streetcraft Competent.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 14m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Suburbanite Survivor

Once the savvy retail store manager at the local shopping center, this suburbanite has adapted to living off the streets. He uses what skills he's learned in the past year to scrounge the ruins of his former workplace for useful goods. He'd rather talk his way out of trouble, but if he has to, his small-caliber revolver is good for more than scaring away would-be shoplifters. He doesn't have many skills useful in society now, but he's surviving day by day.

Quality: Green.

Attributes: Awareness 7, Cognition 5, Coordination 6, Education 7 (Business), Fitness 6, Muscle 5, Personality 6, Resolve 6; CUF 2, OODA 3.

Skills: Driving Novice, Persuasion Novice, Sidearm Novice, Streetcraft Competent.

Wound Thresholds: Slight 1, Moderate 7, Serious 10, Critical 14.

Movement: Sprint 13m, Run 10m, Trot 7m, Walk 4m, Stagger 2m, Crawl 1m.

Thieving Marauder

Once a mere petty thug in the big city, this low-life has leveraged the chaos following the Collapse to step up to the big time and take his show on the road. Never one for a fair fight, the post-apocalyptic highwayman prefers to operate in the shadows and attack from ambush. This scourge of the countryside will make any promise and tell any lie to lure a victim back to his lair. Those foolish enough to turn their backs on him will feel the knife within minutes.

Quality: Experienced.

Attributes: Awareness 9, Cognition 6, Coordination 6, Education 5, Fitness 7, Muscle 8, Personality 6, Resolve 7; CUF 6, OODA 6.

Skills: Deception Professional, Fieldcraft Novice, Hand-to-Hand Competent, Hand Weapons Professional, Longarm Competent, Mounts Novice, Streetcraft Competent.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 14m, Run 11m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Urban Gangster

They're like roaches - hidden from the light, but ubiquitous if you know where to look. The urban gangster was there before the war; now he's expanding his "business" and using his streetwise knowledge to expand his empire. He has dozens of sources of information, can get virtually any "black" item in an organized settlement, and is not to be crossed. The king of the underground or the lord of the streets, he is likely to have a hardened crew of subordinates ready to enforce his will.

Quality: Regular.

Attributes: Awareness 7, Cognition 6, Coordination 6, Education 5, Fitness 6, Muscle 6, Personality 6, Resolve 7; CUF 3, OODA 3.

Skills: Hand Weapons Competent, Intimidation Competent, Security Competent, Sidearm Professional, Streetcraft Competent.

Wound Thresholds: Slight 1, Moderate 7, Serious 11, Critical 14.

Movement: Sprint 13m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Vengeful Technocrat

An awkward and introverted - yet brilliant - child, she was the stereotypical nerd, right down to the tape on her glasses. Their merciless teasing lasted long after she outgrew it, continuing through college and into her management career out at the dam. Several turbines were down for maintenance when the EMP hit, but she got one back online. Now they need her to keep it running

- a fact she does not intend to let them forget.

Quality: Veteran

Attributes: Awareness 9, Cognition 13, Coordination 8, Education 10 (Civil Engineering, Electrical Engineering, Information Technology, Organizational Behavior), Fitness 6, Muscle 4, Personality 5, Resolve 9; CUF 3, OODA 3.

Skills: Computing/Programming Professional, Construction Competent, Electronics Professional, Intimidation Competent, Mechanics/Industrial Expert, Special Equipment (Hydroelectric Power) Expert.

Wound Thresholds: Slight 1, Moderate 7, Serious 11, Critical 14.

Movement: Sprint 12m, Run 9m, Trot 7m, Walk 4m, Stagger 2m, Crawl 1m.

Wary Militiaman

He's seen too much and trusts too little. This NPC is likely to question anyone and everyone he comes across. He takes his job seriously to protect his little piece of the world. He may not have the skills of the trained soldier, but he's doing fine for being an ex-trucker.

Quality: Regular.

Attributes: Awareness 6, Cognition 6, Coordination 6, Education 6, Fitness 7, Muscle 7, Personality 6, Resolve 6; CUF 4, OODA 3.

Skills: Climbing Competent, Driving/Heavy Professional, Fieldcraft Competent, Hand-to-Hand Competent, Longarm Competent.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 14m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Military NPCs

Clerk With a Gun

Only a month ago, this boot-licker was pouring coffee for the squadron brass when he wasn't busy selling morphine out the back of his air-conditioned supply tent. Now, with HQ overrun, manpower is in short supply. Everyone is a rifleman and today he's out on patrol for the first time. The airman's spit-polished jump boots, pristine catalog gear, and tailored fatigues all seem out of place, but what doesn't kill him will make him smarter.

Quality: Green.

Attributes: Awareness 6, Cognition 6, Coordination 8, Education 7 (Marketing), Fitness 6, Muscle 5, Personality 6, Resolve 6; CUF 3, OODA 3.

Skills: Computing Novice, Deception Competent, Longarm Novice, Streetcraft Novice.

Wound Thresholds: Slight 1, Moderate 7, Serious 11, Critical 14.

Movement: Sprint 13m, Run 10m, Trot 7m, Walk 4m, Stagger 2m, Crawl 1m.

Combat Medic

"Doc" doesn't wear a red cross or red crescent any more - by this point, medical insignia just makes a convenient aiming point for the enemy. He carries a rifle like everyone else in his team because he's likely to have to fight his way to the wounded before he can treat them. Far too many of his patients have died for lack of precious supplies or rear-area treatment, and desperate improvisation is SOP now.

Quality: Experienced.

Attributes: Awareness 7, Cognition 6, Coordination 6, Education 7 (Emergency Medicine), Fitness 7, Muscle 7, Personality 6,

Resolve 8; CUF 7, OODA 5.

Skills: Fieldcraft Novice, Instruction Competent, Longarm Competent, Medicine/Surgery Professional, Persuasion Competent.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 14m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Conscripted Infantryman

He was an HVAC contractor until his lottery number came up. Four months later, he was storming the beach of some hole he'd only seen before on the Travel Channel. It was bloody, but the beachhead was secured in under a week. Reinforcements have arrived, and Second Squad is his. He was hoping for a breather, but no such luck - orders just came in. Maybe he can keep these new guys alive long enough to see the sun rise again.

Quality: Regular.

Attributes: Awareness 7, Cognition 6, Coordination 6, Education 6, Fitness 8, Muscle 8, Personality 6, Resolve 7; CUF 4, OODA 4.

Skills: Climbing Competent, Command Novice, Hand Weapons Novice, Longarm Competent, Mechanics/Industrial Professional.

Wound Thresholds: Slight 1, Moderate 9, Serious 14, Critical 18.

Movement: Sprint 14m, Run 11m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Cynical Grunt

The lines have been static for months, but he's been in-country long enough to know he isn't going anywhere soon. It was nice when the shooting first stopped. Now the boredom is killing him. He has a buddy over in the intel shop who says the "enemy" isn't even phoning it in anymore. The brass must realize this, but that doesn't stop them from sending his platoon out on one meaningless patrol after another. It's long past time to pull up stakes and go home. Too bad there's no home anymore.

Quality: Experienced

Attributes: Awareness 7, Cognition 6, Coordination 6, Education 6, Fitness 7, Muscle 7, Personality 5, Resolve 8; CUF 8, OODA 7.

Skills: Fieldcraft Competent, Hand Weapons Competent, Longarm Professional, Medicine Novice, Support Weapons Competent.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 14m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Fanatical Insurgent

Before the war, he used his Ivy League engineering degree to improve his developing nation's infrastructure. Today, his sole motivation is the eviction and eradication of the infidel. His dedication is single-minded and complete; the occupation army will not know peace. His forte is improvised explosives, a skill he has imparted to his fellow partisans as they wage war from the rooftops, sewers and back alleys of their capital.

Quality: Veteran.

Attributes: Awareness 8, Cognition 8, Coordination 8, Education 9 (Chemistry, Materials Science, Structural Engineering), Fitness 8, Muscle 6, Personality 6, Resolve 9; CUF 8, OODA 6.

Skills: Construction/Demolitions Expert, Instruction Professional, Longarm Competent, Mechanics/Machinist Professional, Streetcraft Competent.

Wound Thresholds: Slight 1, Moderate 8, Serious 16, Critical 24.

Movement: Sprint 13m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.



Grounded Pilot

Thirty million dollars of the taxpayers' money is gone, but at least the ejection seat worked. Without the tool of his trade, he's been "reassigned." Not being much of a ground-pounder, he's trying to help the best way he can. With his electronics and leadership skills, he's left leading village detail teams to gather supplies. Not much of a "shooter," at least he's not too much of a liability.

Quality: Experienced.

Attributes: Awareness 8, Cognition 7, Coordination 7, Education 8 (Electrical Engineering, History), Fitness 7, Muscle 7, Personality 6, Resolve 8; CUF 7, OODA 5.

Skills: Aviation/Performance Professional, Command Competent, Electronics Professional, Fieldcraft Novice, Gunnery/Guided Professional, Longarm Novice, Sidearm Competent.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 14m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Hardened Operator

He had you in his sights over a mile ago. Lucky for you, he's on our side. He was the best we had - a veteran of more battles than he can count. "Anytime, anywhere" was his motto, and he can back that up with confirmed kills on at least five continents. He is truly Death from Above. He knows more ways to end you than you know how to die. You wouldn't believe the horror he has seen, even if he told you. But he won't - so don't ask.

Quality: Elite.

Attributes: Awareness 10, Cognition 7, Coordination 8, Education 7 (Asymmetrical Warfare), Fitness 9, Muscle 10, Personality 7,

Resolve 10; CUF 10, OODA 8.

Skills: Fieldcraft Expert, Hand Weapons Professional, Longarm Master, Sidearm Professional, Support Weapons Professional, Tactics Master.

Wound Thresholds: Slight 1, Moderate 10, Serious 20, Critical 30.

Movement: Sprint 15m, Run 11m, Trot 9m, Walk 4m, Stagger 2m, Crawl 1m.

Haunted Analyst

She saw it coming, but no one would listen to a junior intelligence analyst until it was too late. Her eyes are screaming, but her mouth is shut because some of the responsible parties are still around. Now she's tasked with record-keeping and paperwork for the brass, and she's starting to recognize familiar patterns again...

Quality: Regular

Attributes: Awareness 6, Cognition 7, Coordination 6, Education 8 (Anthropology, Statistics), Fitness 5, Muscle 5, Personality 6, Resolve 6; CUF 3, OODA 3.

Skills: Computing Professional, Deception Competent, Fieldcraft Novice, Language (any) Professional, Sidearm Novice.

Wound Thresholds: Slight 1, Moderate 6, Serious 9, Critical 12.

Movement: Sprint 13m, Run 10m, Trot 7m, Walk 4m, Stagger 2m, Crawl 1m.

Homesick Sailor

He spends his days down on the wharf. When he isn't drinking and brawling with the natives, he's tending to the local infrastructure and scrounging for parts to repair one particular Godforsaken tub of bolts anchored out in the bay that stranded his crew here. He pines for any news from home and will do anything for a chance to see his sweetheart again.

Quality: Green.

Attributes: Awareness 6, Cognition 5, Coordination 6, Education 6, Fitness 7, Muscle 7, Personality 6, Resolve 8; CUF 2, OODA 3.

Skills: Aquatics Novice, Hand-to-Hand/Grappling Novice, Mechanics/Nautical Competent, Seamanship Novice, Streetcraft Novice.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 14m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

NBC Scout

He's seen too much on his surveys, things his trusty Geiger counter and chemical detection equipment couldn't warn him about. This skilled combat veteran has the nasty job of either scouting for his military unit or helping out the local settlement, looking for drinkable water, usable goods, or just a safe place to spend the night. His chemical protection gear and decontamination kit are rarely out of reach.

Quality: Veteran

Attributes: Awareness 8, Cognition 6, Coordination 7, Education 7 (Chemistry), Fitness 8, Muscle 7, Personality 6, Resolve 9; CUF 9, OODA 7.

Skills: Driving/Motorcycle Competent, Fieldcraft Expert, Longarm Professional, Mechanics Competent, Medicine Novice, Specialist Equipment (NBC Sensors) Professional.

Wound Thresholds: Slight 1, Moderate 9, Serious 14, Critical 18.

Movement: Sprint 14m, Run 11m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Paranoid Survivalist

He scoffed at the Y2K hype, but as the 21st century unfolded

he saw the writing on the wall. Preparedness became his religion, stockpiling his fetish. First it was just a shotgun, bottled water, and a CPR classe. Then came the "bug-out bag." His friends and colleagues mocked and derided him as he quit his job and relocated his family to a "remote and defensible" location. When the balloon went up, he was ready. Who's laughing now?

Quality: Experienced.

Attributes: Awareness 7, Cognition 8, Coordination 7, Education 8 (Business Administration, Information Systems), Fitness 7, Muscle 6, Personality 7, Resolve 8; CUF 3, OODA 3.

Skills: Agriculture Competent, Archery Competent, Fieldcraft Professional, Longarm Competent, Medicine Competent.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Movement: Sprint 13m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

Reluctant Trainer

This retired military or police veteran feels an obligation to help put the world back together. He still has a voice and a trigger finger, so he's passing on his skills to the generation that's going to make things right. Sometimes he has to lead by example, whether it's a combat mission or a negotiation with a neighboring settlement. His body has seen better days, but old age and treachery count for a lot, and the edge is still sharp.

Quality: Veteran

Attributes: Awareness 8, Cognition 6, Coordination 4, Education 7 (Military History), Fitness 5, Muscle 6, Personality 7, Resolve 9; CUF 10, OODA 8.

Skills: Command Professional, Fieldcraft Expert, Instruction Expert, Longarm Expert, Sidearm Professional, Tactics Expert.

Wound Thresholds: Slight 1, Moderate 6, Serious 9, Critical 12.

Movement: Sprint 13m, Run 10m, Trot 8m, Walk 4m, Stagger 2m, Crawl 1m.

ANIMAL NPCS

For game purposes, animals are treated the same as human NPCs in most respects. However, some exceptions do apply. The following traits are specific to, or modified when used with, animals:

Range: The creature's natural habitat, as well as areas where domestic examples are common. This should serve only as a general guideline for the GM; centuries of human meddling have created captive populations of non-native species around the world.

Attributes: The four physical attributes - Awareness, Coordination, Fitness, and Muscle - are the same for animals as they are for humans. The four mental attributes are replaced with a single attribute, Cunning (CNG), which is a measure of the animal's feral intelligence and reasoning ability. For all of the following animals, values are given for adults; subtract 25% for adolescent or infirm specimens.

The combat psychology attributes, CUF and OODA, respectively depend on the animal's experience with man and its age. Likewise, the animal's Fieldcraft and Hand-to-Hand capabilities, when applicable, are dependent on these factors.

Wound Thresholds: As with human NPCs, animals have only one set of wound thresholds, rather than separate thresholds for each hit location.

Armor: A few animals have natural armor of one type or another. This works the same way as body armor worn by a human character.

Speed: The animal's combat speed is listed in terms of Sprint, Run, Walk, and Stagger speeds. An uninjured animal can move at a sprint, a slightly injured one moves at a run, a moderately

injured one moves at a walk, and a seriously injured one moves at a stagger. A critically injured animal can only crawl at a rate of 1 meter per Move action.

Travel Speed and Load: These two traits apply only to beasts of burden, as per the rules on p. 296.

Attack: Most animals possess natural weapons of some variety.

Meat: The maximum amount of meat that is available on the animal.

Experience	CUF	Hand-to-Hand	Fieldcraft
Wild	3	-	Expert
Feral	4	-	Professional
Domestic	5	-	Novice
Combat-trained	6	+1 level	-
Age	OODA	Hand-to-Hand	Fieldcraft
Fledgling	6	Novice	-
Adolescent	8	Competent	-
Adult	10	Professional	+1 level
Elderly	8	Expert	+1 level

Table 9d: Animal Traits

Beasts of Burden

Camel

An ill-tempered ungulate adapted for desert life. Camels have been domesticated for use as mounts, but rarely serve as draft animals.

Range: Native to arid regions of Asia and northern Africa. A substantial wild population descended from domestic animals also exists in Australia.

Attributes: Awareness 7, Coordination 5, Fitness 12, Muscle 12; Cunning 5.

Wound Thresholds: Slight 1, Moderate 12, Serious 18, Critical 24.

Speed: Sprint 36m, Run 18m, Walk 9 m, Stagger 4m.

Travel Speed: 20 km/hr.

Load: 120/300 kg.

Attacks: Hooves: Damage 4, Penetration x4, Speed 3/5/8.

Meat: 350 kg.

Donkey/Mule

Donkeys and mules are the most sure-footed of pack animals. A mule is a sterile cross between a donkey and a horse. Mules make much better pack animals than donkeys; the latter are ill-tempered (-1 penalty to all training attempts and control checks) but capable of reproduction.

Range: Global.

Attributes: Awareness 8, Coordination 5, Fitness 10, Muscle 10; Cunning 5.

Wound Thresholds: Slight 1, Moderate 10, Serious 15, Critical 20.

Speed: Sprint 40m, Run 20m, Walk 10 m, Stagger 4m.

Travel Speed: 14 km/hr.

Load: 95/170 kg.

Attacks: Hooves: Damage 2, Penetration x4, Speed 2/3/5.

Meat: 180 kg.

Elephant

The largest land of mammals. Elephants cannot be easily trained (-2 penalty on all appropriate checks), but are used as agricultural labor and pack animals in Asia.

Range: Asia and parts of Africa.

Attributes: Awareness 8, Coordination 4, Fitness 15, Muscle 17; Cunning 5.

Wound Thresholds: Slight 1, Moderate 14, Serious 21, Critical 28.

Armor: 1 (90% coverage).

Speed: Sprint 36m, Run 18m, Walk 9m, Stagger 4m.

Travel Speed: 18 km/hr.

Load: 300/600 kg.

Attacks: Gore: Damage 15, Penetration x4, Speed 6/9/12. Trample: Damage 30, Penetration x4, Speed 10/15/23.

Meat: 2 tons.

Horse, draft

A draft horse is a “cold-blood” horse, such as a Percheron, Belgian, or Clydesdale, bred for strength, docility, and endurance rather than agility or speed.

Range: Global.

Attributes: Awareness 9, Coordination 7, Fitness 14, Muscle 14; Cunning 5.

Wound Thresholds: Slight 1, Moderate 13, Serious 20, Critical 26.

Speed: Sprint 36m, Run 18m, Walk 9 m, Stagger 4m.

Travel Speed: 12 km/hr.

Load: 115/210 kg.

Attacks: Hooves: Damage 4, Penetration x4, Speed 3/5/8.

Meat: 250 kg.

Horse, riding (Quarter, Arabian, or Thoroughbred)

A riding horse is a “warm-blood” breed, such as an Arabian, Thoroughbred, or Quarter Horse, bred for pleasure riding and racing. They are swift and sure-footed but lighter than draft horses.

Range: Global.

Attributes: Awareness 9, Coordination 7, Fitness 12, Muscle 12; Cunning 5.

Animal Tactics

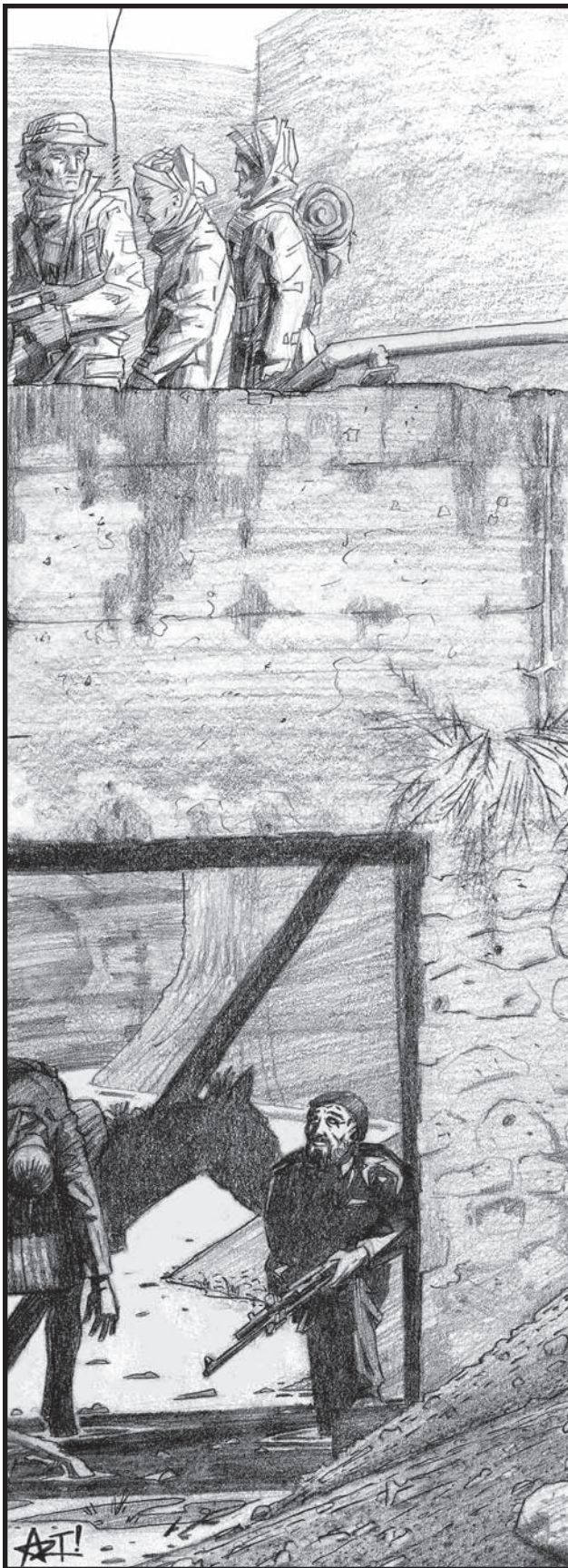
Humans generally prefer to kill at range, but animals lack this ability. Consequently, they tend to remain at range while sizing up potential adversaries, then close as quickly as they can once they commit to an attack. Open flame, as well as gunfire or other loud noises, can hold creatures at bay unless they are starving, diseased, or otherwise desperate. Grapple attacks are common for attackers who want to prevent their opponents from escaping, and all predators can be assumed to have the Hand-to-Hand/Grapple qualification. Attackers who only want to be left alone have only the basic Hand-to-Hand skill.

Canines generally attack with their teeth, trying to bite and drag down their opponents via grapple attacks. When a pack faces a larger or superior foe, the entire pack works together to mass its attacks and bring down one or two targets.

Big cats try to close and grapple with their opponents to disembowel with their hind claws. Most are solitary hunters, but prides of lions - and other groups that have learned to work together - tend to draw their prey's attention with one member while the others circle and attack from multiple other directions.

Beasts of burden are unlikely to attack spontaneously. If backed into a corner, they will attempt to clear an escape route and flee.

Remember that most animals are unencumbered and thus have base initiative values of 15.



Wound Thresholds: Slight 1, Moderate 12, Serious 18, Critical 24.
Speed: Sprint 40m, Run 20m, Walk 10 m, Stagger 4m.
Travel Speed: 14 km/hr.
Load: 90/165 kg.
Attacks: Hooves: Damage 4, Penetration x4, Speed 3/5/8.
Meat: 200 kg.

Ox

A domesticated cow or bull used for agricultural or as a pack animal.

Range: Global.

Attributes: Awareness 7, Coordination 5, Fitness 15, Muscle 15; Cunning 5.

Wound Thresholds: Slight 1, Moderate 14, Serious 21, Critical 28.

Speed: Sprint 30m, Run 15m, Walk 8 m, Stagger 4m.

Travel Speed: 12 km/hr.

Load: 180/325 kg.

Attacks: Hooves: Damage 4, Penetration x4, Speed 3/5/8. Gore: Damage 8, Penetration x3, Speed 5/8/11.

Meat: 280 kg.

Game Animals

Bison/Buffalo

The wild counterparts to domestic cattle.

Range: Eastern Europe (rare); North America (rare); Africa; Southeast Asia.

Attributes: Awareness 7, Coordination 5, Fitness 16, Muscle 16; Cunning 7.

Wound Thresholds: Slight 1, Moderate 15, Serious 23, Critical 30.

Speed: Sprint 30m, Run 15m, Walk 8 m, Stagger 4m.

Attacks: Hooves: Damage 4, Penetration x4, Speed 3/5/8. Gore: Damage 12, Penetration x2, Speed 5/8/11. Most buffalo will attack only in extreme circumstances, but some African species are viciously territorial and have been known to stalk small groups of people.

Meat: 350 kg.

Burrower

This entry represents any variety of non-predatory small land mammal, including ground squirrels, rabbits, beavers, pikas, marmots, and woodchucks.

Range: Global.

Attributes: Awareness 9, Coordination 9, Fitness 1, Muscle 1; Cunning 7.

Wound Thresholds: Slight 1, Moderate 2, Serious 3, Critical 4.

Speed: Sprint 32m, Run 16m, Walk 8 m, Stagger 4m.

Attacks: Bite: Damage -1, Penetration x4, Speed 1/2/4. Burrowers will attack only if cornered or grappled.

Meat: 1 to 5 kg (1d10/2).

Fowl

Any one of a wide array of game birds, including both land and waterfowl. This entry can also represent domestic poultry.

Range: Global, except for extreme polar regions.

Attributes: Awareness 6, Coordination 8, Fitness 3, Muscle 2; Cunning 5.

Wound Thresholds: Slight 1, Moderate 4, Serious 6, Critical 8.

Speed: Flap 60m, Glide 20m, Plummet Aimlessly 10m, Waddle 3m.

Attacks: Peck, claw, or wing buffet: Damage -2, Penetration Nil, Speed 2/3/5. Fowl will attack only if grappled.

Meat: 1d6 kg.

Grazer

This entry represents the wide array of hoofed (and usually horned) herbivores present in most regions of the world, including deer, elk, gazelle, antelope, and similar creatures. Large, aggressive relatives such as moose should be represented with bison/buffalo traits.

Range: Global, except for extreme polar regions and Australia.

Attributes: Awareness 7, Coordination 7, Fitness 9, Muscle 7; Cunning 7.

Wound Thresholds: Slight 1, Moderate 9, Serious 14, Critical 18.

Speed: Sprint 36m, Run 18m, Walk 9m, Stagger 5m.

Attacks: Kick: Damage 4, Penetration x4, Speed 2/3/5. Gore: Damage 5, Penetration x3, Speed 4/6/9. Grazers attack only if an enemy enters close combat range and they cannot otherwise escape.

Meat: 30 kg.

Rat

The basic plague-bearing rodent, ubiquitous around the world. High reproductive rates and strong adaptation to a variety of environments make them a common dietary staple for urban survivors.

Range: Global.

Attributes: Awareness 9, Coordination 11, Fitness 1, Muscle 1; Cunning 9.

Wound Thresholds: Slight 1, Moderate 2, Serious 3, Critical 4.

Speed: Sprint 16m, Run 8m, Walk 4m, Stagger 2m.

Attacks: Bite: Damage -4, Penetration Nil. Rats will attack only if cornered or grappled.

Meat: 0.25 kg.

Swine

This entry includes both wild boars and feral pigs. Swine typically live in groups of 2d6x5.

Range: Wild boars are native to Central Europe, the Mediterranean Basin, and most of Asia. Feral pigs are present throughout North and South America, most of Europe, and the Pacific islands.

Attributes: Awareness 5, Coordination 6, Fitness 8, Muscle 8; Cunning 8.

Wound Thresholds: Slight 1, Moderate 9, Serious 14, Critical 18.

Armor: 1 (50% coverage).

Speed: Sprint 24m, Run 12m, Walk 6m, Stagger 3m.

Attacks: Gore: Damage 4, Penetration x2. Swine attack with upward slashes of their tusks, typically striking the legs or lower abdomens of human opponents.

Meat: 15 kg for European specimens, 30kg for American and Asian swine.

Predators

Alligator/Crocodile

Alligators and crocodiles are biologically different, but physically similar (and thus grouped into a single entry here). Both are predatory aquatic reptiles growing up to five meters long. Gators and crocs are ambush hunters, preferring to lurk underwater or along riverbanks in hopes that meat will blunder within snatching range. They are too stupid to learn to fear humans, and thus can pose a significant threat to travelers who leave the safety of motorized vehicles.

What about Dogmeat?

For some players, it just isn't an apocalypse without a leather jacket, a knee brace, and an Australian Cattle Dog. Starting play with a trained canine companion costs one equipment die for a small dog, two equipment dice for a large dog, and three equipment dice for an attack-trained large dog who will attempt to grapple or disarm opponents on command. Issuing commands to a domestic dog is an Animal Husbandry (RES) task.

Range: Tropical fresh water and some salt water in Africa, Asia, Australia, and the Americas (crocodiles); subtropical fresh water in North America (alligators).

Attributes: Awareness 5, Coordination 5, Fitness 12, Muscle 12; Cunning 7.

Wound Thresholds: Slight 1, Moderate 12, Serious 18, Critical 24.

Armor: 1 (80% coverage).

Speed: Sprint 27m, Run 10m, Walk 5m, Stagger 3m.

Attacks: Bite: Damage 8, Penetration x2, Speed 3/5/8. When attacking a human-sized target, a gator or croc's preferred tactic is to grapple to submission, then drag the victim underwater to drown - or to violently spin and thrash to sever the grappled limb.

Meat: 50 kg.

Bear

The bear family includes a variety of similar omnivores found throughout the world. The larger and more physically dangerous species are also the ones most likely to attack humans if threatened (neither type will aggressively hunt a group of humans as a matter of course). Small bears are capable of climbing trees, while larger ones are not.

Small (Black) Bear

Range: Northwestern South American mountains; most of North America; southeast Asian forests and mountains.

Attributes: Awareness 6, Coordination 6, Fitness 10, Muscle 12; Cunning 8.

Wound Thresholds: Slight 1, Moderate 11, Serious 17, Critical 22.

Speed: Sprint 24m, Run 12m, Walk 6m, Stagger 3m.

Attacks: Slap: Damage 6, Penetration x4, Speed 2/3/5. Bite: Damage 7, Penetration x2, Speed 3/5/8.

Meat: 60 kg.

Large (Grizzly or Polar) Bear

Range: Northern polar regions; sub-polar North America, Asia, and Europe.

Attributes: Awareness 6, Coordination 5, Fitness 12, Muscle 14; Cunning 7.

Wound Thresholds: Slight 1, Moderate 12, Serious 18, Critical 24.

Speed: Sprint 30m, Run 15m, Walk 8m, Stagger 4m.

Attacks: Slap: Damage 8, Penetration x4, Speed 3/5/8. Bite: Damage 10, Penetration x2, Speed 4/6/9.

Meat: 120 kg.

Coyote

A predatory and scavenging canid, noted for its ability to colonize virtually any environment except inner cities. Due to the depopulation of native wolf and large cat populations, coyotes are the primary land predators in many areas of North America. They typically move and hunt in small bands (1d3+1 members) rather than the larger packs common to dogs and wolves.

Range: Virtually all biomes of North and Central America.

Attributes: Awareness 12, Coordination 8, Fitness 11, Muscle 5;

Cunning 12.

Wound Thresholds: Slight 1, Moderate 9, Serious 14, Critical 18.
Speed: Sprint 36m, Run 18m, Walk 9m, Stagger 4m.

Attacks: Teeth: Damage 3, Penetration x3, Speed 1/2/4. Coyotes will attack livestock as a matter of course, but generally avoid combat with humans.

Meat: 6 kg.

Dog

It's no longer safe to assume that *Canis lupus familiaris* is man's best friend. Millions of former pets were released into the wild during the Collapse, and a surprising number have survived and reverted to the feral behavior of their wolf ancestors. Wild dog packs (2d6 members) are now common hazards around the world. On the still-domestic side of the equation, most survivors know the value of dogs as perimeter alarms and guards, and few homesteads are without at least one or two dogs who work to earn their keep.

Small (Lap) Dog

Range: Global.

Attributes: Awareness 8, Coordination 8, Fitness 6, Muscle 3; Cunning 6.

Wound Thresholds: Slight 1, Moderate 5, Serious 8, Critical 10.

Speed: Sprint 24m, Run 12m, Walk 6m, Stagger 3m.

Attacks: Teeth: Damage 2, Penetration x4, Speed 1/2/4.

Meat: 1d3 kg.

Large (Working) Dog

Range: Global.

Attributes: Awareness 8, Coordination 7, Fitness 8, Muscle 6; Cunning 7.

Wound Thresholds: Slight 1, Moderate 8, Serious 12, Critical 16.

Speed: Sprint 27m, Run 14m, Walk 7m, Stagger 4m.

Attacks: Teeth: Damage 5, Penetration x3, Speed 2/3/5.

Meat: 1d5+4 kg.

Great Cat

Despite humanity's best efforts, the species of the great cat family survive in wilderness areas around the world. Predatory felines are solitary hunters (with the notable exception of lionesses), preferring to stalk or ambush prey. They prefer to avoid human contact, especially now that suburban encroachment on their habitats has ceased. Separate trait blocks are given for most large cats (lions, cougars, leopards, jaguars) and the significantly larger tigers.

Large Cat

Range: America, Africa, southern Asia, throughout the Americas.

Attributes: Awareness 11, Coordination 10, Fitness 9, Muscle 9; Cunning 9.

Wound Thresholds: Slight 1, Moderate 9, Serious 14, Critical 18.

Speed: Sprint 35m, Run 18m, Walk 9m, Stagger 5m.

Attacks: Claw: Damage 6, Penetration x3, Speed 2/3/5. Bite: Damage 7, Penetration x2, Speed 3/5/8. Large cats prefer to attack from above or the sides, leaping onto their prey and attempting to either break the neck or crush the windpipe.

Meat: 25 kg.

Tiger

Range: Southeast Asia, Russian Far East.

Attributes: Awareness 11, Coordination 9, Fitness 11, Muscle 12; Cunning 9.

Wound Thresholds: Slight 1, Moderate 11, Serious 17, Critical 22.

Speed: Sprint 35m, Run 18m, Walk 9m, Stagger 5m.

Attacks: Claw: Damage 6, Penetration x3, Speed 2/3/5. Bite: Damage 8, Penetration x2, Speed 3/5/8.

Meat: 40 kg.

House Cat

A small domestic feline of the sort kept as a pet worldwide. In 2013, most have reverted to a predatory existence in feral colonies of up to several dozen. Many communities prize cats for rodent (and thereby disease) control, but few survivors are above hunting them as small game if sufficiently hungry.

Range: Global, save for polar and sub-polar regions.

Attributes: Awareness 11, Coordination 11, Fitness 5, Muscle 2; Cunning 9.

Wound Thresholds: Slight 1, Moderate 4, Serious 6, Critical 8.

Speed: Sprint 27m, Run 14m, Walk 4m, Stagger 2m.

Attacks: Teeth and retractile claws: Damage -3, Penetration Nil, Speed 1/1/2. Cats are natural ambush hunters when seeking prey and prefer to attack from above. A house cat will not fight a larger opponent unless cornered or diseased, in which case it will attempt to attack the face. If grappled, the cat will attempt to break the grapple; Damage increases to -1 in such a circumstance.

Meat: 1 kg.

Snake

Like most other predators described here, snakes are disinclined to attack humans, if for no other reason than people are too big for all but the largest constrictors to eat. However, poor judgment in wilderness areas can lead to potentially lethal encounters with venomous serpents.

Range: Cobra-family serpents are found in most tropical and subtropical regions. Viper-family snakes are native globally, except for polar and arctic regions.

Attributes: Awareness 4, Coordination 12, Fitness 4, Muscle 2; Cunning 8.

Wound Thresholds: Slight 1, Moderate 3, Serious 5, Critical 6.

Speed: "Sprint" 9m, "Run" 5m, "Walk" 2m, "Stagger" 1m.

Attacks: Bite: Damage -4, Penetration x4, Speed 1/1/2. A snakebite cannot inflict more than a moderate injury, regardless of the damage value. However, any damage value greater than zero indicates the serpent has injected one dose of venom (see p. 181).

Meat: 0.25 kg.

Wolf

Free of the threat of man, wolf populations have already begun expanding out of the northern and mountainous territories of their prewar refuges. Wolves typically live and hunt in packs (2d10 members) and are cooperative hunters, combining their efforts to bring down a single large prey animal.

Range: Northern forest regions and forested mountains throughout the northern hemisphere, gradually expanding to southern latitudes and lower altitudes.

Attributes: Awareness 12, Coordination 7, Fitness 11, Muscle 7; Cunning 9.

Wound Thresholds: Slight 1, Moderate 10, Serious 15, Critical 20.

Speed: Sprint 36m, Run 18m, Walk 9m, Stagger 5m. Wolves can

sustain a travel speed of 5 km/hr.

Attacks: Teeth: Damage 7, Penetration x2, Speed 2/3/5. Wolves typically surround a target and launch multiple coordinated grappling attacks, subduing the victim and then tearing out its throat (called attacks to the head).

Meat: 12 kg.

REPUTATION

Even if they begin play as ordinary people, player characters tend to distinguish themselves through extraordinary words and deeds. In a world without mass media to promote entertainers and politicians, people who actually affect the world around them in meaningful ways become public figures through word of mouth. The Reflex System's reputation rules are a means of measuring both the strength and the nature of the renown a character has earned.

REPUTATION BASICS

The central fact of reputation is that while it does have mechanical effects, it is primarily a roleplaying tool. Reputation is earned and lost through actions more often than through die rolls. The name a character has made for herself hangs over every interaction with an NPC who knows of her. Story considerations should almost always come before strict adherence to the rules when reputation enters the picture.

With that said, there are rules associated with the basic concepts. A character has six reputation-related traits. Each of these traits functions like a skill, possessing both a value and a rating. However, each trait can have either a positive or a negative value. In effect, each trait is a sliding scale: a positive value has beneficial effects, a negative value has detrimental effects (except in the case of Renown), and a zero value has no effect.

Renown

Renown is an indicator of the character's overall recognition. The higher the character's Renown, the more widely known her exploits are, and the more likely any given observer is to recognize her name or description. Renown can be considered the most critical of the six traits; if someone hasn't heard of a character at all, the specifics of her reputation just don't matter to him.

Conversely, a negative Renown means the character has aggressively cultivated anonymity, perhaps to the point of destroying records of her existence or spreading rumors of her demise. This is an exception to the general guideline that a negative value is always harmful; not being recognized for past actions can be a powerful advantage. A character with zero Renown simply hasn't done anything worthy of public acclaim; she is one of the nameless masses, just a face in the crowd.

Reputation Changes

Because each reputation trait can have either a positive or a negative value at any given time, "increase" and "decrease" can be confusing when referring to changes in these values. For the purpose of the reputation rules, we use "improve" to denote a change toward the *positive* side of the scale and "worsen" to indicate a change toward the *negative* side of the scale. Thus, if a value of 16 improves by 3, it becomes 19... and if a value of -16 improves by 3, it becomes -13.

Design Note: Force vs. Skill

Many combat-oriented characters will have public images connected to their martial pursuits. For the purpose of reputation, this doesn't mean such characters always "double up" on changes in Force and Skill. Force is intended to reflect a character's reputation for direct, personal use of violence, whereas martial Skill represents how other people view her end results. In such instances, Skill increases when a character fights intelligently or solves a larger problem with the use of violence (contrary to what your teachers may have told you in elementary school, violence does indeed solve problems at times).

For example, a character who defeats the local bar brawler in a fistfight may gain Force. One who leads a successful defense against a bandit attack on the town should more appropriately receive an improvement in Skill, even if she doesn't personally rack up an impressive body count. Of course, if her actions during the skirmish include defeating the bandits' leader in a hand-to-hand fight, she's eligible for both Force and Skill improvement – she both displayed personal fighting capability and achieved a significant result beyond simply breaking someone's nose.

Aspects

Renown measures how widely a character is recognized. The other five reputation traits, collectively known as the reputation *aspects*, describe the things for which she is known. If a character has a zero value in an aspect, she simply has a neutral or nonexistent reputation in that particular area.

- **Force** denotes the character's reputation for personal combat prowess. A character with a positive Force is known as a lethal opponent, while one with a negative Force is widely regarded as being incapable of winning a fight with her dinner.

- **Skill** addresses the character's competence in her chosen field of endeavor. Positive Skill reflects a string of prominent successes in difficult tasks, while negative Skill is gained through well-publicized defeats or failures. A character's Skill is tied to her public image as a member of a particular profession or field, whether it's formally defined (architect, physician, farmer) or just something she stumbled into (mercenary, free trader, game designer). Accordingly, each player should define her character's Skill according to the face the character presents to others.

- **Integrity** measures the character's perceived honesty and willingness to keep her word. A character with positive Integrity is regarded as loyal, trustworthy, and willing to honor her debts and commitments. People are reluctant to turn their backs on a character with negative Integrity.

- **Service** reflects the lengths to which the character is known to go to help others. Positive Service indicates the character is known as a self-sacrificing humanitarian, or just someone who's making an effort to help put the world back together one piece at a time. A character with negative Service is reputed to be a criminal, predator, or self-centered miscreant whose actions or inactivity have brought harm to others.

- **Luck** is the least tangible reputation trait, and yet the most widely applicable one. It reflects the value others place in the character's fortune and its effects on those around her. To a certain extent, it also measures the degree of faith others place in her ability to snatch victory from the jaws of defeat. Conversely, a character with negative Luck is regarded as someone not to be trusted with explosives, glassware, large sums of money, or desperate covert operations.

IMPROVING REPUTATION

A character begins play with a zero value in each reputation trait (unless the player bought appropriate advantages or disadvantages during character creation). Over the course of play, the value of each reputation trait improves or worsens based on the actions she takes *that become a matter of public record*. In other words, for a character's reputation to grow, other people – and this means the public at large, not just the other PCs – must become aware of what she has done.

Improving Aspects

Whenever a character performs an action or achieves a success that occurs in the public eye and is directly relevant to one of the reputation aspects *in a positive manner*, roll percentile. If the result is greater than her current value in that trait, the trait improves by 1. At the GM's discretion, particularly epic or heroic actions may be worth greater improvements, up to a maximum of 10 for final showdowns after years of game time.

Example 1: *While drinking in a local tavern, Leslie gets into a knife fight and wins despite the three-to-one odds stacked against her. The GM decides this is an appropriate public success with the potential to improve Leslie's Force reputation. Her current Force is 21. Leslie rolls percentile. If the die result is greater than 21, her Force will improve to 22.*

Example 2: *Leslie has somehow acquired a bad reputation for Integrity; her current value in this trait is -12. She comes through with a promise of assistance to a local merchant, risking her own life and sustaining several injuries. The GM decides this is an appropriate public act to help re-establish Leslie's credibility. Leslie rolls percentile. If the die result is 13 or higher, her Integrity will improve to -11.*

Specific types of actions are appropriate for improving each reputation aspect, as follows:

- **Force:** Winning a fight against equal or worse odds; inflicting gratuitous brutality to make a point; demonstrating such overpowering combat skills that an equal or superior opponent backs down to avoid a fight.
- **Skill:** Spectacularly succeeding at a difficult large-scale task with an outcome directly affected one or more other characters in a meaningful way.
- **Integrity:** Telling the truth, keeping an oath or promise, or accepting responsibility despite significant personal cost, instead of avoiding that cost through a less-honest option; adhering to pre-Collapse legal and ethical standards despite personal inconvenience or loss.
- **Service:** Making a significant contribution to the well-being of others at some personal cost; making a significant contribution to the well-being of an entire community without charging more than a fair price (in monetary or other terms); displaying successful long-term or crisis leadership of a community.
- **Luck:** Pulling off an unbelievable long-odds feat of skill, survival, or outright fortune. This is more nebulous than the previous four categories, as Luck is sometimes a measure of faith rather than proven confidence. In general, any act ending in success and worthy of later re-telling (“No shit, there we were...”) is a possible trigger for Luck gain.

Note that these are examples, not all-encompassing lists. Furthermore, actions worthy of reputation improvement are

highly subjective, based on the conditions and circumstances of the campaign. The GM is the final arbiter of whether a given action is seen by witnesses who consider it noteworthy.

Improving Renown

As previously mentioned, Renown measures how well the character is known, while the other five traits depict the things for which she's known. Accordingly, Renown improves somewhat independently of the other traits. Whenever a character's Force, Skill, Integrity, Service, or Luck changes – *whether improving or worsening* – there is a flat 50% chance the character's Renown improves by 1 point.

LOSING REPUTATION

Actions reflecting the negative side of each reputation category can also affect a character's good name. Reputation can be lost (or made more negative, for a character who already has a bad reputation) in the same manner in which it's gained. However, the risks may be higher than the rewards: a single mistake or selfish act can wipe out months of consistent good performance. The court of public opinion is particularly harsh.

Whenever a character performs an action or suffers a failure (a) occurring in the public eye and (b) directly relevant to Force, Skill, Integrity, Service, or Luck *in a negative manner*, roll percentile. If the result is greater than her current value in that trait, the trait worsens by an amount dependent on the magnitude of the action. A trivial act of selfishness or incompetence is worth a loss of 1 point, moderately ignominious performance worsens the trait by 1d6 points, and an error or betrayal of major proportions costs the character 2d6 points. Epic failures or treachery with national or global effects, such as starting a nuclear war, may weigh even heavier.

As with positive reputation changes, negative changes for each trait are dependent on certain categories of actions. Remember that reputation loss only occurs if someone sees the action and spreads the word, so silencing witnesses – or simply not getting caught – is a viable tactic for mitigating or eliminating such loss.

- **Force:** Losing a fight against equal or more favorable odds; failing to defend oneself or others against an immediate threat; making an unsuccessful or transparent attempt to display greater than actual combat prowess (the “all mouth and no trousers” case).
- **Skill:** Spectacularly screwing up a critical effort; displaying staggering incompetence in a chosen field of specialty; fumbling a trivially easy task.
- **Integrity:** Oathbreaking; refusing to recognize lawfully-constituted authority; betraying a friend or ally; displaying gross disregard for commonly-accepted ethical standards; failing to honor commitments in the name of expediency or personal convenience; trading dishonestly for goods or services.
- **Service:** Preying on noncombatants; disrupting or destroying systems or goods essential for a community's well-being; withholding aid to others in order to maximize personal gain.
- **Luck:** Catastrophic failure at any major task that should have been a “sure thing;” consistent ill fortune over a long period of time; being the central figure in a series of catastrophes, regardless of actual fault. As with Luck gains, Luck losses are also subject to the “no shit, there we were” guideline.

Worsening Renown

As Renown measures the actual strength and breadth of a character's overall reputation, it doesn't automatically worsen when she loses points in one of the other five traits. Doing something bad is just as viable a way to gain publicity as doing something good is, and as stated previously, Renown may actually grow when a character's reputation worsens. To worsen her Renown, and thus lessen her overall public profile, a character must outrun her reputation. Remember that the following rules assume the default setting of **Twilight: 2013**, in which all reputation spreads by word of mouth rather than telecommunication or mass media exposure.

Time

Human social attention tends to focus on the immediate past. For every month of game time that passes during which the character does not undergo a reputation change, her Renown worsens by 2d6L. This cannot take Renown below zero – negative Renown is only possible through deliberate effort (see Obfuscation, following).

There is one exception to this rule: once a character's Renown reaches a Legendary rating (see Using Reputation, following), it no longer decreases over time.

Distance

Conventional wisdom holds that nothing travels farther or faster than rumor, but a character can, in fact, travel outside areas where her name and face are known. For every 50 kilometers a character travels into geographic areas where she's never previously acquired or lost reputation, her Renown worsens by 2d6L. This reflects both the lack of familiarity new acquaintances have with her and an "out of sight, out of mind" attitude on the part of people who don't have to deal with her any longer.

Obfuscation

A character with a Renown rating of Competent or less can make an active attempt to escape her reputation. This requires sustained deliberate effort at avoiding locales and situations where she is known or might be recognized, as well as not adding to her reputation in any manner (neither positive nor negative).

GM Hint: The Long-Distance Reset

The reputation rules as written assume that if the characters travel, they do so under the normal constraints of the setting. In other words, their movement is slower than it would be in a modern industrialized setting, due to travel hazards, fuel shortages, and the other logistical factors present after the Collapse. If a character travels sufficiently far to completely change the campaign's locale, she may lose *all* reputation, not just Renown. Typically, this should only occur when a major shift in geographic focus occurs, such as a transoceanic voyage or a land trip of a thousand kilometers or more. A classic example from previous editions of **Twilight: 2000** is the **Going Home** module, in which American troops stranded in Europe were able to link up with a convoy bound for the United States.

If the GM plans for the characters to return to vacated locations in the future – say, going back to Europe through the events of the **Last Submarine** trilogy – it may be useful to file away their existing reputations for future reference. Trust us: it'll be worth the trouble to see the looks on your players' faces when their characters return to old haunts and their actions from months or years ago come back to plague them.

The player must state that her character is attempting this lifestyle shift. At the end of every month during which the character loses Renown through time (see previous), the player then makes a Resolve check. With success, the character's Renown loss changes from the standard 2d6L to 2d6H plus the margin of success. Again, this cannot take Renown into negative values.

Cover-Ups

A particularly paranoid character may take her efforts at anonymity even farther, engaging in cover-ups, destroying records, and persuading acquaintances or witnesses to refrain from discussing her previous exploits. Such adventures should be played out on a case-by-case basis, but success should result in significant worsening of Renown, up to 2d6 for particularly innovative tactics. Such active countermeasures are the one means by which a character can gain a negative Renown value.

USING REPUTATION

As previously mentioned, each of the six reputation traits functions in the same manner a skill, with its value dictating a rating (and thereby a dice pool). The scale for determining these ratings is the same as the standard scale for skills, with the caveat that positive and negative values produce the same results (so a value of –11 results in a Professional rating and a 3d20L dice pool):

Value	Rating (Dice Rolled)
64+	Legendary (6d20L)
32-63	Master (5d20L)
16-31	Expert (4d20L)
8-15	Professional (3d20L)
4-7	Competent (2d20L)
1-3	Novice (1d20)
0	No reputation use possible

Table 9c: Reputation Ratings

Whenever a character is in a situation in which her reputation may affect social interaction, her player or the GM may call for a Renown check. Unlike normal skill checks, in which one of the character's attributes determines the TN, the TN for this check is the highest Awareness of any NPC involved in the scene. If the check fails, no one is aware of the character's reputation and no further effect is possible. If the check succeeds, however, the character's reputation is known. Depending on the character's values and ratings in the reputation aspects, either the character *or any opposing NPC* may substitute an appropriate reputation rating for her own skill or attribute rating in certain social interaction.

When used in place of skills or attributes, reputation ratings ignore one critical rule that normally overshadows all task checks. As long as a character is conscious, she never suffers wound penalties when using a reputation rating. Conversely, however, when a negative reputation rating is used against the character, wound penalties likewise do not apply.

Negative Renown

A character with a negative Renown value enjoys deliberately-cultivated anonymity, rather than widespread public regard or loathing. When rolling negative Renown, success indicates the character is *not* recognized. Only if the Renown check *fails* does someone connect the character with the reputation attached to her name or appearance.

Using Positive Aspects

If a character has a positive reputation in an aspect directly relevant to a social situation or interaction, she may apply it instead of the social skill she would normally use. This reflects the fact that she's relying less on her own capacity for social interaction than the strength of her good name. Rather than asking people to believe or trust her based on her own words, she appeals to their existing knowledge of her personality, values, and accomplishments. In this manner, even relatively inarticulate characters can be incredibly persuasive if they have strong reputations.

Mechanically, the player has two options. If the character's reputation rating is better than her skill rating, the player may directly use the reputation rating for any relevant skill check. Otherwise, if the character's reputation rating is equal to or less than her skill rating, the player may instead apply a bonus equal to the number of dice produced by the reputation rating.

Each reputation aspect can be applied to a different type of social interaction. As with previous examples, the following points are broad generalizations and open to expansion by GMs and players:

- **Force:** Intimidation; convincing someone of the character's combat prowess.
- **Skill:** Instilling belief in the character's competence to undertake a task within her field of expertise; persuading peers in the same field to accept the character's leadership; establishing the character's credibility within her field, even in the face of evidence or beliefs contradicting her claims.
- **Integrity:** Establishing the character's honesty or credibility, regardless of topic; instilling trust; providing legal testimony; contradicting someone else's accusations (whether they're true or false); performing financial transactions both formal and informal.
- **Service:** Gaining the trust of an insular or paranoid community; establishing the character's altruism; performing financial transactions on behalf another needy party; persuading in others to engage in charitable behavior; instilling guilt in those with lesser histories of service to others.
- **Luck:** Convincing others to believe in, follow, or support the character before she attempts something that appears impossible or insane; gambling.

Example: In a roadhouse outside the ruins of Bonn, Leslie is accosted by four large, burly men who believe she'd like some company for the night. Words are exchanged and the matter is about to be further discussed with pool cues. Leslie is in no shape for a fight at these odds, as she's still recovering from previous misadventures. She asks the GM, "hey, don't these assholes know who I am?" The GM admits the possibility, allowing Leslie to make a Renown check.

Leslie's Renown is 13, giving her a Professional (3d20L) rating. The witness with the highest Awareness is the bartender, with a value of 7. Leslie rolls 3d20L against a TN of 7 and succeeds. The bartender puts down the mug he's polishing and blurts, "hey, don't you assholes know who she is?" He then expounds for a moment on Leslie's reputation and the small mountain of corpses she's produced (Leslie has Force 22, or an Expert rating).

Leslie takes this opportunity to sneer and let her coat fall open just enough to reveal the hand-carved ivory grip of the heavily-customized pistol that's part of her public image. This is enough for the GM to allow her an Intimidation (RES) skill check to make her adversaries back down. Because of her wound penalties, her

Expert Force rating is substantially better than her current Intimidation rating, so Leslie instead makes a Force (RES) check, opposed by her adversaries' Resolve checks. A few die rolls later, the four men promptly apologize and decide to look elsewhere for new friends.

Using Negative Aspects

A character with a negative reputation can find it working against her in a similar manner. If the aforementioned Renown check succeeds, any NPC who opposes the character in a social situation can substitute the character's appropriate reputation rating for his own skill or attribute rating. As before, each reputation aspect can hinder the character in certain circumstances. These align with the same general cases given in the previous section. For example, if a character has a negative reputation for Force and attempts to intimidate someone, he may oppose her Intimidate (RES) check with a Force (RES) check rather than a Resolve check.

Example: Leslie still has a poor reputation for Integrity (–11, or a Professional rating). She attempts to sell some recently-"salvaged" equipment to a local machine shop. The GM decides the machinist may be suspicious of Leslie and asks her to make a Renown check, using her opponent's Awareness as the TN. Leslie grumbles, rolls the dice, and succeeds despite her wishes to the contrary.

The machinist isn't a good negotiator under normal circumstances, with only a Novice Persuasion rating. However, he's aware Leslie is known to be somewhat underhanded at times. Therefore, rather than opposing her Persuasion (PER) check with his own Persuasion (PER) check, he instead makes an Integrity (PER) check using Leslie's Integrity rating and his own Personality value.

VARIATIONS

The following optional rules add complexity to the basic reputation system or address specific uncommon circumstances.

Who was that masked man?

Circumstances may prevent witnesses from attaching characters' names to their deeds, while other characters may actively seek to dissociate their reputations from their actions. If a reputation-gaining action is witnessed but no observer has a clear means of attributing it to the character, the GM should make an Awareness check for the most astute witness (i.e. the one with the highest Awareness). If the character is disguised, this check opposes the character's margin of success on the Performance (Disguise) skill check she made to create the disguise. With success, the witness has a good enough eye for detail. While he doesn't know the identity of the character, he can accurately describe her. In such an event, the character gains or loses reputation normally.

Alter Egos

A character may establish an alternate identity, either as a self-preservation technique or as part of an ongoing espionage or scam operation. Doing so requires her to either disguise herself or relocate far enough that she has no Renown (see Worsening Renown, previous). After having escaped any previous Renown, she may then begin an incremental Deception (RES, TN –1) action with a period of one week and a target total of 6. If she's also maintaining a disguise during this time, each Deception check must be matched with a Perform (Disguise) (COG, TN –1) check; failure on either check is considered overall failure for that week.

If the character fails three checks in a row, her attempt to establish an alternate identity fails completely, and she may not try again in the same locale for 1d6+6 months of game time.

If the character succeeds, she establishes an alternate identity with Renown 1 and no values in any reputation aspect. Henceforth, any action she takes that results in a reputation change will only impact one of her “selves” – either her actual identity or her alternate identity. Any social or bureaucratic benefits the character acquires in one identity, such as contacts, military rank, or elected office, do not carry over to her other identities.

At the GM’s discretion, the character may create or acquire falsified credentials to support her alternate identity. Creation of such items typically requires Forensics/Forgery (COG or EDU) checks. Successfully-forged artifacts of this nature provide an equipment bonus to appropriate checks based on the extent of the records or documents.

Revelation

When the character finds herself at risk of being recognized under multiple identities, the player must make a separate Renown check for each identity. If more than one Renown check indicates an onlooker knows her, confusion is likely to ensue. The immediate effects of such a revelation (“Wait, that’s *my* wife!”) are left to the GM’s discretion, as they will vary widely depending on the scene. The GM may waive one or more identities’ Renown checks if recognition is a certainty.

If two or more of a character’s identities are publicly associated as the same person, she acquires the higher of her two Renown values. For every other reputation trait, the values of each identity’s traits are averaged.

Identity Theft

Although credit card records and magazine subscriptions vanished in the Collapse, it’s still possible for characters to indulge in the oldest form of identity theft: simply claiming to be someone else. A character attempting to masquerade as someone else must first make the standard Renown check to see if she’s recognized as herself. If this check fails, she may then make a Deception (PER) check, opposed by a Renown (PER) check *for the individual she’s attempting to impersonate*. This Deception check’s TN is modified based on the degree of similarity between the impersonator and the victim: +5 for an evil twin, –5 for a different gender and ethnicity,

and modifiers in between for greater or lesser resemblance. A disguise provides a bonus equal to the margin of success on the Perform (Disguise) (COG) check.

If the Deception check succeeds, the impersonator may use the victim’s reputation as if it were her own – and have it used against her, in the case of negative reputation. Furthermore, any actions she commits while pretending to be the victim are attached to the victim’s reputation rather than the impersonator’s.

Publicity

A character can attempt to inflate or repair her reputation, or someone else’s, through careful manipulation of public opinion. Whenever she commits an action that results in reputation improvement, *or* would have resulted in reputation improvement if it had been witnessed, *or* gains reputation but does not gain Renown, she has the opportunity for a publicity campaign.

A publicity campaign must occur within one week of the triggering event. It requires one week of work and requires a Persuasion (PER, TN –4) check. With success, the trait in question improves by 1.

Alternately, a character can attempt to lie about her exploits or those of another in order to artificially inflate the subject’s reputation. This also requires one week and a Deception (PER, TN –2) check. With success, the targeted trait improves by 1. With failure, the targeted trait worsens by 1, as does the character’s Integrity.

Slander

Slander is similar to publicity, but in reverse: an attempt to deliberately undermine someone else’s reputation (it’s theoretically possible for a character to work at ruining her own reputation, but why?). Slander must involve one of the five reputation aspect traits (Renown cannot be targeted in such a manner). It requires one week of work and a Persuasion (PER, TN –3) or Deception (PER, TN –1) check. This check is opposed by the victim’s choice of a Renown (PER) check or, if the slanderer has negative Integrity, a check with the slanderer’s Integrity and the victim’s PER.

If the attempt succeeds, the victim’s selected reputation trait worsens by the attacker’s net margin of success. If the victim succeeds, the attacker’s Integrity worsens by the net victim’s net margin of success.



APPENDIX



INDEX

Advanced Combat Timing 162

Advantages and Disadvantages

Personal Advantages 121,122

Physical Advantages 122

Social Advantages 123

Sensory Advantages 122,123

Personal Disadvantages 123

Physical Disadvantages 123,124

Psychological Disadvantages 125-128

Sensory Disadvantages 128,129

Age 86-88,91-93,96,97,108,109,122,148,199,
246,298,314,321,322

Aimed Shots 129,143,147,162,252,258,259,
260,313

Alcohol 74,125,126,170,191,197,204,206,213,
224,236,246,276,315

Ambush 77,86,128,142,158-160,306-308

Animal Training 296-298

Animals 73,80,83-85,126,141,156,160,169-172,
175,176,178,191,194,196-198,202,206,209,210,
223,236,245,253,272,273,276,296,298,321-326

Armor Degradation 162,186

Assistance 73,80,96,127,173,183,194,199

Assistant Gunners 162,256

Attack Speed 143

Attributes

Awareness (AWA) 73,76-78,80-
85,86,91,93,122,123,128-130,132,138,139,142,
158,165,166,169,171,173,178,186,188,189,193,
196,197,215,217,228,238,246,273,312,328,329

Coordination (CDN) 71,72,77,80-85,91,93,122,
130,139,141,145,148,151,157,164,168,189,226,
246,251,258,262,270,272

Fitness (FIT) 76,77,80,91,93-96,122,124,130,145,
151-153,157,168,170,171,173,175-179,181-183,207,
232,283,311,313

Muscle (MUS) 72,77,80-85,91-96,122,130,139,
147-153,161,163,168,175,191,193,197,207,213,
223,232-236,262,263,269,272,277,282,283,
286,296,297,313

Cognition (COG) 76,77,80-86,91,93,104,105,108,
120-127,133,158,159,163,164,166,168,170,171,
174-176,179,181,187,188,193-195,198,199,204,
229,241,246,260,270,272,273,276,277,329,
315,316,330

Education (EDU) 72,76-78,81-86,91-93,97,
121-123,125,133,152,180,189,192-194,197,
199,221,241,330

Degrees 78

Personality (PER) 72,78,82-86,91,93,96,121,125,
126,129,131,158,184,199,203,298,316,329,330

Resolve (RES) 72,78,80,82-85,91-96,121,126,
128,130,132,136,161,162,166,169,173-175,180,
182-185,208,261,272,282,296,297,298,317,324,
328,329

Coolness Under Fire (CUF) 75,79,91,96,126,128-
130,132,133,136,138,144,152,154,156,159-162,
165,184,185,200,246,282,297,308,312-314,321,
322

Observe-Orient-Decide-Act (OODA) 79,91,128-
130,136-138,141,149,152,200,217,238,246,308,
312,314,321,322

Background Skills 91

Barter 85,186,202,203,208,213,236,241,307,
308,315

Beast of Burden 210,296-298

Biodiesel 170,191,210,211,213,246-249,276,309

Blind Strikes 139,142,149,150

Blocks 149,150

Body Armor 139,141,152,157,186,206,207,214,
216,218,229,231,262,263,281,313,315,321

Book Learning 199

Bridges 17,47,82,165,192-195,226,272,273

Build (construction) 99,194,195,221,193

Build 94-96

Building Bombs 270

Buildings 69,74,75,82,83,91,145,146,151,164,
171,187,188,190,192-195,204,232,235,236,
242,247,265

Burst Fire 147,160

Calculated Strikes 143

Called Attacks 144,146,149,326

Campaign 69,87,91,180,196,208,210,300-311,
315,327,330

Carrying Capacity 77,94,95,277

Cascade 80,84,85,179

Cash 202,203,206,209,210

Cavalry 130,210,277,296,297

Character Improvement 308

Character Time 68,69

Combat Load 94-96,122,206,207

Combat Time 69,137

Competing Actions 72

Complications 72,143,146,191,197,206,316

Contacts

Contacts 90,96,97,123,125,129,130,312,314-317,
330

Information Contacts 96,130,314,315

Reinforcement Contacts 96,130,315

Service Contacts 96,315,316

Trade Contacts 96,315

Squad 144,158,221,253,256,264,289,302,308,
313,314

Control Checks 75,226,272,277,278,281-284,
296,297,322

Cover 82,126,136,137,139,140,142-146,152,155,
158,159,192,263,274,278,279,313

Critical Injuries 121,132,133,153,154,162,173-
175,184

Critical Wound 87,94,133,151,153,154,172,
174,180

Damaging Equipment 154

Damaging Load 95,96,208

Damaging Structures 192

Demolition 80,82,117,142,154,164-166,195,199,
233,234,267,268,270,273

Demolition Materials 267-270

Demolition Points 268

Deviation 148,164,267

Disease 77,124,128,168,171,173,175-177,179,183,
198,228,231,232

Diving Strikes 149,150

Domestication and Training 298

Drowning 139,157

Economy 202,203,206,209,210,213,251,276

Encumbrance

Encumbrance 87,90,94,95,137,138,141,150,206,
207,209,213,283,284

Lightly Encumbered 137,141,207

Moderately Encumbered 137,141,157,207,218

Heavily Encumbered 137,138,157,207

Overloaded 137,141,157,207,208,284

Emergency Load 95,96,122,207,208

Environmental Conditions 74,136,170

Equipment

Powered Devices 213

Clothing and Protective Gear 214,217

Bags, Packs, and LBE 217-219

Communication and Signal Equipment 219-222

Survival Equipment 222-228

Medical Equipment 228-232

Tools and Power 232-236

Sensors and Sensory Augmentation 236-239

Computer Hardware and Software 239-242

Luxury and Consumer Goods 242-244

Storage 244-245

Food 245,246,248

Fuel 246-248

Misc, Consumables 247-249

Parts 247-248

Autoloaders 250,254
 Revolvers 250,251,254
 Submachine Guns (SMGs) 251,254
 Assault Rifles 251,254
 Target and Hunting Rifles 252,254
 Service Rifles 252,255
 Sniper Rifles 253,255
 Shotguns 253,255
 Machine Guns 255,256
 Rifle and Pistol Ammo 256,257
 Shotgun Ammo 257
 Firearm Accessories 258-260
 Close Combat Weapons 260-262
 Improvised Weapons 262
 Thrown Objects 262
 Hand Grenades 262
 Improvised Grenades 262,263
 Bows and Crossbows 263
 Arrows and Bolts 263,264
 Grenade Launchers 264,265
 Rocket Launchers 264,265
 Anti-Tank Guided Missiles (ATGMs) 265-267
 Mortars 265,267

 Escape 151,160,161
 Exceptional Success 71
 Exchange of Fire 69,126,128,137-142,147,150, 151,154,157-159,161,162,164,173,174,180,181,189, 190,207,208,262,274,277,278,281,297
 Explosions 74,76,147,154-156,162,163,165,177, 182,189,209,232,250,262,268,269,275,282,314
 Explosive Charges 267-270
 Extended Care 84,173,174
 Fatigue 75,87,88,90,94,96,122,125,128,168, 170-173,177-179,181,183,196,197,207,208, 217-272,297
 Fatigue Thresholds 90,94,122,125,172,173
 Fire 151,154,156,157,162,173,175,185,223,236, 269,280-282
 First Aid 69,73,74,84,130,142,146,154,159,160, 174,175,228,230,231,309
 Food 71,75,80,83,85,95,96,119,126,168-170,172, 173,176-179,189,197,198,202,203,206,211,223, 225,245-249,296,303,309,315
 Fuel 72,157,186,188-192,196,197,202,204,206, 208,210,211,213,223-234,244-248,263,268, 272-276,280-282,296,303,309,315,328
 GM 300
 Grappling 80,84,91,150
 Grenade 86,148,151,156,157,161,164,169,170,181, 212,218,219,260,262-266,268,313,314
 Group Equipment 94,209,210
 Gun Fu 151,149
 Handedness 124,163
 Hazardous Duty 90,121,129,130,131
 Healing Factor 122,124,173
 Heavy Weapon 140,162,187

Height 94,95,277
 Hip Shots 142,143,147,162,163,258,274
 Hit Location 87,124,144,147,151,154-156,163,173- 175,180,181,208,209,214,217,231,261,264,267, 274,275,278,279,281,282,313,321
 Illumination 74,75,236-238,260,264
 Impact 148,151,155,157,162,164,182,214,239, 258,263,264,267-269,296
 Incremental Actions 72,80-85
 Indirect Fire 80,145,148,163,164,250,264,267
 Initiative 69,123,132,133,137-139,142,144,151, 154,158,162,173,207,208,238,164,277,309, 313,322
 Injury 73-75,77,79,83,87,94-96,124,126,128, 129,132,133,136,141,142,149-154,157,160,162, 163,172-175,179-181,184,208,209,228,231, 244,262,279,281,296,297,305
 Instability 154,174,186,311
 Instant Death 154,311
 Integration 131-134,184
 Krugerrand 58,63,203
 Led Actions 73
 Less-Lethal Damage 152,179,181,262,264

Lifepaths

Graduate University 97,98,130
 Law School 97,109,130
 Medical School 97,98,109
 Trade School 98
 Undergraduate University 98,109,130
 Big Business 98
 Civil Aviation 99,129
 Diplomacy 99
 Emergency Services 99,129,130,221
 Engineering 99
 Entertainment 99
 Farming 100
 Industrial Labor 100
 Information Technology 100
 Journalism 100
 Legal Practice 100
 Medical Practice 100,101,317
 Nursing 101,109
 Office Work 101
 Outdoorsmanship 101
 Politics 102
 Religion 102
 Service Industry 102
 Sports 102
 Teaching 103
 Technical Trade 103
 Transportation 103
 Exile 103
 High Life 103
 Homemaking 104
 Slacking 104
 Petty Crime 104

Organized Crime 104
 Prison 104
 Violent Crime 105
 White-Collar Crime 105
 Intelligence Analysis 105
 Intelligence Support 105
 Tradecraft 105
 Criminal Investigation 106
 Local Police 106
 National Police 106
 Executive Protection 106
 Insurgency 107
 PMC 108
 Survivalist 108
 Direct Commission 109
 Flight School 110
 Military Indoctrination 110
 Officer Candidate School 110
 Service Academy 110
 Staff College 111
 Armored Reconnaissance 111
 Heavy Armor 112
 Air Defense Artillery (ADA) 112
 Field Artillery 112
 Forward Observer 112
 Aircrew 112
 Combat Aviation 112
 Support Aviation 113
 Civil Engineering 113
 Combat Engineering 113
 Assault Infantry 113
 Light Infantry 113
 Military Police 114
 Naval Infantry 114
 Analysis 114
 Human Intelligence 115
 Technical Intelligence 115
 Combat Medicine 115
 Medical Corps 115
 Nursing Corps 115
 Small Craft 116
 Submarine Warfare 116
 Surface Warfare 116
 CSAR 117
 Elite Infantry 117
 Special Operations Training 117
 General Staff 118
 Unit Staff 118
 Administration 118
 Chaplaincy 118
 Legal Corps 118
 Maintenance 119
 Transport 119
 Military Reserves 119
 The Last Year 119
 Displacement 119
 Irregular Warfare 119



Rural Survival 120
Twilight Warfare 120
Urban Survival 120

Loot 127,170,188-191,196,204,210,308,309
Maintenance 74,75,80-86,124,168,171,172,184-188,194,196,197,202,204,205,208,226,232,233,245,247,251,253,256,274,309
March Load 95,96,122,207
Margin of Failure 70-72,133,149,151,153,157,164-166,169,174,175,177-184,187,188,208,272,276,277,297,315
Margin of Success 70-73,119-121,133,137,138,142,147,149,150,151,154-157,161,162,164,165,169,171,173,175,181,184,186,188,189,193-195,197,199,203,208,209,223,251,257,267,270,272,273,275,277,279,297,315,316,328,329,330
Medical Treatment 173,174,177,232
Mines 267-268
Mines 86,164-166,267,268
Mishaps 192,205,276,296
Moderate Injuries 124,152-154,160,174,181,296
Moderate Wound 94,151,174,180
Morale 126,128,138,151,158-162,183,313
Morale Boosts 161
Mounted Combat 297
Mounted Travel 296
Movement Speeds 77,90,94,122,149,272,274
Natural Healing 173,184
Noise 76,77,124,162,217,223,291

NPCs

NPC 80,88,129,131,132,134,155,203,297,303,308,309,311-315,317,326,328,329
Star NPC 88,129,155,314
Sample NPCs 317-321
Nutritional Requirements 90,95,96,168
Operational Actions 73,132,133,137-139,141,142,150,163,164,174,217,250,267,270,282,289,292,293
Opposed Actions 72,149
Orders 69,81,86,132,133,137,141,303,304,311
Pack Animals 296,323
Pause 69,137-139,141,142
Permanent Impairments 153,163,173-175
Personal Skills 92
Physique 90,94,95,122

Places

Afghanistan 8-10,12,14,15,28,36,46
Africa 14-17,21,24,36,37,41,55,57,58,62,63,196,203,217,246,252,290,292,322-324
Antarctica 58,60
Argentina 11,17,20,25,26,57,196
Australia 10,13,29,30,54,55,62,63,196,252,264,292,322,324
Austria 16,27,36,41,43,44,250,252
Belgium 24,40,41

Brazil 11,17,20,25,26,32,56,57
Canada 14,28,29,32,42,51,56,62,292
Central America 36,51,57,324
China 8-12,15,20,28,29,31,32,34,36,42,47,48,50,51,52-55,57,60,62,196,226,252,289
Colombia 8,11,55,57
Cuba 13,14,32,55,56
Egypt 21,27,30,32,36,47,57,58,63,84
El Mirador 57
Ellesmere Island 65
EU 8,10,12,14-16,20,21,25-27,29,33,39,44,253,292
Europe 8,10-12,14-16,19-21,23-27,29,31-34,36-38,40-45,52,54,55,0,62-65,177,205,217,221,226,246,250,252,253,264-266,283,290,292,304,307,323
Falkland Islands 57
Finland 25,41
France 9,16,18-24,26,36,37,39-41,250
Germany 8,16,18,19,21,24-27,33,36,39,40,43,52,60,64,252,316
Guatemala 57
Guyana 11,32,56
Hawaii 60
Hungary 27,43,44
India 10,14,15,18-20,28,30,32,36,46,47,55,62,196,226,290,314,315
Iran 9,12,24,27-30,32,36,44-46,55,66,117
Iraq 8-10,12,14-18,21,24,25,30,36,44-47,51,55,66
Islamic Confederation of Nations 25,27,29,36,45
Israel 8,21,27,28,32,36,44,47,58
Italy 16,21,24,33,36,40,41,44,250
Japan 29,36,52,53,60,62,66,198,226
Kaliningrad Oblast 24,26,42,43
Kurdistan 9,21,24,28,36,45-47,66
Libya 13,14,17,20,21,30,32,36,57,58,65
Luxemburg 41
Mammoth Cave 66
Mexico 8,11,14,17,18,28,31,32,34,36,47,51,57
Middle East 8,14,16,21,24,27,28,32,36,37,44,45,58,63,265,292,293
Moldova 44
Monaco 41
Myanmar 29,30,32,36,52,54
New Zealand 55
North America 14,15,25,32,34,36,37,42,47,55,60,62,64,65,221,246,250,283,285,323,324
North Korea 12,20,21,53
Norway 25,40
Pakistan 8-10,12-16,19,20,28,30,36,46,47,308,315
Panama 28,32,55,57
Persian Gulf 12,44
Poland 8,24,26,27,36,43,304,310
Russia 8,12,15-22,24-27,29,32-34,36-45,47,48,51,55,56,58,60,62,64,66,226,251,251,253,256,258,264-266,287,288,293,315,325

Saudi Arabia 9,24,27,28,30,32,36,44-47,58,252
Scandinavia 40,62
Slovakia 43
South Africa 21,37,57,58,63,203
South America 11,13,17,20,25,32,36,55,56,61-63,246,64,292,324
South Korea 11,12,14,20,21,53
Spain 8,16,21,24,26,27,36,39,40
Suriname 32,56
Sweden 25,40,41
Switzerland 41
Syria 27,32,36,46,47,66
Taiwan 12,29,36,52,53
The Capriccio 66
The Caribbean 13,14,32,55,56
The Czech Republic 24,27,43,64,251,290
The Former Yugoslavia 44
The Island of Nevis 66
The Netherlands 24,40,41
The Philippines 8,29,36,52-54
UK 33,37,38,52,54,253,264
United States 8,9-21,24,26-32,34,36,37,39,42,43,45-56,60,61,66,69,117,136,190,203,226,250,252,264,266,268,288,290,304,328
Utopia 17,37,58,65
Venezuela 9,11,14,20,25,32,55-57,66
Wake Island 66

Player Time 68

Poison 171,176,177,179-181,197,232
Professional Skills 90,92,93,110,119
Promotion 90,93,109,110,118,119,123,130
Protection 122,141,144,152,157,171,180-182,193,207-209,214-217,222,274,275,277,279,286
Psychological Damage 126,128,133,134,168,178,183,184
Psychotherapy 72,134,184-190,202,213,229,236,239,251,274,277
Qualifications 79,80-86,199

Range

Personal 69,126,139,140,146,149,151,237,237,258
Gunfighting 69,74,129,146,219,236,260,261
Close Quarters Battle (CQB) 69,74,146,236,260
Tight 69,70,146,264
Medium 70,74,146,237,258
Open 70,146
Sniping 70
Extreme 70
Visual Range 74,75,123,129,143,146,164,196,237,258,259,273

Rank 86,87,90,93,98,109,119,330
Reaction Drills 133
Recoil 139,143,147,148,250-253,260,263-265
Recurring Injuries 152

Reflex System 68-71,73,74,77-79,82,86,87,90-92,94,96,132,133,136,137,139,142-147,149,150,152,155,158,161-163,169,171,172,182,184,186,192,198,206,208,213,247,251,262,263,274,277,279,305,306,308-310,326
 Renown 123,129,326-330
 Repair 69,75,77,81-85,123,141,142,171,175,184,186,188,191-193,202,245,272,276,291,330
 Reputation 123,129,138,203,252,326-330
 Rest 75,157,171-173,193,272,296,297
 Resuscitation 151,154,174,229
 Riding 84,124,172,183,210,296,297,322
 Salt 197,198,246,248
 Salvage 82,129,185,187,188,190,191,193,196,203-206,235,236,243,275,282,304,309,315,329
 Scene 68,69,74,75,83,87,88,106,124,126,128,132,137-139,144,145,152,154,157,159,160,162,172,174,175,185,189,196,200,209,297,306-308,310,311,313,315,328,330
 Scrounge 188,191
 Serious Injuries 73,124,152-154,160,162,173,184
 Serious Wound 79,87,94,151,173-175
 Shelter 82,83,85,171-173,175,182,187,192-195,197,204,222-224,275
 Shock 153-155,161,174,175,223,311
 Simple Actions 72,80-86,187

Skills

Agriculture 78,80,91,170,189,191
 Animal Husbandry 79,80,91,130,178,197,198,296,298,324
 Aquatics 80,83,85,91,123,130,169,207,226,272,277,282
 Archery 80,91,130,148,263
 Artillery 80,86,92,109,130,148,163,164,187,199
 Artisan 80,81,84,85,91,130,184,187,189,191-197,241,251,258,260
 Aviation 80,81,84,91,129,130,156,211,225,235,246,272,276,315
 Climbing 80,81,91,130,226,228
 Command 73,80-82,91,93,130-134,162,165,250,313
 Computing 80,82,91,241
 Construction 79,80,82,91,164-166,171,193-195,199,204,222,232,233,267,270,277
 Deception 80,83,91,152,158,329,330
 Driving 80,83,91,130,137,272,277
 Electronics 72,79,80,83,91,141,184,186,187,197,204,221,233,242,276
 Fieldcraft 73,80,83,91,122,130,142,159,169,171,178,181,188,189,196-198,514,228,272,273,321,322
 Forensics 80,83,185,188,330
 Freefall 80,83,130,226,227,272
 Gunnery 80,83,87,92,130,148
 Hand-to-Hand 80,83,84,91,149,261,321,322
 Hand Weapons 72,80,84,91,130,149,163,260

Instruction 80,84,91,93,199,315
 Intimidation 80,84,91,93,130,161,317,329
 Language 80,84,91,129,130
 Longarm 80,84,91,130,187,256
 Mechanics 74,80,81,83-85,91,141,184,187-189,192,232,255,258,276,277,286
 Medicine 72-74,78-80,83-85,87,91,97,130,152,173-181,185,229
 Mounts 80,84,91,130,272,296,297
 Performance 80,81,83,85,91,130,329
 Persuasion 72,80,85,91,184,203,315-317,329,330
 Seamanship 80,85,130,189,199,225,272
 Security 80,85,91
 Sidearm 71,80,85,91,130,251
 Special Equipment 80,85,92,292
 Special Vehicle 80,85,92,272
 Streetcraft 80,83-86,91,122,130,142,159,171,188,189,214,272,273
 Support Weapons 80,86,92,130,148,152,212,256
 Tactics 80,84,86,130,133,142,158,159,163,164,217,307,313,322

Slight Injuries 152,154,160,181
 Slight Wound 80,84,87,94,125,126,151,174,296
 Snap Shots 126,128,142,143,147,161,259,260,313
 Snap Strikes 128,142,143
 Stabilization 174,179,229,231,260,278,282
 Stage I 68,79,94,149,151,262,311
 Stage II 68,90,94,121,162
 Stage III 68,88,90,94-96,108,117,148,154,183,186,209,231,252,267,279
 Stimulants 172,230,232,246

Structures 127,149,154,157,171,192,193,195,204,207,247,304
 Suffocation 157,181
 Supply-Dependent Actions 72,187,188
 Suppressive Fire 148,161,163
 Surprise 128,139,142,158,307,308
 Survival Points 86-88,90,97,122,129,134,311
 Tactical Actions 124,128,137-142,150,154
 Tactical Movement 140,141,149,277
 Target Size 74,146,149,278
 Teams 131,132
 Temperature 75,156,170,214,225,231,247
 Threat Conditions 126,128,151,159-162
 Threats 136,158-161,165,168,198,200,216,217,317
 Throwing 72,77,122,142,148,151,261,262,263,307
 Tick 69,80,81,137-143,146,149,162,164,166,217,218,232,250,260,262,267,269,277,278,290,293,297,313,314
 Training 68,75,77,78,80-86,92,93,98,105,106,108-110,119,122,130-134,137,144,149,163,172,179,180,190,196,199,200,205,210,214,244,251,

253,292,296-298,309,314,322
 Trauma Surgery 174,175,316
 Travel 69,94,122-124,146,155,165,186,196,198,204,206-208,222,226,232,240,267,272-274,276,277,295-397,304,306,311,322,328

Vehicles

Ground Vehicles 75,83,233,235,272,274,277,315
 Water Vehicles 277
 Crash Damage 277
 Vehicle Systems 141,281
 Simple Vehicles 282,283
 Extremely Simple Vehicles 282
 Passenger Vehicles 283-285
 Technicals and Gun Trucks 286
 Commercial Vehicles 285-287
 Military Vehicles 287-293
 Watercraft 293-296

Virtual Injuries 124,152,157,160
 Water 75,80,83,85,128,152,157,168-173,175-179,182,187,189,191,192,196-198,202-204,207-209,211,217,218,221,223-225,231,235,236,243,245,246,268,269,273,274,277,282,286,293-296,303
 Wear 141,154,171,184
 Weather 75,141,169-171,192,195-198,205,214,215,217,221-224,239,272,273
 Weight 69,94-96,148,155-157,165,192,194,198,206-209,312,214,217,218,243-245,249,251,256-258,270,274,286,287
 Wind 75,76,148,158,170,171,182,196,204,211,224,234,236,273,282
 Wound Penalties 87,185,162,163,264,328,329
 Wound Thresholds 90,94,122,124,151-154,279,313

RECOMMENDED MEDIA

BOOKS

We Were Soldiers Once...and Young Band of Brothers by Harold G. Moore and Joseph L. Galloway

Generation Kill by Evan Wright

Citizen Soldiers by Stephen E. Ambrose

Black Hawk Down by Mark Bowden

Bravo Two-Zero by Andy McNab

On Killing - The Psychological Cost of Learning to Kill in War and Society by Dave Grossman

On Combat: The Psychology and Physiology of Deadly Conflict in War and Peace by Dave Grossman and Loren W. Christensen

Once a Warrior King : Memories of an Officer in Vietnam by David Donovan

Steel My Soldiers' Hearts by David H. Hackworth
About Face by David H. Hackworth

No True Glory - A frontline account of the battle for Fallujah by Bing West

The Postman by David Brim

Lucifer's Hammer by Larry Niven and Jerry Pournelle

War Day by Whitley Strieber and James Kunetka

Resurrection Day by Brendan DuBois

The War in 2020 by Ralph Peters

Roughneck Nine-One : The Extraordinary Story of a Special Forces A-team at War by Frank Antenori and Hans Halberstadt

Blood Stripes: The Grunt's View of the War in Iraq by David J. Danelo

Thunder Run: The Armored Strike to Capture Baghdad by David Zucchino

Warfare and the Third World by Robert E. Harkavy and Stephanie G. Neuman

World War Z by Max Brooks

MOVIES

Red Dawn

We Were Soldiers

The Day After

The Mad Max Series

Jarhead

Children of Men

Escape from New York

V for Vendetta

The Terminator Series

28 Days Later

The Beast

I Am Legend

The Stand

Def-Con 4

The Postman

TV

Band of Brothers

The Lost Battalion

Generation Kill

The Unit

Jericho

M*A*S*H*

Jeremiah

Combat!

Over There

Tour of Duty

Threads

WEB

Twilight: 2013

<http://www.93gamesstudio.com>

<http://www.myspace.com/93gamesstudio>

<http://93gamesstudio.livejournal.com>

Twilight: 2000

<http://www.farfuture.net>

<http://forum.juhlin.com>

<http://groups.yahoo.com/group/Twi2000>

<http://groups.yahoo.com/group/t2k>

All Around Goodness

<http://www.rpg.net>

<http://www.rpglife.com>

<http://zombiehunters.org/forum>

TWILIGHT: 2013

CREW	
CARGO	
WEIGHT	
BV	
SP	

VEHICLE NAME	

Special Equipment/Sensors/Notes:

CONFIGURATION	
SUSPENSION	
MAINTENANCE	
ARMOR	

TRAVEL SPEED	
COMBAT SPEED	
FUEL	
FUEL CONS	

CAPACITY	
RATE OF FIRE	
MAX. RANGE	
OPT. RANGE	
SPEED	

WEAPON NAME	

Notes:

Round	Damage	Penetration	Explosiion.Effects	BV	SP

Weapon	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP

TWILIGHT: 2013

ROF		WEAPON NAME			
RECOIL		Attachments/Notes: 			
BULK					
WEIGHT					
AMMO					
CAPACITY					
		MAX. RANGE		OPT. RANGE	

	Personal	Gunfighting	CQB	Tight	Medium	Open	Sniping	Extreme
Speed								
Attack								
Damage								
Penetration								

Ammo:	Ammo:	Ammo:	Ammo:	Ammo:
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Ammo:	Ammo:	Ammo:	Ammo:	Ammo:
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

TWILIGHT 2013

o. General Information

Name _____
Quality _____
Nationality _____
MOS/Position _____
Rank _____
Handedness _____
Languages _____

1. NPC Traits

Of course, PCs' interactions with NPCs won't be limited to the social level. The progression from roleplaying to tossing dice is where NPC traits become relevant.

In theory, you could use the character creation rules in Chapter Four to generate complete life path histories, traits, and values for every NPC that the PCs are likely to encounter. In practice, this would create such an immense workload that no sane GM could manage it. Thus, most NPCs don't receive the same level of mechanical detail that player characters do. They instead receive only what they need to fulfill their designated walk-on roles: a bare minimum of numerical information.

2. Quality

An NPC's quality is a relative measure of his experience and competence which determines the acceptable ranges for several other traits. Quality is measured on a descriptive scale. Note that this isn't necessarily a measurement of combat experience unless combat is the NPC's chosen profession – a world-class neurosurgeon is likely to be a high-quality NPC with abysmal combat capabilities. From highest to lowest, possible NPC qualities are:

Green: The NPC is young and inexperienced or has led an exceptionally sheltered life without much opportunity to learn useful skills. Alternately, he was highly experienced before the Collapse, but everything he knew is now completely irrelevant (many former urban professionals fit this criterion). Green NPCs make up about 25% of the total population.

2. Quality cont.

Regular: The NPC is of average competence, probably on a par with a well-rounded starting player character in his twenties. Roughly 40% of the total population can be considered Regular.

Experienced: Through long experience, above-average innate aptitude, or fortunate survival of many lethal situations, the NPC stands a cut above his peers. Approximately 25% of the total population is Experienced.

Veteran: Broadly-experienced and well-trained, the NPC is a significant challenge for a highly-skilled starting character assuming a conflict in the NPC's area of specialty (use common sense: a veteran lawyer won't stand a chance in a gunfight with PCs, but will mop the floor with most of them in a courtroom). Veteran NPCs comprise about 10% of the population.

Elite: The best of the best, the NPC is a world-class authority in his chosen field of endeavor. This is one of the most capable allies or dangerous adversaries that the PCs will ever encounter. Less than 1% of the population can be considered Elite.

3. Attributes and Key Skills

An NPC's quality determines his attribute values and skill ratings. The GM should assign these as appropriate.

For attributes, a range of points is provided; the total of all ten of the NPC's attributes should fall within this range. Combat-capable NPCs should lean toward the higher end of the range, with the extra points going into CUF and OODA; noncombatants aren't likely to have values above 3 in either of the derived attributes.

For skills, a little discretion is called for. Most PCs will have ratings in at least 12 to 15 skills, which is a little excessive for an NPC who may only be on-screen for a few exchanges of fire. An enemy militiaman's farming background and exquisite taste in watercolors may be interesting from a social perspective, but he's much more likely to be shooting at the PCs than discussing landscape lighting with them. Accordingly, it's only necessary to determine the NPC's ratings in the three to six key skills that are directly relevant to his role in the story. The following ratings are recommended maximums; not all of these key skills must be this high.

'TWILIGHT': 2013

NPC Quality	Attributes	Key Skills' Ratings
Elite	76-84	Master
Veteran	70-78	Expert
Experienced	64-72	Professional
Regular	58-66	Competent (one at Professional)
Green	52-60	Novice (one at Competent)

Attribute	Value
Awareness	
Cognition	
Coordination	
Fitness	
Muscle	
Personality	
Resolve	
Education	
CUF	
OODA	

[illegible]

4. Wound Thresholds

Determine an NPC's base wound threshold in the same manner as a PC's: $(10 + \text{FIT} + \text{FIT} + \text{MUS}) / 4$. However, an NPC's damage is tracked on a single scale, rather than separately per hit location. His thresholds are the same as a PC's limb thresholds: Slight is 1, Moderate is base, Serious is 1.5x base, Critical is 2x base. Most NPCs die easier than PCs.

There's one exception case. If you're making a veteran or elite combatant NPC, calculate his thresholds on the torso progression: Slight 1, Moderate base, Serious 2x base, Critical 3x base. These are hard bastards and should not go down easily.

If the NPC is not intended to be a combatant, it's acceptable to skip this step and assume that one solid hit will take him out of a fight.

Normal NPCs

$$\text{Base} = [10 + \text{MUS} + [\text{FIT} \times 2]] / 4$$

Slight	1	
Moderate		Base
Serious		Base x 1.5
Critical		Base x 2

Veteran or Elite NPCs

$$\text{Base} = [10 + \text{MUS} + [\text{FIT} \times 2]] / 4$$

Slight	1	
Moderate		Base
Serious		Base x 2
Critical		Base x 3

Physical qualities such as height, weight, eye color, etc. can be selected as needed (rather than randomly determined) to fit each NPC.

TWILIGHT: 2013

NPC Name					Quality				
Age	Gender	Hair Color	Eye Color	Height	Weight	Handedness			
Nationality		Occupation/MOS/Position			Rank	Langauges			
AWA	CND	MUS	FIT	COG	EDU	PER	RES	OODA	CUF
		Slight	Moderate	Serious	Critical	Fatigue			
Sprint	Run	Jog	Walk	Stagger	Crawl	Travel			
			4	2	1				

NPC Name					Quality				
Age	Gender	Hair Color	Eye Color	Height	Weight	Handedness			
Nationality		Occupation/MOS/Position			Rank	Langauges			
AWA	CND	MUS	FIT	COG	EDU	PER	RES	OODA	CUF
		Slight	Moderate	Serious	Critical	Fatigue			
Sprint	Run	Jog	Walk	Stagger	Crawl	Travel			
			4	2	1				

'TWILIGHT': 2013

Squad Identifier	Quality						Size		
AWA	CND	MUS	FIT	COG	EDU	PER	RES	OODA	CUF
	Slight	Moderate	Serious	Critical	Fatigue				
Sprint	Run	Jog	Walk	Stagger	Crawl	Travel			
			4	2	1				

Squad Leader	
Damage	
Slight	
Moderate	
Serious	
Critical	
Fatigue	
Dead	

NPC 1	
Damage	
Slight	
Moderate	
Serious	
Critical	
Fatigue	
Dead	

NPC 2	
Damage	
Slight	
Moderate	
Serious	
Critical	
Fatigue	
Dead	

NPC 3	
Damage	
Slight	
Moderate	
Serious	
Critical	
Fatigue	
Dead	

NPC 4	
Damage	
Slight	
Moderate	
Serious	
Critical	
Fatigue	
Dead	

NPC 5	
Damage	
Slight	
Moderate	
Serious	
Critical	
Fatigue	
Dead	

NPC 6	
Damage	
Slight	
Moderate	
Serious	
Critical	
Fatigue	
Dead	

NPC 7	
Damage	
Slight	
Moderate	
Serious	
Critical	
Fatigue	
Dead	

NPC 8	
Damage	
Slight	
Moderate	
Serious	
Critical	
Fatigue	
Dead	

NPC 9	
Damage	
Slight	
Moderate	
Serious	
Critical	
Fatigue	
Dead	

GEAR	QTY	WEIGHT

Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP

[illegible][illegible][illegible]

TWILIGHT: 2013

Team Leader _____

TEAM INTEGRATION

GEAR	QTY	WEIGHT	GEAR	QTY	WEIGHT

Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP

Melee Weapon	Dam.	Pen.	Speed	Bulk	Weight	BV	SP

Explosive	Damage	Explosion/Effects	Weight	BV	SP

TWILIGHT 2013

0. General Information

Name _____
Quality _____
Nationality _____
MOS/Position _____
Rank _____
Handedness _____
Languages _____

1. Attribute Scores

Roll 2d6-1 seven times, recording each die result. Then allocate the seven results as you see fit. Assign a default value of 6 to Education to represent a high school diploma or the equivalent. You may voluntarily remove up to 5 points from Education, applying each removed point to another attribute. You may not increase any attribute above 10 in this manner.

If the total of these seven values is less than 40, add points as you see fit to bring the total up to 40. You may not increase any attribute above 8 in this manner.

Alternatively, Start with a pool of 52 attribute points (we recommend 48 points for green characters, 56 points for experienced ones, 60 points for veterans, and 65 points as an elite) and distribute them as you see fit, with at least one point in each. At this stage of character creation, Education cannot have a value higher than 6 and no other attribute can exceed 10.

Attribute	Initial	Modifiers	Value
Awareness	_____	_____	_____
Cognition	_____	_____	_____
Coordination	_____	_____	_____
Fitness	_____	_____	_____
Muscle	_____	_____	_____
Personality	_____	_____	_____
Resolve	_____	_____	_____
Education	_____	_____	_____
CUF	_____	_____	_____
OODA	_____	_____	_____

Initial CUF value is equal to (Resolve / 2).

Initial OODA value is equal to (Awareness / 2).

2. Background Skills

Your character receives 6 points in the Language cascade for his native language. You also may distribute (6 + Cognition) skill points among the following skills, with no more than 3 points in any one skill:

Skill	Points	Final
Agriculture	_____	_____
Animal Husbandry	_____	_____
Aquatics/SCUBA	_____	_____
Archery	_____	_____
Artisan (any cascade)	_____	_____
Aviation	_____	_____
Climbing	_____	_____
Command	_____	_____
Computing/Programming	_____	_____
Construction	_____	_____
Deception	_____	_____
Driving/Heavy, /Motorcycle	_____	_____
Electronics	_____	_____
Fieldcraft	_____	_____
Hand-to-Hand/Grappling	_____	_____
Hand Weapons/Grappling	_____	_____
Instruction	_____	_____
Intimidation	_____	_____
Language (any cascade)	_____	_____
Longarm	_____	_____
Mechanics	_____	_____
Medicine	_____	_____
Mounts	_____	_____
Performance (any cascade)	_____	_____
Persuasion	_____	_____
Security	_____	_____
Sidearm	_____	_____
Streetcraft	_____	_____

NOTE: Unless otherwise specified in the phase's Special Rules entry, each year of a life path phase provides 1 personal skill point (for example, a phase that lasts 4 years provides 4 personal skill points). You may not use personal skill points to raise any skill above a value of 15. You may spend personal skill points on any skill except Artillery, Gunnery, Special Equipment, Special Vehicle, and Support Weapons. Any restrictions on spending a phase's professional skill points do not apply to personal skill points.

In addition, you may spend 5 personal skill points to increase any attribute by 1. If necessary, you may "save up" personal skill points over multiple phases to make such a purchase. You may not raise Education above 7 in this manner, nor any other attribute above 9.

'TWILIGHT' 2013

3. Lifepaths

1st Term

Length

Benefits

Special Rules

Hazardous Duty

Rank

2nd Term

Length

Benefits

Special Rules

Hazardous Duty

Rank

3rd Term

Length

Benefits

Special Rules

Hazardous Duty

Rank

4th Term

Length

Benefits

Special Rules

Hazardous Duty

Rank

5th Term

Length

Benefits

Special Rules

Hazardous Duty

Rank

Last Year

Benefits

Special Rules

Hazardous Duty

Rank

Equipment Dice

Rads

4. Skills

Skill

Value

Rating

Degrees

5. Advantages/Disadvantages

Name

Value

At the end of every phase that grants Rank, you must determine whether your character earns a promotion. This requires an attribute check with a penalty equal to 2 plus your character's current Rank.

TWILIGHT 2013

6. Fatigue Thresholds

Slight	_____	FIT/2
Moderate	_____	FIT
Serious	_____	FIT + (RES/2)
Critical	_____	FIT + RES

7. Movement Speeds

Sprint	_____	10 + (MUS/2)
Run	_____	8 + (MUS/3)
Trot	_____	6 + (MUS/4)
Walk	_____	4
Stagger	_____	2
Crawl	_____	1
Travel Speed	_____	3 + (FIT/3) kph

8. Wound Thresholds

Base = $[10 + \text{MUS} + (\text{FIT} \times 2)] / 4$

Location	Slight	Moderate	Serious	Critical
Head	1	_____	_____	_____
		Base x .5	Base	Base x 1.5
Torse	1	_____	_____	_____
		Base	Base x 2	Base x 3
Limbs	1	_____	_____	_____
		Base	Base x 1.5	Base x 2

9. Physique *

Buils	Modifier
Slight	MUS or FIT < 10 14
Average	Normal 19
Large	FIT <= 12 27
Athletic	FIT + MUS => 16 or higher, neither attribute below 5 21
Male Height	_____ (4d20 + 138)/100
Femal Height	_____ (4d20 + 120) /100
Weight	_____ (Height x Height x Build)

10. Carrying Capacity

Combat Load

(Stage II - 10 + MUS)
(Stage III - Weight x [20 + MUS]%)

March Load

(Stage II - 11 + MUS + FIT)
(Stage III -Weight x [26 + MUS+FIT]%)

Emergency Load

(Stage II - 21 +(2 x MUS) + FIT + RES)
(Stage III -Weight x [55 + MUS+FIT+RES]%)

Damaging Load

(Stage II - x 2 Emergency Load)
(Stage III -x 2 Emergency Load)

11. Nutritional Requirements

A character's base starvation threshold - the length of time he can go without food and avoid attribute reduction - depends on his age:

Age	Starvation Threshold
Under 20	6 days
20-29	7 days
30-34	8 days
35-39	9 days
40-44	10 days
45-49	9 days
50-59	8 days
60-64	7 days
65-69	6 days
70-74	5 days
75+	4 days

Reduce the threshold by 1 day for every physical attribute with a value between 8 and 11, and by 2 for every physical attribute with a value of 12 or greater. This cannot reduce the threshold below 3 days. Finally, for a female character, multiply the threshold by 1.2.

For Stage III, if a character has an athletic build, multiply the threshold by 0.75.

* Physique is a Stage III rule only. For Stage I and II character creation, you are free to choose your character's height and weight.

TWILIGHT 2013

12. Contacts

Base _____ PER + 1 per 10 years of age

For every pass through a military combat arm phase, subtract one contact.

Die Roll	Contact Quality
1-4	Green
5-11	Regular
12-16	Experienced
17-19	Veteran
20	Elite

Age

Age	AWA	CDN	COG	EDU	FIT	MUS	PER
30	—	1	—	—	—	—	—
35	—	2	—	—	—	1	—
40	1	3	—	—	—	2	—
45	2	4	—	—	—	3	—
50	3	5	—	—	1	4	—
55	4	6	—	—	2	5	—
60	5	7	1	—	3	6	—
65	6	8	2	—	4	7	—
70	7	9	3	—	5	8	1
75	8	10	4	—	6	9	2
80	9	10	5	1	7	10	3
84	10	10	6	2	8	10	4
87	10	10	7	3	9	10	5
89	10	10	8	4	10	10	6
90	10	10	9	5	10	10	7
91	10	10	10	6	10	10	8
92	10	10	10	7	10	10	9
93	10	10	10	8	10	10	10
94	10	10	10	9	10	10	10
95+	10	10	10	10	10	10	10

Whenever a character reaches or exceeds a threshold age during a phase, you must make one or more aging rolls against the possibility of attribute loss. The above table defines threshold ages. You must roll 1d10 for each attribute. Your character loses 1 point in each attribute for which the corresponding die result is less than or equal to the listed number.

[illegible]

'TWILIGHT': 2013

PROS AND CONS			
ADVANTAGES		POINTS	
DISADVANTAGES		POINTS	

QUALITY		TYPES	
Green			
Regular			
Experienced			
Veteran			
Elite			

[illegible]

Firearm	Caliber	Cap.	Dam.	Pen.	Rng	ROF	Speed	Rec	Bulk	Wgt	BV	SP
Melee Weapon			Dam.	Pen.		Speed	Bulk	Weight		BV		SP