



Artillery and Ortilery

The capabilities of weapons are reflected in their controls. These charts determine the controls to be expected on weapons.

INDIRECT FIRE

Some weapons can attack targets which are not directly in their line of sight. This Indirect Fire involves Artillery (high arcing shots which descend on the target), Ortilery (shots dropped from orbit on a target), or Bombing (shots dropped from flyers on a target). In most cases, Indirect Fire is controlled by a Forward Observer.

The Observer Process

A Forward Observer identifies a Target, communicates with an Indirect Fire weapon operator, and tells it the Target's location identifiers (he may give coordinates by voice, or transmit data).

On the Forward Observer's command (Fire One), the weapon shoots one ranging shot. It arrives in the next Round.

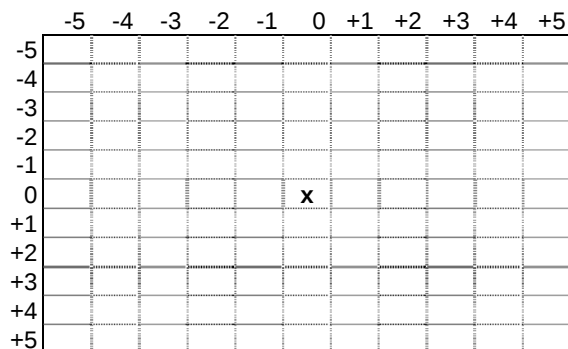
The shot may deviate from a direct hit: roll Flux twice: once for vertical and once for horizontal deviation.

The Forward Observer observes the impact of the shot.

Hit! If it hits, he tells the weapon operator (Hit! Fire For Effect) and the weapon now fires one normal shot. It hits in the next Round.

Miss! If it misses, he tells the weapon operator (Miss! Up X Left Y) and the weapon fires a ranging shot. It hits in the next Round and the process repeats.

THE OBSERVER METHOD



Roll Flux twice: apply it vertically and horizontally to determine where the shot actually hits. On each roll, apply Mod Forward Observer skill (with a sign as appropriate) but never beyond zero on the chart.

Deviation Scale. Indirect Fire weapons deviate in units of 50 meters. This may keep the hits in the same Range Band, or may move it to another Range Band.

The Designator Process

A Forward Observer identifies a Target and is working with either a Remote weapon slaved to the Designator, or with an Indirect Fire weapon at another location.

Indirect Fire Weapons

He is using a Designator. He activates the Designator and fires at the Target.

Hit! If he hits, he Triggers the Indirect Fire Weapon, which then fires and will hit in the next Round. The operator must fire again in the next Round to Redesignate the Target.

A Designator must Hit, but need not Penetrate.

Pre-Shot. An operator may Trigger the Indirect Fire Weapon before he attempts to Designate a Target. In the next Round, he Designates the Target: if he hits, the Indirect Fire Weapon also hits; if he misses, the Indirect Fire Weapon also misses (roll Flux twice for Deviation- it has to hit somewhere).

Designate and Forget. Designators which use Spray leave a residue on the Target. Once it has been hit, the operator may pursue other activities.

Remote Indirect Weapons

A Remote weapon is emplaced at a location and slaved to an operator's Designator. When the Designator is fired, the Remote is automatically ready to fire in support.

Triggered Operation. The Designator fires at the Target. If it hits, the user Triggers the Remote weapon, which fires at the designated target and hits in the next Round.

A Designator must Hit, but need not Penetrate.

Automatic Operation. The Designator fires at the Target, and the Remote automatically fires at the same time.

A Designator must Hit, but need not Penetrate. If the Designator misses, then the Remote misses.

FN. The FN for a Remote depends on its installation.

$FN = Char + Skill$

$Char = Weapon\ Quality\ (if\ not\ already\ known,\ roll\ 2D-2).$

$Skill = Installation.$

To Install A Remote Weapon

$2D < Dexterity + Fighting$

$Installation = Assets\ minus\ Die\ Roll.$



	WMD Weapons of Mass Destruction include Nuclear, Biological, and Chemical Weapons.	WMD-1
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A variety of WMD are possible (if not readily available). Effects are in D: Blast-1D, Bang-2D, etc.
Bio and Chemical weapons are clouds or areas of effect, diminishing with distance from the center.

N PLAGUE “NI”

Biological Weapon

R= Proximity	1D-1	Versus		----- Inflicts -----	
		Infect	Infect	Poison	
0 Contact	0	3	6	1	
1 Contact	1	3	4		
2 Touch	2	3	2		
3 Miss	3+	0			

Ni is a contact bio-weapon. It does not degrade.

G POISON GAS “GALI”

Chemical Weapon

R= Proximity	1D-1	Versus		----- Inflicts -----	
		Gas	Suff	Poison	Stench
0 Direct Hit	0	3	10	5	0
1 Hit	1	3	8	4	0
2 Near Miss	2	3	2	2	0
3 Miss	3+	0	0	0	0

Gali is an odorless suffocating gas. Degrades 1 per minute.

D PLAGUE “DA”

Biological Weapon

R= Proximity	1D-1	Versus		----- Inflicts -----	
		Gas	Infect	Poison	
0 Direct Hit	0	3	3	3	
1 Hit	1	3	2	2	
2 Near Miss	2	3	1	1	
3 Miss	3+	0			

Da is an air-borne infectious bio-weapon. It degrades after one day.

Z POISON GAS “ZALA”

Chemical Weapon

R= Proximity	1D-1	Versus		----- Inflicts -----	
		Gas	Suff	Poison	Stench
0 Direct Hit	0	3	2	10	5
1 Hit	1	3		8	4
2 Near Miss	2	3		2	2
3 Miss	3+	0		0	0

Zala is a poison gas with an identifiable odor. It degrades 1 per ten minutes.

R RAD POINT SOURCE “RUUN”

Nuclear Weapon

R= Proximity	1D-1	Versus		----- Inflicts -----	
		Rad	Rad		
0 Direct Hit	0	9	5		
1 Hit	1	6	4		
2 Near Miss	2	3	2		
3 Miss	3+	0			

Ruun is a radioactive object. It does not degrade.

T CROWD CONTROL GAS “TAT”

Chemical Weapon

R= Proximity	1D-1	Versus		----- Inflicts -----	
		Gas	Suff	Poison	Stench
0 Direct Hit	0	3	3	1	7
1 Hit	1	3	2		4
2 Near Miss	2	3	1		2
3 Miss	3+	0			1

Tat is a non-lethal gas. It degrades 1 per minute.

Kh RADIATION “KH”

Nuclear Weapon

R= Proximity	1D-1	Versus		----- Inflicts -----	
		Rad	Rad		
0 Direct Hit	0	6	6		
1 Hit	1	4	4		
2 Near Miss	2	2	2		
3 Miss	3+	0			

Khulanii is a radioactive area dust contamination. It does not degrade.

V CONTACT POISON “VON”

Chemical Weapon

R= Proximity	1D-1	Versus		----- Inflicts -----	
		Poison	Poison	Trang	
0 Contact	0	3	5	6	
1 Contact	1	3	4	3	
2 Touch	2	3	1	1	
3 Miss	3+	0			

Von is a surface contaminant. It does not degrade.

R= distance from the release point (assumes a random targeting in the area).

Versus= Weapon attacks as stated against armor and protection. If it overwhelms the protection, use **Inflicts=**.

Range=	0	1	2	3	4	5	6	7	8	9
Range	Contact	Vshort	Short	Medium	Long	Vlong	Distant	VDistant	Orbit	Far Orbit
Distance		5 m	50 m	150 m	500 m	1000 m	5000 m	50 km	500 km	5000 km

	WMD Weapons of Mass Destruction include Nuclear, Biological, and Chemical Weapons.	WMD
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A variety of WMD are possible (if not readily available). Note effects are in D: Blast-1D, Bang-2D, etc.

Suitcase

		Nuclear Weapon				
R=	Proximity	1D-1	Blast	BFE*	Burn	Rad
0	Direct Hit	0		Vaporized	30D	
1	Hit	1		Vaporized	25D	
2	Hit	2	10	12	12	20
3	Vnear Miss	3	5	6	3	20
4	Near Miss	4	1	4	1	5
5	Far Miss	5		2		3
6	Miss	6				

Suitcase is a portable nuclear weapon.

Tactical

		Nuclear Weapon				
R=	Proximity	1D-1	Blast	BFE*	Burn	Rad
0	Direct Hit	0		Vaporized	50D	
1	Hit	1		Vaporized	40D	
2	Hit	2		Vaporized	30D	
3	Vnear Miss	3	10	12	12	20
4	Near Miss	4	5	6	3	20
5	Far Miss	5	1	4	1	5
6	Miss	6				

Tactical is a typical battlefield nuclear weapon.

Dirty Tactical is the same weapon with intentional radioactive contamination = 4x Rad.

Strategic

		Nuclear Weapon				
R=	Proximity	1D-1	Blast	BFE*	Burn	Rad
0	Direct Hit	0		Vaporized	100D	
1	Hit	1		Vaporized	90D	
2	Hit	2		Vaporized	80D	
3	Vnear Miss	3		Vaporized	50D	
4	Near Miss	4	10	12	12	20
5	Far Miss	5	5	6	3	20
6	Miss	6	1	4	1	5

Strategic is a typical strategic nuclear weapon.

Massive Explosion

		Missile Warhead				
R=	Proximity	Sz-1D	Blast	BFE*	Rad	Burn
0	Direct Hit	5		Vaporized	100D	
1	Hit	6	90 D	20 D	10 D	30 D
2	Hit	7	40 D	15 D	10 D	20 D
3	Vnear Miss	8	30 D	10 D	10 D	10 D
4	Near Miss	9	10 D	5 D	5 D	5 D
5	Far Miss	10	5 D	1D	1D	1D
6	Miss	11				

Assumes Missile-5 Warhead.

Sz-1D is Missile Size minus 1D.

Missiles-4-5-6-7 Warheads can inflict Massive Explosion.

Missile-5 is the Benchmark for effects.

Missile-4 inflicts one-tenth damage,

Missile-6 inflicts double damage.

Missile-7 inflicts triple damage

Bang=0 if in space.

Non-Nuke ignore EMP and Rad.

Explosive (not Nuke) inflicts one-tenth damage.

AM Anti-Matter inflicts additional triple damage.

Effects in Space

Weapons in Vacuum inflict Blast at one-tenth Effect.

Bang= 0.

Using These Tables

Each of the weapons on this page vaporizes the target with a Direct Hit.

If the result is potentially NOT a Direct Hit, roll 1D-1 (or Missile Size – 1D for Massive Explosion) and implement the noted Effects instead.

*BFE= Bang, Flash, and EMP are each inflicted in this amount.

*BF = Bang and Flash are each inflicted in this amount.

R= distance from the release point (assumes a random targeting in the area).

Versus= Weapon attacks as stated against armor and protection. If it overwhelms the protection, use **Inflicts=**.

Range=	0	1	2	3	4	5	6	7	8	9
Range	Contact	Vshort	Short	Medium	Long	Vlong	Distant	VDistant	Orbit	Far Orbit
Distance		5 m	50 m	150 m	500 m	1000 m	5000 m	50 km	500 km	5000 km



Military Explosions

Many military weapons are explosives, or create explosions.

Explosions

A variety of military explosive weapons are available, either as battlefield events, or as the projectiles of other weapons. Note effects are in D: Blast-1D, Bang-2D, etc.

Grenade

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Flash
1	Hit	0	1	2	1	
2	Near Miss	1		1		
3	Miss	2				

Grenade is hand (manipulator) thrown.

AF Warhead

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Pen
1	Hit	0	5	3	10	4
2	Near Miss	1	3	2	5	
3	Miss	2	1	1	3	

Anti-Flyer Warhead attacks flyers.

Flash-Bang

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Flash
1	Hit	0	1	4	1	6
2	Near Miss	1		2		3
3	Miss	2				

Flash-Bang is a distracting device.

AA Warhead

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Pen
1	Hit	0	2	2	1	5
2	Near Miss	1	1	1		
3	Miss	2				

Anti-Armor Warhead attacks tanks and vehicle armor.

60-Sec

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Flash
1	Hit	0	1	2	1	
2	Near Miss	1		1		
3	Miss	2				

Alternative Grenade. Attacks as Grenade after a delay (thrown in Turn=1; screams its message all through Turn=2; explodes in Turn=3). Grenade screams (in local language): "I AM A 60-SECOND GRENADE, 59, 58, 57...."

Hvy AA Warhead

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Pen
1	Hit	0	2	2	1	10
2	Near Miss	1	1	1		
3	Miss	2				

Heavy Anti-Armor Warhead (upgraded in effects) attacks tanks and vehicle armor.

IED

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Flash
1	Hit	0	2	3	2	1
2	Near Miss	1	1	2	1	
3	Miss	2		1		

Improvised Explosive Device. Remotely triggered.

Land Mine

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Flash
1	Hit	0	2	3	10	1
2	Near Miss	1	1	2	2	
3	Miss	2		1		

Land Mine attacks individual who moves into the same Range Band.

Artillery Shell

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Pen
1	Hit	0	3	4	5	3
2	Near Miss	1	2	3	3	
3	Miss	2	1	2	1	

Artillery Shell is an incoming attack from distant artillery.

AA Land Mine

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Pen
1	Hit	0	2	3	2	10
2	Near Miss	1	1	2	1	
3	Miss	2		1		

AA Land Mine ignores individuals; attacks ground vehicle which moves into the same Range Band.

Ortillery Shot

Military Explosions

R=	Proximity	1D-1	Blast	Bang	Frag	Flash
1	Hit	0	1	2	1	
2	Near Miss	1		1		
3	Miss	2				

Ortillery Shot is an incoming attack from orbit (alternative to Ortillery missiles).



Environmental Effects

Benchmarks provide insights into the expected consequences of commonplace situations

7-1

	Code	Event	Effect1	Effect2	Effect3	Comment	TC
Temperature		Extreme Cold	Cold-25			HZ+2 and outer = - 100 C	Fr
		Intense Cold	Cold-16			= - 75 C	
		Very Cold	Cold-2			HZ+1	Tu
		Cold	Cold-1			= 0 C	
		Temperate	-none-			Temperate World	
		Hot	Heat-1			= 50 C	
		Very Hot	Heat-2			HZ -1	Tr
		Intense Heat	Heat-16			= +125 C	
		Extreme Heat	Heat-25			HZ -2 and inner = +150 C	
		Slow Reentry	Heat-50			= +200 C	
		Reentry	Heat-2000			Typical orbital reentry =	
		Reentry Plus	Heat-3000			Orbital reentry to Dense Atm =8+	
Atmosphere	0	Vacuum	Suff-3				Va
	1	Trace	Suff-3				
	2	Very Thin Tainted	Suff-2	Poison-1		Combination-5	
	3	Very Thin	Suff-2			Respirator-5	
	4	Thin Tainted	Suff-1	Poison-1		Combination-5	
	5	Thin	Suff-1			Respirator-5	
	6	Standard	-none-				
	7	Standard Tainted		Poison-1		Filter-3	
	8	Dense	-none-				
	9	Dense Tainted		Poison-1		Filter-3	
	A	Exotic	Suff-1 or	Infection-1 or		Breather-9 or Rebreather-10	
	B	Corrosive	Corrode-1	Poison-1			
	C	Insidious	Corrode-2	Poison-2			
	D	Dense High					
	E	Ellipsoid					
	F	Thin-Low					
		Underwater	Suff-2			for Air Breathers	
		Smoke, Dust	Suff-1				
		Heavy Smoke	Suff-2				
		Chemical Smoke	Suff-2	Poison-1			
Radiation		Non-Radioactive	-none-				
		Mildly Radioactive	Rad-1				
		Radioactive	Rad-2				
		Highly Radioactive	Rad-3				
		Stellar Flare	Rad-1-2-3	EMP-2			
		Nuclear Explosion	Rad-1-2-3			Otherwise quite distant.	
		Fallout	Rad-1-2-3				
Impacts, Falls and Collisions		Trip and Fall	Wound-1				
		Hi-G Trip and Fall	Wound-2				
		Very High Fall	Wound-N			N= Range.	
		One-Story Fall	Wound-2			Height = 3 meters	
		Traffic Collision	Wound-1-2-3			Reasonable speeds	
		Crash	Wound-3-4-5			Higher speeds	
Weather		Storm	Blast-1-2				
		Blizzard	Blast-1-2	Cold-1-2-3			
		Hurricane	Blast-1-2-3				
		Tornado	Blast-2-3-4				
		Hail	Frag-1				
		Typhoon	Blast-1				
		Turbulence	Blast-1				
		Scirroco	Blast-1	Hot-1-2-3		Hot Winds.	
		Lighting	Elec-5				
		Thunder	Bang-5				
		Bright Sun	Flash-1	Hot-1		Unrelenting Desert Sun	





Environmental Effects

Benchmarks provide insights into the expected consequences of commonplace situations.

7-2

	Code	Event	Effect1	Effect2	Effect3	Comment	TC
Events and Encounters		Volcanic Eruption	Blast-1	Frag-1	Burn-1	Actual Effects vary wildly	
		Allergic Reactions	Tranq-1-2-3				
		Poison Reactions	Poison-1-2-3				
		Fire	Burn-1-2-3				
		Loud	Bang-1				
		Decompression	Suff-2			Thorns.	
		Flood	Cold-1	Suff-2			
		Rough Vegetation	Cut-1				
		Plague	Infection-1-2-3				
		Short Circuit	Elec-2				
	Code	Event	Effect1	Effect2	Effect3	Comment	TC
Stars and Space		Star	Flash-3	Heat-3		In Space. Quite Close	
		Star	Flash-2	Heat-2		In Space. Closer Than HZ	
		Star	Flash-1	Heat-1		In Space. In Habitable Zone	
		Star				In Space. Farther Than HZ.	
		Vacuum	Suff-3				
		Stellar Flare	Flash-4	Rad-1-2-3	EMP-1	In Space.	
Stars and Space		Nova	Flash-9	Heat-9	EMP-4	In Space. Quite Close	
		Nova	Flash-7	Heat-7	EMP-3	In Space. Closer Than HZ	
		Star	Flash-5	Heat-5	EMP-2	In Space. In Habitable Zone	
		Star	Flash-3	Heat-3	EMP-1	In Space. Farther Than HZ.	
			Inflicts	Intensity			
Body Weapons		Fists	Blow	1D			
		Horns	Cut	1D			
		Tusks	Infection	1D			
		Fangs	Cut	1D			
		Teeth	Cut	1D			
		Claws	Cut	1D			
		Hooves	Blow	1D			
		Spikes	Cut	1D			
		Sting	Poison	1D		or Tranq	
		Gripper	Blow	1D			
		Grasper	Blow	1D			
		Tentacle	Blow	1D			
		Hand	Blow	1D			
		Paw	Blow	1D			

