



THE ARMORY

T.M.

VOLUME 1

GUNPOWDER ERA WEAPONS FROM THE
FOURTEENTH CENTURY TO THE PRESENT.

NEW!

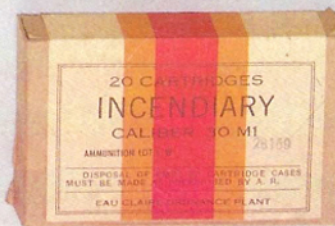
WITH TABLES FOR USE WITH



AND

ESPIONAGE!
The Secret Agent Role Playing Game

T.M.



BY
KEVIN DOCKERY

INTRODUCTION

As modern role-playing games expanded into the present day a need has been voiced by gamers for information on weapons that has not been "filtered" through personal opinion. This, the first volume in the Armory series, is the result of several years research in the arms field. Information is given in a factual format to present the weapon in a realistic light.

Sufficient data is given on each piece of equipment so that it can be added to any game system on the market. All data is based on published data of the actual weapon with any extrapolations corresponding to available data.

Future volumes will continue to expand the information available to the gamer. Forthcoming volumes will include:

Ancient weapons
from the prehistoric to the gunpowder era
Science fiction weaponry
Expansions of modern weapons
Exotic weaponry
Nuclear devices

July 5, 1983
Kevin Dockery

ABOUT THE AUTHOR

Kevin Dockery was born on October 12, 1954 in the Detroit, Michigan area. He joined the United States Army on May 21, 1972. He received antique weapon training at both the Smithsonian Institute and Colonial Williamsburg, Virginia. While an armorer for the President's guard in Washington, D.C, he did custom pistol work and achieved Class III Gunsmith classification.

On September 24, 1975, he entered service with the Michigan National Guard and has been on active duty reserve status since.

Kevin attended Oakland University and graduated in 1980 with a degree in communications. The Morrow Project was his thesis, acting as his introduction to the wargaming field with Timeline Limited. He now lives in Ann Arbor, Michigan and works as the Design Engineer for Firebird Limited.

T.M.

THE ARMORY VOLUME 1

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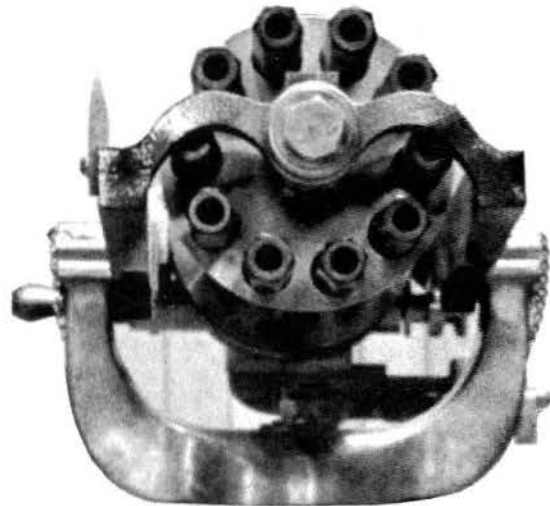
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CODING

All weapons listed in this book are headed with an eight number code broken into three groups. The coding is for easy location of weapons and to simplify the addition of other weapons. The coding states the weapon type, country of origin, and year of adoption. The first group of two numbers gives the general weapon type. In a weapon class with several subtypes there is also a letter suffix.

01	Pistols
02	Submachineguns
03	Rifles
04	Machineguns
05	Miscellaneous weapons
05A	Shotguns
05B	Flamethrowers
05C	Grenade launchers
06	Heavy weapons
06A	Mortars
06B	Recoilless rifles
06C	20mm Cannon
07	Reserved for future expansion
08	Grenades
09	Small arms ammunition

The second three number group indicates the country where the weapon design originated. The countries are encoded on the following list:

000	International
001	Afghanistan
002	Albania
003	Algeria
004	Angola
005	Argentina
006	Australia
007	Austria
008	Bahrain
009	Bangladesh
010	Barbados
011	Belgium
012	Benin
013	Bolivia
014	Brazil
015	Brunei
016	Bulgaria
017	Burma
018	Burundi
019	Cameroon
020	Canada
021	Chad
022	Chile
023	China (People's Republic)
024	Columbia
025	Congo
026	Costa Rica
027	Cuba
028	Cyprus
029	Czechoslovakia
030	Denmark
031	Dominican Republic
032	Ecuador
033	Egypt
034	El Salvador

035	Ethiopia
036	Finland
037	France
038	Gabon
039	Gambia
040	Germany (NAZI or earlier)
041	Germany (Federal Republic)
042	Germany (Democratic Republic)
043	Ghana
044	Greece
045	Guatemala
046	Guinea
047	Guinea-Bissau
048	Guyana
049	Haiti
050	Honduras
051	Hong Kong
052	Hungary
053	India
054	Indonesia
055	Iran
056	Iraq
057	Ireland
058	Israel
059	Italy
060	Ivory Coast
061	Jamaica
062	Japan
063	Jordan
064	Kampuchea
065	Kenya
066	Korea (North)
067	Korea (South)
068	Kuwait
069	Laos
070	Lebanon
071	Liberia
072	Libya
073	Luxembourg
074	Madagascar
075	Malawi
076	Malaysia
077	Mali
078	Mauritania
079	Mexico
080	Mongolia
081	Morocco
082	Mozambique
083	Nepal
084	Netherlands
085	New Zealand
086	Nicaragua
087	Niger
088	Nigeria
089	Norway
090	Oman
091	Pakistan
092	Panama
093	Papua New Guinea
094	Paraguay
095	Peru
096	Philippines
097	Poland
098	Portugal
099	Qatar
100	Rhodesia (Zimbabwe)
101	Romania

- 102 Rwanda
- 103 Saudi Arabia
- 104 Senegal
- 105 Sierra Leone
- 106 Singapore
- 107 Somalia
- 108 South Africa
- 109 Spain
- 110 Sri Lanka
- 111 Sudan
- 112 Sweden
- 113 Switzerland
- 114 Syria
- 115 Taiwan
- 116 Tanzania
- 117 Thailand
- 118 Togo
- 119 Tonga
- 120 Transkei
- 121 Trinidad and Tobago
- 122 Tunisia
- 123 Turkey
- 124 Uganda
- 125 Union of Soviet Socialist Republics (Russia)
- 126 United Arab Emirates
 - 127 Abu Dhabi
 - 128 Dubai
 - 129 Ras al Khaimah
 - 130 Sharjah
- 131 United Kingdom (Britain)
- 132 United States of America (America)
- 133 Upper Volta
- 134 Uruguay
- 135 Venezuela
- 136 Vietnam (North)
- 137 Vietnam (South)
- 138 Yemen (North)
- 139 Yemen (South)
- 140 Yugoslavia
- 141 Zaire
- 142 Zambia

The last three number group indicates the first year the specific model of weapon became available (Date adopted). On weapons that were adopted in the same year a letter suffix is placed after the number group on subsequent weapons.

Example: 03-132-970a

This coding indicates the following:

03 - The weapon is a rifle.

132 - The native country is the United States.

970a - The weapon was first available in 1970 and is the second weapon shown for that year.

PISTOLS

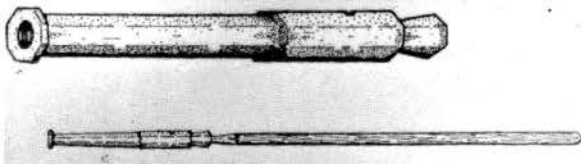
A pistol is generally considered to be any hand-held weapon that can be aimed and fired with one hand. Early hand cannons pushed this definition with their long tillers being held under the arm and the need of a second hand to hold the match. Indeed, the very few examples still in existence indicate that hand weapons were very rare in the early days of firearms.

With the invention of the wheellock, it was possible to make true one handed pistols, but they were still primarily a rich man's weapon.

With the advent of the flintlock, pistols became much more common than they had been previously. The pistols' small size and convenience made them very popular with travellers in the more rural areas. Pistols were also of great interest to the cavalry troopers, as it gave them a firearm which they could fire from horseback, allowing them to compete with the footsoldier's muskets.

The invention of the revolver greatly increased the popularity of handguns, especially in the American West. In a revolver, a cylinder contains the ammunition supply and rotates to line up a fresh round each time the hammer is cocked. In the single action revolvers, the hammer must be cocked back manually each time the weapon is to be fired. In the later, double action pistols, the hammer could be manually cocked or, a long pull of the trigger would lift and fire the hammer.

The self loading pistol, commonly called an automatic, was developed at the close of the 19th century. In the self-loader, the ammunition is carried in a magazine and the force of the fired round operates the action of the weapon, reloading a fresh round. True automatic pistols continue to fire as long as the trigger is held. These "machine pistols" are covered under Submachineguns.



01-000-399

NAME Tannenburg Hand Cannon

NAME (NATIVE) Tannenburg buchse

TYPE Early (German) cannonlock pistol

DATE ADOPTED c. 1399

CAL 17mm

LENGTH 32/127cm

MUZZLE VEL 400 fps

WT (EMPTY) 1.235kg

WT (LOADED) 1.268kg

EFF RNG 20m

MAX RNG 1280m

TYPE OF FIRE Single shot, muzzle loader

RATE OF FIRE 3 rpm

FEED DEVICE 1 round (ball and loose powder)

FEED DEVICE WT .033kg per round (28g ball, 5g powder)

BASIC LOAD 50 rounds (.25kg powder, 1.25kg ball)

LOAD WT 1.5kg

This is one of the very earliest "handguns" that can be accurately dated. The weapon was found during the 1840's in the ruins of an infamous robber-baron's castle in Tannenburg Germany. The castle was known to have been leveled in 1399. The weapon is effectively a small cannon on the end of a wooden shaft. The weapon would be loaded with loose powder, six .33 caliber lead balls (when possible), and with wadding holding it all in. Loose powder at the touchhole would be ignited with a burning cord (slowmatch), or hot wire to fire the gun.



01-000-520

NAME Wheellock pistol

TYPE Early wheellock pistol

DATE ADOPTED c. 1520

CAL 17mm

LENGTH 57.7cm

MUZZLE VEL 450 fps

WT (EMPTY) 1.37kg

WT (LOADED) 1.401kg

EFF RNG 35m

MAX RNG 1348m

TYPE OF FIRE Single shot, muzzle loader

RATE OF FIRE 2 rpm

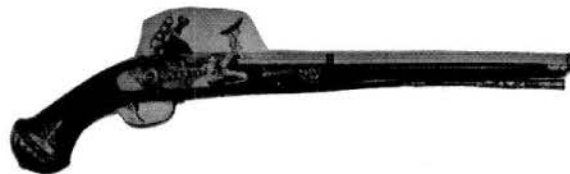
FEED DEVICE 1 round (ball and loose powder)

FEED DEVICE WT .031kg (28g ball, 3g powder)

BASIC LOAD 50 rounds (1.4kg ball, .15kg powder)

LOAD WT 1.55kg

This was one of the first true "pistols" able to be held and fired with one hand. Due to the complexity and delicacy of the action of the wheellock, the weapon was very expensive and could only be made, or repaired, by a master gunsmith. The firing of a wheellock was very sure and much safer than the contemporary matchlocks of the period.



01-000-550

NAME Snaphaunce pistol

TYPE Early "flintlock" pistol

DATE ADOPTED c. 1550

CAL 14mm

LENGTH 53.5cm

MUZZLE VEL 450 fps

WT (EMPTY) 1.04kg

WT (LOADED) 1.057kg

EFF RNG 35m

MAX RNG 1127m

TYPE OF FIRE Single shot, muzzle loader

RATE OF FIRE 4 rpm

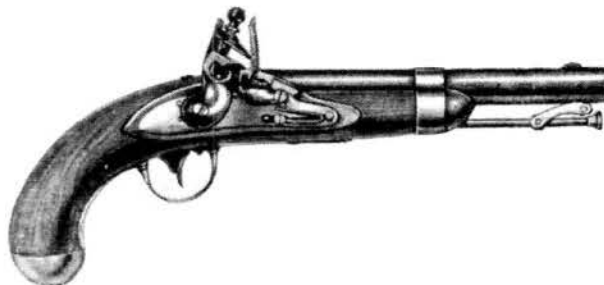
FEED DEVICE 1 round (ball and loose powder)

FEED DEVICE WT .017kg (14g ball, 3g powder)

BASIC LOAD 50 rounds (.7kg ball, .15kg powder)

LOAD WT .85kg

The Snaphaunce action preceded the flintlock for both hand and shoulder weapons. The action was simpler to make than that of a wheellock but still more complicated than the action of a true flintlock. The Snaphaunce, though effective, was quickly superseded by more efficient weapons.



01-000-806

NAME .54 Flintlock

TYPE Early (American) flintlock pistol

DATE ADOPTED 1806

CAL 14mm

LENGTH 40.6cm

MUZZLE VEL 725 fps

WT (EMPTY) 1.13kg

WT (LOADED) 1.148kg

EFF RNG 10m

MAX RNG 500m

TYPE OF FIRE Single shot, muzzle loader

RATE OF FIRE 6 rpm

FEED DEVICE 1 round (ball and loose powder)

FEED DEVICE WT .011kg (8g ball, 3g powder)

BASIC LOAD 12 rounds (.096kg ball, .036kg powder)

LOAD WT .132kg

This weapon is representative of most early, single shot, muzzle loading, flintlock pistols. The weapon most commonly fires a lead ball packed down over loose black powder. The ball has a loose fit in the barrel to allow for faster loading in combat with a fouled (dirty) weapon. It is due to this relatively loose fit

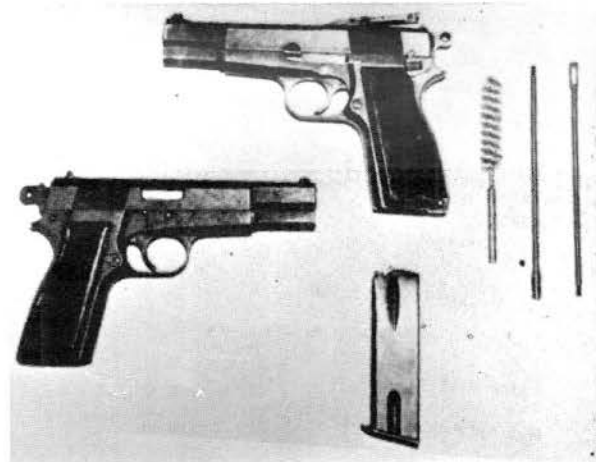
that the weapon has such poor accuracy and range. The flintlock is fired by priming powder being ignited by sparks created by a piece of flint, held in the hammer, striking a piece of metal, known as the frizzen, on the outside of the barrel. These sparks fall onto some loose priming powder held in a pan under the frizzen. The pan is connected to the main charge by a hole in the barrel. The flash of the powder travels up this hole igniting the main charge and firing the weapon. About 10% of the time, only the priming powder in the pan will ignite failing to fire the weapon. This failure to fire is known as a "flash-in-the-pan."



01-007-981

NAME Styer GB 80
TYPE Austrian autoloader
DATE ADOPTED 1981
CAL 9x19mm
LENGTH 21.4cm
MUZZLE VEL 1214 fps
WT (EMPTY) .88kg
WT (LOADED) 1.21kg
EFF RNG 50m
MAX RNG 2104m
TYPE OF FIRE Double action semiautomatic
RATE OF FIRE 40 rpm
FEED DEVICE 18 round box magazine
FEED DEVICE WT .33kg
BASIC LOAD 3 magazines (59 rounds)
LOAD WT .99kg

This is a very new weapon on the market. The GB is built of high quality stainless steel reducing possible corrosion. The double action trigger as well as the large magazine capacity make this pistol a very efficient combat weapon. The sights of the weapon have a luminous material built into them to aid in firing under low light conditions.



01-011-935

NAME Browning High Power, HP 35
NAME (NATIVE) Pistole Automatique Browning, Modele A Grande Puissance
TYPE Belgian autoloader
DATE ADOPTED 1935
CAL 9x19mm
LENGTH 19.6cm
MUZZLE VEL 1161 fps
WT (EMPTY) .88kg
WT (LOADED) 1.085kg
EFF RNG 45m
MAX RNG 2012m
TYPE OF FIRE Semiautomatic
RATE OF FIRE 40 rpm
FEED DEVICE 13 round box magazine
FEED DEVICE WT .205kg
BASIC LOAD 3 magazines (39 rounds)
LOAD WT .615kg

This pistol was John Browning's last design for an automatic pistol. Built after his death, the HP-35 was the first of the successful large magazine capacity pistols. The weapon is very well built and has been adopted by over 10 countries as their standard military pistol. The HP-35's excellent design has made it a commercial as well as military success. There is also a version of the HP-35 that takes a Mauser style wooden holster/stock.



01-011-906

NAME Browning .25
TYPE Belgian autoloader
DATE ADOPTED 1906

CAL 6.35x15.5mmSR
 LENGTH 11.5cm
 MUZZLE VEL 820 fps
 WT (EMPTY) .368kg
 WT (LOADED) .423kg
 EFF RNG 10m
 MAX RNG 640m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 30 rpm
 FEED DEVICE 6 round box magazine
 FEED DEVICE WT .055kg
 BASIC LOAD 2 magazines (12 rounds)
 LOAD WT .11kg

This is one of the smallest commercially available automatic pistols on today's market. The .25 automatic cartridge is lower in power than a .22 Long Rifle cartridge and because of this comparative lack of power it's only recommended as a last ditch defensive weapon. The small size of the weapon allows for it to be very concealable. This concealability, combined with the pistol's 6 round magazine, are the only advantages of a weapon of this caliber.



01-029-952
 NAME Vz-52
 NAME (NATIVE) 7.62mm Pistole vz/52
 TYPE Czechoslovakian autoloader
 DATE ADOPTED 1952
 CAL 7.62x25mm
 LENGTH 21cm
 MUZZLE VEL 1615 fps
 WT (EMPTY) .887kg
 WT (LOADED) 1.045kg
 EFF RNG 50m
 MAX RNG 1927m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 35 rpm
 FEED DEVICE 8 round box magazine
 FEED DEVICE WT .158kg
 BASIC LOAD 3 magazines (24 rounds)
 LOAD WT .474kg

This weapon can fire any 7.62x25mm ammunition but works best with Czech "hot" loaded 7.62x25mm cartridges. Using the same locking system as the German MG-42 machinegun, the Vz-52 is a very streamlined though internally complex design. The Vz-52 was standard issue in the Czechoslovakian military until the Russian Makarov was adopted.



01-037-970
 NAME MAB-P15
 TYPE French autoloader
 DATE ADOPTED c. 1970
 CAL 9x19mm
 LENGTH 20.3cm
 MUZZLE VEL 1148 fps
 WT (EMPTY) 1.09kg
 WT (LOADED) 1.323kg
 EFF RNG 50m
 MAX RNG 1990m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 40 rpm
 FEED DEVICE 15 round box magazine
 FEED DEVICE WT .233kg
 BASIC LOAD 3 magazines (45 rounds)
 LOAD WT .699kg

This is the modern French Army's issue pistol. The weapon is essentially a militarized version of a French commercial pistol, the Unique Modele R Para. The large magazine capacity and simple action make this weapon one of the most effective of the French designs.



01-040-893
 NAME Borchardt
 NAME (NATIVE) M93 Borchardt-Selbstlade-pistole
 TYPE German autoloader
 DATE ADOPTED 1893
 CAL 7.65x25mm
 LENGTH 35.6cm (66cm w/stock)
 MUZZLE VEL 1100 fps
 WT (EMPTY) 1.275kg (1.7kg w/stock)

WT (LOADED) 1.415kg (1.84kg w/stock)
 EFF RNG 75m
 MAX RNG 1400m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 24 rpm
 FEED DEVICE 8 round box magazine
 FEED DEVICE WT .140kg
 BASIC LOAD 3 magazines (24 rounds)
 LOAD WT .420kg

This weapon was the forerunner of the P-08 (Luger) pistol. The Borchardt is a very long, ungainly looking weapon. Its length is due, in part, to the mainspring of the action being above and behind the grip. The toggle action used in the Borchardt was only commonly seen on the descendent of the Borchardt, the Luger, and no other weapon. Though clumsy appearing, the Borchardt was well-balanced as a pistol and, when used with its attachable shoulder stock, (stock wt. .425kg), made a fairly effective carbine. The ammunition used in the Borchardt has a light propellant load and this weapon cannot safely use ammunition from other weapons.



01-040-896
 NAME Mauser M1896
 NAME (NATIVE) Mauser-Selbstladepistole Construction 96 (C96)
 TYPE German autoloader
 DATE ADOPTED 1896
 CAL 7.62x25mm
 LENGTH 28.8cm (63cm w/stock)
 MUZZLE VEL 1400 fps
 WT (EMPTY) 1.13kg (1.58kg w/stock)
 WT (LOADED) 1.237kg (1.687kg w/stock)
 EFF RNG 50m (200m w/stock)
 MAX RNG 1800m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 30 rpm

FEED DEVICE 10 round internal magazine, 10 round Stripper clip
 FEED DEVICE WT .119kg
 BASIC LOAD 4 clips (40 rounds)
 LOAD WT .476kg

One of the first commercially successful automatic pistols, the Mauser M1896, also known as the "broomhandle" due to its distinctive grip, has been around since before the turn of the century. The weapon is unusual in that its integral magazine is in front of the trigger guard and not in the grip as in most other automatic pistols. The Mauser is loaded by "stripping" 10 rounds off a "clip" inserted into the top of the magazine. When the empty clip is removed, the bolt goes forward automatically chambering a round. Mausers can be fitted with a stock (stock wt. .45kg), that allows the pistol to be fired while braced against the shoulder. The stock is hollow and the pistol can fit inside the stock making it a holster.



01-040-908
 NAME P-08 Luger
 NAME (NATIVE) 9mm Parabellum-Pistole Modell 1908, 9mm Parabellum-Marinen-Pistole Modell 1904, System of 1908 9mm Parabellum-Artillerie-Pistole Modell 1908 (Modell 1917)
 TYPE German autoloader
 DATE ADOPTED 1908
 CAL 9x19mm
 LENGTH w/10.2cm bbl 22.3cm, w/15.2cm bbl (naval) 26.7cm, w/19cm bbl (artillery) 31.1cm
 MUZZLE VEL w/10.2cm bbl 1150 fps, w/15.2cm bbl (naval) 1200 fps, w/19cm bbl 1250 fps
 WT (EMPTY) w/10.2cm bbl .87kg, w/15.2cm bbl .96kg, w/19cm bbl 1.05kg
 WT (LOADED) w/10.2cm bbl 1.068kg, w/15.2cm bbl 1.158kg, w/19cm bbl (w/8 round mag) 1.248kg, (w/32 round mag) 2.117kg
 EFF RNG 50m (200m w/stock)
 MAX RNG 2012m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 32 rpm
 FEED DEVICE 8 round box magazine or 32 round "snail" drum magazine
 FEED DEVICE WT (8 round) .198kg, (32 round drum) 1.067kg
 BASIC LOAD 2 magazines (16 rounds), Artillery Model - 5 drum magazines (160 rounds)
 LOAD WT .396kg, Artillery Model 5.335kg

One of the world's most recognized pistols, the P-08, or Luger as it is more commonly known, is unique among military pistols. Developed from the Borchardt, the

Luger has a distinctive toggle action which functions very quickly. The weapon's design is quite complex and the individual parts are fitted very closely. This complexity and tightness makes all the Lugers very prone to jamming from dirt in the action. A very accurate and easy to shoot weapon, the Luger is found in several variations.

The most common model of Luger is the Infantry model (P-08) with a 10.2cm barrel. The 15.2cm barrel is found on the Marine (naval) model of 1904/6. The Marine model was used by the Imperial German navy in WWI and was often found fitted with a detachable wooden stock. The Artillery model of 1917 was fitted with a 19cm barrel and detachable stock. Also designed for the Artillery model was a special 32 round "snail-drum" magazine for sustained fire. The special drum and shoulder stocks will fit all three of the German military Lugers.



01-040-930
 NAME Walther PPK
 NAME (NATIVE) Walther Selbstlade pistol Modell Polizei
 Pistole Kriminal
 TYPE German autoloader
 DATE ADOPTED 1930
 CAL 9x17mm
 LENGTH 17.3cm
 MUZZLE VEL 970 fps
 WT (EMPTY) .682kg
 WT (LOADED) .801kg
 EFF RNG 40m
 MAX RNG 1360m
 TYPE OF FIRE Double action semiautomatic
 RATE OF FIRE 21 rpm
 FEED DEVICE 7 round box magazine
 FEED DEVICE WT .119kg
 BASIC LOAD 3 magazines (21 rounds)
 LOAD WT .357kg

This pistol was often carried by high-ranking German officers who did not wish to carry a heavier, more powerful pistol just for personal defense. Also favored by the Gestapo and other intelligence services, the PPK was originally designed for police detectives. The letters PPK stand for the German words meaning police pistol, criminal. The weapon is very fast to get into action owing to the excellent balance of the design and double action trigger.



01-040-938
 NAME Walther P-38 (P-1)
 NAME (NATIVE) Pistole 38 (Pistole 1)
 TYPE German autoloader
 DATE ADOPTED 1938
 CAL 9x19mm
 LENGTH 21.5cm
 MUZZLE VEL 1150 fps
 WT (EMPTY) .772kg
 WT (LOADED) .96kg
 EFF RNG 50m
 MAX RNG 2012m
 TYPE OF FIRE Double action semiautomatic
 RATE OF FIRE 32 rpm
 FEED DEVICE 8 round box magazine
 FEED DEVICE WT .188kg
 BASIC LOAD 2 magazines (16 rounds)
 LOAD WT .376kg

This weapon was designed as a modernized, easier to manufacture, replacement for the P-08 Luger. The P-38 is not as prone to jamming as the Luger being much less sensitive to dirt. Equipped with a double action trigger, the P-38 can be safely carried with the hammer down on a loaded chamber. To fire the weapon, only the trigger needs to be pulled as the weapon will automatically cock itself (single action) as it is fired. This double action feature allows the P-38 to be put into action faster than most standard semiautomatic pistols.



01-040-940
 NAME Mauser HSc
 NAME (NATIVE) Mauser Selbstlade pistol Modell HSc

TYPE German autoloader
 DATE ADOPTED 1940
 CAL 9x17mm
 LENGTH 16.5cm
 MUZZLE VEL 951 fps
 WT (EMPTY) .596kg
 WT (LOADED) .724kg
 EFF RNG 40m
 MAX RNG 1360m
 TYPE OF FIRE Double action semiautomatic
 RATE OF FIRE 30 rpm
 FEED DEVICE 8 round box magazine
 FEED DEVICE WT .128kg
 BASIC LOAD 3 magazines (24 rounds)
 LOAD WT .384kg

This small automatic was developed by Mauser before World War II as a commercial weapon but was adopted by the German Air Force and Navy during the war. The hammer on the HSc is covered by the slide with only a small ridge exposed to allow for single action cocking. The slide locks to the rear on the last shot and when a magazine is inserted, either loaded or empty, automatically goes forward. This automatic slide release allows for very fast reloading.



01-041-966
 NAME Heckler and Koch P9S
 TYPE German autoloader
 DATE ADOPTED c. 1966
 CAL 9x19mm
 LENGTH 13.7cm
 MUZZLE VEL 1152 fps
 WT (EMPTY) .880kg
 WT (LOADED) 1.063kg
 EFF RNG 50m
 MAX RNG 2035m
 TYPE OF FIRE Double action semiautomatic
 RATE OF FIRE 30 rpm
 FEED DEVICE 9 round box magazine
 FEED DEVICE WT .183kg
 BASIC LOAD 3 magazines (27 rounds)
 LOAD WT .549kg

This modern German pistol has several new design features. The weapon utilizes the same roller-locking feature as the G-3 rifle series resulting in a very safe and reliable weapon. The barrel of the P9S is rifled with polygonal rifling, that is, the barrel has no lands or grooves but is slightly oval in shape with a spiral twist to the barrel. This form of rifling

makes for a barrel that is very easy to clean and has less drag on the bullet when it is fired. Though the action of the P9S allows for double action firing, there is a cocking lever on the side of the weapon that allows for the hammer to be either cocked or lowered safely on a loaded chamber.



01-059-934
 NAME Beretta M34
 NAME (NATIVE) Pistola Automatica Beretta Modello 1934, Brevetto 1915/19
 TYPE Italian autoloader
 DATE ADOPTED 1934
 CAL 9x17mm
 LENGTH 15.2cm
 MUZZLE VEL 950 fps
 WT (EMPTY) .65kg
 WT (LOADED) .763kg
 EFF RNG 40m
 MAX RNG 732m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 21 rpm
 FEED DEVICE 7 round box magazine
 FEED DEVICE WT .113kg
 BASIC LOAD 3 magazines (21 rounds)
 LOAD WT .339kg

This small pistol was one of the first Beretta automatics to see wide use. The M34 was standard issue in the Italian military throughout WWII and was highly coveted by men on both sides of the war due to the weapon's small size and weight. The weapon fires the 9mm short round and because of this has limited offensive use due to the low power of the round.



01-059-951

NAME Beretta M1951

NAME (NATIVE) Pistola Automatica Beretta Modello 1951

TYPE Italian autoloader

DATE ADOPTED 1951

CAL 9x19mm

LENGTH 20.3cm

MUZZLE VEL 1182 fps

WT (EMPTY) .87kg

WT (LOADED) 1.058kg

EFF RNG 50m

MAX RNG 2012m

TYPE OF FIRE Semiautomatic

RATE OF FIRE 32 rpm

FEED DEVICE 8 round box magazine

FEED DEVICE WT .188kg

BASIC LOAD 3 magazines (24 rounds)

LOAD WT .564kg

Also known as the Beretta "Brigadier," this weapon has been adopted by several countries including Israel. Designed to be very comfortable to fire, the M1951 is more accurate as a result. With its exposed barrel, the M1951 is easily fitted with a suppressor and does not easily overheat.



01-059-976

NAME Beretta Model 84

TYPE Italian autoloader

DATE ADOPTED 1976

CAL 9x17mm

LENGTH 17.1cm

MUZZLE VEL 920 fps

WT (EMPTY) .62kg

WT (LOADED) .8kg

EFF RNG 40m

MAX RNG 1190m

TYPE OF FIRE Double action semiautomatic

RATE OF FIRE 39 rpm

FEED DEVICE 13 round box magazine

FEED DEVICE WT .18kg

BASIC LOAD 3 magazines (39 rounds)

LOAD WT .54kg

This is a very modern design automatic pistol. The large magazine capacity makes this pistol one of the most effective designs in this caliber. Essentially, this pistol is a smaller version of the Beretta M92 pistol. The M84 is primarily made for police and private use as the 9x17mm round is considered underpowered for combat usage.



01-059-976a

NAME Beretta M92S

NAME (NATIVE) Pistola Automatica Beretta Modello 92S

TYPE Italian autoloader

DATE ADOPTED 1976

CAL 9x19mm

LENGTH 21.6cm

MUZZLE VEL 1155 fps

WT (EMPTY) .949kg

WT (LOADED) 1.169kg

EFF RNG 50m

MAX RNG 2012m

TYPE OF FIRE Double action semiautomatic

RATE OF FIRE 40 rpm

FEED DEVICE 15 round box magazine

FEED DEVICE WT .22kg

BASIC LOAD 3 magazines (45 rounds)

LOAD WT .66kg

This is a very modern, double action, large magazine capacity pistol. This weapon is very much like the Beretta M1951 but has almost double the magazine capacity as well as a double action trigger (see Walther P-38, 01-040-938). Because of the fact that the barrel is exposed, the weapon is readily fitted with a suppressor. The Beretta M92S was under consideration by the United States recently as a possible replacement for the Colt M1911A1.



01-062-925

NAME M14 Nambu

NAME (NATIVE) 14 Nen Shiki Kenju

TYPE Japanese autoloader

DATE ADOPTED 1925

CAL 8x21mm

LENGTH 22.8cm

MUZZLE VEL 1066 fps

WT (EMPTY) .907kg

WT (LOADED) .998kg

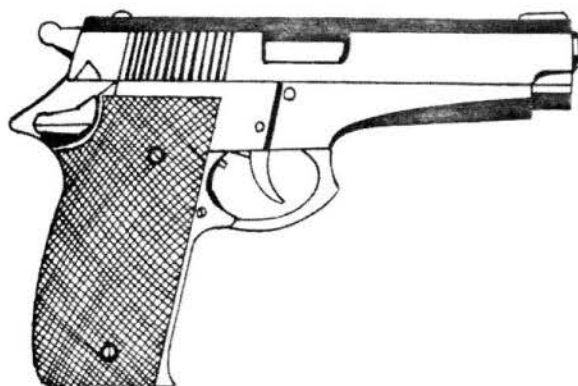
EFF RNG 15m
 MAX RNG 500m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 35 rpm
 FEED DEVICE 8 round magazine
 FEED DEVICE WT .091kg
 BASIC LOAD 3 magazines (24 rounds)
 LOAD WT .273kg

The more commonly issued pistol used by Japan during WWII, the P-14, also known as the Nambu, can be found with a wooden holster/stock (see Mauser M1896, 01-040-896). The Nambu fires a low-powered round that is unique to this weapon. There is also a version of this pistol approximately 1/3 smaller than the P-14 and chambered for a 7mm round. This smaller weapon is commonly known as the "baby Nambu."



01-097-964
 NAME P-64
 TYPE Polish pistol
 DATE ADOPTED 1964
 CAL 9x18mm
 LENGTH 15.5cm
 MUZZLE VEL 1030 fps
 WT (EMPTY) .636kg
 WT (LOADED) .68kg
 EFF RNG 50m
 MAX RNG 1094m
 TYPE OF FIRE Double action semiautomatic
 RATE OF FIRE 30 rpm
 FEED DEVICE 6 round box magazine
 FEED DEVICE WT .044kg
 BASIC LOAD 2 magazines (12 rounds)
 LOAD WT .088kg

This pistol was developed in Poland as a replacement for the Tokarev M33 for the military. Externally, the P-64 resembles the Makarov PM and is chambered for the same round as the Makarov. Internally, the P-64 resembles the Walther PPK and somewhat duplicates that weapon in functioning.



01-108-979
 NAME Mamba
 TYPE South African autoloader
 DATE ADOPTED 1979
 CAL 9x19mm
 LENGTH 21.8cm
 MUZZLE VEL 1200 fps
 WT (EMPTY) 1.05kg
 WT (LOADED) 1.277kg
 EFF RNG 50m
 MAX RNG 2012m
 TYPE OF FIRE Double action semiautomatic
 RATE OF FIRE 45 rpm
 FEED DEVICE 15 round box magazine
 FEED DEVICE WT .227kg
 BASIC LOAD 3 magazines (45 rounds)
 LOAD WT .681kg

This all stainless steel pistol was originally developed as a joint venture between South Africa and Rhodesia. The Mamba is an excellent combat design with a large magazine capacity, double action trigger, and ambidextrous safety. There was also an experimental Mamba built as a selective fire machine pistol but was dropped due to lack of interest.



01-113-949
 NAME SIG P-210-2
 NAME (NATIVE) Selbstlade-pistole Modell 49 (SP47/8)
 TYPE Swiss autoloader
 DATE ADOPTED 1949
 CAL 9x19mm
 LENGTH 21.6cm
 MUZZLE VEL 1100 fps
 WT (EMPTY) .909kg
 WT (LOADED) 1.097kg
 EFF RNG 50m
 MAX RNG 2000m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 35 rpm
 FEED DEVICE 8 round box magazine
 FEED DEVICE WT .188kg
 BASIC LOAD 3 magazines (24 rounds)
 LOAD WT .564kg

This pistol is considered to be the most accurate military issue handgun in the world today. The SIG is standard issue in the Swiss army. The weapon's close fitting of parts and careful design allow for excellent accuracy while minimizing jamming due to dirt build-up.



01-125-933

NAME Tokarev M1933

NAME (NATIVE) 7.62mm Pistolet Obr 1933 g, Tul'skiy Tokarev (TT)

TYPE Russian autoloader

DATE ADOPTED 1933

CAL 7.62x25mm

LENGTH 19.5cm

MUZZLE VEL 1378 fps

WT (EMPTY) .769kg

WT (LOADED) .94kg

EFF RNG 50m

MAX RNG 1644m

TYPE OF FIRE Semiautomatic

RATE OF FIRE 35 rpm

FEED DEVICE 8 round box magazine

FEED DEVICE WT .171kg

BASIC LOAD 3 magazines (24 rounds)

LOAD WT .513kg

This was the standard issue Soviet military pistol throughout World War II. The ammunition fired in the Tokarev is interchangeable with any standard 7.62x25mm ammunition. This weapon is essentially a simplified copy of the Colt M1911A1 with a major difference being the lack of a safety catch on the Tokarev.



01-125-952

NAME Makarov PM

NAME (NATIVE) 9mm Pistolet Makarova (PM)

TYPE Russian autoloader

DATE ADOPTED 1952

CAL 9x18mm

LENGTH 16cm

MUZZLE VEL 1033 fps

WT (EMPTY) .68kg

WT (LOADED) .79kg

EFF RNG 40m

MAX RNG 1097m

TYPE OF FIRE Double action semiautomatic

RATE OF FIRE 35 rpm

FEED DEVICE 8 round box magazine

FEED DEVICE WT .11kg

BASIC LOAD 3 magazines (24 rounds)

LOAD WT .33kg

This is the new standard issue sidearm of the Soviet military. The weapon is very much like a scaled-up version of the German PPK automatic pistol. The Makarov fires 9x18mm ammunition which is not interchangeable with NATO 9x19mm ammo. The pistol has a double action trigger and is a very handy though somewhat underpowered weapon.



01-131-901

NAME Webley-Fosbury

NAME (NATIVE) Webley-Fosbury Self-cocking Revolver

TYPE British semiautomatic revolver

DATE ADOPTED 1901

CAL 11.43x19mmR

LENGTH 28cm

MUZZLE VEL 650 fps

WT (EMPTY) 1.25kg

WT (LOADED) 1.37kg

EFF RNG 50m

MAX RNG 793m

TYPE OF FIRE Single action self-cocking revolver

RATE OF FIRE 18 rpm

FEED DEVICE 6 round cylinder

FEED DEVICE WT 6 rounds .12kg

BASIC LOAD 24 rounds

LOAD WT .48kg

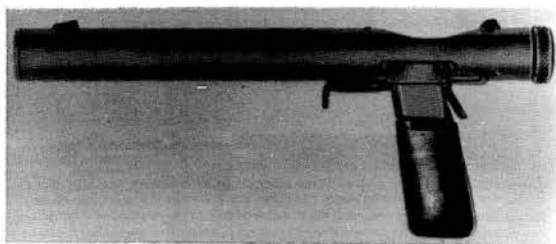
Developed at the turn of the century, this weapon is a unique combination of automatic pistol and revolver. The weapon is single action and when the hammer is cocked and fired, the barrel/cylinder section recoils to the rear of the lower trigger housing. When the upper unit recoils, the cylinder is rotated and the hammer cocked for the next shot. The action is

sensitive to dirt and therefore prone to jamming. This tendency to jam prevented the Webley-Fosbury from being an effective military weapon. One of the features of this weapon is that it is one of the very few revolvers with a manual safety catch.



01-131-915
 NAME .455 Webley Mark 6
 TYPE British revolver
 DATE ADOPTED 1915
 CAL 11.43x19mmR
 LENGTH 28.6cm
 MUZZLE VEL 600 fps
 WT (EMPTY) 1.07kg
 WT (LOADED) 1.19kg
 EFF RNG 50m
 MAX RNG 732m
 TYPE OF FIRE Double action revolver
 RATE OF FIRE 18 rpm
 FEED DEVICE 6 round cylinder
 FEED DEVICE WT (6 rounds) .12kg
 BASIC LOAD 18 rounds
 LOAD WT .36kg

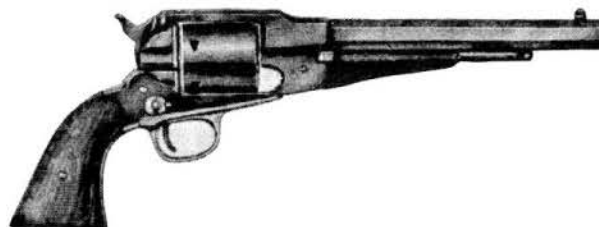
Prior to the acceptance of the Browning HP-35, this revolver was a standard issue sidearm of the British army. The revolver fires a very heavy, slow moving bullet that is now considered obsolete. The weapon is easy and quick to load due to the top break action of the Webley. To load or unload the weapon a lever is pressed down on the side allowing the pistol to fold in half, automatically ejecting any fired cases. The very strong design makes for a heavy, but very reliable, pistol.



01-131-942
 NAME Welrod
 NAME (NATIVE) Mark I Hand Firing Device
 TYPE British silenced pistol
 DATE ADOPTED c. 1942
 CAL 7.65x17mmSR
 LENGTH 30.5cm
 MUZZLE VEL 700 fps
 WT (EMPTY) .91kg
 WT (LOADED) .941kg
 EFF RNG 20m
 MAX RNG 943m

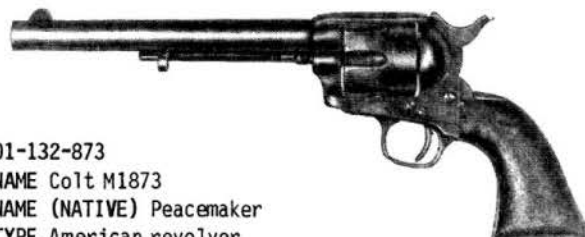
TYPE OF FIRE Bolt action repeater
 RATE OF FIRE 12 rpm
 FEED DEVICE 6 round Internal magazine
 FEED DEVICE WT .031kg
 BASIC LOAD 6 rounds
 LOAD WT .031kg

This unusual pistol was specifically designed for use as a "silent" assassination weapon. The action of the pistol is a manual, twist-bolt repeater, using a subsonic round and a built-in silencer to quiet the weapon's firing. The result of this design is a very quiet weapon that is difficult to locate when fired.



01-132-860
 NAME .44 New Model Army
 TYPE American percussion revolver
 DATE ADOPTED 1860
 CAL 11.2mm
 LENGTH 34.3cm
 MUZZLE VEL 1100 fps
 WT (EMPTY) 1.13kg
 WT (LOADED) 1.202kg
 EFF RNG 30m
 MAX RNG 1870m
 TYPE OF FIRE Single action revolver
 RATE OF FIRE 12 rpm
 FEED DEVICE 6 round cylinder
 FEED DEVICE WT 6 rounds .066kg (9g ball, 2g powder per round)
 BASIC LOAD 50 rounds (.45kg ball, .1kg powder)
 LOAD WT .55kg

One of the first widely used revolvers, this weapon was designed before metallic cartridges were in wide use. This type of weapon is known as a "cap and ball" black powder firearm. Cap and ball means that the cylinder of the revolver is first loaded with black powder and a lead bullet is pressed down on the powder with the ramming lever underneath the barrel. On the back of the cylinder a copper percussion cap is placed over a nipple on the copper of each chamber. Since this is a single action weapon, the hammer must be manually cocked back for each shot. When the trigger is pulled, the hammer crushes the percussion cap, firing the fulminate in the cap and igniting the powder charge. The weapon has no safety and is dangerous to carry fully loaded (see Colt M1873, 01-132-873).



01-132-873
 NAME Colt M1873
 NAME (NATIVE) Peacemaker
 TYPE American revolver
 DATE ADOPTED 1873

CAL 11.56x33mmR
 LENGTH w/12cm bbl 25.7cm, w/14cm bbl 27.6cm, w/19.1cm bbl 32.7cm
 MUZZLE VEL w/12cm bbl 820 fps, w/14cm bbl 860 fps, w/19.1cm bbl 960 fps
 WT (EMPTY) w/12cm bbl 1.021kg, w/14cm bbl 1.049kg, w/19.1cm bbl 1.106kg
 WT (LOADED) w/12cm bbl 1.156kg, w/14cm bbl 1.184kg, w/19.1cm bbl 1.241kg
 EFF RNG 45m
 MAX RNG 1480m
 TYPE OF FIRE Single action revolver
 RATE OF FIRE 12 rpm
 FEED DEVICE 6 round cylinder
 FEED DEVICE WT 6 rounds .135kg
 BASIC LOAD 36 rounds
 LOAD WT .814kg

This was considered the most popular of the Colt revolvers used in the American West. The weapon fires a large metallic cartridge loaded with black powder. Due to the Colt being single action, the pistol's hammer must be cocked back for each shot. Since there was nothing to prevent the hammer from accidentally firing a cartridge if struck a blow, the weapon was often carried with the uncocked hammer down on an empty chamber limiting the weapon to five shots. The Colt has a single loading port and each cartridge had to be chambered or ejected singly. This factor slowed the rate of fire considerably.



01-132-907

NAME Colt Police Positive and Detective Special
 TYPE American revolver
 DATE ADOPTED 1907, 1926*
 CAL 9x29mmR

LENGTH w/5cm bbl 16.8cm*, w/10.2cm bbl 22.2cm, w/12.7cm bbl 24.8cm, w/15.2cm bbl 28.6cm
 MUZZLE VEL w/5cm bbl* 776 fps, w/10.2cm bbl 837 fps, w/12.7cm bbl 862 fps, w/15.2cm bbl 870 fps

WT (EMPTY) w/5cm bbl* .624kg, w/10.2cm bbl .652kg, w/12.7cm bbl .836kg, w/15.2cm bbl 1.021kg
 WT (LOADED) w/5cm bbl* .713kg, w/10.2cm bbl .741kg, w/12.7cm bbl .925kg, w/15.2cm bbl 1.11kg
 EFF RNG 50m, 20m*
 MAX RNG c. 1660m
 TYPE OF FIRE Double action revolver
 RATE OF FIRE 24 rpm
 FEED DEVICE 6 round cylinder
 FEED DEVICE WT 6 rounds .089kg
 BASIC LOAD 24 rounds
 LOAD WT .356kg
 *Detective Special

These two revolvers are among the most common police handguns used in the United States especially during the 1930's. The Detective Special is simply the snub-nosed version of the larger Police Positive. Though out of production today, a great deal of these weapons are still found in use, a very definite statement to the weapon's durability.



01-132-921

NAME Colt M1911A1
 TYPE American autoloader
 DATE ADOPTED 1921
 CAL 11.43x23mm
 LENGTH 21.9cm
 MUZZLE VEL 860 fps
 WT (EMPTY) 1.106kg
 WT (LOADED) 1.36kg
 EFF RNG 50m
 MAX RNG 1463m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 35 rpm
 FEED DEVICE 7 round box magazine
 FEED DEVICE WT .254kg
 BASIC LOAD 3 magazines (21 rounds)
 LOAD WT .762kg

This Browning design has been in use by the U.S. military for over 70 years. The heavy slug fired by this pistol has long been known for its "knock down" power as a man stopper. The very rugged design of the ".45" allows it to function in almost impossible conditions. The accuracy of the M1911A1 is obvious when it is realized that the design has been used as a match pistol for target shooting for over 50 years.



01-132-935

NAME Smith & Wesson Model 27

TYPE American revolver

DATE ADOPTED 1935

CAL 9x33mmR

LENGTH w/8.9cm bbl 23.8cm, w/12.7cm bbl 26.1cm, w/15.2cm bbl 28.6cm, w/21.3cm bbl 34.9cm

MUZZLE VEL w/8.9cm bbl 1185 fps, w/12.7cm bbl 1232 fps, w/15.2cm bbl 1270 fps, w/21.3cm bbl 1328 fps

WT (EMPTY) w/8.9cm bbl 1.162kg, w/12.7cm bbl 1.205kg, w/15.2cm bbl 1.247kg, w/21.3cm bbl 1.332kg

WT (LOADED) w/8.9cm bbl 1.275kg, w/12.7cm bbl 1.318kg, w/15.2cm bbl 1.36kg, w/21.3cm bbl 1.445kg

EFF RNG 75m

MAX RNG 2150m

TYPE OF FIRE Double action revolver

RATE OF FIRE 24 rpm

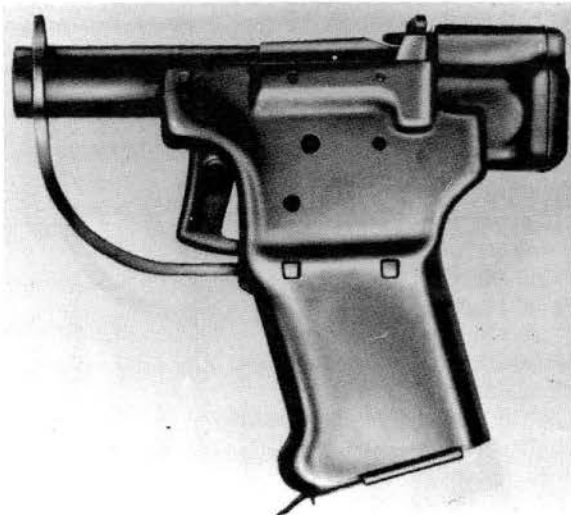
FEED DEVICE 6 round cylinder

FEED DEVICE WT 6 rounds .113kg

BASIC LOAD 24 rounds

LOAD WT .45kg

One of the largest weapons in this caliber, the Model 27 is one of the most comfortable .357 magnum revolvers to shoot. The Model 27 was the first handgun to be chambered for the .357 magnum cartridge. Built on the same frame as the later Model 29 .44 magnum, the M27 can use the most powerful loads safely.



01-132-942

NAME Liberator M1942

NAME (NATIVE) .45in Flare Projector (code name)

TYPE American pistol

DATE ADOPTED 1942

CAL 11.43x23mm

LENGTH 14cm

MUZZLE VEL 800 fps

WT (EMPTY) .454kg

WT (LOADED) .475kg

EFF RNG 5m

MAX RNG 1360m

TYPE OF FIRE Single shot

RATE OF FIRE 6 rpm

FEED DEVICE Single round

FEED DEVICE WT .021kg

BASIC LOAD 10 rounds

LOAD WT .21kg

This unusual weapon was designed for inexpensive manufacture and simple use for clandestine (guerrilla) forces. The Liberator is made of steel stampings and a minimum of parts. The barrel is a smooth-bored piece of tubing and has no extractor to remove the fired shell. There is a trap in the grip of the pistol that will hold 10 loose rounds of ammunition. Included with the weapon was a short piece of dowel to push out the fired case as well as a set of instructions done in a cartoon form for using the weapon. The Liberator was issued with 10 rounds of ammunition and was intended to be used to kill an enemy soldier to obtain his weapon.



01-132-950

NAME Smith & Wesson Model 36 Chief's Special

TYPE American revolver

DATE ADOPTED 1950

CAL 9x29mmR

LENGTH 16.5cm

MUZZLE VEL 1030 fps

WT (EMPTY) .539kg

WT (LOADED) .614kg

EFF RNG 10m

MAX RNG c.1660m

TYPE OF FIRE Double action revolver

RATE OF FIRE 20 rpm

FEED DEVICE 5 round cylinder

FEED DEVICE WT 5 rounds .074kg

BASIC LOAD 10 rounds

LOAD WT .148kg

Most commonly known as the Chief's Special, this is one of the smallest .38 Special revolvers made. The very small size of the M36 makes it a very popular weapon with undercover police and detectives. This pistol is built as a very high quality weapon with its only drawback the relatively low powered round it fires.



01-132-955

NAME Colt Python

TYPE American revolver

DATE ADOPTED 1955

CAL 9x33mmR

LENGTH w/6.6cm bbl 19.9cm, w/10.2cm bbl 23.5cm,
w/15.2cm bbl 28.5cm, w/20.3cm bbl 33.6cm

MUZZLE VEL w/6.6cm bbl 1086 fps, w/10.2cm bbl 1179 fps,
w/15.2cm bbl 1259 fps, w/20.3cm bbl 1310 fps

WT (EMPTY) w/6.6cm bbl .955kg, w/10.2cm bbl 1.077kg,
w/15.2cm bbl 1.247kg, w/20.3cm bbl 1.502kg

WT (LOADED) w/6.6cm bbl 1.068kg, w/10.2cm bbl 1.19kg,
w/15.2cm bbl 1.36kg, w/20.3cm bbl 1.615kg

EFF RNG 75m

MAX RNG 2150m

TYPE OF FIRE Double action revolver

RATE OF FIRE 24 rpm

FEED DEVICE 6 round cylinder

FEED DEVICE WT 6 rounds .113kg

BASIC LOAD 24 rounds

LOAD WT .45kg

This is the top quality revolver manufactured by Colt Industries. The shrouded barrel gives the Python its distinctive outline. The Python is a very well built, quality pistol with a reputation for accuracy and reliability.



01-132-955a

NAME Smith & Wesson Model 19 Combat Magnum

TYPE American revolver

DATE ADOPTED 1955

CAL 9x33mmR

LENGTH w/6.6cm bbl 19cm, w/10.2cm bbl 24.1cm, w/15.3cm
bbl 29.2cm

MUZZLE VEL w/6.6cm bbl 1086 fps, w/10.2cm bbl 1206 fps,
w/15.3cm bbl 1270 fps

WT (EMPTY) w/6.6cm bbl .879kg, w/10.2cm bbl .992kg,
w/15.3cm bbl 1.152kg

WT (LOADED) w/6.6cm bbl .992kg, w/10.2cm bbl 1.105kg,
w/15.3cm bbl 1.265kg

EFF RNG 75m

MAX RNG 2150m

TYPE OF FIRE Double action revolver

RATE OF FIRE 24 rpm

FEED DEVICE 6 round cylinder

FEED DEVICE WT 6 rounds .113kg

BASIC LOAD 24 rounds

LOAD WT .45kg

Developed in 1955 at the recommendation of Bill Jordan, a noted Border Patrol officer, the Model 19 was the first of the "small frame" .357 magnums. Built on the smaller "K" frame rather than the large "N" frame of the Model 27 and 29 magnums, the Combat Magnum was especially designed for use by police officers. A very popular weapon, the Model 19 is one of Smith & Wesson's top selling revolvers.



01-132-956

NAME Smith & Wesson Model 39

TYPE American autoloader

DATE ADOPTED 1956

CAL 9x19mm

LENGTH 18.9cm

MUZZLE VEL 1140 fps

WT (EMPTY) .751kg

WT (LOADED) .939kg

EFF RNG 50m

MAX RNG 1975m

TYPE OF FIRE Double action semiautomatic

RATE OF FIRE 30 rpm

FEED DEVICE 8 round box magazine

FEED DEVICE WT .188kg

BASIC LOAD 3 magazines (24 rounds)

LOAD WT .564kg

This weapon was developed by Smith & Wesson as a possible replacement for the U.S. government's M1911A1 pistol. Though turned down as an issue military weapon, the M39 is an excellent handgun for general use. The M39 is available in either of two different frames, a lightweight alloy frame (the M39) or a steel frame (M539). The data above is for the alloy frame model. The steel frame M539 has an empty weight of 1.021kg. All other data is the same as for the M39.



01-132-956a
 NAME Smith & Wesson Model 29
 TYPE American revolver
 DATE ADOPTED 1956
 CAL 10.97x33mmR
 LENGTH w/10.2cm bbl 23.9cm, w/16.5cm bbl 30.2cm, w/21.3cm bbl 34.9cm
 MUZZLE VEL w/10.2cm bbl 1395 fps, w/16.5cm bbl 1470 fps, w/21.3cm bbl 1505 fps
 WT (EMPTY) w/10.2cm bbl 1.219kg, w/16.5cm bbl 1.332kg, w/21.3cm bbl 1.46kg
 WT (LOADED) w/10.2cm bbl 1.359kg, w/16.5cm bbl 1.472kg, w/21.3cm bbl 1.6kg
 EFF RNG 150m
 MAX RNG 2290m
 TYPE OF FIRE Double action revolver
 RATE OF FIRE 24 rpm
 FEED DEVICE 6 round cylinder
 FEED DEVICE WT 6 rounds .14kg
 BASIC LOAD 24 rounds
 LOAD WT .56kg

This is one of the most powerful handguns available on the commercial market. The size and weight of the weapon allows it to be controllable when fired, though its muzzle blast and recoil can still make it uncomfortable to use, especially when fired with the short (10.2cm) barrel. The care used in the Model 29's manufacture as well as the weapon's design makes it one of the most reliable and accurate weapons of its class.



01-132-963
 NAME High Standard Derrenger
 TYPE American pistol
 DATE ADOPTED 1963
 CAL 5.7x24.5mmR
 LENGTH 12.5cm
 MUZZLE VEL 1350 fps
 WT (EMPTY) .310kg
 WT (LOADED) .318kg
 EFF RNG 15m

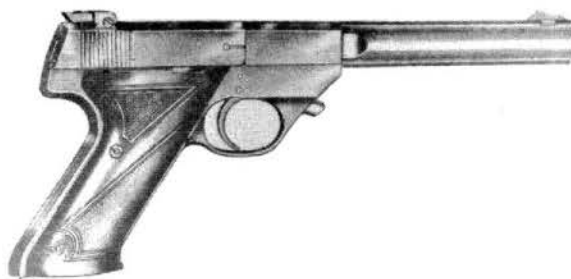
MAX RNG 1450m
 TYPE OF FIRE Double action 2 shot repeater
 RATE OF FIRE 8 rpm
 FEED DEVICE 2 barrels, 1 round per barrel
 FEED DEVICE WT 2 rounds .008kg
 BASIC LOAD 6 rounds
 LOAD WT .048kg

A very small, flat, 2 barreled pistol chambered for the .22 magnum round, this weapon is a popular secondary firearm. The .22 magnum ammunition allows for a good deal of power to be contained in a small package. The derrenger has no safety but instead has a very long double action trigger pull. When the trigger is first pulled it fires the top barrel and, when pulled again, switches to fire the lower barrel.



01-132-963a
 NAME Remington XP 100
 TYPE American pistol
 DATE ADOPTED 1963
 CAL 5.56x36mm
 LENGTH 42.5cm
 MUZZLE VEL 2650 fps
 WT (EMPTY) 1.7kg
 WT (LOADED) 1.71kg
 EFF RNG 300m
 MAX RNG 2143m
 TYPE OF FIRE Bolt action single shot
 RATE OF FIRE 5 rpm
 FEED DEVICE single round
 FEED DEVICE WT .01g
 BASIC LOAD 50 rounds
 LOAD WT .5kg

A specialized weapon designed for long range accurate fire, the XP 100 was the first pistol of its kind. Developed from a bolt action rifle, this exotic looking weapon has become very popular for long distance target (silhouette) shooting. The weapon is easily fitted with a telescopic sight which helps to gain the maximum accuracy from the pistol.



01-132-964
 NAME High Standard .22
 TYPE American auto-loader
 DATE ADOPTED 1964

CAL 5.7x17.5mmR
 LENGTH 22.8cm
 MUZZLE VEL 975 fps
 WT (EMPTY) 1.105kg
 WT (LOADED) 1.262kg
 EFF RNG 40m
 MAX RNG 1050m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 40 rpm
 FEED DEVICE 10 round box magazine
 FEED DEVICE WT .157kg
 BASIC LOAD 3 magazines (30 rounds)
 LOAD WT .471kg

This weapon is representative of most automatic pistols of this caliber. The .22 Long Rifle (5.5x17.5mmR) cartridge is the most common ammunition in the world with almost every country that manufactures ammunition loading it. The High Standard is a very accurate, easily controlled pistol and is easily handled by almost anyone.



01-132-966
 NAME Mk II Gyrojet
 TYPE American autoloader rocket pistol
 DATE ADOPTED 1966
 CAL 13x36mm
 LENGTH 27.6cm
 MUZZLE VEL 1250 fps
 WT (EMPTY) .42kg
 WT (LOADED) .532kg
 EFF RNG 75m
 MAX RNG 2000m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 21 rpm
 FEED DEVICE 7 round internal magazine
 FEED DEVICE WT 7 rounds, .122kg
 BASIC LOAD 21 rounds
 LOAD WT .336kg

This is a pistol that fires a self-contained rocket. When the weapon is fired, the entire cartridge (rocket) is launched leaving no cartridge case to be ejected. The rocket is fired by the hammer of the pistol striking the nose of the rocket driving the round back onto the firing pin. The rocket is ignited by a standard primer cap and, when the rocket drives forward, recocks the hammer. The cartridge is a steel cased, spin stabilized, percussion fired projectile and acts as an armor piercing bullet. Because the ammunition is self contained, the weapon can fire in vacuum (twice the effective range), or underwater (1/4 the effective range), without any modification to the weapon or effect on the efficiency of the projectile.

The pistol is completely recoilless and very light in weight. Due to the manner of the gyrojet's functioning, there is no separate magazine and the ammunition is loaded individually through the top feed port of the weapon.



01-132-971
 NAME Smith & Wesson Model 59
 TYPE American autoloader
 DATE ADOPTED 1971
 CAL 9x19mm
 LENGTH 18.9cm
 MUZZLE VEL 1140 fps
 WT (EMPTY) .78kg
 WT (LOADED) .996kg
 EFF RNG 50m
 MAX RNG 1975m
 TYPE OF FIRE Double action semiautomatic
 RATE OF FIRE 40 rpm
 FEED DEVICE 14 round box magazine
 FEED DEVICE WT .216kg
 BASIC LOAD 3 magazines (42 rounds)
 LOAD WT .648kg

This is an improved version of the S&W M39 with an enlarged magazine capacity. There are two versions of the M59, one with an alloy frame and another model, the M559 with a steel frame. The data above is for the alloy frame model. The M559 steel frame has an empty weight of 1.134 kilograms. The large magazine capacity and double action trigger allows for the M59 to be a very effective combat weapon.



01-132-972
 NAME .44 Automag
 TYPE American autoloader
 DATE ADOPTED 1972
 CAL 11.2x32mm
 LENGTH 27.6cm
 MUZZLE VEL 1640 fps
 WT (EMPTY) 1.5kg

WT (LOADED) 1.759kg
EFF RNG 200m
MAX RNG 2790m
TYPE OF FIRE Semiautomatic
RATE OF FIRE 25 rpm
FEED DEVICE 7 round box magazine
FEED DEVICE WT .295kg
BASIC LOAD 3 magazines (21 rounds)
LOAD WT .885kg

This is one of the world's most powerful production (now discontinued) automatic pistols. The weapon is very large with black plastic grips and a silver body due to it being made almost entirely of stainless steel. The Automag fires a round that is effectively a cut down 7.62x51mm rifle cartridge case with a bullet put into it. Due to the power of the ammunition and the close machining tolerances required to control this power, the Automag is sensitive to heat expansion and prone to jam from overheating.



01-132-978
NAME C. O. P. .357
TYPE American pistol
DATE ADOPTED 1978
CAL 9x33mmR
LENGTH 14cm
MUZZLE VEL 1280 fps
WT (EMPTY) .794kg
WT (LOADED) .862kg
EFF RNG 20m
MAX RNG 2290m
TYPE OF FIRE Double action repeater
RATE OF FIRE 16 rpm
FEED DEVICE 4 barrels, one round per barrel
FEED DEVICE WT 4 rounds .068kg
BASIC LOAD 12 rounds
LOAD WT .204kg

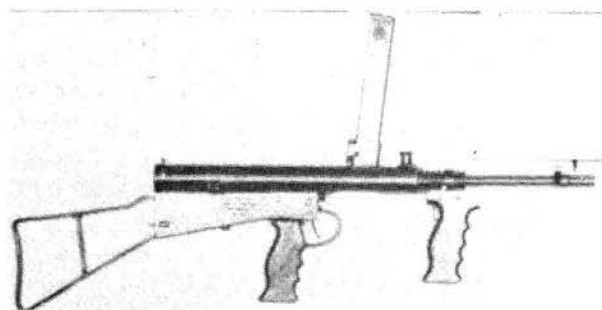
This pistol was especially designed for use as a concealed defensive weapon for off duty policemen. Instead of using the revolving cylinder of a revolver, the C.O.P. has 4 short barrels and a rotating firing pin on the hammer. The action is double action only and each time the trigger is pulled the hammer fires another barrel. The C.O.P. is made entirely of stainless steel. The weapon's small size and simple action make it very easy to conceal or use.

SUBMACHINEGUNS

The submachinegun, or machine pistol as it is called in Europe, is a fairly recent invention. Developed during the trench warfare of WWI, the submachinegun is generally defined as a hand held weapon of pistol ammunition caliber, capable of full automatic fire.

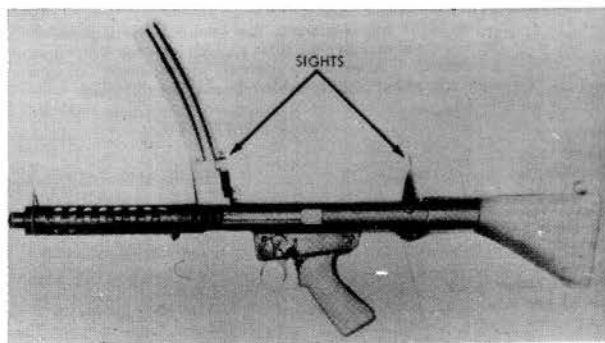
During WWII a great variety of submachineguns were used by almost all of the combatants. It was during WWII that the submachinegun developed from a carefully machined, complex, expensive weapon into the simple, stamped metal, inexpensive weapons of today.

With new developments in design and ammunition technology, the submachinegun is even more compact and easy to use than it was twenty years ago. With the advent of specialist strike teams and antiterrorist groups, the handyness and firepower of the submachinegun ensure that it will be a part of the world's arsenal for a long time to come.



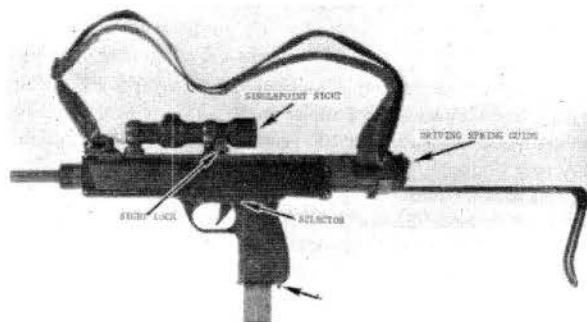
02-006-941
 NAME Owen MK 1
 NAME (NATIVE) Machine Carbine, 9mm Owen, Mark 1
 TYPE Australian submachinegun
 DATE ADOPTED 1941
 CAL 9x19mm
 LENGTH 81.3cm
 MUZZLE VEL 1200 fps
 WT (EMPTY) 4.23kg
 WT (LOADED) 4.86kg
 EFF RNG 200m
 MAX RNG 2080m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 700 rpm
 FEED DEVICE 33 round box magazine
 FEED DEVICE WT .63kg
 BASIC LOAD 6 magazines (198 rounds)
 LOAD WT 3.78kg

The Owen was one of the first native weapons built in Australia. The weapon was designed especially for jungle fighting and will rarely jam due to dirt. One of the Owen's most unusual features is the top-mounted magazine which is rarely seen in a modern weapon.



02-006-960
 NAME F1A1
 NAME (NATIVE) 9mm Submachinegun F1
 TYPE Australian submachinegun
 DATE ADOPTED 1960
 CAL 9x19mm
 LENGTH 71.4cm
 MUZZLE VEL 1200 fps
 WT (EMPTY) 3.27kg
 WT (LOADED) 3.996kg
 EFF RNG 200m
 MAX RNG 2080m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 600 rpm
 FEED DEVICE 32 round box magazine
 FEED DEVICE WT .726kg
 BASIC LOAD 6 magazines (204 rounds)
 LOAD WT 4.356kg

This weapon was developed to replace the World War II weapons still in service with the Australian military. A weapon unusual in appearance, the F1A1 was developed in part from the results of a survey among submachinegun users in the military. As a result of this survey, the F1A1 retains the top-mounted magazine so distinctive of Australian submachine guns.



02-007-969
 NAME MPI-69
 NAME (NATIVE) Styer Maschinenpistole MPi 69
 TYPE Austrian submachinegun
 DATE ADOPTED 1969
 CAL 9x19mm
 LENGTH 47/63.3cm
 MUZZLE VEL 1250 fps
 WT (EMPTY) 2.95kg
 WT (LOADED) 3.57kg
 EFF RNG 200m
 MAX RNG 1280m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 50 rpm (A) 100 rpm (CYCLIC) 550 rpm
 FEED DEVICE 25 or 32 round box magazine
 FEED DEVICE WT (25 round) .5kg, (32 round) .62kg
 BASIC LOAD 8-32 round magazines (256 rounds)
 LOAD WT 4.96kg

Outwardly resembling the UZI, the MPI-69 has a very simple action. A noticeable characteristic is the weapon's lack of a cocking knob. The weapon is cocked by pulling out and back on the front of the sling, the front sling swivel acting as the cocking knob. The trigger of the MPI-69 is of the progressive type (see Sidewinder SS-1, 02-132-978) and this feature adds to the overall simplicity of the weapon.



02-007-972
 NAME American 180 M-2
 TYPE Austrian submachinegun
 DATE ADOPTED 1972
 CAL 5.7x17.5mmR
 LENGTH 90cm
 MUZZLE VEL 1350 fps
 WT (EMPTY) 2.608kg
 WT (LOADED) 4.672kg
 EFF RNG 150m
 MAX RNG 1450m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 80 rpm (A) 531 rpm (CYCLIC) 1200 rpm
 FEED DEVICE 177 round drum

FEED DEVICE WT 2.064kg
 BASIC LOAD 3 drums (531 rounds)
 LOAD WT 6.192kg

This submachinegun could also be considered a small assault rifle. The weapon has a large-capacity drum magazine that fits across the top of the receiver. The low recoil of the .22 Long Rifle ammunition allows the weapon to be very easily controlled on full automatic fire. The very high cyclic rate of fire will empty the 177 round drum in under 9 seconds with the stability of the weapon allowing all the rounds to impact on target. The AM-180 is often found fitted with the laser-loc sight developed for this weapon.

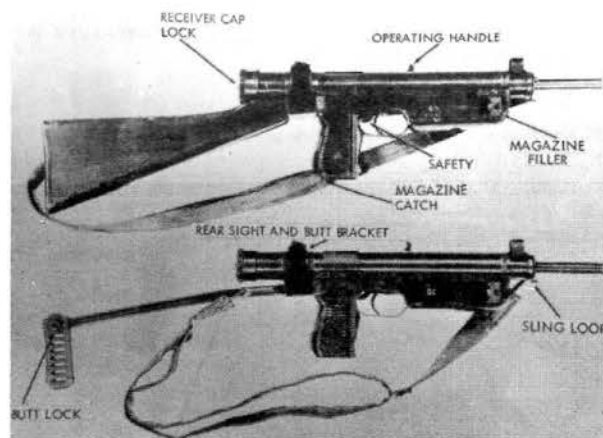
NAME Laser-Loc sight
 TYPE Laser aiming device
 SIZE 35x9x4.5cm
 WT .85kg
 EFF RNG 300m
 BATTERY LIFE 30 minutes per charge continuous use
 CHARGE TIME 6 hours

This aiming system consists of a Helium-Neon laser in a casing that can be mounted underneath the barrel of a weapon. The laser puts out a harmless beam that places a red dot on the target. The beam cannot be seen in the air but the brilliant red dot indicates, when properly adjusted, exactly where the fired bullets will impact.



02-023-964
 NAME Type 64
 TYPE Chinese (red) silenced submachinegun
 DATE ADOPTED c.1964
 CAL 7.62x25mm Special
 LENGTH 63.5/84.3cm
 MUZZLE VEL 1681 fps (1000 fps)
 WT (EMPTY) 3.4kg
 WT (LOADED) 4kg
 EFF RNG 135m
 MAX RNG 1445m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 90 rpm (CYCLIC) 1300 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .6kg
 BASIC LOAD 4 magazines (120 rounds)
 LOAD WT 2.4kg

This submachinegun was designed for silenced operation and is not based on another design. The weapon superficially resembles an AK-47 with the safety/selector in the same location. The Type 64 will fire standard 7.62x25mm ammunition though the silencing action works best with the special heavy bullet subsonic round loaded for it. The data in brackets above is for the weapon using the subsonic round.



02-029-948
 NAME Vz 23 and Vz 25
 NAME (NATIVE) Samopal CZ 48a/b (Samopal 23/25)
 TYPE Czech Submachinegun
 DATE ADOPTED 1948
 CAL 9x19mm
 LENGTH (23) 68.6cm (25) 44.5/68.6cm
 MUZZLE VEL 1250 fps
 WT (EMPTY) (23) 3.27kg, (25) 3.5kg
 WT (LOADED) (23) 3.87kg, (25) 4.1kg
 EFF RNG 200m
 MAX RNG 2166m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 70 rpm (A) 100 rpm (CYCLIC) 650 rpm
 FEED DEVICE 40 round box magazine
 FEED DEVICE WT .6kg
 BASIC LOAD 4 mags (160 rounds)
 LOAD WT 2.4kg

These submachineguns were developed in Czechoslovakia to replace the World War II models still in the Czech military. The weapons are effectively the same with the primary difference being that the model 25 has a metal folding stock and the model 23 a fixed wooden stock. The Vz 23/25 was the first successful weapon to have the magazine in the grip allowing for better balance, as well as a "telescoping bolt" to allow for a shorter overall length. The telescoping bolt has a deep cut in the face of the bolt allowing much of the bolt's mass to surround or "telescope" the barrel. There is also a built-in feed guide on the side of the weapon allowing the magazine to be quickly filled from 8 round clips.



02-029-952
 NAME Vz 24 and Vz 26
 NAME (NATIVE) Samopal 24, Samopal 26
 TYPE Czech Submachinegun
 DATE ADOPTED 1952
 CAL 7.62x25mm
 LENGTH (24) 67.6cm, (26) 44.5/68.6cm

MUZZLE VEL 1800 fps
 WT (EMPTY) (24) 3.41kg (26) 3.88kg
 WT (LOADED) (24) 4.01kg (26) 4.48kg
 EFF RNG 200m
 MAX RNG 1087m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 70 rpm (A) 100rpm (CYCLIC) 650 rpm
 FEED DEVICE 32 round box magazine
 FEED DEVICE WT .6kg
 BASIC LOAD 4 magazines (128 rounds)
 LOAD WT 2.4kg

These are effectively the same weapons as the Vz 23/25. The primary difference is that the Vz 24/26 is chambered for the Czech 7.62x25mm round. The Vz 24 has a fixed wooden stock and the Vz 26, a folding metal stock.



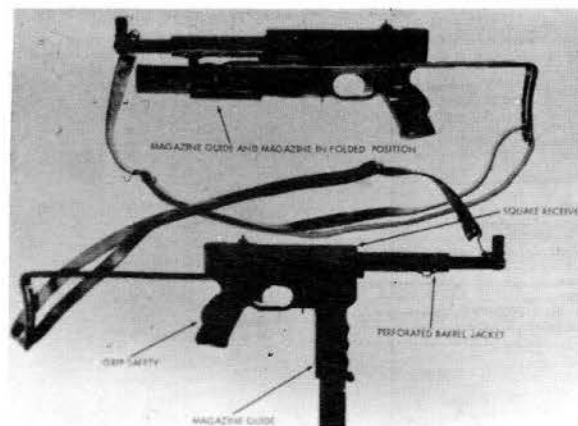
02-029-961
 NAME Vz 61 Skorpion
 NAME (NATIVE) Samopal 62 "Skorpion"
 TYPE Czechoslovakian machinepistol
 DATE ADOPTED 1961
 CAL 7.63x17mm
 LENGTH 26.8/51cm (w/suppressor, 47.2/71.6cm)
 MUZZLE VEL 1040 fps
 WT (EMPTY) 1.29kg
 WT (LOADED) 1.55kg (w/20 round mag.)
 EFF RNG 50m
 MAX RNG 1195m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 80 rpm (CYCLIC) 840 rpm
 FEED DEVICE 10 or 20 round box magazine
 FEED DEVICE WT (10 round) .16kg (20 round) .41kg
 BASIC LOAD 1-10 round, 4-20 round magazines (90 rounds)
 LOAD WT 1.8kg

Commonly called the "Skorpion," this weapon is the world's smallest military issue submachinegun. The Skorpion is easily carried in a shoulder holster. Because of the low-powered round fired by the Vz-61, it is easily silenced and is often found with its issue suppressor (wt. .341kg). The weapon's ease of control on automatic fire is also due to the low-powered round used. The Skorpion is very popular among Soviet-bloc agents (it is manufactured in Czechoslovakia) and communist backed terrorist groups.



02-030-950
 NAME Madson M50
 NAME (NATIVE) Maskinpistol m/50
 TYPE Danish submachinegun
 DATE ADOPTED 1950
 CAL 9x19mm
 LENGTH 52.8/79.4cm
 MUZZLE VEL 1280 fps
 WT (EMPTY) 3.15kg
 WT (LOADED) 3.74kg
 EFF RNG 100m
 MAX RNG 1315m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 128 rpm (CYCLIC) 550 rpm
 FEED DEVICE 32 round magazine
 FEED DEVICE WT .59kg
 BASIC LOAD 8 magazines (256 rounds)
 LOAD WT 4.72kg

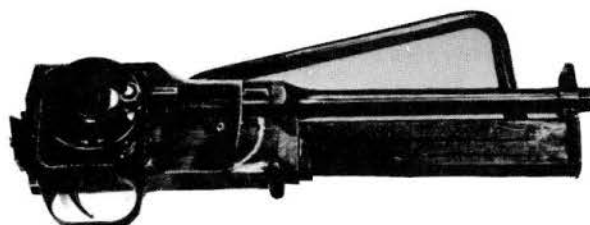
This Danish submachinegun has been sold widely in Latin American countries. The weapon has a grip safety on the front grip (magazine well). Unless this safety is held in, the weapon cannot be fired. This arrangement prevents the M50 from being fired with one hand.



02-037-949
 NAME MAT-49
 NAME (NATIVE) Pistolet Mitrailleur MAT Modele 49
 TYPE French submachinegun
 DATE ADOPTED 1949
 CAL 9x19mm
 LENGTH 55.8/71cm
 MUZZLE VEL 1161 fps
 WT (EMPTY) 4.14kg
 WT (LOADED) 4.76kg
 EFF RNG 200m
 MAX RNG 1190m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 128 rpm (CYCLIC) 600 rpm
 FEED DEVICE 32 round box magazine
 FEED DEVICE WT .62kg
 BASIC LOAD 8 magazines (256 rounds)
 LOAD WT 4.96kg

This weapon was standard issue throughout France for both the police and military forces. The widespread use of this weapon with the French forces has made the MAT-49 very common in any of the old French protectorates or colonies. One unique aspect of this military weapon is that the magazine and magazine well/handgrip folds forward for compactness and safety. With the magazine folded, there is no possibility of an

accidental discharge and the weapon has a much more compact outline.



02-037-954
NAME PM-9
NAME (NATIVE) Pistolet Mitrailleur 9
TYPE French submachinegun
DATE ADOPTED 1954
CAL 9x19mm
LENGTH 35.9/63.9cm
MUZZLE VEL 1200 fps
WT (EMPTY) 2.538kg
WT (LOADED) 3.178kg
EFF RNG 100m
MAX RNG 2080m
TYPE OF FIRE Selective
RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 750 rpm
FEED DEVICE 32 round box magazine
FEED DEVICE WT .62kg
BASIC LOAD 6 magazines (192 rounds)
LOAD WT 3.72kg

This weapon was developed in France as a commercial venture but was unsuccessful due to its high cost. The PM-9 has a very unusual action that uses a flywheel to operate the bolt. Because of this flywheel action, the PM-9 has a very short receiver. Another feature of the PM-9 is the magazine which can fold up underneath the barrel. With the stock and magazine folded, the PM-9 makes for a very compact weapon. The style of the PM-9 prevents it from being fired with the stock folded, (see above photo).



02-040-916
NAME MP18-1
NAME (NATIVE) Maschinenpistole 18/1
TYPE German submachinegun
DATE ADOPTED 1916

CAL 9x19mm
LENGTH 81.2
MUZZLE VEL 1250 fps
WT (EMPTY) 4.26kg
WT (LOADED) 5.327kg
EFF RNG 200m
MAX RNG 2166m
TYPE OF FIRE Full automatic
RATE OF FIRE (A) 120 rpm (CYCLIC) 400 rpm
FEED DEVICE 32 round snail drum magazine
FEED DEVICE WT 1.067kg
BASIC LOAD 4 drums (128 rounds)
LOAD WT 4.268kg

This weapon is considered to be the first true submachinegun to see military use. The first models of the MP18-1 used the 32 round snail drum from the P-08 Luger pistol. A later, around 1925, modified MP18-1 used a 20 round (Wt. .47kg) or 32 round (Wt. .7kg) box magazine. Though a heavy and cumbersome weapon, the MP18-1 was effective and set the stage for submachinegun design until the mid-1930's.



02-040-932
NAME Mauser M32 or M712
NAME (NATIVE) Schnellfeuer-Selbstlade-pistole M32
TYPE German machinepistol
DATE ADOPTED 1932
CAL 7.62x25mm
LENGTH 29.9/64.7cm
MUZZLE VEL 1400 fps
WT (EMPTY) 1.13kg
WT (LOADED) 1.75kg (w/20 round mag.)
EFF RNG 50m (w/stock 300 m)
MAX RNG 1800m
TYPE OF FIRE Selective
RATE OF FIRE (SS) 50 rpm (A) 280 rpm (CYCLIC) 900 rpm
FEED DEVICE 10 or 20 round box magazine
FEED DEVICE WT (10 round) .55kg, (20 round) .62kg
BASIC LOAD 1-10 round & 4-20 round magazines (90 rounds)
LOAD WT 3.03kg

The first widely used true "machine pistol," the Mauser M32 is a selective fire version of the Mauser M1896 pistol. The M32 may be loaded with the M1896 clips but is fitted with a removable 10 or more commonly, 20 round box magazine. Due to the recoil of 7.62x25mm ammunition and the weapon's high rate of fire, the M32 is almost impossible to fire on full automatic without first attaching the removable holster/stock (see Mauser M1896, 01-040-896, stock wt. .45kg). The M32 will fit inside the holster/stock only when it is loaded with the 10 round magazine.



02-040-940
 NAME MP40
 NAME (NATIVE) Maschinenpistole 40
 TYPE German submachinegun
 DATE ADOPTED 1940
 CAL 9x19mm
 LENGTH 63/83.3cm
 MUZZLE VEL 1250 fps
 WT (EMPTY) 4.03kg
 WT (LOADED) 4.7kg
 EFF RNG 200m
 MAX RNG 2012m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 120 rpm (CYCLIC) 500 rpm
 FEED DEVICE 32 round box magazine
 FEED DEVICE WT .67kg
 BASIC LOAD 6 magazines (192 rounds)
 LOAD WT 4.02kg

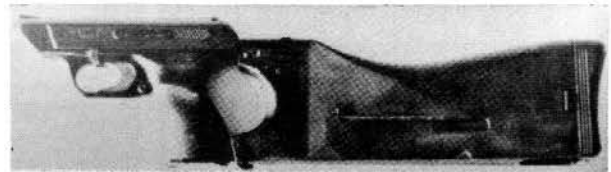
This very famous German submachinegun is commonly known as the "Schmeisser," although Hugo Schmeisser was not on the weapon's design team. The MP-40 was derived from the earlier MP-38 and MP-38/40 but is effectively a duplicate of the earlier weapons. The MP-40 series is considered to be the first of the modern submachineguns. The action of the MP-40 consists of only four major parts and is correspondingly easy to maintain. Coveted by all troops during World War II, the MP-40 is widely found throughout the world today.



02-041-965
 NAME MP5A2
 NAME (NATIVE) Maschinenpistole 5A2
 TYPE German submachinegun
 DATE ADOPTED 1965
 CAL 9x19mm
 LENGTH 68cm
 MUZZLE VEL 1312 fps
 WT (EMPTY) 2.44kg
 WT (LOADED) 2.96kg (w/30 round magazine)
 EFF RNG 250m
 MAX RNG 1350m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 50 rpm (A) 100rpm (CYCLIC) 650 rpm
 FEED DEVICE 15 or 30 round box magazine
 FEED DEVICE WT (15 round) .28kg, (30 round) .52kg
 BASIC LOAD 8-30 round magazines (240 rounds)
 LOAD WT 4.16kg

This is a submachinegun version of the German G-3 rifle. This model has a fixed plastic stock that can be

removed and other stocks fitted. The MP5A2 is commonly seen in modern Germany as it is a standard issue weapon for the police and border guards. The weapon functions exactly like the G-3 rifle and so a person trained to operate one weapon can easily operate the other. Because the MP5A2 fires from a closed-bolt position, it is very accurate for a submachinegun. This fact makes the weapon popular with the German anti-terrorist police. The closed bolt, however, makes the weapon susceptible to overheating and "cooking off." Cooking off is when a cartridge chambered in the weapon fires from the heat of the barrel without the trigger being pulled. In extreme cases the weapon "runs away," that is, it fires all its ammunition in one long uncontrolled burst.



02-041-972
 NAME VP-70
 NAME (NATIVE) Heckler & Koch VP-70
 TYPE German machine pistol
 DATE ADOPTED c. 1972
 CAL 9x19mm
 LENGTH 20.4/54.5cm
 MUZZLE VEL 1180 fps
 WT (EMPTY) .82kg (w/stock 1.274kg)
 WT (LOADED) 1.134kg (w/stock 1.588kg)
 EFF RNG 50m (w/stock 150m)
 MAX RNG 1210m
 TYPE OF FIRE Selective, Double action, burst control
 RATE OF FIRE (SS) 40 rpm (A) 100 rpm (CYCLIC) 2200 rpm
 FEED DEVICE 18 round box magazine
 FEED DEVICE WT .314kg
 BASIC LOAD 4 magazines (72 rounds)
 LOAD WT 1.256kg

This machine pistol is also a large, double-action handgun with its light weight due to the VP-70 being primarily made of alloys and plastic. Though the VP-70 can fire full automatic, the pistol can only do this when it is fitted with its holster/stock (see Mauser M1896, 01-040-896, stock wt. .45kg). The stock has the selector switch built into it and, when mounted on the weapon, allows 3 round bursts to be fired (see Colt SCAMP, 02-132-970). Without the stock, the VP-70 acts as a standard semiautomatic pistol.



02-041-975
 NAME H&K MP5SD3
 TYPE German silenced submachinegun
 DATE ADOPTED 1975
 CAL 9x19mm
 LENGTH 61/78cm
 MUZZLE VEL 935 fps
 WT (EMPTY) 2.0kg
 WT (LOADED) 2.52kg (w/30 round magazine)
 EFF RNG 135m
 MAX RNG 962m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 100 rpm (CYCLIC) 650 rpm
 FEED DEVICE 15 or 30 round box magazine
 FEED DEVICE WT (15 round) .28kg, (30 round) .52kg
 BASIC LOAD 5-30 round magazines (150 rounds)
 LOAD WT 2.6kg

This version of the MP5 family of submachineguns has an integral silencer built into the design. The design of the silencer is such that it slows the muzzle velocity of standard ammunition to below the speed of sound, eliminating the supersonic "crack" of the bullet. The MP5SD3 is very popular among the world's antiterrorist units, especially the German GSG-9 and British SAS.



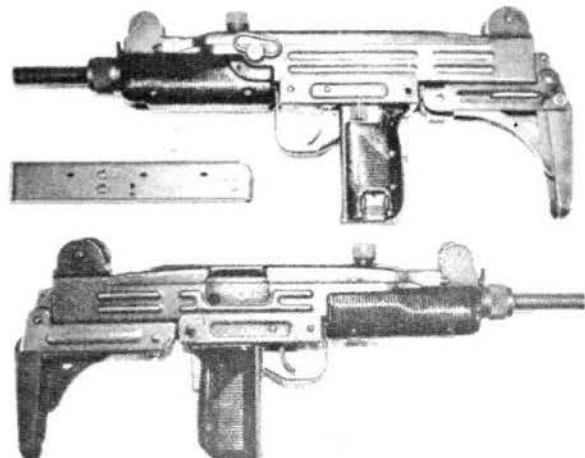
02-041-976
 NAME H&K MP5K
 NAME (NATIVE) Heckler & Koch Maschinenpistole 5 Kurz
 TYPE German submachinegun
 DATE ADOPTED 1976
 CAL 9x19mm
 LENGTH 32.5cm
 MUZZLE VEL 1230 fps
 WT (EMPTY) 2kg
 WT (LOADED) 2.28kg (15 round mag.)
 EFF RNG 50m
 MAX RNG 2131m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 100 rpm (CYCLIC) 840 rpm
 FEED DEVICE 15 or 30 round box magazine
 FEED DEVICE WT (15 round) .28kg (30 round) .52kg
 BASIC LOAD 5 - 30 round magazines (150 rounds)
 LOAD WT 2.6kg

This is an extremely shortened version of the MP5 submachinegun. The weapon was designed for use by antiterrorist teams in small areas. The MP5K has no stock and a vertical front grip for easier control when firing. The weapon works in the same manner as the MP5, firing from a closed bolt, and, combined with its small size, makes for a very accurate "machine-pistol."



02-052-964
 NAME AMD-65
 TYPE Hungarian submachinegun
 DATE ADOPTED c.1964
 CAL 7.62x39mm
 LENGTH 64.8/85.1cm
 MUZZLE VEL 2295 fps
 WT (EMPTY) 3.27kg
 WT (LOADED) 4.097kg
 EFF RNG 300m
 MAX RNG 1994m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 600 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .827kg
 BASIC LOAD 5 magazines (150 rounds)
 LOAD WT 4.135kg

This is a shortened version of the AKM-47 rifle. The forward handgrip and folding stock make this a very handy weapon for its caliber. The AMD uses the same magazines and ammunition as the AKM rifle. This weapon also has a large muzzle brake for easier control when firing the powerful cartridge through the shortened barrel.



02-058-951
 NAME UZI
 TYPE Israeli submachinegun
 DATE ADOPTED 1951
 CAL 9x19mm
 LENGTH 47/64cm
 MUZZLE VEL 1312 fps
 WT (EMPTY) 3.6kg

WT (LOADED) 4.22kg (32 round mag)
 EFF RNG 200m
 MAX RNG 2012m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 64 rpm (A) 128 rpm (CYCLIC) 600 rpm
 FEED DEVICE 25 or 32 round box magazine
 FEED DEVICE WT (25 round) .5kg, (32 round) .62kg
 BASIC LOAD 12 magazines (384 rounds)
 LOAD WT 7.44kg

This weapon was developed in Israel as a simple, effective weapon that could be manufactured by their new arms industry. The UZI has developed a very good reputation for dependability over the years. The magazine is held in the pistol grip making for a very well balanced weapon. With the folding stock extended, the UZI may be effectively fired one-handed. There is also a model of UZI with a detachable wooden stock (empty wt. 3.49kg, length 47/64cm). The UZI is also manufactured and used in Belgium and Germany and is widely used by the world's police departments. The UZI is also a favored weapon of the United States Secret Service's Executive Protection branch.



02-058-982
 NAME MINI-UZI
 TYPE Israeli submachinegun
 DATE ADOPTED 1982
 CAL 9x19mm
 LENGTH 36/60cm
 MUZZLE VEL 1148 fps
 WT (EMPTY) 2.65kg
 WT (LOADED) 3.1kg (w/20 round magazine)
 EFF RNG 150m
 MAX RNG 1005m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 64 rpm (A) 128 rpm (CYCLIC) 1200 rpm
 FEED DEVICE 20, 25, or 32 round box magazine
 FEED DEVICE WT (20 round) .45kg, (25 round) .5kg, (32 round) .62kg
 BASIC LOAD 5 - 20 round magazines (100 rounds)
 LOAD WT 2.25kg

This is a smaller version of the standard UZI submachinegun. The only differences between the Mini-UZI and the standard are primarily those of size and weight. The Mini-UZI works the same as the standard weapon but is more concealable due to its small size. The Mini-UZI is especially popular with police units, security teams, and some anti-terrorist units.



02-059-938
 NAME Beretta M38A
 NAME (NATIVE) Pistola Mitragliatrice Beretta Modello 38A
 TYPE Italian submachinegun
 DATE ADOPTED 1938
 CAL 9x19mm
 LENGTH 94.6cm
 MUZZLE VEL 1378 fps
 WT (EMPTY) 4.2kg
 WT (LOADED) 4.97kg
 EFF RNG 200m
 MAX RNG 2388m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 600 rpm
 FEED DEVICE 40 round box magazine
 FEED DEVICE WT .77kg
 BASIC LOAD 8 magazines (320 rounds)
 LOAD WT 6.16kg

This weapon was the standard submachinegun of the Italian military during World War II. The carbine styling is the heaviest style of submachinegun. The front trigger of the weapon is for single shots and the rear one for full automatic fire. A later model of this weapon, the model 38/49, is still in use by the Italian army.



02-059-959
 NAME Beretta M12
 NAME (NATIVE) Pistola Mitragliatrice Beretta Modello 12
 TYPE Italian submachinegun
 DATE ADOPTED 1959
 CAL 9x19mm
 LENGTH 41.8/64.5cm
 MUZZLE VEL 1250 fps
 WT (EMPTY) 3kg
 WT (LOADED) 3.73kg (w/40 round mag.)
 EFF RNG 200m
 MAX RNG 1280m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 550 rpm
 FEED DEVICE 20, 32, or 40 round box magazine
 FEED DEVICE WT (20 round) .43kg, (32 round) .61kg, (40 round) .73kg
 BASIC LOAD 8-40 round magazines (320 rounds)
 LOAD WT 5.84kg

As the standard issue submachinegun of modern Italy, the M12 is seen in the hands of both the police and military. The M12 has two grips to allow it to be steadily held while firing. The magazine fits into the center of the weapon which aids in balance, adding to the weapon's accuracy. A grip safety, located in the rear pistol grip, prevents the weapon from firing accidentally if dropped.



02-079-973

NAME HM-3

NAME (NATIVE) Pistola Ametrallador HM-3

TYPE Mexican submachinegun

DATE ADOPTED 1973

CAL 9x19mm

LENGTH 39.5/63.5cm

MUZZLE VEL 1280 fps

WT (EMPTY) 2.98kg

WT (LOADED) 3.635kg

EFF RNG 200m

MAX RNG 2200m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 600 rpm

FEED DEVICE 32 round box magazine

FEED DEVICE WT .655kg

BASIC LOAD 4 magazines (128 rounds)

LOAD WT 2.62kg

This weapon was designed and built in Mexico by the Mendoza company. The HM-3 is a very light design with the magazine in the grip. With the stock folded, the rear section of the stock is used as the forward handgrip.

02-059-980

NAME Beretta M93R

NAME (NATIVE) Beretta Modello 93 Raffica

TYPE Italian machine pistol

DATE ADOPTED 1980

CAL 9x19mm

LENGTH 24cm (w/stock 43.5/60.8cm)

MUZZLE VEL 1230 fps

WT (EMPTY) 1.16kg (w/stock 1.43kg)

WT (LOADED) 1.453kg

EFF RNG 50m (100m w/stock)

MAX RNG 2131m

TYPE OF FIRE Selective, Double action, burst control

RATE OF FIRE (SS) 35 rpm (A) 110 rpm (CYCLIC) 750 rpm

FEED DEVICE 20 round box magazine

FEED DEVICE WT .293kg

BASIC LOAD 4 magazines (80 rounds)

LOAD WT 1.172kg

This is a highly modified version of the Beretta M92 pistol. A muzzle brake on the M93R as well as a folding front handgrip allow for more control when the weapon is fired on full automatic. The selector switch allows for either semiautomatic or 3-round bursts on full automatic. The weapon will not fire "fully" automatic but is restricted to a 3-round burst for each pull of the trigger (see SCAMP, 02-132-970). There is also a detachable shoulder stock available for the weapon. The 93R can also use the 15 round magazines from the M92 pistol as well as its extended 20 round magazine.



02-097-963

NAME PM-63

NAME (NATIVE) Pistolet Maszynowy wz 63 RAK

TYPE Polish machinepistol

DATE ADOPTED 1963

CAL 9x18mm

LENGTH 33.3/58.3cm

MUZZLE VEL 1050 fps

WT (EMPTY) 1.55kg

WT (LOADED) 1.8kg

EFF RNG 40m (w/stock 200m)

MAX RNG 1100m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 100 rpm (CYCLIC) 650 rpm

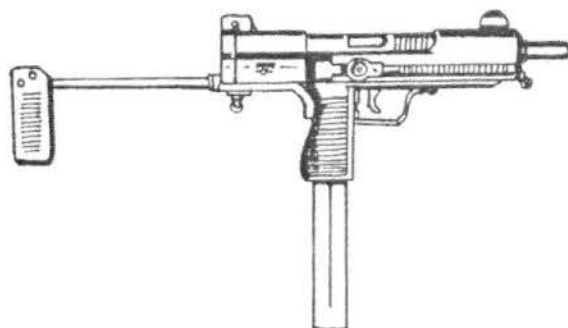
FEED DEVICE 15, 25, or 40 round magazine

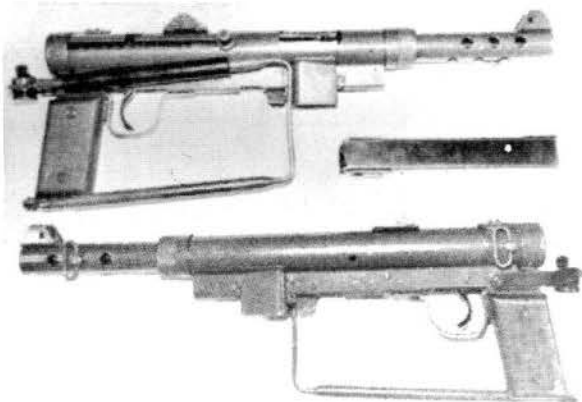
FEED DEVICE WT (25 round) .25kg

BASIC LOAD 4-25 round magazines (100 rounds)

LOAD WT 1.0kg

This Polish submachinegun, also known as the Wz-63, is easily small enough to be classified as a machine pistol. The PM-63 has a progressive trigger (see Sidewinder SS-1, 02-132-978) that simplifies firing. There is a handgrip at the front of the weapon that folds down, allowing a secure grip for both hands. When the stock is unfolded, the forward handgrip becomes the buttplate of the stock. Due to its compact size, the PM-63 can be carried in a hip holster.





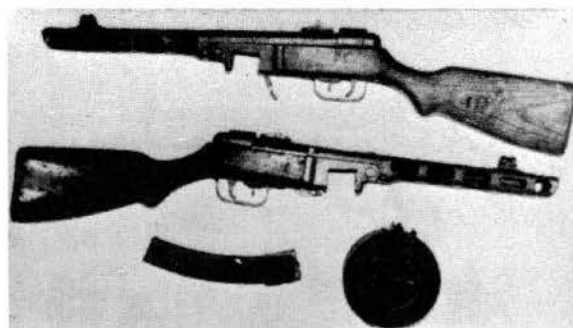
02-112-945
 NAME M-45 (Swedish K)
 NAME (NATIVE) Kulspruta Pistol m/45
 TYPE Swedish submachinegun
 DATE ADOPTED 1945
 CAL 9x19mm
 LENGTH 55.1/80.8cm
 MUZZLE VEL 1198 fps
 WT (EMPTY) 3.43kg
 WT (LOADED) 4.2kg (w/32 round mag.)
 EFF RNG 200m
 MAX RNG 1230m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 144 rpm (CYCLIC) 600 rpm
 FEED DEVICE 36 or 50 round box magazine
 FEED DEVICE WT (36 round) .77kg, (50 round) 1.019kg
 BASIC LOAD 8-36 round magazines (288 rounds)
 LOAD WT 6.16kg

Also known as the "Swedish K" or "Carl Gustave," this is a rugged, strongly built submachinegun. The weapon is widely distributed throughout the world's arms market. Because it is not associated with any aggressive country, the M-45 was once very popular with the American CIA for sterile, covert operations.



02-113-953
 NAME Rexim F.V. Mk4
 NAME (NATIVE) Maschinenpistole "Rexim-Favor" FV Mark 4
 TYPE Swiss submachinegun
 DATE ADOPTED 1953
 CAL 9x19mm
 LENGTH 61/87cm
 MUZZLE VEL 1312 fps
 WT (EMPTY) 3.79kg
 WT (LOADED) 4.68kg
 EFF RNG 200m
 MAX RNG 1350m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 96 rpm (CYCLIC) 600 rpm
 FEED DEVICE 32 round box magazine
 FEED DEVICE WT .65kg
 BASIC LOAD 8 magazines (256 rounds)
 LOAD WT 5.2kg

This is a rarely seen, but highly accurate, Swiss submachinegun. The Rexim is built along the lines of a rifle and fires from a closed bolt (see MP5A2, 02-041-965). Having been produced for commercial sale, the Rexim has very tight tolerances between moving parts which adds to its accuracy, but makes the weapon very prone to jamming from dirt.



02-125-941
 NAME PPsh-41
 NAME (NATIVE) Pistolet-Pulemyot Shpagina obr 1941 G
 TYPE Russian submachinegun
 DATE ADOPTED 1941
 CAL 7.62x25mm
 LENGTH 84.2cm
 MUZZLE VEL 1600 fps
 WT (EMPTY) 3.5kg
 WT (LOADED) 5.3kg (w/71 round drum)
 EFF RNG 200m
 MAX RNG 1645m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 105 rpm (CYCLIC) 900 rpm
 FEED DEVICE 35 round box or 71 round drum magazine
 FEED DEVICE WT (35 round) .6kg, (71 round) 1.84kg
 BASIC LOAD 2 drums (142 rounds)
 LOAD WT 3.68kg

Next to the AK-47, the PPsh-41 is the most widely recognized communist weapon in the world. Normally found with a large drum magazine and perforated barrel jacket, the weapon was first issued in World War II by the Soviet army. The Communist Chinese adopted and manufactured the PPsh for use in both the Korean war and in Vietnam (see K-50, 02-136-960). The weapon is very strong and simply made, but the drum magazine is noisy to carry and difficult to reload, a drawback in combat.



02-125-943
 NAME PPS-43
 NAME (NATIVE) Pistolet-Pulemyot Sudaeva obr 1943 G
 TYPE Russian submachinegun
 DATE ADOPTED 1943
 CAL 7.62x25mm
 LENGTH 61.5/82cm
 MUZZLE VEL 1600 fps
 WT (EMPTY) 3.36kg

WT (LOADED) 3.93kg
 EFF RNG 200m
 MAX RNG 1645m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 100 rpm (CYCLIC) 650 rpm
 FEED DEVICE 35 round box magazine
 FEED DEVICE WT .57kg
 BASIC LOAD 3 magazines (105 rounds)
 LOAD WT 1.71kg

This simple, all-metal weapon was produced in the Soviet Union during World War II. The metal stock folds over the top of the weapon with the buttplate sitting around the rear sight. A rugged, easy to manufacture weapon, the PPS-43 is still sometimes seen in the hands of guerillas and terrorists around the world.



02-125-951
 NAME Stechkin
 NAME (NATIVE) 9mm Automaticheskiy Pistolet Stechkina
 TYPE Russian machinepistol
 DATE ADOPTED 1951
 CAL 9x18mm
 LENGTH 22.6/54cm
 MUZZLE VEL 1115 fps
 WT (EMPTY) .76kg (w/stock 1.32kg)
 WT (LOADED) 1.23kg
 EFF RNG 50m (w/stock 200m)
 MAX RNG 1400m
 TYPE OF FIRE Selective, Double action
 RATE OF FIRE (SS) 40 rpm (A) 80 rpm (CYCLIC) 750 rpm
 FEED DEVICE 20 round box magazine.
 FEED DEVICE WT .47kg
 BASIC LOAD 4 magazines
 LOAD WT 1.88kg

A true "machine pistol," this weapon outwardly resembles the Colt M1911A1. At one time very popular among KGB agents, the Stechkin is capable of full automatic fire. Due to its high cyclic rate of fire, and because its recoil makes the Stechkin very difficult to control on full automatic fire, there is a holster/stock issued with the weapon (see Mauser M1896, 01-040-986, stock wt. .56kg). Without the stock attached, it is almost impossible to fire on full

automatic and expect to hit a single target with more than the first few rounds.



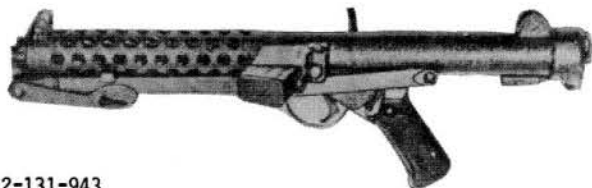
02-131-941
 NAME Sten Mk II
 NAME (NATIVE) Machine Carbine, 9mm Sten, Mark 2
 TYPE British submachinegun
 DATE ADOPTED 1941
 CAL 9x19mm
 LENGTH 76.2cm
 MUZZLE VEL 1200 fps
 WT (EMPTY) 2.8kg
 WT (LOADED) 3.44kg
 EFF RNG 200m
 MAX RNG 1230m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 128 rpm (CYCLIC) 540 rpm
 FEED DEVICE 32 round box magazine
 FEED DEVICE WT .64kg
 BASIC LOAD 8 magazines (256 rounds)
 LOAD WT 5.12kg

This World War II vintage submachinegun is widely recognized throughout the world. Once being standard issue in both the British and Canadian armies, the Sten was also freely distributed to underground resistance groups. The Sten is very simply and inexpensively made. Being relatively crude in appearance, it looks like something welded out of old pipe rather than an effective weapon.



02-131-942
 NAME Sten Mk IIS
 TYPE British silenced submachinegun
 DATE ADOPTED c. 1942
 CAL 9x19mm
 LENGTH 85.7cm
 MUZZLE VEL 1000 fps
 WT (EMPTY) 3.5kg
 WT (LOADED) 4.14kg
 EFF RNG 150m
 MAX RNG 1025m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 128 rpm (CYCLIC) 575 rpm
 FEED DEVICE 32 round box magazine
 FEED DEVICE WT .64kg
 BASIC LOAD 8 magazines (256 rounds)
 LOAD WT 5.12kg

This silenced version of the Sten MkII is considered one of the best suppressor equipped weapons of WWII. As the silencer gets very hot when used, there is an insulating jacket around the barrel to prevent burns to the operator. The Sten MkIIS is best fired on single shot for maximum noise suppression as well as for the fact that the end cap of the silencer tends to be blown off when fired excessively on full automatic.



02-131-943

NAME Sterling L2A3

NAME (NATIVE) Machine Carbine, 9mm Sterling L2A3

TYPE British submachinegun

DATE ADOPTED 1943

CAL 9x19mm

LENGTH 48.2/69cm

MUZZLE VEL 1280 fps

WT (EMPTY) 2.72kg

WT (LOADED) 3.47kg

EFF RNG 200m

MAX RNG 1315m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 102 rpm (CYCLIC) 550 rpm

FEED DEVICE 34 round box magazine

FEED DEVICE WT .75kg

BASIC LOAD 8 magazines (272 rounds)

LOAD WT 6kg

As the replacement for the Sten guns in the British military, the Sterling is also found in service with many of the British affiliated countries. The weapon is very small and light but is still well balanced. The magazine is side mounted but is not intended for use as a hand grip. Holding the magazine while firing greatly increases the chance for a jam due to magazine misalignment. There is also a 10 round magazine available for the Sterling. The short magazine makes the weapon very easy to handle in a crowded place, such as inside a truck cab or car.



02-131-964

NAME Sterling L34A1

NAME (NATIVE) Machine Carbine, 9mm Sterling, L34A1

TYPE British silenced submachinegun

DATE ADOPTED 1964

CAL 9x19mm

LENGTH 65.4/85.7cm

MUZZLE VEL 1010 fps

WT (EMPTY) 3.5kg

WT (LOADED) 4.25kg

EFF RNG 150m

MAX RNG 1040m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 102 rpm (CYCLIC) 550 rpm

FEED DEVICE 34 round box magazine

FEED DEVICE WT .75kg

BASIC LOAD 8 magazines (272 rounds)

LOAD WT 6kg

This weapon consists of a standard Sterling L2A3 with a built-on (permanently attached) suppressor. Due to the suppressor's design slowing down the velocity of the bullet, the L34A1 does not have the range of the standard Sterling but can fire quietly with standard ammunition. It is not recommended to fire the weapon on full automatic for any length of time as the suppressor quickly heats up and clogs, cutting down on its sound suppression.



02-132-938

NAME Thompson M1928A1

TYPE American submachinegun

DATE ADOPTED 1938

CAL 11.43x23mm

LENGTH 85.2cm

MUZZLE VEL 920 fps

WT (EMPTY) 4.9kg

WT (LOADED) 7.13kg (w/50 round drum)

EFF RNG 200m

MAX RNG 1600m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40rpm (A) 120 rpm (CYCLIC) 700 rpm

FEED DEVICE 20 or 30 round box, 50 or 100 round drum magazines

FEED DEVICE WT (20 round) .57kg, (30 round) .73kg, (50 round) 2.23kg, (100 round) 3.86kg

BASIC LOAD 3 - 50 round drums (150 rounds)

LOAD WT 6.69kg

This weapon was the last of the Thompson series of submachineguns that could accept the drum magazines. Also known as the "Tommy gun," the M1928A1 was a very complex, expensive to manufacture weapon. Slow and clumsy to load, the M1928A1 can use the box magazines but is more widely known for using the large drum magazines. The drum was sensitive to dirt, slow to reload, and noisy to carry as the loosely held cartridges tended to rattle when the drum was moved.



02-132-940

NAME Thompson M1

TYPE American submachinegun

DATE ADOPTED 1940

CAL 11.43x23mm

LENGTH 81cm

MUZZLE VEL 925 fps

WT (EMPTY) 4.8kg

WT (LOADED) 5.53kg

EFF RNG 200m

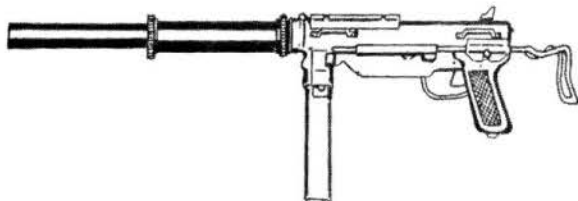
MAX RNG 1600m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 700 rpm

FEED DEVICE 20 or 30 round box magazine
 FEED DEVICE WT (20 round) .57kg, (30 round) .73kg
 BASIC LOAD 5 - 30 round magazines (150 rounds)
 LOAD WT 3.65kg

This was the last and simplest of the Thompson submachineguns. The weapon was greatly simplified internally and could not use the drum magazines. The M1 was not fitted with the distinctive Cutts compensator on the muzzle of the earlier Thompsons and was slightly more difficult to shoot as a result. A very rugged weapon, the Thompson M1 is still seen in use today.



02-132-943
 NAME OSS M3
 TYPE American silenced submachinegun
 DATE ADOPTED 1943
 CAL 11.43x23mm
 LENGTH 73.9/91.7cm
 MUZZLE VEL 768 fps
 WT (EMPTY) 4.3kg
 WT (LOADED) 5.28kg
 EFF RNG 150m
 MAX RNG 1296m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 120 rpm (CYCLIC) 450 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .98kg
 BASIC LOAD 8 magazines (240 rounds)
 LOAD WT 7.84kg

Until the development of the Ingram M10 this weapon, along with the British Sten MkIIS, was the most commonly available silenced submachinegun for the U.S. The standard M3 submachinegun had a silencer developed for it during WWII at the request of the Office of Strategic Services, predecessor of the modern CIA. The full barrel silencer may also be screwed onto the later M3A1 submachinegun instead of the standard barrel.



02-132-944
 NAME M3A1
 TYPE American submachinegun
 DATE ADOPTED 1944
 CAL 11.43x23mm

LENGTH 57.9/75.7cm
 MUZZLE VEL 918 fps
 WT (EMPTY) 3.47kg
 WT (LOADED) 4.45kg
 EFF RNG 200m
 MAX RNG 1550m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 120 rpm (CYCLIC) 450 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .98kg
 BASIC LOAD 8 magazines (240 rounds)
 LOAD WT 7.84kg

A modified version of the earlier M3 "Greasegun," the M3A1 is a very simple and rugged weapon. The simplicity of the M3A1 is apparent in the example of the weapons cocking system. In the M3 there was an external cocking lever, in the M3A1 this handle was removed and replaced with a hole in the bolt. To cock the M3A1 a finger is inserted into the bolt and the bolt pulled back. The ejection port cover of the M3 and the M3A1 is also the weapon's safety. With the cover closed the bolt cannot move. Though the accuracy of the M3A1 is relatively poor, the weapon will function in conditions that would jam other weapons.



02-132-968
 NAME CAR 15 (XM177E2)
 TYPE American submachinegun
 DATE ADOPTED c. 1968
 CAL 5.56x45mm
 LENGTH 71.1/78.7cm
 MUZZLE VEL 2700 fps
 WT (EMPTY) 2.78kg
 WT (LOADED) 3.23kg (w/30 round magazine)
 EFF RNG 200m
 MAX RNG 2320m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 50 rpm (A) 150 rpm (CYCLIC) 750 rpm
 FEED DEVICE 20, 30, or 40 round box magazine
 FEED DEVICE WT (20 round) .318kg, (30 round) .45kg, (40 round) .74kg
 BASIC LOAD 12 - 30 round magazines (360 rounds)
 LOAD WT 5.4kg

The XM177E2, also called the "Shorty 16," is a shortened version of the standard M16A1 rifle. Due to the weapon having a very short (27.9cm) barrel, and yet still firing the full sized rifle cartridge, the XM177E2 has a very loud and bright muzzle blast. To alleviate this problem the barrel is fitted with a long flash hider, which has a slight sound suppressor capability. The XM177E2 functions exactly the same as the M16A1.



02-132-968a
 NAME Smith & Wesson M76
 TYPE American submachinegun
 DATE ADOPTED 1968
 CAL 9x19mm
 LENGTH 51.4/77.5cm
 MUZZLE VEL 1250 fps
 WT (EMPTY) 3.28kg
 WT (LOADED) 3.96kg
 EFF RNG 200m
 MAX RNG 2012m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 72 rpm (A) 144 rpm (CYCLIC) 720 rpm
 FEED DEVICE 36 round box magazine
 FEED DEVICE WT .68kg
 BASIC LOAD 8 magazines (288 rounds)
 LOAD WT 5.44kg

Manufactured in the mid-1960's as a possible military issue weapon, the M76 follows very closely the design of the Swedish M45. The weapon is simply made and is light and easy to carry. The M76 was featured in the movie, "The Omega Man" starring Charlton Heston. In the movie the weapon had a flashlight mounted underneath the barrel to aid in aiming in low light conditions.



02-132-970
 NAME Colt Scamp
 NAME (NATIVE) Small Caliber Machine Pistol
 TYPE American machine pistol
 DATE ADOPTED 1970
 CAL 5.56x29mm
 LENGTH 29.5cm
 MUZZLE VEL 2100 fps
 WT (EMPTY) 1.02kg
 WT (LOADED) 1.47kg
 EFF RNG 45m
 MAX RNG 1725m
 TYPE OF FIRE Selective, Double action, burst control
 RATE OF FIRE (SS) 54 rpm (A) 108 rpm (CYCLIC) 1500 rpm

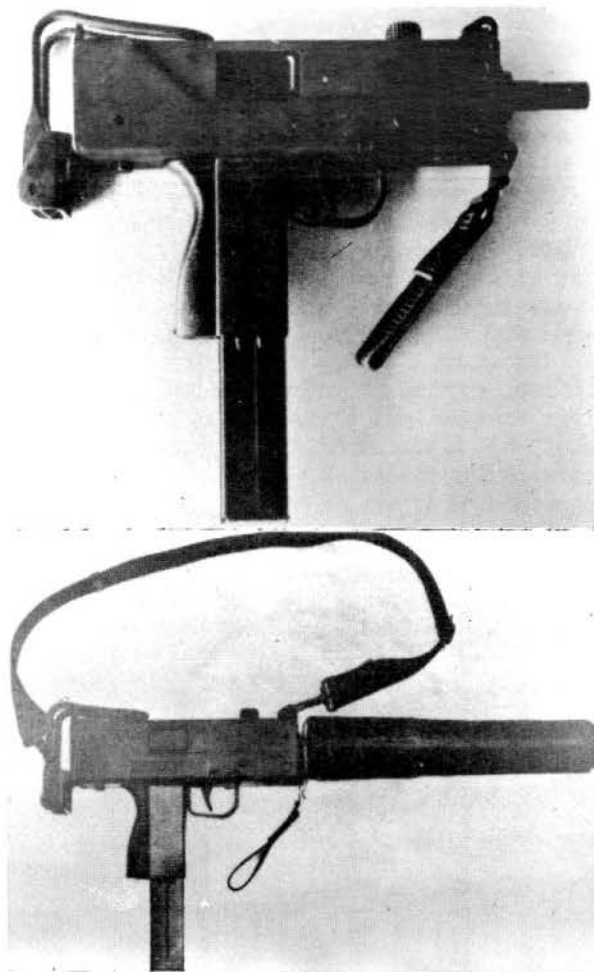
FEED DEVICE 27 round box magazine
 FEED DEVICE WT .45kg
 BASIC LOAD 3 magazines (81 rounds)
 LOAD WT 1.35kg

This weapon is a true "machine-pistol" since it is capable of full automatic fire. The SCAMP is something of a cross between a pistol and a submachinegun, firing a .22 caliber round designed especially for it. Though the SCAMP is considered a full automatic weapon it cannot fire its entire magazine in one long burst. The selector switch allows for either single shots or controlled 3 round bursts to be fired. In a controlled burst the weapon will only fire its programmed number of rounds, in this case three, for each pull of the trigger. Combined with a high cyclic rate of fire, the 3 round burst is considered an optimum size to keep all of the rounds on target before recoil forces the weapon's muzzle up and off-target.



02-132-970a
 NAME Bushmaster
 TYPE American machine pistol
 DATE ADOPTED 1970
 CAL 5.56x45mm
 LENGTH 52.4cm
 MUZZLE VEL 2915 fps
 WT (EMPTY) 2.38kg
 WT (LOADED) 2.83kg (w/30 round mag)
 EFF RNG 150m
 MAX RNG 1450m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 60 rpm (A) 120 rpm (CYCLIC) 750 rpm
 FEED DEVICE 20, 30, or 40 round box magazine
 FEED DEVICE WT (20 round) .318kg, (30 round) .45kg, (40 round) .74kg
 BASIC LOAD 6-30 round magazines (180 rounds)
 LOAD WT 2.7kg

This weapon is designed to be fired with one hand and has no stock. The Bushmaster uses the M16A1 magazine and will fire with its magazine rotated to either side (see Sidewinder SS-1, 02-132-978). The handgrip of the weapon is underneath the barrel and the entire weapon is meant to be used while braced against the forearm. Because the Bushmaster fires the 5.56x45mm round, it is one of the most powerful machine pistols made.



02-132-971a

NAME Ingram M11

TYPE American submachinegun

DATE ADOPTED 1971

CAL 9x17mm

LENGTH 22.2/46cm (w/suppressor 44/65cm)

MUZZLE VEL 960 fps

WT (EMPTY) 1.59kg

WT (LOADED) 2.1kg (w/32 round mag)

EFF RNG 100m

MAX RNG 1045m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 96 rpm (CYCLIC) 1200 rpm

FEED DEVICE 16 or 32 round box magazine

FEED DEVICE WT (16 round) .282kg, (32 round) .51kg

BASIC LOAD 8-32 round magazines (256 rounds)

LOAD WT 4.08kg

submachinegun. When chambered for 9x19mm ammunition, the M10 uses the same magazine as the Walther MP-K.

02-132-971

NAME Ingram M10

TYPE American submachinegun

DATE ADOPTED 1971

CAL 9x19mm

LENGTH 26.9/54.8cm (w/suppressor 54.5/79.8cm)

MUZZLE VEL 1200 fps (918 fps)

WT (EMPTY) 2.84kg

WT (LOADED) 3.46kg (3.818kg)

EFF RNG 100m

MAX RNG 2012m (1922m)

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 96 rpm (90 rpm) (CYCLIC) 1090 rpm (1145 rpm)

FEED DEVICE 32 round box magazine (30 round box magazine)

FEED DEVICE WT .62kg (.978kg)

BASIC LOAD 12 magazines (384 rounds) (8 mags. 240 rounds)

LOAD WT 7.44kg (7.824kg)

This is a smaller version of the Ingram M10 submachinegun. The M11 is chambered for the 9x17mm (.380 ACP) round and with its suppressor (wt. .45kg) is a very quiet weapon. There is a special 16 round magazine available for the M11 allowing the weapon to be carried concealed in a shoulder holster. Due to the light recoil of the 9x17mm round, the M11 has a very high cyclic rate of fire.

This weapon was developed by Gordon Ingram in 1970 as a very small submachinegun for use primarily by clandestine forces. The M10 is chambered for either 9x19mm or 11.43x23mm. The data in brackets above is for the 11.43mm caliber model. The Ingram, as the M10 is more popularly called, was designed for use with a sound suppressor which greatly adds to its use as an undercover weapon (suppressor wt. .545kg in either caliber). The Ingram may be fired without the suppressor attached but cannot accurately be fired on automatic with one hand. The M10 in 11.43x23mm caliber uses the same magazine (slightly modified) as the M3A1



02-132-978

NAME Sidewinder SS-1

TYPE American submachinegun

DATE ADOPTED 1978

CAL 9x19mm

LENGTH 45.7/61cm

MUZZLE VEL 1200 fps

WT (EMPTY) 2.495kg

WT (LOADED) 3.175kg (w/32 round mag)

EFF RNG 200m

MAX RNG 1230m

TYPE OF FIRE Selective fire

RATE OF FIRE 40 rpm

FEED DEVICE 32 or 45 round box magazine

FEED DEVICE WT (32 round) .68kg, (45 round) .907kg

BASIC LOAD 8-32 round magazines (256 rounds)

LOAD WT 5.44kg

This submachinegun is designed to be used equally well by either right or left handed firers. The magazine will rotate around the receiver so that it can function from either side. The buttplate will also rotate to allow the weapon to be fired with the butt braced against the inside of the elbow of the firing arm. This allows for accurate, one-handed fire. The buttstock will also extend so that the weapon can be braced against the shoulder. Also incorporated into the weapon is a "progressive trigger." In a progressive system the type of fire is determined by the amount of trigger pull. A slight trigger pull will only fire single shots, while a long pull of the trigger causes full automatic fire.



02-136-960

NAME K-50

TYPE Vietnamese submachinegun

DATE ADOPTED c. 1960

CAL 7.62x25mm

LENGTH 57.1/75.6cm

MUZZLE VEL 1600 fps

WT (EMPTY) 3.4kg

WT (LOADED) 4.08kg

EFF RNG 200m

MAX RNG 1645m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 50 rpm (A) 100 rpm (CYCLIC) 700 rpm

FEED DEVICE 35 round box magazine

FEED DEVICE WT .681kg

BASIC LOAD 5 magazines (175 rounds)

LOAD WT 3.405kg

This is a highly modified Chinese Type 50 (PPsh-41) submachinegun built in Vietnam. The wooden stock was removed and a sliding wire stock, copied from the MAT-49, added on. The barrel jacket was mostly removed, a front sight put on the barrel, and a pistol grip added. The weapon cannot use the PPsh-41 drum magazine but is internally the same as the original weapon.

RIFLES

The first shoulder weapons were little more than iron pipes mounted on wood stocks. The early matchlocks were so heavy that they needed a forked stick to aim them. With the invention of the flintlock, military longarms became considerably more efficient.

The large smoothbore flintlocks were referred to as muskets primarily because of their non-rifled barrels. The term rifle meant a weapon with a rifled bore. During the early 1800's, the idea of firing the rifles with a waterproof percussion cap came into being and was quickly taken up by the civilian, and later, the military population.

It was with the invention of the metallic cartridge that the beginning of the modern rifle took place. Once a suitable means of firing metallic cartridges became available, a number of different operating systems were invented. The lever action was very popular with the civilian population in the last quarter of the 19th century, while the military preferred more rugged, single shot weapons.

By WWI however, almost all the militaries of the world were using some form of repeating, bolt action rifle. In the 1930's, the United States was the first government to adopt a self loading rifle and was also the only group to enter WWII with a majority of troops using a semiautomatic weapon. Another development during the 1920's and 30's, was the design of several very powerful antitank rifles. The antitank rifle was designed to penetrate the relatively thin armor of the early tanks. They accomplished this by either using increasingly larger ammunition or by using regular rifle bullets which were pushed to extreme velocities by massive cartridge cases. Either method resulted in some of the largest shoulder fired rifles ever made.

During WWII, the development of the assault rifle by Germany ushered in this, the newest class of rifle. The assault rifle is capable of either full or semiautomatic fire, has a large magazine capacity, and fires a cartridge larger than pistol ammunition but not as large as long range (standard) rifle ammunition. Almost every country today uses some form of assault rifle with the trend today being towards smaller bullets pushed to higher velocities.



03-000-790
 NAME .69 Musket
 TYPE Early (American) flintlock musket
 DATE ADOPTED 1790
 CAL .69
 LENGTH 115.6cm
 MUZZLE VEL 580 fps
 WT (EMPTY) 5.03kg
 WT LOADED) 5.067kg
 EFF RNG 50m
 MAX RNG 300m
 TYPE OF FIRE Flintlock single shot muzzle loader
 RATE OF FIRE (SS) 12 rpm
 FEED DEVICE ball and loose powder
 FEED DEVICE WT .037kg per round (31g ball, 6g powder)
 BASIC LOAD 50 rounds (paper cartridges)
 LOAD WT 1.85kg

A musket is a smoothbore shoulder arm and this model is representative of the type. A single shot weapon, the musket was fitted with a long bayonet for close in work. The musket had a relatively short range and, when fired with combat ammunition, was generally inaccurate. Though the weapon could be fairly accurate when fired with a tight fitting patched ball, the standard ammunition of the musket was a loose fitting ball in a paper cartridge. The loose ball would rattle from side to side down the barrel when fired and leave the muzzle at any angle. Due to the muskets being fired in ranked volleys during combat, the loose cartridge ball would allow for a high volume of fire (see also Early Flintlock Pistol, 01-000-806).



03-007-969
 NAME Styer SSG-69
 NAME (NATIVE) Scharfschützen Gewehr 69
 TYPE Austrian rifle
 DATE ADOPTED 1969
 CAL 7.62x51mm
 LENGTH 113cm
 MUZZLE VEL 2820 fps
 WT (EMPTY) 4.37kg (w/scope)
 WT LOADED) 4.56kg
 EFF RNG 1000m
 MAX RNG 3725m
 TYPE OF FIRE Bolt action repeater
 RATE OF FIRE (SS) 20 rpm
 FEED DEVICE 5 round rotary magazine, 10 round box magazine
 FEED DEVICE WT (5 round) .19kg, (10 round) .514kg
 BASIC LOAD 2 magazines + 60 loose rounds (70 rounds)
 LOAD WT 1.88kg

The SSG-69 is a bolt action rifle designed specifically for use as a sniper rifle. The rifle is normally used with a telescopic sight and is very accurate on long range shots. Weapons of this type are not commonly issued due to the specialized nature of the job they are designed to perform.



03-007-972
 NAME Styer AUG Rifle
 NAME (NATIVE) Styer Automatisches Universal Gewehr
 TYPE Austrian rifle
 DATE ADOPTED 1972
 CAL 5.56x45mm
 LENGTH 79cm
 MUZZLE VEL 3150 fps
 WT (EMPTY) 2.81kg
 WT LOADED) 3.3kg
 EFF RNG 400m
 MAX RNG 2548m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 90 rpm (CYCLIC) 680 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .49kg
 BASIC LOAD 8 magazines (240 rounds)
 LOAD WT 3.92kg

The Styer is a new development in a weapon where the same action may serve as a carbine, rifle, or light machinegun by simply changing their barrels. A very futuristic appearing weapon, the AUG is built in a "bull pup" configuration with a great deal of plastic and aluminum used in its construction to hold down weight. The magazine of the AUG is made of high-impact, transparent plastic which allows the ammunition to be seen. A 1.5 power optical sight is built into the handle of this model, the Type 12. The bolt is also designed so that the weapon can be comfortably fired by either right or left handed shooters. All the barrels have a combination flash suppressor/rifle grenade launcher for 22mm tail grenades. The differences between the three variants are shown below:

AUG Carbine
 LENGTH 69cm
 WT (EMPTY) 3.13kg
 MUZZEL VEL 3085 fps
 EFF RNG 300m
 MAX RNG 2495m

AUG RIFLE (see above)

AUG Light Machinegun
 LENGTH 89 cm
 WT (EMPTY) 3.43kg (w/bipod)
 MUZZLE VEL 3208 fps
 EFF RNG 600m
 MAX RNG 2595m



03-011-950
 NAME FN-FAL
 NAME (NATIVE) Fusil Automatique Leger
 TYPE Belgian rifle
 DATE ADOPTED 1950
 CAL 7.62x51mm

LENGTH 109cm
 MUZZLE VEL 2756 fps
 WT (EMPTY) 4.25kg
 WT LOADED) 4.98kg
 EFF RNG 650m
 MAX RNG 3725m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 60 rpm (A) 120 rpm (CYCLIC) 700 rpm
 FEED DEVICE 20 round box magazine
 FEED DEVICE WT .73kg
 BASIC LOAD 10 magazines (200 rounds)
 LOAD WT 7.3kg

The FN-FAL is the most widely used rifle of the NATO countries. The FN was first issued in Belgium. Now, over 20 nations around the world either manufacture or purchase it. The rifle fires a "full-sized" cartridge that has long range and good penetration qualities. Designed along the lines of an assault rifle, the FN has excellent handling qualities and is a strong, durable weapon.



03-011-966
 NAME FN-CAL
 NAME (NATIVE) Carabine Automatique Leger
 TYPE Belgian rifle
 DATE ADOPTED 1966
 CAL 5.56x45mm
 LENGTH 98cm
 MUZZLE VEL 3200 fps
 WT (EMPTY) 3kg
 WT LOADED) 3.55kg (w/30 round mag.)
 EFF RNG 400m
 MAX RNG 2590m
 TYPE OF FIRE Selective, 3 round burst
 RATE OF FIRE (SS) 60 rpm (A) 120 rpm (CYCLIC) 700 rpm
 FEED DEVICE 20 or 30 round box magazine
 FEED DEVICE WT (20 round) .39kg, (30 round) .55kg
 BASIC LOAD 8-30 round magazines (240 rounds)
 LOAD WT 4.4kg

This assault rifle was developed as a possible replacement for the 7.62mm FN-FAL. The weapon is capable of full and semiautomatic fire as well as 3 round burst fire (see Colt SCAMP, 02-132-970). The CAL can be fitted with either a standard fixed or folding stock. The barrel of the CAL has a flash hider that is also used to launch 22mm tail rifle grenades.



03-029-958
 NAME Vz-58V
 NAME (NATIVE) Samopal Vz 58V
 TYPE Czechoslovakian rifle
 DATE ADOPTED 1958

CAL 7.62x39mm
 LENGTH 63.5/82cm
 MUZZLE VEL 2330 fps
 WT (EMPTY) 3.14kg
 WT (LOADED) 3.821kg
 EFF RNG 400m
 MAX RNG 2024m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 90 rpm (CYCLIC) 800 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .681kg
 BASIC LOAD 3 magazines (90 rounds)
 LOAD WT 2.043kg

Presently the standard issue weapon of the Czechoslovakian military, the Vz-58 bears an outside resemblance to the AK-47. Though resembling an AK-47 externally, the Vz-58 is internally very different, using another locking, trigger, and control system. The Vz-58 is available in two models, the Vz-58P with a fixed stock, and the Vz-58V with a folding stock. Being available on the commercial market, the Vz-58 has been used by the PLA, Black September, and it has also been intercepted off of the coast of Ireland.



03-036-982
 NAME Valmet M82
 TYPE Finnish rifle
 DATE ADOPTED 1982
 CAL 5.56x45mm
 LENGTH 71cm
 MUZZLE VEL 2900 fps
 WT (EMPTY) 3.3kg
 WT (LOADED) 3.92kg (w/30 round mag.)
 EFF RNG 300m
 MAX RNG 2345m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE (SS) 40 rpm
 FEED DEVICE 15 or 30 round box magazine
 FEED DEVICE WT (15 round) .32kg, (30 round) .62kg
 BASIC LOAD 6-30 round magazines (180 rounds)
 LOAD WT 3.72kg

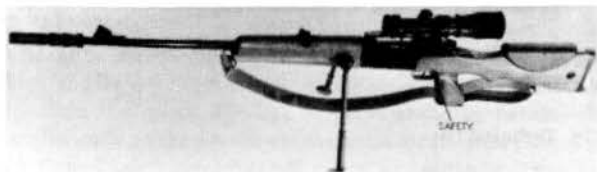
This is a "bull pup" configuration of the Finnish Valmet M76 assault rifle. The M76 is a 5.56x45mm version of the AK-47 and was the base receiver from which the Galil was developed. The M82 has most of the action and barrel of the weapon encased in a high impact plastic housing. It is an interesting weapon which combines the dependability of the AK system with the handiness of the bull pup configuration.



03-037-956
 NAME MAS-49/56
 NAME (NATIVE) Fusil Mitrailleur Modele 49/56

TYPE French Rifle
 DATE ADOPTED 1956
 CAL 7.5x54mm
 LENGTH 101cm
 MUZZLE VEL 2700 fps
 WT (EMPTY) 3.9kg
 WT (LOADED) 4.332kg
 EFF RNG 600m
 MAX RNG 3595m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE (SS) 30 rpm
 FEED DEVICE 10 round box magazine
 FEED DEVICE WT .432kg
 BASIC LOAD 8 magazines (80 rounds)
 LOAD WT 3.456kg

This is presently the standard rifle of the French Army. Modified from the earlier post-WWII M49, the M49/56 uses a gas system which conducts gas into the receiver to operate the action. This type of gas system adds greatly to the fouling of the weapon. However, the M49/56 operates reliably. The M49 and the subsequent M49/56 were the first weapons to mount an integral rifle grenade launcher on the muzzle. The launcher can fire any standard 22mm tail rifle grenade.



03-037-965
 NAME Fusil FR-F1
 NAME (NATIVE) Fusil a Repetition F1, Tireur d' Elite, Modele A
 TYPE French rifle
 DATE ADOPTED c.1965
 CAL 7.5x54mm
 LENGTH 113.8cm
 MUZZLE VEL 2795 fps
 WT (EMPTY) 5.2kg
 WT (LOADED) 5.656kg
 EFF RNG 800m
 MAX RNG 3718m
 TYPE OF FIRE Bolt action repeater
 RATE OF FIRE (SS) 15 rpm
 FEED DEVICE 10 round box magazine
 FEED DEVICE WT .456kg
 BASIC LOAD 6 magazines (60 rounds)
 LOAD WT 2.736kg

This specialized sniper rifle is based on a pre-WWII French bolt action rifle. The FR-F1 is especially adaptable to fit individual firers with a number of different sizes of cheek pads, butt plates, and an adjustable trigger. The FR-F1 is also available chambered in 7.62x51mm NATO as well as in a competition model, the Modele B, with micrometer sights. The Model 53 bis 4 power telescopic sight is fitted to the FR-F1 as standard equipment along with a folding bipod.



03-037-974
 NAME 5.56mm FA-MAS
 NAME (NATIVE) Fusil Automatique MAS 5.56
 TYPE French rifle
 DATE ADOPTED 1974
 CAL 5.56x45mm
 LENGTH 75.7cm
 MUZZLE VEL 3150 fps
 WT (EMPTY) 3.55kg
 WT (LOADED) 4.025kg
 EFF RNG 300m
 MAX RNG 2549m
 TYPE OF FIRE Selective, burst control
 RATE OF FIRE (SS) 50 rpm (A) 125 rpm (CYCLIC) 950 rpm
 FEED DEVICE 25 round box magazine
 FEED DEVICE WT .475kg
 BASIC LOAD 6 magazines (150 rounds)
 LOAD WT 2.85kg

This weapon is gradually replacing the MAS 49/56 rifle as the standard French service rifle. The FA-MAS is a very modern design making maximum use of lightweight alloys and plastics. The design of the bolt and receiver allows the weapon to fire either right or left handed at the firer's option. Also included in the weapon are a built-in bipod and luminous sights for night firing. The FA-MAS also has a combination flash suppressor/rifle grenade launcher which allows standard 22mm tail rifle grenades to be fired.



03-040-935
 NAME KAR-98k
 NAME (NATIVE) Karabiner Modell 1898 kurz
 TYPE German rifle
 DATE ADOPTED 1935
 CAL 7.92x57mm
 LENGTH 110.5cm
 MUZZLE VEL 2477 fps
 WT (EMPTY) 3.9kg
 WT (LOADED) 4.032kg
 EFF RNG 550m
 MAX RNG 2011m
 TYPE OF FIRE Bolt action repeater
 RATE OF FIRE (SS) 15 rpm
 FEED DEVICE 5 round internal magazine, clip loaded
 FEED DEVICE WT (5 round clip) .132kg
 BASIC LOAD 18 clips (90 rounds)
 LOAD WT 2.376kg

This weapon was the standard issue rifle of the German army during WWII. The Kar 98k is a shortened, modified version of the original Gewehr 98 developed in 1898. The Kar 98k is made around the basic Mauser bolt action which is a very strong, safe design. The name

Kar 98k is taken from the German name Karabiner 98 kurz, kurz being the German term for short. The Kar 98k has an internal 5 round magazine that can be loaded with single rounds or 5 rounds can be quickly "stripped" into the weapon from a 5 round clip.



03-040-939
 NAME PzB 39
 NAME (NATIVE) 7.92mm Panzerbuchse 39
 TYPE German antitank rifle
 DATE ADOPTED 1939
 CAL 7.92x95mm
 LENGTH 128/162cm
 MUZZLE VEL 3740 fps
 WT (EMPTY) 12.6kg
 WT (LOADED) 12.74kg
 EFF RNG 800m
 MAX RNG 6578m
 TYPE OF FIRE Single shot
 RATE OF FIRE (SS) 8 rpm
 FEED DEVICE Single round
 FEED DEVICE WT .14kg
 BASIC LOAD 20 rounds
 LOAD WT 2.8kg

This weapon was a German attempt to develop a rifle powerful enough to disable tanks. The PzB-39 used a very large cartridge case to push a standard sized rifle bullet at a high velocity. Though the idea of the antitank rifle did have merit the armor of tanks was quickly developed to a point where a rifle based weapon had little, if any, effect. The PzB was still occasionally found throughout World War II being used against lighter vehicles and personnel behind cover.



03-040-942
 NAME FG-42
 NAME (NATIVE) 7.92mm Fallschirmjägergewehr 42
 TYPE German rifle
 DATE ADOPTED 1942
 CAL 7.92x57mm

LENGTH 94cm
 MUZZLE VEL 2500 fps
 WT (EMPTY) 4.5kg
 WT (LOADED) 4.88kg
 EFF RNG 800m
 MAX RNG 4397kg
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 775 rpm
 FEED DEVICE 20 round box magazine
 FEED DEVICE WT .38kg
 BASIC LOAD 6 magazines (120 rounds)
 LOAD WT 2.28kg

Developed for use by German paratroops in WWII, the FG-42 used a number of new designs. Intended for use primarily as a rifle, the FG-42 would fire semiautomatically with a closed bolt for accuracy and with an open bolt on full automatic for cooling. The operating rod/bolt system was directly copied in the American M60 machinegun. Two variants of the FG-42 were often seen. The earlier models had a metal buttstock and a sharply angled pistol grip. Later models had a wooden buttstock and a more standard grip.



03-040-943
 NAME MP-44 (StG-44)
 NAME (NATIVE) Maschinenpistole 44 (Sturmgewehr 44)
 TYPE German rifle
 DATE ADOPTED 1943
 CAL 7.92x33mm
 LENGTH 94cm
 MUZZLE VEL 2297 fps
 WT (EMPTY) 4.5kg
 WT (LOADED) 5.2kg
 EFF RNG 500m
 MAX RNG 1830m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 500 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .7kg
 BASIC LOAD 6 magazines (180 rounds)
 LOAD WT 4.2kg

The MP-44 was the first of what is now the modern assault rifle. Developed in Germany during WWII, the MP-44, also known as the StG 44 or Sturmgewehr, fired a shortened version of the standard rifle cartridge. Using the MP-44 as an example, an assault rifle should be capable of selective fire, have a large magazine capacity, and fire a mid-range cartridge, more powerful than submachinegun ammunition but not as bulky or heavy as "full size" rifle ammunition. The AK-47 concept was taken directly from this weapon (see AK-47, 03-125-951).



03-041-960

NAME G-3

NAME (NATIVE) Gewehr 3

TYPE German rifle

DATE ADOPTED 1960

CAL 7.62x51mm

LENGTH 101.6cm

MUZZLE VEL 2650 fps

WT (EMPTY) 4.25kg

WT (LOADED) 5kg

EFF RNG 500m

MAX RNG 3405m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 100 rpm (CYCLIC) 550 rpm

FEED DEVICE 20 round box magazine

FEED DEVICE WT .75kg

BASIC LOAD 8 magazines (160 rounds)

LOAD WT 6kg

This rifle was developed from a late war (1945) German design. The G3 rifle is the first of a family of weapons based on the same action. In the family of weapons produced by Heckler and Koch the G3 is the 7.62mm NATO class, the HK33A2 is representative of the 5.56x45mm series, the MP5A2 represents the 9x19mm series, and the HK-21 represents the machinegun class. The G3 rifle is a very robust rifle and is simple to operate. Over 40 countries either use or produce the G3. The flash suppressor allows the weapon to fire 22mm tail rifle grenades.



03-041-968

NAME Heckler & Koch 33A2

NAME (NATIVE) HK33A2

TYPE German rifle

DATE ADOPTED 1968

CAL 5.56x45mm

LENGTH 92cm

MUZZLE VEL 3150 fps

WT (EMPTY) 3.65kg

WT (LOADED) 4.25kg (w/40 round mag.)

EFF RNG 500m

MAX RNG 2575m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 160 rpm (CYCLIC) 700 rpm

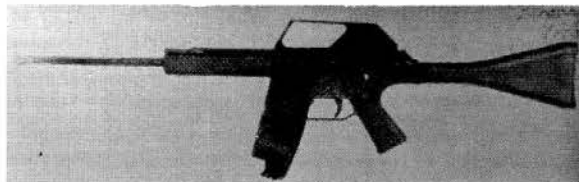
FEED DEVICE 20 or 40 round box magazine

FEED DEVICE WT (20 round) .34kg, (40 round) 60 kg

BASIC LOAD 6-40 round magazines (240 rounds)

LOAD WT 3.6kg

The H & K 33A2 is designed as a reduced size version of the G3 rifle. The weapon is chambered for the 5.56x45mm cartridge and has an extended 40 round magazine. All accessories that fit on the G3 rifle will also fit the HK33A2. The flash suppressor on the barrel of the rifle allows the weapon to fire 22mm tail rifle grenades.



03-041-972

NAME 4.6mm HK-36

TYPE German rifle

DATE ADOPTED 1972

CAL 4.6x36mm

LENGTH 79.6/88.9cm

MUZZLE VEL 2800 fps

WT (EMPTY) 2.85kg

WT (LOADED) 3.696kg (w/3 clips, 90 rounds)

EFF RNG 300m

MAX RNG 3000m

TYPE OF FIRE Selective, adjustable controlled burst

RATE OF FIRE (SS) 90 rpm (A) 180 rpm (CYCLIC) 1200 rpm

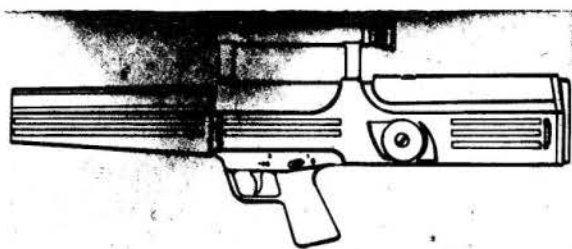
FEED DEVICE 30 round clip, 90 round magazine box

FEED DEVICE WT (30 round clip) .282kg

BASIC LOAD 18 clips (540 rounds)

LOAD WT 5.076kg

Developed around the new 4.6mm round, the HK-36 uses the same gas, locking, and control system as the G3 rifle. The feed mechanism is of special interest in the HK-36. The magazine box is permanently attached to the weapon. Ammunition comes packed in lightweight alloy boxes which hold 30 rounds each. A lever is pulled on the bottom of the magazine, feeding a box of 30 rounds into the action. Up to 3 boxes can be placed in the magazine. The HK 36 has an optical reflex sight built into the handle of the weapon with glowing stadia for use in low light conditions. Though normally set for 3 round bursts, the burst fire mechanism can be set to fire either 2, 3, 4, or 5 round bursts for each pull of the trigger.



03-041-980

NAME H & K G-11

TYPE German rifle

DATE ADOPTED c. 1980

CAL 4.7x21mm Caseless

LENGTH 75cm

MUZZLE VEL 3051 fps

WT (EMPTY) 3.6kg

WT (LOADED) 4.5kg (w/100 rounds)

EFF RNG 300m

MAX RNG 3266m

TYPE OF FIRE Selective, 3 round burst

RATE OF FIRE (SS) 50 rpm (A) 150 rpm (CYCLIC) 600 rpm/2200 rpm (3 round burst)

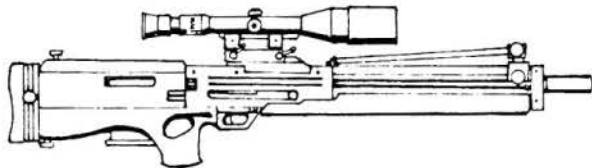
FEED DEVICE 100 round magazine box

FEED DEVICE WT (50 rounds) .45kg

BASIC LOAD 6 magazines (300 rounds.)

LOAD WT 2.7kg

This unique bull pup rifle has been under development by Heckler & Koch for over 13 years. The G-11 fires a special "caseless" round which has no standard metal cartridge case but a solid rectangular block of propellant instead. The fact that there is no case to be extracted allows for an extremely high rate of fire to be reached. The action of the G-11 is a rotating breechblock that moves with the barrel while firing. This breechblock is operated by rotating the round knob to the rear of the pistol grip to load the first round. When fired on 3 round burst, the G-11 fires at a cyclic rate of over 2,000 rounds per minute. This extreme rate of fire allows for all three rounds to be fired before the recoil, and subsequent movement, is even felt by the firer. There is a lower rate of fire for full automatic to prevent unnecessary wastage of ammunition. Ammunition for the G-11 is available in 50 round disposable plastic magazines of which the rifle can hold 2, 100 rounds total. The casing of the rifle completely seals the action from any foreign matter eliminating jams from dirt. The handle of the G-11 has a built-in 1 power optical sight with an internal illuminator for low light use.



03-041-982
 NAME Walther WA-2000
 TYPE German sniper rifle
 DATE ADOPTED 1982
 CAL 7.62x66mmB
 LENGTH 90.5cm
 MUZZLE VEL 3070 fps
 WT (EMPTY) 7.91kg w/scope
 WT (LOADED) 8.31kg
 EFF RNG 1100m
 MAX RNG 4084m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 18 rpm
 FEED DEVICE 6 round box magazine
 FEED DEVICE WT .4kg
 BASIC LOAD 3 magazines (18 rounds)
 LOAD WT 1.2kg

This weapon was designed by Otto Ropa for Walther specifically as a long range, precision sniper rifle. The fact that it was not based on any other rifle allowed the WA-2000 to be specific for its job. The WA-2000 is chambered for the .300 Winchester Magnum cartridge as recommended by the GSG9 sniper teams. The bull pup configuration allows for a fairly compact weapon while also allowing a "frame" to be built around the weapon. The frame protects the barrel as well as providing a mount for sighting systems and the adjustable bipod which can be placed anywhere along the track above the barrel. The built-in flash hider/muzzle brake reduces recoil considerably. A 2.5 to 10 power adjustable telescopic sight is normally used with the WA-2000 but the weapon can also mount standard night vision devices.



03-058-970
 NAME GALIL ARM
 NAME (NATIVE) Galil Assault Rifle/Machine gun
 TYPE Israeli rifle
 DATE ADOPTED 1970
 CAL 5.56x45mm
 LENGTH 75.3/99cm
 MUZZLE VEL 3117 fps
 WT (EMPTY) 3.9kg
 WT (LOADED) 4.61kg (w/35 round mag.)
 EFF RNG 600m
 MAX RNG 2653m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 105 rpm (CYCLIC) 650 rpm
 FEED DEVICE 35 or 50 round box magazine
 FEED DEVICE WT (35 round) .71kg, (50 round) 1kg
 BASIC LOAD 8-35 round magazines (280 rounds)
 LOAD WT 5.68kg

The Galil is a hybrid weapon developed by the Israelis for use in their desert combat environment. Parts from the AK-47, Stoner M63A, M16A1, and FN-FAL all went into the final design for the Galil. Built into the weapon is a folding bipod that incorporates a wirecutter in the front hinge. The clamp bracket for the bipod is also designed for use as a bottle opener. The weapon's sights have folding night-aiming attachments that glow in the dark allowing the sights to be used in low light levels. The weapon is considered to be the best medium assault rifle manufactured in the world today.



03-059-959
 NAME BM-59 Mark Ital.
 NAME (NATIVE) Fucile Automatico Beretta Modello 59
 TYPE Italian rifle
 DATE ADOPTED 1959
 CAL 7.62x51mm
 LENGTH 109.5cm
 MUZZLE VEL 2700 fps
 WT (EMPTY) 4.6kg
 WT (LOADED) 5.28kg
 EFF RNG 600m
 MAX RNG 3595m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 750 rpm
 FEED DEVICE 20 round box magazine
 FEED DEVICE WT .68kg
 BASIC LOAD 6 magazines (120 rounds)
 LOAD WT 4.08kg

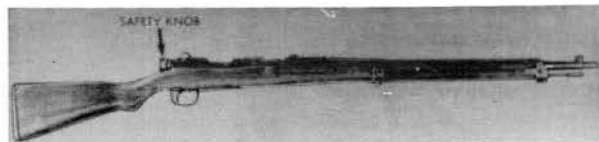
This rifle is an upgraded version of the M1 Garand rifle used by the Italian military. The basic Garand action was modified for selective fire, rechambered for

the 7.62x51mm NATO round, and fitted with a 20 round removable magazine, shorter barrel, and a built-in rifle grenade launcher. The BM-59 also has a folding winter trigger that allows the weapon to be fired while wearing heavy gloves. The rifle grenade launcher allows standard 22mm tail rifle grenades to be fired. A built-in folding bipod is also available for use.



03-059-970
 NAME AR-70
 NAME (NATIVE) Fucile Automatico Beretta Modello 70
 TYPE Italian rifle
 DATE ADOPTED 1970
 CAL 5.56x45mm
 LENGTH 94cm
 MUZZLE VEL 3182 fps
 WT (EMPTY) 3.41kg
 WT (LOADED) 3.99kg
 EFF RNG 400m
 MAX RNG 2574m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 100 rpm (CYCLIC) 630 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .58kg
 BASIC LOAD 6 magazines (120 rounds)
 LOAD WT 3.48kg

This lightweight assault rifle is gradually replacing the BM-59 in the Italian military. The AR-70 was designed for easy mass production and has a minimum of machined parts. The weapon has a built-in rifle grenade launcher and sights that allow standard 22mm tail rifle grenades to be fired.



03-062-939
 NAME Arisaka Mod. 99
 NAME (NATIVE) 7.7mm rifle, Type 99
 TYPE Japanese rifle
 DATE ADOPTED 1939
 CAL 7.7x56mmR
 LENGTH 111.7cm
 MUZZLE VEL 2239 fps
 WT (EMPTY) 3.99kg
 WT (LOADED) 4.115kg
 EFF RNG 550m
 MAX RNG 2743m
 TYPE OF FIRE Bolt action repeater
 RATE OF FIRE (SS) 25 rpm
 FEED DEVICE 5 round internal magazine, clip loaded
 FEED DEVICE WT (5 round clip) .125kg
 BASIC LOAD 20 clips (100 rounds)
 LOAD WT 2.5kg

This was the last of the Arisaka rifles used by Japan in WWII. The Type 99 was a larger caliber version of the earlier Arisaka rifles. The 5 round internal

magazine allowed loading loose other rounds or from 5 round stripper clips. Though late-war production was poor, well built Arisaka receivers were tested and found to be the strongest of the bolt action rifles used in WWII.



03-062-964
 NAME Type 64
 NAME (NATIVE) 64 Shiki Jidoju
 TYPE Japanese rifle
 DATE ADOPTED 1964
 CAL 7.62x51mm
 LENGTH 99cm
 MUZZLE VEL 2625 fps (Reduced 2297 fps)
 WT (EMPTY) 4.4kg
 WT (LOADED) 5.12kg
 EFF RNG 400m
 MAX RNG 3492m (Reduced load 3055m)
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 20 rpm (A) 100 rpm (CYCLIC) 500 rpm
 FEED DEVICE 20 round box magazine
 FEED DEVICE WT .72kg
 BASIC LOAD 6 magazines (120 rounds)
 LOAD WT 4.32kg

This weapon was designed for the modern Japanese Self Defense Force to give the Japanese soldier a 7.62mm rifle tailored to his needs. The Type 64 is of smaller size than a "standard" 7.62x51mm battle rifle with a muzzle brake built in to reduce recoil. There is a special 7.62x51mm round intended to be used with the Type 64. The special round has a reduced charge to lighten recoil. Standard 7.62x51mm NATO ammunition may also be used in the Type 64 (Data for the Type 64 firing Reduced ammunition is given in the brackets above). The Type 64 has an integral rifle grenade launcher that allows standard 22mm tail rifle grenades to be fired.



03-112-976
 NAME MKS
 TYPE Swedish rifle
 DATE ADOPTED 1976
 CAL 5.56x45mm

LENGTH 63.4/86.8cm
 MUZZLE VEL 3200 fps
 WT (EMPTY) 2.75kg
 WT (LOADED) 3.36kg
 EFF RNG 400m
 MAX RNG 2588m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 1100 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .61kg
 BASIC LOAD 6 magazines (180 rounds)
 LOAD WT 3.66kg

This recent rifle from Sweden demonstrates one of the radical departures from conventional weapons design. The MKS is a very compact, lightweight weapon which does not give up strength or barrel length to achieve these things. The "bull pup" design has the rear magazine well acting as the rear handgrip. The rear buttplate acts as a front handgrip when the stock is folded. The barrel of the MKS also has an integral rifle grenade launcher allowing standard 22mm tail rifle grenades to be fired.



03-113-957
 NAME SIG 510-4
 NAME (NATIVE) Sturmgewehr Modell 510-4 (SG 510-4)
 TYPE Swiss rifle
 DATE ADOPTED 1957
 CAL 7.62x51mm
 LENGTH 101.6cm
 MUZZLE VEL 2559m
 WT (EMPTY) 4.364kg
 WT (LOADED) 5.044kg
 EFF RNG 600m
 MAX RNG 3405m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 80 rpm (CYCLIC) 600 rpm
 FEED DEVICE 20 round box magazine
 FEED DEVICE WT .68kg
 BASIC LOAD 8 magazines (160 rounds)
 LOAD WT 5.44kg

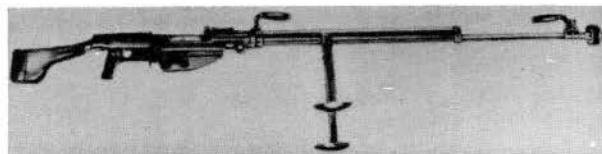
This weapon is an improved version of the Swiss StG 57 assault rifle. The SIG is a very finely built and reliable weapon. There is a built-in winter trigger on the weapon that, when unfolded, allows easy firing when wearing mittens. The weapon is capable of firing standard 22mm tail rifle grenades. The SIG is found in Switzerland and several South American countries.



03-125-930
 NAME Mosin - Nagant M1891/30
 NAME (NATIVE) Vintouka obr 1891/30g
 TYPE Russian rifle
 DATE ADOPTED 1930

CAL 7.62x54mmR
 LENGTH 123cm
 MUZZLE VEL 2580 fps
 WT (EMPTY) 4.25kg
 WT (LOADED) 4.63kg
 EFF RNG 800m
 MAX RNG 3015m
 TYPE OF FIRE Bolt action repeater
 RATE OF FIRE (SS) 15 rpm
 FEED DEVICE 5 round internal magazine, clip loaded
 FEED DEVICE WT (5 round clip) .38kg
 BASIC LOAD 20 clips (100 rounds)
 LOAD WT 7.6kg

This was the basic Russian rifle of WWII. The M1891/30 served with the Russian forces from 1930 through WWII and up to 1967 as a sniper rifle. The magazine is loaded from 5 round stripper clips and makes up the forward portion of the trigger guard. The weapon and its variants are still found in use in some parts of the world especially in China, as the Type 53 carbine, and in Southeast Asia.



03-125-941
 NAME PTRS-41
 NAME (NATIVE) 14.5mm Protivotankovoe Ruzh'yo obr 1941g
 PTRS
 TYPE Russian antitank rifle
 DATE ADOPTED 1941
 CAL 14.5x114mm
 LENGTH 213.4cm
 MUZZLE VEL 3220 fps
 WT (EMPTY) 20.86kg
 WT (LOADED) 22.053kg
 EFF RNG 800m
 MAX RNG 7000m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE (SS) 15 rpm
 FEED DEVICE 5 round internal magazine, clip loaded
 FEED DEVICE WT (5 round clip) 1.193kg
 BASIC LOAD 8 clips (40 rounds)
 LOAD WT 9.544kg

This very large rifle was designed for use by one man against tanks. The weapon fires a massive round from a five round bloc clip (see M1 Garand, 03-132-932). Though the weapon was not effective against the newer tanks of World WarII, the cartridge is still found used in the KPV machinegun. The gas action of the PTRS-41 was also used in the later designed SKS rifle.



03-125-945
 NAME SKS
 NAME (NATIVE) 7.62mm Samozaryadnyi Karabin Simonova
 TYPE Russian rifle
 DATE ADOPTED 1945
 CAL 7.62x39mm
 LENGTH 102.1cm

MUZZLE VEL 2411 fps
 WT (EMPTY) 3.85kg
 WT (LOADED) 4.01kg
 EFF RNG 400m
 MAX RNG 2095m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE (SS) 20 rpm
 FEED DEVICE 10 round internal magazine, clip loaded
 FEED DEVICE WT (10 round clip) .16kg
 BASIC LOAD 8 clips (80 rounds)
 LOAD WT 1.28kg

The SKS has the distinction of being the first weapon chambered for the now popular 7.62x39mm round. Developed by Sergei Simonov, the SKS greatly resembles the PTRS-41 internally, the PTRS-41 also being a Simonov design. Particularly strong and simple in design, the SKS is fed by an internal magazine loaded from 10 round stripper clips. The SKS is a popular design still being produced, with an integral rifle grenade launcher, as the M59/66 rifle in Yugoslavia and, as the Type 56 rifle in communist China. A standard fitting on the SKS is a folding spike or blade type bayonet underneath the barrel.



03-125-951
 NAME AK-47 (AKM-47)
 NAME (NATIVE) 7.62mm Avtomat Kalashnikova (Modernizirovannyi)
 TYPE Russian rifle
 DATE ADOPTED 1951
 CAL 7.62x39mm
 LENGTH 107cm
 MUZZLE VEL 2532 fps
 WT (EMPTY) 4.3kg (AKM 3.15kg)
 WT (LOADED) 5.127kg (AKM 3.997kg)
 EFF RNG 300m
 MAX RNG 2200m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 100 rpm (CYCLIC) 600 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .827kg
 BASIC LOAD 6 magazines (180 rounds)
 LOAD WT 4.962kg

This weapon is probably the most widely recognized rifle in the world. Originally developed in the Soviet Union from the German MP-44, the AK-47 and its variants are now manufactured or used by all of the communist bloc countries including Red China. The AK, as it is more commonly known, is a very simple, rugged, easy to maintain weapon. The more modernized version of the AK-47 is known as the AKM-47. In the AKM the receiver is made out of sheet steel and other parts are improved over the original. The drawbacks of the AK are that it is very heavy for its type, tends to overheat on full automatic fire, and is difficult to accurately fire on full automatic.



03-125-963
 NAME SVD
 NAME (NATIVE) 7.62mm Snayperskaya Vintovka Dragunova
 TYPE Russian rifle
 DATE ADOPTED 1963
 CAL 7.62x54mmR
 LENGTH 122.5cm
 MUZZLE VEL 2720 fps
 WT (EMPTY) 4.3kg (w/scope)
 WT (LOADED) 4.612kg
 EFF RNG 1300m
 MAX RNG 3070m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE (SS) 20 rpm
 FEED DEVICE 10 round box magazine
 FEED DEVICE WT .312kg
 BASIC LOAD 5 magazines (50 rounds)
 LOAD WT 1.56kg

This semiautomatic rifle was designed especially for use by snipers and as a result is an extremely accurate weapon. The SVD uses an action much like that of the AK-47 but is incapable of automatic fire and fires a much larger cartridge. The weapon has standard open sights but is most often used with the PSO-1 telescopic sight (wt. .8kg). The PSO-1 sight has an infrared capability and illuminated crosshairs which aid in night firing. The infrared capability of the sight requires an outside source of light (IR searchlight, lamp, etc.) to be effective at night.



03-125-974
 NAME AK-74
 NAME (NATIVE) 5.45mm Avtomat Kalashnikova obr 1974
 TYPE Russian rifle
 DATE ADOPTED 1974
 CAL 5.45x39mm
 LENGTH 93cm
 MUZZLE VEL 2952 fps
 WT (EMPTY) 3.6kg
 WT (LOADED) 4.15kg
 EFF RNG 400m
 MAX RNG 2500m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 50 rpm (A) 120 rpm (CYCLIC) 650 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .55kg
 BASIC LOAD 6 magazines (240 rounds)
 LOAD WT 3.3kg

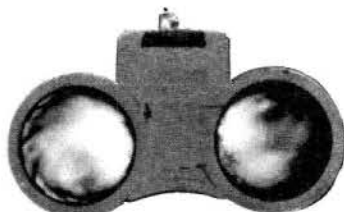
The AK-74 is an updated version of the AK/AKM-47 with little change incorporated into the basic action. The weapon is chambered for a small-caliber, high velocity round which allows for a much lighter rifle. The AK-74 uses a dark orange plastic magazine with the color helping prevent the magazine from being mistaken for an earlier issue AK-47 magazine. There is also a very

effective muzzle brake fitted to the end of the weapon's barrel. The muzzle brake allows for more stability when firing especially on full automatic fire. The brake gives the AK-74 a distinctive silhouette when compared to the AK/AKM-47.



03-131-871
 NAME Martini - Henry Mk I
 TYPE British rifle
 DATE ADOPTED 1871
 CAL 11.43x60mmR
 LENGTH 125.7cm
 MUZZLE VEL 1350 fps
 WT (EMPTY) 4.08kg
 WT LOADED) 4.134kg
 EFF RNG 550m
 MAX RNG 2560m
 TYPE OF FIRE Lever action single shot
 RATE OF FIRE (SS) 10 rpm
 FEED DEVICE single round
 FEED DEVICE WT .054kg
 BASIC LOAD 30 rounds
 LOAD WT 1.62kg

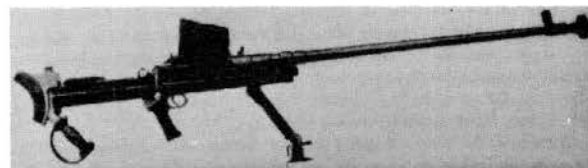
This was the first breechloader adopted by the British government as standard issue. Used for over 31 years, the Martini saw action in the Colonial wars in Asia, Africa, China, and last saw action in the Boer War. The Martini uses an unusual dropping block action which is still used in precision target weapons.



View down the barrels from the muzzle. (Life size)

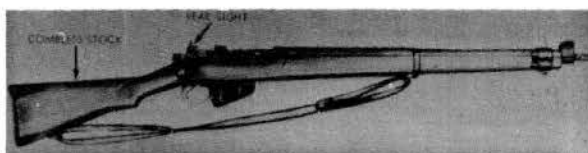
03-131-903
 NAME .600 Nitro Double rifle
 TYPE British rifle
 DATE ADOPTED 1903
 CAL 15.7x76mmR
 LENGTH 105.4cm
 MUZZLE VEL 2050 fps
 WT (EMPTY) 7.71kg
 WT LOADED) 7.9kg
 EFF RNG 150m
 MAX RNG 4375m
 TYPE OF FIRE Break open single shot, double barrel
 RATE OF FIRE (SS) 10 rpm
 FEED DEVICE 2 barrels, one round per barrel
 FEED DEVICE WT (2 rounds) .19kg
 BASIC LOAD 12 rounds
 LOAD WT 1.14kg

This rifle is representative of the largest big-game rifles used in this century. The Holland & Holland gunmakers of England produced these weapons up until World War II. The double rifle with its two parallel barrels looks and operates like a double-barrelled shotgun. The two barrels allow for an immediate second shot when hunting dangerous game. The .600 Nitro, (Nitro meaning the round uses smokeless (cordite) powder), Express was the largest rifle cartridge ever commercially loaded. Until the .460 Weatherby magnum, the .600 was the most powerful sporting cartridge in the world.



03-131-938
 NAME Mk I Boys .55
 TYPE British antitank rifle
 DATE ADOPTED 1938
 CAL 13.9x99mmB
 LENGTH 163cm
 MUZZLE VEL 2900 fps
 WT (EMPTY) 16.32kg
 WT LOADED) 17.235kg
 EFF RNG 150m
 MAX RNG 7335m
 TYPE OF FIRE Bolt action repeater
 RATE OF FIRE (SS) 10 rpm
 FEED DEVICE 5 round box magazine
 FEED DEVICE WT .915kg
 BASIC LOAD 6 magazines (30 rounds)
 LOAD WT 5.49kg

Originally called the Stanchion gun, this weapon was renamed the Boys after the death of its designer Captain Boys. The weapon is a massive bolt action rifle with the magazine inserted into the top of the action. The muzzle brake, heavily padded butt, and recoiling action were all added to the design to help absorb some of the punishing recoil of the rifle. Sometimes found mounted on the Bren-gun carrier as a primary weapon, the Boys was quickly rendered obsolete as the armor of tanks soon became too thick for the .55 bullet to penetrate.



03-131-941
 NAME Enfield No. 4, Mk I
 NAME (NATIVE) Rifle No. 4, Mk I
 TYPE British rifle
 DATE ADOPTED 1941
 CAL 7.7x56mmR
 LENGTH 112.7cm
 MUZZLE VEL 2444 fps
 WT (EMPTY) 4.1kg
 WT LOADED) 4.559kg
 EFF RNG 500m
 MAX RNG 3255m

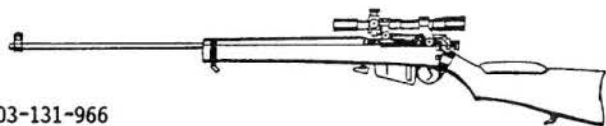
TYPE OF FIRE Bolt action repeater
 RATE OF FIRE (SS) 30 rpm
 FEED DEVICE 10 round box magazine
 FEED DEVICE WT .459kg
 BASIC LOAD 8 magazines (80 rounds)
 LOAD WT 3.672kg

This was the standard issue British service rifle from before WWII through the mid 1950's when the FN-FAL was adopted. The rifle is fed from a removeable 10 round magazine but may also be loaded with stripper clips (see KAR98k, 03-040-935, Mauser M1896, 01-040-896) through the top of the action. The basic Enfield action used in this rifle, was very reliable and had been in use since before the turn of the century.



03-131-942
 NAME De Lisle Carbine
 NAME (NATIVE) De Lisle System
 TYPE British silenced rifle
 DATE ADOPTED 1942
 CAL 11.43x23mm
 LENGTH 88.9cm
 MUZZLE VEL 1200 fps
 WT (EMPTY) 3.18kg
 WT LOADED) 3.5kg
 EFF RNG 300m
 MAX RNG 2045m
 TYPE OF FIRE Bolt action
 RATE OF FIRE (SS) 30 rpm
 FEED DEVICE 10 round box magazine
 FEED DEVICE WT .32kg
 BASIC LOAD 6 magazines (60 rounds)
 LOAD WT 1.92kg

Developed especially for use by clandestine troops and commandos, the De Lisle was a converted Enfield rifle action. The rifle action was rebuilt to fire pistol ammunition from an extended M1911A1 magazine. The full barrel silencer, modified action, and subsonic cartridge makes the De Lisle extremely quiet when fired. With the bolt action and extended barrel, excellent accuracy is obtained from the 11.43x23mm cartridge.



03-131-966
 NAME L42A1
 NAME (NATIVE) Rifle, 7.62mm, L42A1, Enfield Enforcer (police)
 TYPE British rifle
 DATE ADOPTED 1966
 CAL 7.62x51mm
 LENGTH 107.1cm
 MUZZLE VEL 2750 fps
 WT (EMPTY) 4.42kg
 WT LOADED) 4.76kg
 EFF RNG 800m
 MAX RNG 3660m
 TYPE OF FIRE Bolt action repeater

RATE OF FIRE (SS) 30 rpm
 FEED DEVICE 10 round box magazine
 FEED DEVICE WT .34kg
 BASIC LOAD 8 magazines (80 rounds)
 LOAD WT 2.72kg

The L42A1 is a 7.62x51mm version of the .303 No. 4 Lee - Enfield and is designed especially for use as a sniper weapon. The action of the weapon was modified to take the 7.62x51mm round and the trigger reworked for a smooth, steady pull. The L42A1 is normally used with a 4 power L1A1 telescopic sight and can be fitted with a starlight scope.



03-131-976
 NAME XL-64 4.85mm Individual Weapon
 TYPE British rifle
 DATE ADOPTED 1976
 CAL 4.85x49
 LENGTH 77cm
 MUZZLE VEL 2952 fps
 WT (EMPTY) 3.82kg w/sight
 WT LOADED) 4.218kg
 EFF RNG 300m
 MAX RNG 3160m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 800 rpm
 FEED DEVICE 20 round box magazine
 FEED DEVICE WT .398kg
 BASIC LOAD 8 magazines (160 rounds)
 LOAD WT 3.184kg

This weapon was developed by Britain for the NATO weapon trials of 1978-79. The XL-64 is built in a "Bull Pup" configuration. The "bull pup" design has the receiver of the weapon at the rear with the firing controls in front of the action. This type of action allows for a very compact weapon while still retaining a long barrel length. The weapon is normally fitted with a 4 power optical sighting system with improved night use capability. The flash suppressor allows the weapon to fire 22mm tail rifle grenades.



03-132-840
 NAME .50 Hawken
 TYPE American percussion rifle
 DATE ADOPTED 1840
 CAL .50
 LENGTH 114.3cm
 MUZZLE VEL 1800 fps
 WT (EMPTY) 4.07kg
 WT LOADED) 4.088kg
 EFF RNG 70m
 MAX RNG 1200m

TYPE OF FIRE percussion single shot muzzle loader
 RATE OF FIRE (SS) 10 rpm
 FEED DEVICE patched ball and loose powder
 FEED DEVICE WT .018kg, per round (12g ball, 6g powder)
 BASIC LOAD 50 rounds (.6kg ball, .3kg powder)
 LOAD WT .9kg

This was a very popular design of hunting rifle for the mid-1800's in America. Especially favored by the mountaineers and plainsmen of that time, the Hawken was a sturdy and simple design. With its rifled barrel, the Hawken was very accurate over ranges with a patched ball. Although it was available in several different calibers, the .50 caliber was among the most popular. Since black powder does not produce the high velocities of modern smokeless powders, black powder weapons had to be of large caliber to have adequate stopping power for dangerous game. The Hawken most commonly used percussion caps (see .44 New Model Army, 01-132-860) for firing though some models were made with flintlock actions.



03-132-863
 NAME Spencer .56/56 Carbine
 TYPE American rifle
 DATE ADOPTED 1863
 CAL 13.9x22mmR
 LENGTH 99cm
 MUZZLE VEL 1200 fps
 WT (EMPTY) 3.7kg
 WT LOADED) 3.931kg
 EFF RNG 350m
 MAX RNG 1100m
 TYPE OF FIRE lever action repeater
 RATE OF FIRE (SS) 20 rpm
 FEED DEVICE 7 round internal magazine
 FEED DEVICE WT (7 rounds) .231kg
 BASIC LOAD 42 rounds
 LOAD WT 1.386kg

This is the first repeating rifle to see successful military service in any large numbers. Though soon replaced by a single shot rifle, the M1873 Springfield, about 70,000 Spencers saw action during the Civil War. The magazine of the Spencer is a tube contained in the buttstock of the rifle. Working the trigger guard/lever feeds a fresh round into the chamber extracting and ejecting any spent cartridge cases. The large external hammer must be manually cocked for each shot.



03-132-873
 NAME Springfield Trapdoor
 NAME (NATIVE) Springfield rifle model 1873
 TYPE American rifle
 DATE ADOPTED 1873
 CAL 11.6x54mmR (45-70)
 LENGTH 131.9cm
 MUZZLE VEL 1315 fps
 WT (EMPTY) 4.5kg
 WT LOADED) 4.54kg
 EFF RNG 400m

MAX RNG 3200m
 TYPE OF FIRE Manual breech loader, single shot
 RATE OF FIRE (SS) 18 rpm
 FEED DEVICE Single round
 FEED DEVICE WT .04kg
 BASIC LOAD 30 rounds
 LOAD WT 1.2kg

This weapon was developed from the converted muzzle loading/breechloaders prevalent in the U.S. military after the Civil War. The "trapdoor" action requires the hammer to be half-cocked, the action cover lifted, a fired casing removed, and a fresh cartridge hand loaded into the breech. With the cover closed, the hammer could be left on half-cock (safety) or fully cocked for firing. The M1873 Springfield was a very tough weapon although it was relatively slow to fire and susceptible to stoppages due to the ammunition of that time. As the first military cartridge breechloader in the U.S. military issued for standard use, the M1873 Springfield and its other models were the rifles used to fight the American Indian Wars of the 1870's to 1890's.



03-132-873a
 NAME Winchester Model 1873 Rifle
 TYPE American rifle
 DATE ADOPTED 1873
 CAL 10.8x33mmR
 LENGTH 109.2cm
 MUZZLE VEL 1325 fps
 WT (EMPTY) 4.08kg
 WT LOADED) 4.392kg
 EFF RNG 350m
 MAX RNG 915m
 TYPE OF FIRE Lever action repeater
 RATE OF FIRE (SS) 25 rpm
 FEED DEVICE 15 round internal magazine
 FEED DEVICE WT (15 rounds) .312kg
 BASIC LOAD 60 rounds
 LOAD WT 1.248kg

Also referred to as "the rifle that won the west," the M1873 Winchester was the first of a very popular line of lever action repeating arms made by Winchester. Developed from earlier Henry and Volcanic lever actions, the "Winchester 73" was considered too delicate for military use but was widely used by the civilian population of the American West. The 73 introduced the side loading gate to fill the tubular magazine underneath the barrel. To load the magazine, individual rounds were fed through the gate and into the magazine. The tubular magazine prevented pointed bullets from being used as the recoil from firing could drive the primer of a cartridge onto the point of a bullet behind it, possibly firing the cartridge.



03-132-874
 NAME Sharps .50-140
 NAME (NATIVE) Sharps Model 1874 Long Range Express

Sporting Rifle
 TYPE American rifle
 DATE ADOPTED 1874/1880
 CAL 12.7x83mmR .50-140-473
 LENGTH 129.5cm
 MUZZLE VEL 1800 fps
 WT (EMPTY) 4.763kg
 WT LOADED) 4.825kg
 EFF RNG 800m
 MAX RNG 2552m
 TYPE OF FIRE Lever action single shot
 RATE OF FIRE (SS) 10 rpm
 FEED DEVICE Single round
 FEED DEVICE WT .062kg
 BASIC LOAD 30 rounds
 LOAD WT 1.86kg

The Sharps rifle with its lever operated, dropping block action was one of the first effective breech loading cartridge rifles. As centerfire cartridges were perfected, the Sharps became a popular hunting rifle. The very strong action of the Sharps allowed it to be chambered for the most powerful of the available cartridges. The data shown is for the largest of the so-called "buffalo" big-game rounds.



03-132-894
 NAME Winchester M1894
 TYPE American rifle
 DATE ADOPTED 1894
 CAL 7.62x51mmR
 LENGTH 95.9cm
 MUZZLE VEL 2410 fps
 WT (EMPTY) 2.95kg
 WT LOADED) 3.082kg
 EFF RNG 200m
 MAX RNG 2830m
 TYPE OF FIRE Lever action repeater
 RATE OF FIRE (SS) 24 rpm
 FEED DEVICE 6 round tubular magazine
 FEED DEVICE WT (6 rounds) .132kg
 BASIC LOAD 30 rounds
 LOAD WT .66kg

This is the most common of the Winchester lever-action rifles. The Model 94 was developed in 1894 and is most often found chambered in .30-30 Winchester. Even though it was developed far too late to have any historic use, the M94 is the rifle most commonly seen in many of the western movies of the post-Civil War era.



03-132-903
 NAME Springfield M1903
 TYPE American rifle
 DATE ADOPTED 1903
 CAL 7.62x63mm

LENGTH 110cm
 MUZZLE VEL 2700 fps
 WT (EMPTY) 4.1kg
 WT LOADED) 4.229kg
 EFF RNG 600m
 MAX RNG 3592m
 TYPE OF FIRE Bolt action repeater
 RATE OF FIRE 15 rpm
 FEED DEVICE 5 round internal magazine, clip loaded
 FEED DEVICE WT (5 round clip) .129kg
 BASIC LOAD 20 clips (100 rounds)
 LOAD WT 2.58kg

This rifle, more commonly known as the "Springfield", was developed at the Springfield arsenal from a license given by the Mauser company of Germany. The M1903 and its later variations are considered among the most accurate military rifles ever produced in quantity. Much of this accuracy is due to the care given in the manufacture of the weapon as well as the excellent sights designed for it. It is interesting to note that the M1903 is effectively a slightly modified Mauser (see Kar 98k, 03-040-935).



03-132-932
 NAME M1 Garand
 TYPE American rifle
 DATE ADOPTED 1932
 CAL 7.62x63mm
 LENGTH 110.6cm
 MUZZLE VEL 2805 fps
 WT (EMPTY) 4.3kg
 WT LOADED) 4.507kg
 EFF RNG 600m
 MAX RNG 3155m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 30 rpm
 FEED DEVICE 8 round internal magazine, clip loaded
 FEED DEVICE WT (8 round clip) .207kg
 BASIC LOAD 20 clips (160 rounds)
 LOAD WT 4.14kg

This weapon was the standard issue U.S. military rifle for both WWII and the Korean war. The M1 was the first semiautomatic rifle adopted by any country for standard issue. The ammunition for the M1 is issued in an eight round bloc clip that is inserted into the weapon. When the last round was fired, the weapon would eject the spent casing and empty clip with the action remaining open to speed reloading. Due to the weapon's design, the M1 cannot fire semiautomatically if the ammunition is not loaded with the clip. Also the clip cannot hold less than eight rounds and be inserted into the weapon.



03-132-941

NAME M1 Carbine
NAME (NATIVE) US Carbine, Caliber .30 in, M1 (M2)
TYPE American rifle
DATE ADOPTED 1941
CAL 7.62x33mm
LENGTH 90.4cm
MUZZLE VEL 1969 fps
WT (EMPTY) 2.286kg
WT LOADED) 2.482kg (w/15 round magazine)
EFF RNG 300m
MAX RNG 2000m
TYPE OF FIRE Semiautomatic (M2 Selective)
RATE OF FIRE (SS) 40 rpm (A) 75 rpm (M2) (CYCLIC) 750 rpm (M2)
FEED DEVICE 15 or 30 round box magazine
FEED DEVICE WT (15 round) .196kg, (30 round) .704kg
BASIC LOAD 8 - 15 round magazines (120 rounds)
LOAD WT 1.568kg

Developed as a replacement for the M1911A1 pistol for non-combat troops, the M1 carbine is a small, lightweight rifle. The cartridge is considered to be very underpowered for military rifle use. A later version, called the M2 carbine, was capable of selective fire and had the 30 round magazine developed for its use.



03-132-955

NAME AR 10
NAME (NATIVE) 7.62mm AR-10 Assault rifle
TYPE American rifle
DATE ADOPTED 1955
CAL 7.62x51mm
LENGTH 102.9cm
MUZZLE VEL 2772 fps
WT (EMPTY) 4.1kg
WT LOADED) 4.82kg
EFF RNG 500m
MAX RNG 3690m
TYPE OF FIRE Selective
RATE OF FIRE (SS) 40 rpm (A) 80 rpm (CYCLIC) 700 rpm
FEED DEVICE 20 round box magazine
FEED DEVICE WT .72kg
BASIC LOAD 8 magazines (160 rounds)
LOAD WT 5.76kg

Prior to the development of the M16A1, the AR-10 was submitted by Armalite to the U.S. Army for consideration as a new service rifle. The AR-10 looks much like a large M16 with the cocking handle under the top grip. The modern M16A1 was derived by Armalite from the earlier AR-10. Though an interesting weapon, the AR-10 was not adopted by any major government and is rarely seen today.



03-132-956a

NAME M14, M14NM (M21)
TYPE American rifle
DATE ADOPTED 1956
CAL 7.62x51mm
LENGTH 112cm
MUZZLE VEL 2800 fps
WT (EMPTY) 4.12kg (M21, 4.745kg)
WT LOADED) 4.8kg (M21, 5.425kg)
EFF RNG 700m (M21, 1000m)
MAX RNG 3725m
TYPE OF FIRE Selective (M21 semiautomatic)
RATE OF FIRE (SS) 40 rpm (A) 60 rpm (CYCLIC) 700 rpm
FEED DEVICE 20 round box magazine
FEED DEVICE WT .68kg
BASIC LOAD 6 magazines (120 rounds)
LOAD WT 4.08kg

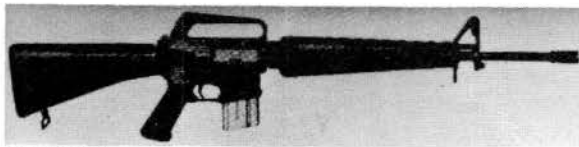
The M14 rifle was developed from the earlier M1 Garand. The gas system of the M14 was redesigned from the earlier M1 as well as the feed being changed to a 20 round box magazine. The M14 can be fitted with a selector switch allowing selective fire. An upgraded version of the M14 is the M14NM (National Match). These rifles are modified for maximum accuracy but this does make the weapon more susceptible to dirt. The selector shaft of the M14NM is welded and the weapon cannot fire fully automatically. The M21 is a M14NM fitted with a Leatherwood ranging telescopic sight for use as a sniper rifle. The M21 can also be fitted with a silencer and has been adopted by the U.S. Army as a sniper rifle.



03-132-956

NAME Winchester M70 African
TYPE American rifle
DATE ADOPTED 1956
CAL 11.6x63.5mmB
LENGTH 107.9cm
MUZZLE VEL 2130 fps
WT (EMPTY) 3.856kg
WT LOADED) 4.021kg
EFF RNG 600m
MAX RNG 5185m
TYPE OF FIRE Bolt action repeater
RATE OF FIRE (SS) 12 rpm
FEED DEVICE 3 round internal magazine
FEED DEVICE WT (3 rounds) .165kg
BASIC LOAD 20 rounds
LOAD WT 1.1kg

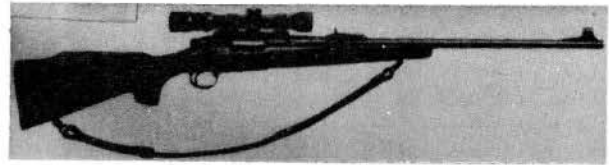
This rifle was the first weapon chambered for the .458 Winchester Magnum cartridge. The stock of the rifle is especially reinforced to withstand the recoil of the powerful magnum round. Though a telescopic sight can be fitted, the African is normally used with the simple iron sights that come with the weapon. The .458 Magnum cartridge is more than powerful enough to handle the largest game including elephant and other dangerous game.



03-132-957
 NAME M16A1
 TYPE American rifle
 DATE ADOPTED 1957
 CAL 5.56x45mm
 LENGTH 99cm
 MUZZLE VEL 3280 fps
 WT (EMPTY) 3.18kg
 WT LOADED) 3.635kg (w/30 round mag)
 EFF RNG 400m
 MAX RNG 2653m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 45 rpm (A) 150 rpm (CYCLIC) 800 rpm
 FEED DEVICE 20, 30, or 40 round box magazine
 FEED DEVICE WT (20 round) .318kg, (30 round) .455kg, (40 round) .74kg
 BASIC LOAD 6-30 round magazines (180 rounds)
 LOAD WT 2.73kg

Developed from the earlier AR-10, the M16A1 is now the standard rifle for the U.S. military. The design of the M16A1 is such that gas from the fired round is allowed into the receiver to operate the action. Due to this type of operation, the M16A1 must be cleaned on a regular basis. The manufacturing tolerances of the M16A1 also require regular maintenance of the weapon and with this maintainance, the weapon has a high degree of reliability. The civilian version of the M16A1 is known as the AR-15. The only essential difference between the weapons is that the AR-15 cannot fire fully automatically. The flash suppressor of the M16A1 allows the weapon to fire standard 22mm tail rifle grenades.

it suitable for only the largest of the big-game animals, elephant and rhino. The size of the bullet allows it to have excellent stability over long ranges but it was intended for relatively close-in shooting.



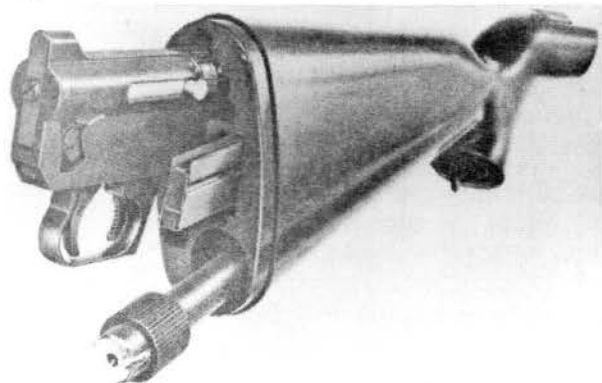
03-132-960
 NAME Remington M700
 TYPE American rifle
 DATE ADOPTED 1960
 CAL 7.62x51mm
 LENGTH 105.5cm
 MUZZLE VEL 2800 fps
 WT (EMPTY) 3.06kg (w/scope)
 WT LOADED) 3.185kg
 EFF RNG 1000m
 MAX RNG 3100m
 TYPE OF FIRE Bolt action repeater
 RATE OF FIRE (SS) 10 rpm
 FEED DEVICE 5 round integral magazine
 FEED DEVICE WT (5 rounds) .125kg
 BASIC LOAD 120 rounds
 LOAD WT 3 kg

This sniper weapon is a slightly modified version of the Remington M700 hunting rifle. Used with a telescopic sight, the weapon feeds from an internal magazine that has to be singly loaded with loose rounds of ammunition, slowing the rate of fire considerably. This slow rate of fire is not considered a major fault in a sniper weapon. The M700 is in use with the U.S. Marines.



03-132-958
 NAME .460 Weatherby Mk V
 TYPE American rifle
 DATE ADOPTED 1958
 CAL 11.6x74mmB
 LENGTH 118.1cm
 MUZZLE VEL 2750 fps
 WT (EMPTY) 4.76kg
 WT LOADED) 4.955kg
 EFF RNG 1000m
 MAX RNG 6692m
 TYPE OF FIRE Bolt action repeater
 RATE OF FIRE (SS) 8 rpm
 FEED DEVICE 3 round internal magazine
 FEED DEVICE WT (3 rounds) .195kg
 BASIC LOAD 24 rounds
 LOAD WT 1.56kg

Developed in the 1950's as a big-game rifle, the Mark V Weatherby has a very large receiver, specially reinforced stock, and integral muzzle brake to help reduce recoil. The reason for these characteristics is that the weapon is designed to fire the .460 Weatherby magnum cartridge, the most powerful commercial cartridge ever produced. The power of this rifle makes



03-132-960a
 NAME AR-7 Explorer
 TYPE American rifle
 DATE ADOPTED 1960
 CAL 5.7x17.5mmR
 LENGTH 87.6cm
 MUZZLE VEL 1285 fps
 WT (EMPTY) 1.13kg
 WT LOADED) 1.19kg

EFF RNG 75m
 MAX RNG 1375m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE (SS) 48 rpm
 FEED DEVICE 8 round box magazine
 FEED DEVICE WT .06kg
 BASIC LOAD 6 magazines (48 rounds)
 LOAD WT .36kg

This unique rifle was developed from the AR-5A bolt action survival rifle designed for the air force. The AR-7 was intended for use by campers, hikers, and pilots as a light-weight survival weapon. The AR-7 will break down into 4 parts: action, barrel, magazine, and stock, with all parts fitting inside the waterproof, plastic stock. Another advantage of the AR-7 is that it will float in water whether assembled or inside the stock.



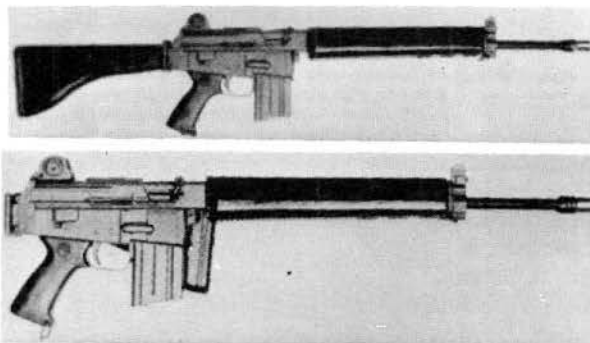
03-132-965
 NAME Stoner M23 Carbine
 NAME (NATIVE) Stoner M63A Carbine
 TYPE American rifle
 DATE ADOPTED 1965
 CAL 5.56x45mm
 LENGTH 68/90cm
 MUZZLE VEL 3002 fps
 WT (EMPTY) 3.7kg
 WT LOADED) 4.24kg
 EFF RNG 300m
 MAX RNG 2428m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 90 rpm (CYCLIC) 750 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .54kg
 BASIC LOAD 8 magazines (240 rounds)
 LOAD WT 4.32kg

This carbine version of the Stoner M63A weapon system is also referred to as the Stoner submachinegun. The M23 carbine uses the basic receiver group, carbine barrel, folding stock, magazine adapter, forestock, and rifle rearsight assembly from the 63A system. Due to the design of the Stoner system, the carbine variant is somewhat heavier than contemporary weapons. This extra weight is due to some of the carbine parts having to be made heavy enough to stand up to the stress when they are used in the machinegun variants. Though the M23 cannot fire rifle grenades, the weapon can mount a bayonet.



03-132-965a
 NAME Stoner M22 Rifle
 NAME (NATIVE) Stoner M63A Rifle
 TYPE American rifle
 DATE ADOPTED 1965
 CAL 5.56x45mm
 LENGTH 102.2cm
 MUZZLE VEL 3248 fps
 WT (EMPTY) 3.7kg
 WT LOADED) 4.24kg
 EFF RNG 400m
 MAX RNG 2627m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 40 rpm (A) 90 rpm (CYCLIC) 750 rpm
 FEED DEVICE 30 round box magazine
 FEED DEVICE WT .54kg
 BASIC LOAD 8 magazines (240 rounds)
 LOAD WT 4.32kg

This is the assault rifle variant of the Stoner M63A Weapons System. The M22 uses the basic receiver group, rifle barrel, rifle sight assembly, magazine adapter, and forestock of the M63A system. An interesting point on the M63A system is the way the same basic receiver group is used for the rifle/carbine versions, both fire from closed bolt, as well as the machinegun variants which fire from open bolt. With the receiver oriented with the gas system at the top, the trigger mechanism allows the bolt to go forward and releases a hammer to strike the firing pin. With the receiver oriented with the gas system at the bottom, the trigger mechanism holds the bolt operating rod to the rear to allow the chamber to cool preventing "cook-off." In the machinegun variants, the bolt has a fixed firing pin which fires a cartridge as soon as the bolt locks forward. Though an innovative system, the Stoner 63A was not adopted by any major military group and is rarely seen any longer.



03-132-965b
 NAME AR-18 (AR-180)
 TYPE American rifle
 DATE ADOPTED 1965
 CAL 5.56x45mm
 LENGTH 73.6/94cm
 MUZZLE VEL 3248 fps
 WT (EMPTY) 3.17kg
 WT LOADED) 3.62kg
 EFF RNG 460m
 MAX RNG 2653m
 TYPE OF FIRE Selective (AR-180 Semiautomatic only)
 RATE OF FIRE (SS) 40 rpm (A) 80 rpm (CYCLIC) 800 rpm
 FEED DEVICE 20, 30, or 40 round box magazine
 FEED DEVICE WT (20 round) .312kg, (30 round) .45kg, (40 round) .74kg

BASIC LOAD 8-30 round magazines (240 rounds)
LOAD WT 3.6kg

The AR-18 was originally developed by Armalite as a replacement for the M16A1 (or AR-15 as it was first known). Due to the large amounts of M16A1s already available, the U.S. Army did not adopt the AR-18 and it is now being sold by Armalite on the world's arms market. The weapon has a simpler and more efficient action than that of the M16A1. The stock on the AR-18 folds to the side allowing for a much more compact weapon. The AR-180 is the civilian version of the AR-18 and it is not capable of automatic fire.



03-132-966

NAME Gyrojet Carbine
TYPE American rocket rifle
DATE ADOPTED 1966
CAL 13x71mm
LENGTH 66cm
MUZZLE VEL 1600 fps
WT (EMPTY) 1.36kg
WT LOADED 1.653kg
EFF RNG 300m
MAX RNG 2500m
TYPE OF FIRE Semiautomatic
RATE OF FIRE (SS) 36 rpm
FEED DEVICE 6 round box magazine
FEED DEVICE WT .293kg
BASIC LOAD 18 magazines (108 rounds)
LOAD WT 3.763kg

The Gyrojet rocket carbine is unique in the rifle field. Based on the same pattern as the Gyrojet Mk II pistol (see 01-132-966), the carbine has a longer barrel and special removable magazine. The longer barrel of the carbine does not add to the final velocity of the fired round as the round is a self-propelled rocket. The version shown above uses a lengthened version of the standard (pistol) round. There is also a carbine which fires the standard pistol round. The different data for the 13x36mm Gyrojet carbine is shown below:

CAL 13x36mm
WT (LOADED) 1.569kg
MUZZLE VEL 1250 fps
EFF RNG 200m
MAX RNG 2000m
FEED DEVICE WT .209kg
BASIC LOAD WT 3.763kg



03-132-973

NAME M19 SPIW
NAME (NATIVE) Special Purpose Individual Weapon M19
TYPE American Experimental rifle
DATE ADOPTED 1973
CAL XM645-Flechette
LENGTH 107.6cm
MUZZLE VEL 4850 fps
WT (EMPTY) 2.68kg
WT LOADED 3.18kg
EFF RNG 800m
MAX RNG +2500m
TYPE OF FIRE Selective, burst control
RATE OF FIRE (SS) 45 rpm (A) 180 rpm (CYCLIC) 600 rpm (1800 rpm Burst)
FEED DEVICE 50 round box magazine
FEED DEVICE WT .5kg
BASIC LOAD 6 magazines (300 rounds)
LOAD WT 3kg

This is an experimental rifle resulting from developments rising from the Future Rifle Program of the 1960's. The weapon is of the "Serial rifle" section of the program. The serial rifle was intended to increase the probability of striking a target by firing a series of rounds for each pull of the trigger. The series or burst of rounds would be fired at a very high cycle rate of fire with a low recoil.

To achieve the low recoil, the M19 fires fin stabilized steel "needles" or flechettes. The flechettes are carried in a fiberglass sabot that peels away when the "bullet" leaves the muzzle. Since the round is fin stabilized the weapon has no rifling and a smooth bore barrel. The very high velocity flechettes cause massive wounding due to the needles "hooking" in the flesh. A unique aspect of the flechettes is that they will penetrate "bulletproof" Kevlar vests by penetrating between the weave.



03-132-973a

NAME MINI 14
TYPE American rifle
DATE ADOPTED 1973
CAL 5.56x45mm
LENGTH 94.6cm
MUZZLE VEL 3297 fps
WT (EMPTY) 2.9kg
WT LOADED 3.35kg (w/30 round mag.)
EFF RNG 300m
MAX RNG 2740m
TYPE OF FIRE Semiautomatic
RATE OF FIRE (SS) 40 rpm
FEED DEVICE 20 or 30 round box magazine
FEED DEVICE WT (20 round) .2kg, (30 round) .45kg
BASIC LOAD 8-30 round magazines (240 rounds)
LOAD WT 3.6kg

The MINI 14 is a combination of ideas from several weapons. Primarily sold on the civilian market, the MINI 14 has not been adopted by any major military force although a selective fire version is available. Having the general configuration of the M14 rifle, the

MINI 14 is a very light and reliable weapon for its caliber.



03-132-973b
NAME TRW-LMR
NAME (NATIVE) TRW Low Maintenance Rifle
TYPE American experimental rifle
DATE ADOPTED 1973
CAL 5.56x45mm
LENGTH 87.1cm
MUZZLE VEL 3248 fps
WT (EMPTY) 3.3kg
WT LOADED) 3.64kg
EFF RNG 460m
MAX RNG 2425m
TYPE OF FIRE Full automatic
RATE OF FIRE (A) 120 rpm (CYCLIC) 450 rpm
FEED DEVICE 30 round box magazine
FEED DEVICE WT .34kg
BASIC LOAD 8 magazines (240 rounds)
LOAD WT 2.72kg

The TRW-LMR was designed and built experimentally as a Low Maintenance Rifle. The LMR is built of corrosion resistant materials and has special finishes to minimize required cleaning. The weapon is gas operated and designed so that recoil and operating forces do not move the weapon off target. The rate of fire is relatively slow to allow for readjustment of fire between shots. A special, semi-permanent dry lubrication is used on the LMR which helps it to work well in any environment from tropical to arctic. An extremely simple weapon, the LMR is a robust and accurate design. The design also makes use of a number of standard components such as the M60 trigger mechanism and M16A1 magazine.



03-132-982
NAME SATS-G3
NAME (NATIVE) Short Assault Tactical System-G3
TYPE American rifle
DATE ADOPTED 1982
CAL 7.62x51mm
LENGTH 78.7cm
MUZZLE VEL 2650 fps
WT (EMPTY) 3.63kg
WT LOADED) 4.38kg
EFF RNG 400m
MAX RNG 3405m
TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 400 rpm
FEED DEVICE 20 round box magazine
FEED DEVICE WT .75kg
BASIC LOAD 6 magazines (120 rounds)
LOAD WT 4.5kg

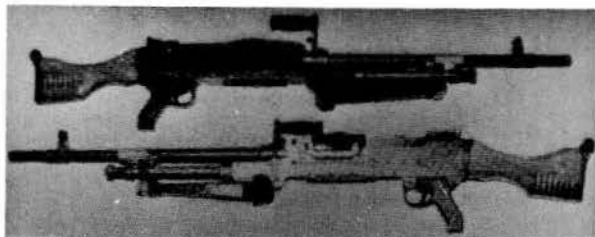
This weapon is a modified G3 rifle. The modification is done with a conversion kit which replaces the buttstock and portions of the trigger mechanism to convert the G3 to a bull pup configuration (see also XL-64 Individual Weapon, 03-131-976). This bull pup layout uses the magazine as the pistol grip but still leaves the controls in their original locations. The SATS conversion is also being made available for weapons other than the G3 and is designed to appeal primarily to the "survivalist" or "adventurer" market.

MACHINEGUNS

The development of the modern machinegun started in the 1860's with the invention of a manually operated repeating weapon, the Gatling gun by Dr. Richard J. Gatling. The Gatling used a number of barrels rotating around a central axis, powered by a hand crank to feed, load, fire, extract, and eject ammunition. Though the Gatling was not used in the same manner as modern automatic weapons, it was an excellent, practical design. Quickly outmoded by fully automatic weapons, the Gatling gun was reborn when the armed services were looking for a very high rate of fire weapon. The modern Minigun and other multibarreled weapons are based on Dr. Richard Gatling's patents of 1860 and later.

Hiram Maxim developed the first true automatic weapon that was successful. In a true automatic, the power of the cartridge is used to operate the action with the gun firing as long as it has ammunition and the trigger is held back. The Maxim gun and its derivatives were large, heavy, watercooled weapons fed from flexible belts of ammunition and capable of long periods of sustained firing.

During WWI, the invention of the Lewis gun and BAR introduced the concept of the light machinegun. A light machinegun is one that can be carried and operated by one man, as compared to the heavy weapons which require a crew. During the 1930's and in WWII, the Germans introduced the concept of the general purpose machinegun with their MG-34 and 42. The general purpose machinegun can be used as a light machinegun or mounted on a tripod for sustained fire as a medium or heavy machinegun. All of the world's armies are presently arming with general purpose machineguns with a trend towards lighter weapons for individual use.



04-011-958
 NAME MAG-58
 NAME (NATIVE) Mitrailleur a Gaz
 TYPE Belgian machinegun
 DATE ADOPTED 1958
 CAL 7.62x51mm
 LENGTH 125.5cm
 MUZZLE VEL 2756
 WT (EMPTY) 10.85kg
 WT (LOADED) 12.32kg
 WT (MOUNTED) 22.82kg
 EFF RNG 1200m
 MAX RNG 3100m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 250 rpm (CYCLIC) 800 rpm
 FEED DEVICE 50 round belt
 FEED DEVICE WT 1.47kg
 BASIC LOAD 6 belts (300 rounds)
 LOAD WT 8.82kg

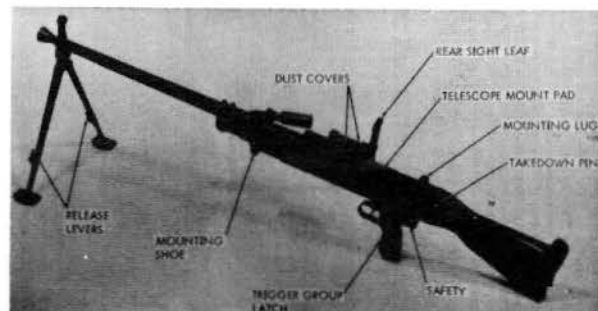
This is a very popular weapon developed in Belgium and adopted by over 20 countries including the U.S.A. The MAG-58 is a very rugged weapon with the capability of working well in almost any environment. Based on the gas action and locking system of the BAR, the MAG-58 also uses the excellent belt feed system and trigger mechanism of the MG-42. Though a bit heavy for a light machinegun, the MAG-58 has seen great success as a weapon with its adoption worldwide. This popularity has caused some interesting developments. With the L7A1 version of the MAG-58 in the British army and the MAG-FN used by the Argentinian military, the MAG-58 was facing itself in the recent Falkland islands conflict.



04-011-974
 NAME Minimi (M249 Squad Automatic Weapon)
 NAME (NATIVE) Mitrailleur FN Calibre 5.56mm (Minimi)
 TYPE Belgian machinegun
 DATE ADOPTED 1974
 CAL 5.56x45mm
 LENGTH 105.2cm
 MUZZLE VEL 2940 fps
 WT (EMPTY) 7.031kg
 WT (LOADED) 9.933kg
 EFF RNG 500m

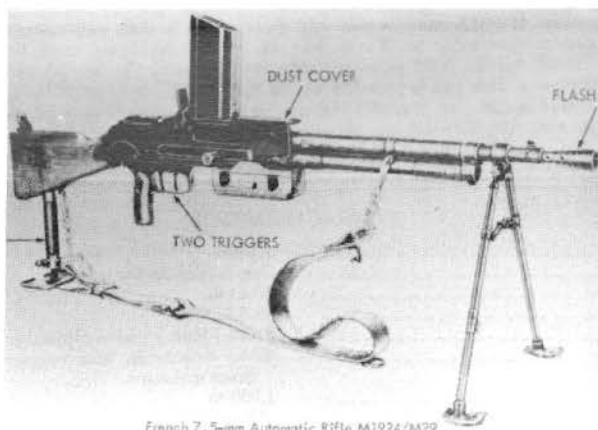
MAX RNG 2378m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 150 rpm, (CYCLIC) 750 or 950 rpm
 FEED DEVICE 30 round magazine or 200 round belt in magazine
 FEED DEVICE WT (30 round) .455kg, (200 round) 2.903kg
 BASIC LOAD 3 - 200 round belts (600 rounds)
 LOAD WT 8.709kg

The Minimi is the basic weapon recently adopted by the U.S. Army as their new squad automatic weapon. Developed to utilize the maximum potential of the 5.56x45mm round the Minimi has some characteristics unique to itself. The weapon can use belted 5.56mm ammunition supplied in either 100 or 200 round containers which will mount underneath the weapon. The belt containers have a transparent back that allows the gunner to quickly see how much ammunition is left. The standard M16A1 magazines may also be used by the Minimi as it has both an integral magazine feed and belt feed. The careful design of the Minimi also minimises jamming. The gas cylinder of the Minimi has a normal and an adverse condition setting. The normal setting has the cyclic rate at about 750 rpm with the adverse setting allowing a higher, 950 rpm, rate of fire. The adverse setting is to allow more gas to operate the action when the weapon is very dirty or fouled.



04-029-959
 NAME Vz-59
 NAME (NATIVE) Kulomet vz 59
 TYPE Czechoslovakian machinegun
 DATE ADOPTED 1959
 CAL 7.62x54mmR
 LENGTH 111.6cm
 MUZZLE VEL 2723 fps
 WT (EMPTY) 8.67kg
 WT (LOADED) 10.05kg
 WT (MOUNTED) 20.01kg
 EFF RNG 1000m (1370m mounted)
 MAX RNG 4800m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 150 rpm (CYCLIC) 800 rpm
 FEED DEVICE 50 round belt
 FEED DEVICE WT 1.38kg
 BASIC LOAD 6 belts (300 rounds)
 LOAD WT 8.28kg

This is the standard machinegun in the Czech military. The Vz-59 is an upgraded version of earlier Czech machineguns and is chambered for the long range 7.62x54mmR round. There is a version of the Vz-59, the Vz-59N, which is chambered for the 7.62x51mm NATO round. The Vz-59N is designed for sales to western countries.



French 7.5-mm Automatic Rifle M1924/M29

04-037-929

NAME Model 24/29

NAME (NATIVE) Fusil Mitrailleur Modele 1924/29

TYPE French machinegun

DATE ADOPTED 1929

CAL 7.5x54mm

LENGTH 108.2cm

MUZZLE VEL 2789 fps

WT (EMPTY) 9.24kg

WT (LOADED) 10.88kg

EFF RNG 800m

MAX RNG 3000m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 52 rpm (A) 125 rpm (CYCLIC) 500 rpm

FEED DEVICE 25 round box magazine

FEED DEVICE WT 1.64kg

BASIC LOAD 6 magazines (150 rounds)

LOAD WT 9.84kg

Developed by France after WWI, the Model 24 machinegun was released for service before being fully developed. It was found to have a habit of exploding which did not thrill the troops assigned to it. Modified in 1929, the new model 24/29 saw service with the French military through WWII and into Indo-China. The select-fire arrangement allows for the front trigger to be used for semiautomatic fire only, while the rear trigger is for full automatic fire.



04-037-952

NAME AAT-52

NAME (NATIVE) Arme Automatique Transformable Modele 52

TYPE French machinegun

DATE ADOPTED c. 1952

CAL 7.5x54mm

LENGTH 98/114.5cm

MUZZLE VEL 2756 fps

WT (EMPTY) 10.7kg

WT (LOADED) 12.098kg

WT (MOUNTED) 19.248kg

EFF RNG 800m

MAX RNG 3000m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 150 rpm (CYCLIC) 700 rpm

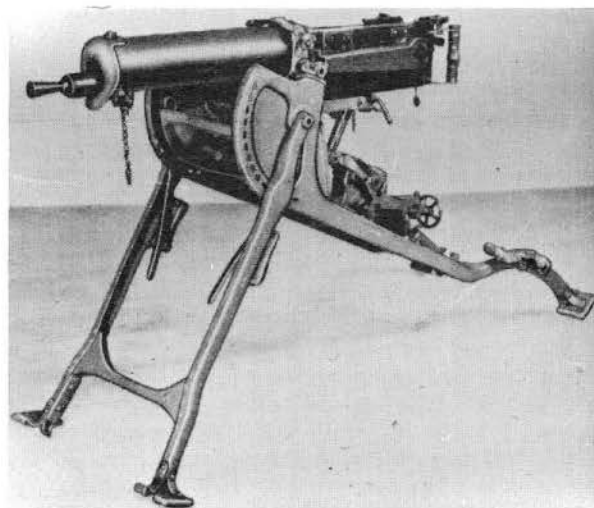
FEED DEVICE 50 round belt

FEED DEVICE WT 1.398kg

BASIC LOAD 6 belts (300 rounds)

LOAD WT 8.388kg

The AAT-52 is presently the standard machinegun of the French military. Using the blowback system of operation, the AAT-52 is very rough on the ammunition it fires. Cartridges have a tendency to be ripped in half when fired, leaving the neck portion in the chamber, jamming the gun. It is interesting to note that with an abundance of excellent designs to choose from, the French insisted on developing a native design which barely works.



04-040-908

NAME MG-08

NAME (NATIVE) Maschinengewehr 08

TYPE German machinegun

DATE ADOPTED 1908

CAL 7.92x57mm

LENGTH 117cm

MUZZLE VEL 2925 fps

WT (EMPTY) 18.4kg (w/water 26.54kg)

WT (LOADED) 33.08kg (w/water)

WT (MOUNTED) 66.08kg

EFF RNG 1100m (3000m indirect)

MAX RNG 4572m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 200 rpm (CYCLIC) 400 rpm

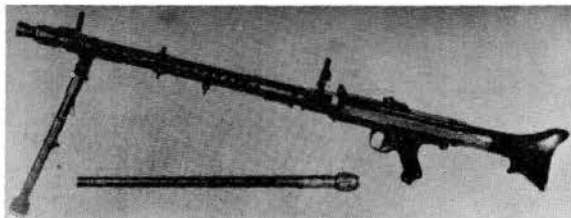
FEED DEVICE 250 round fabric belt

FEED DEVICE WT 6.54kg

BASIC LOAD 5 belts (1250 rounds)

LOAD WT 32.7kg

The MG-08 was the first machinegun to be issued on a wide scale to any army. Because of their advanced thinking and application of machineguns, the German army entered WWI with a distinct advantage over most other armies. A modified Maxim design, the MG-08 was issued with a large "sledge" mount which added greatly to the weight of the emplaced weapon. With a water jacket, 4 liter capacity, cooling the barrel, the MG-08 quickly introduced a stalemate in the trench warfare of WWI.



04-040-934
 NAME MG-34
 NAME (NATIVE) Maschinengewehr Modell 34
 TYPE German machinegun
 DATE ADOPTED 1934
 CAL 7.92x57mm
 LENGTH 122cm
 MUZZLE VEL 2475 fps
 WT (EMPTY) 12kg
 WT (LOADED) 13.5kg
 WT (MOUNTED) 32.69kg
 EFF RNG 800m (mounted 2000m)
 MAX RNG 2515m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 60 rpm (A) 200 rpm (CYCLIC) 900 rpm
 FEED DEVICE 50 round metallic belt
 FEED DEVICE WT 1.5kg
 BASIC LOAD 8 belts (400 rounds)
 LOAD WT 12kg

The MG-34 was the first of the general purpose machineguns. Developed to re-arm the German military after WWI, the MG-34 was very carefully built with high tolerance and smoothly finished parts. Early MG-34s had a trigger arrangement where pressure on the top of the trigger produced semiautomatic fire, with pressure on the lower part of the trigger causing full automatic fire. Some later models of the MG-34 did not have the rocking trigger and were only capable of full automatic fire.



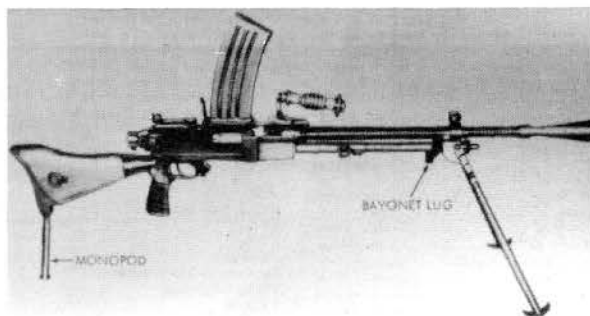
04-040-942
 NAME MG-42
 NAME (NATIVE) Maschinengewehr Modell 42
 TYPE German machinegun
 DATE ADOPTED 1942
 CAL 7.92x57mm
 LENGTH 122cm
 MUZZLE VEL 2625 fps
 WT (EMPTY) 13.1kg
 WT (LOADED) 11.899kg (w/50 rounds)
 WT (MOUNTED) 32.29kg
 EFF RNG 800m (mounted 2000m)
 MAX RNG 2515m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 150 rpm (CYCLIC) 1200 rpm
 FEED DEVICE 50 round metallic belt
 FEED DEVICE WT 1.5kg
 BASIC LOAD 8 belts (400 rounds)
 LOAD WT 12kg

Developed as a replacement for the MG-34, the MG-42 was designed with mass production in mind. The MG-42 is considered by many to be the best machinegun design to come out of WWII. Built mostly of stampings, the MG-42 has since been adopted by the modern German army as the MG-3, chambered in 7.62x51mm NATO.



04-041-972
 NAME HK-21
 NAME (NATIVE) Heckler & Koch Maschinengewehr HK21
 TYPE German machinegun
 DATE ADOPTED c.1972
 CAL 7.62x51mm
 LENGTH 102.1cm
 MUZZLE VEL 2625 fps
 WT (EMPTY) 7.92kg
 WT (LOADED) 8.67kg (7.62x51mm w/20 round mag.)
 EFF RNG (7.62x51mm) 1200m, (7.62x39mm) 800m, (5.56x45mm) 600m
 MAX RNG (7.62x51mm) 3200m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 200 rpm (CYCLIC) 850 rpm
 FEED DEVICE metallic belt or 20 round box magazine (7.62x51mm only), or 70 round drum
 FEED DEVICE WT varies for belts, 20 round mag .75kg

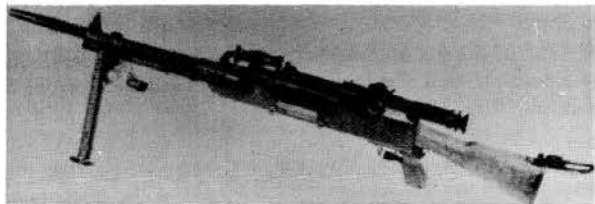
This is the light machinegun member of the Heckler and Koch weapons family. By changing the barrel, bolt, and bolt feed plate, the HK-21 can fire either 7.62x51mm NATO, 5.56x45mm or 7.62x39mm ammunition. With the belt feed mechanism replaced with a magazine feed, the HK-21 can use the same magazine as the H & K G3 rifle.



04-062-939
 NAME Type 99
 TYPE Japanese machinegun
 DATE ADOPTED 1939
 CAL 7.7x56mmR
 LENGTH 118.7cm
 MUZZLE VEL 2224 fps
 WT (EMPTY) 10.5kg
 WT (LOADED) 11.87kg
 EFF RNG 700m
 MAX RNG 3475m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 150 rpm (CYCLIC) 850 rpm

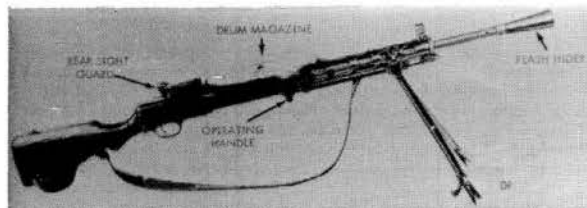
FEED DEVICE 30 round box magazine
 FEED DEVICE WT 1.37kg
 BASIC LOAD 8 magazines (240 rounds)
 LOAD WT 10.96kg

With the adoption of the Arisaka M99 rifle and the 7.7x58mm round, the Japanese military developed the Type 99 machinegun to fire the same round. Developed from an earlier design, the Type 99 was the most efficient native machinegun used by Japan during WWII. One very unusual feature of the Type 99 is the fitting of a long sword bayonet below the barrel. Though the idea of using a machinegun with bayonet for close combat is definitely unusual, the long weighty bayonet would have helped hold the barrel down on automatic fire.



04-062-962
 NAME Type 62
 NAME (NATIVE) 62 Shiki Kikanju
 TYPE Japanese machinegun
 DATE ADOPTED 1962
 CAL 7.62x51mm
 LENGTH 120.5cm
 MUZZLE VEL 2800 fps
 WT (EMPTY) 10.68kg
 WT (LOADED) 13.62kg
 WT (MOUNTED) 20.42kg
 EFF RNG 800m
 MAX RNG 3100m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 150 rpm (CYCLIC) 650 rpm
 FEED DEVICE 100 round belt
 FEED DEVICE WT 2.94kg
 BASIC LOAD 3 belts (300 rounds)
 LOAD WT 8.82kg

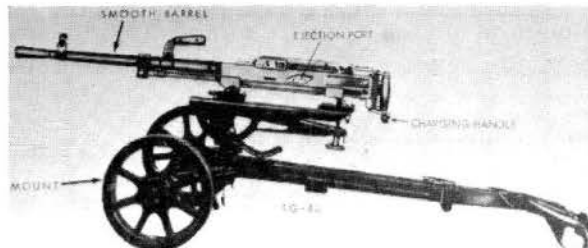
When Japan organized a Self Defense force in the early 1960's, they adopted a new machinegun designed in Japan. The Model 62 is a somewhat complex weapon that fires the standard 7.62x51mm NATO round. Though complex, the Model 62 is a sturdy design with excellent accuracy.



04-125-928
 NAME DP
 NAME (NATIVE) 7.62 Ruchnoy Pulemyot Degtyaryev
 Pakhotnyi
 TYPE Russian machinegun
 DATE ADOPTED 1928
 CAL 7.62x54mmR
 LENGTH 129cm
 MUZZLE VEL 2760 fps

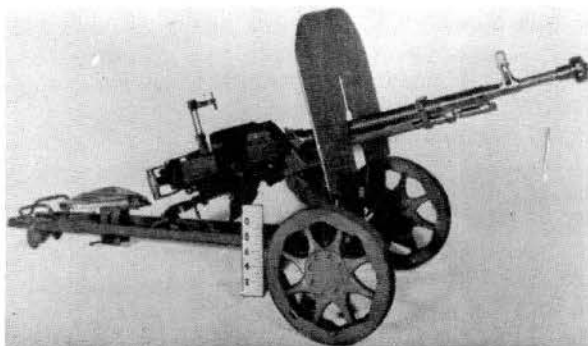
WT (EMPTY) 9.12kg
 WT (LOADED) 11.92kg
 EFF RNG 800m
 MAX RNG 4800m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 90 rpm (CYCLIC) 600 rpm
 FEED DEVICE 47 round pan
 FEED DEVICE WT 2.8kg
 BASIC LOAD 8 pans (376 rounds)
 LOAD WT 22.4kg

The DP was the standard Russian machinegun when they entered WWII. Developed in the early 1930's, the DP was "field tested" during the Spanish Civil War and was modified following that war. The DP was a very simple, sturdy design which was copied by Communist China as the Type 53 and saw action in Vietnam.



04-125-943
 NAME SG-43
 NAME (NATIVE) 7.62mm Stankovyi Pulemyot obr 1943g
 TYPE Russian machinegun
 DATE ADOPTED 1943
 CAL 7.62x54mmR
 LENGTH 112cm
 MUZZLE VEL 2625 fps
 WT (EMPTY) 13.6kg
 WT (LOADED) 22.68kg
 WT (MOUNTED) 36.48kg
 EFF RNG 1000m
 MAX RNG 3200m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 250 rpm (CYCLIC) 650 rpm
 FEED DEVICE 250 round belt
 FEED DEVICE WT 9.08kg
 BASIC LOAD 3 belts (750 rounds)
 LOAD WT 27.24kg

Developed as a replacement for the watercooled heavy machineguns in the Russian military, the SG-43 has a very heavy barrel. With a very rugged and simple design, the SG-43 is still found today in a modified form as the SGM. Though an excellent design, the Russian military continued to use watercooled Maxim guns throughout WWII.



04-125-946

NAME Dsh KM Model 38/46

NAME (NATIVE) 12.7mm Stankovyi Pulemyot Dsh KM
(Degtyaryova, Shpagina Krupnokalibernyi
Modernizirovannyi) obr 1938/46g

TYPE Russian machinegun

DATE ADOPTED 1946

CAL 12.7x108mm

LENGTH 158.8cm

MUZZLE VEL 2822 fps

WT (EMPTY) 35.7kg

WT (LOADED) 46.7kg

WT (MOUNTED) 164.2kg

EFF RNG 2000m

MAX RNG 6415m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 80 rpm (CYCLIC) 575 rpm

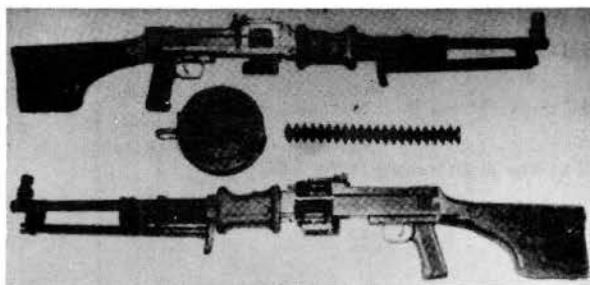
FEED DEVICE 50 round belt

FEED DEVICE WT 11kg

BASIC LOAD 6 belts (300 rounds)

LOAD WT 66kg

The Dsh KM 38/46 is the standard issue heavy machinegun for the Russian military. It is a modified version of the earlier Dsh K 38. The Dsh KM 38/46 fires a very heavy round slightly larger than the American 12.7x99 round. A simple, tough weapon, as most Russian designs are, the Dsh KM 38/46 is widely used as a light anti-aircraft defense. The mount for the Dsh KM 38/46 is the same as the earlier model and has wheels so that the heavy weapon can be moved with a fair amount of ease by a small crew.



04-125-953

NAME RPD

NAME (NATIVE) Ruchnoi Pulemyot Degtyaryov

TYPE Russian machinegun

DATE ADOPTED 1953

CAL 7.62x39mm

LENGTH 104.1cm

MUZZLE VEL 2410 fps

WT (EMPTY) 6.6kg

WT (LOADED) 9kg

EFF RNG 800m

MAX RNG 3000m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 150 rpm (CYCLIC) 700 rpm

FEED DEVICE 100 round belt w/drum

FEED DEVICE WT 2.4kg

BASIC LOAD 3 drums (300 rounds)

LOAD WT 7.2kg

This was the first machinegun developed to use the 7.62x39mm round. The RPD is belt fed with the belt being held in a drum container which mounts underneath the weapon. The unusual butt design of the RPD is built so that the left hand of the gunner holds the butt solidly against the right shoulder when firing. The RPD

was, at best, an interim weapon and is rapidly being replaced by the RPK.



04-125-954

NAME 14.5mm KPV

NAME (NATIVE) Krupnokalibernyi Pulemyot Vladimirova

TYPE Russian machinegun

DATE ADOPTED 1954

CAL 14.5x114mm

LENGTH 200.6cm

MUZZLE VEL 3280 fps

WT (EMPTY) 49.1kg

WT (LOADED) 75.5kg

WT (MOUNTED) variable

EFF RNG 1100m

MAX RNG 7000m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 150 rpm (CYCLIC) 600 rpm

FEED DEVICE 100 round belt

FEED DEVICE WT 26.4kg

BASIC LOAD 4 belts (400 rounds)

LOAD WT 105.6kg

This very massive machinegun was designed to fire the 14.5mm round developed for the PTRS-41 antitank rifle. The weapon is actually in the small cannon class and is used on several armored vehicles as their primary armament. The KPV is normally found in twin or quadruple trailer mountings for anti-aircraft defense.



04-125-964

NAME RPK

NAME (NATIVE) Ruchnoi Pulemyet Kalashnikov

TYPE Russian machinegun

DATE ADOPTED 1964

CAL 7.62x39mm

LENGTH 103.5cm

MUZZLE VEL 2400 fps

WT (EMPTY) 5kg

WT (LOADED) 6.13kg (w/40 round mag.)

EFF RNG 800m

MAX RNG 2085m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 80 rpm (CYCLIC) 660 rpm

FEED DEVICE 30 or 40 round box magazine, 75 round drum

FEED DEVICE WT (30 round) .85kg, (40 round) 1.13kg, (75 round) 2.1kg

BASIC LOAD 1-drum, 4-40 round magazines (235 rounds)

LOAD WT 6.62kg

This weapon is essentially a modified AK-47 with a longer barrel, bipod, and machinegun buttstock. Developed to replace the RPD, the RPK does not have a belt feed for sustained fire. To allow for more effective use as a machinegun, the RPK has a 40 round box magazine as well as a 75 round drum magazine

available for it. To enhance its use as a squad automatic weapon, the RPK can also use the standard 30 round magazine from the AK-47.



04-125-964a
 NAME PKM (PKMS)
 NAME (NATIVE) Pulemyot Kalashnikova Modernizirovannyi (Stankovy)
 TYPE Russian machinegun
 DATE ADOPTED 1964
 CAL 7.62x54mmR
 LENGTH 116cm
 MUZZLE VEL 2707 fps
 WT (EMPTY) 8.4kg
 WT (LOADED) 9.62kg
 WT (MOUNTED) 17.12kg
 EFF RNG 1000m
 MAX RNG 3600m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 250 rpm (CYCLIC) 650 rpm
 FEED DEVICE 50 round belt
 FEED DEVICE WT 1.22kg
 BASIC LOAD 6 belts (300 rounds)
 LOAD WT 7.32kg

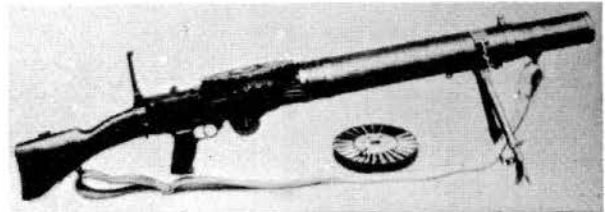
This is the standard machinegun of the Russian military. The PKM uses the 7.62x54mmR round and so has a more complicated feed mechanism due to the rimmed round. The design of the PKM is such that there is relatively little recoil and muzzle climb making the PKM very easy to shoot. The PKM and its variants have replaced the SGM (SG-43) through most of the Russian military.



04-131-912
 NAME .303 in. Vickers Mk I
 TYPE British machinegun
 DATE ADOPTED 1912
 CAL 7.7x56mmR
 LENGTH 115.6cm

MUZZLE VEL 2440 fps
 WT (EMPTY) 15kg (18.2kg w/water)
 WT (LOADED) 24.3kg w/water
 WT (MOUNTED) 47kg
 EFF RNG 3658m
 MAX RNG 4195m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 200 rpm (CYCLIC) 500 rpm
 FEED DEVICE 250 round fabric belt
 FEED DEVICE WT 6.1kg
 BASIC LOAD 5 belts (1250 rounds)
 LOAD WT 30.5kg

This British modification of the Maxim design has performed feats of endurance that are unmatched by other weapons. Adopted in 1912, the Mk I Vickers served as a front line weapon with the British military until 1968, 56 years of service. With the proper, Mk IV tripod mount, the Vickers could be used for accurate indirect fire on targets over three and a half kilometers away. The very strong design and efficient watercooled barrel jacket which used 3.31 liters of water, allowed the Mk I to be fired for extended lengths of time. On August 24, 1916, ten Vickers MkIs fired one belt (250 rounds) short of one million rounds firing continuously over a twelve hour period. One weapon alone fired over 120,000 rounds.



04-131-914
 NAME Lewis Mk I
 TYPE British machinegun
 DATE ADOPTED 1914
 CAL 7.7x56mmR
 LENGTH 128.2cm
 MUZZLE VEL 2440 fps
 WT (EMPTY) 12.25kg
 WT (LOADED) 14.12kg
 EFF RNG 600m
 MAX RNG 4195m
 TYPE OF FIRE Full automatic
 RATE OF FIRE (A) 141 rpm (CYCLIC) 550 rpm
 FEED DEVICE 47 round drum magazine
 FEED DEVICE WT 1.87kg
 BASIC LOAD 3 drums (141 rounds)
 LOAD WT 5.61kg

The Lewis gun was adopted by the British military because production of the Vickers gun could not meet demand. The Lewis gun quickly developed a place for itself as the first light machinegun. Fed from a rotating drum held flat across the receiver top, the Lewis had a complicated action and was prone to a wide variety of stoppages and jams. A bit heavy for ground use, the Lewis remained as the British Light Machinegun until replaced by the simpler Bren gun. The Lewis was very popular as an aircraft weapon and was the first machinegun to be fired from a plane on June 7, 1912.



04-131-938

NAME Bren Mk II

TYPE British machinegun

DATE ADOPTED 1938

CAL 7.7x56mmR

LENGTH 115.6cm

MUZZLE VEL 2440 fps

WT (EMPTY) 10.52kg

WT (LOADED) 11.77kg (w/30 round mag)

EFF RNG 600m

MAX RNG 3000m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 540 rpm

FEED DEVICE 30 round box magazine, 100 round drum

FEED DEVICE WT (30 round) 1.25kg, (100 round) 5.41kg

BASIC LOAD 6-30 round magazines (180 rounds)

LOAD WT 7.5kg

This light machinegun was developed from a Czech design, the Zb30. The Bren replaced the Lewis gun as the British LMG and remains in use to the present day with the British military as the L2A4 chambered for the 7.62x5mm NATO round. The name Bren gun comes from the first two letters of the Czech arsenal at BRuno and the first two letters of the British arsenal at ENfield where it was produced.



04-131-976

NAME 4.85 Light Support Weapon

TYPE British machinegun

DATE ADOPTED 1976

CAL 4.85x49mm

LENGTH 90cm

MUZZLE VEL 3051 fps

WT (EMPTY) 4.68kg

WT (LOADED) 5.26kg

EFF RNG 500m

MAX RNG 3266m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 800 rpm

FEED DEVICE 30 round box magazine

FEED DEVICE WT .584kg

BASIC LOAD 6 magazines (180 rounds)

LOAD WT 3.504kg

This weapon is the companion to the 4.85mm Individual Weapon XL-64 (03-131-976). Developed as a possible replacement for both the Bren and MAG-58 as military section weapons, the LSW has since been rechambered

experimentally in 5.56x45mm. The "bull pup" design of the LSW (see 03-131-976) allows for a compact weapon with a long barrel for accurate distance firing. The LSW may also use the 20 round magazine from the XL-64.



04-132-874

NAME 1874 Gatling gun

TYPE American machinegun

DATE ADOPTED 1874

CAL 11.6x54mmR

LENGTH 124.5cm

MUZZLE VEL 1315 fps

WT (EMPTY) 90.7kg

WT (LOADED) 94.15kg

WT (MOUNTED) 142.05kg

EFF RNG 800m

MAX RNG 3200m

TYPE OF FIRE Manual, rotating repeater

RATE OF FIRE (SS) 60 rpm (A) 200 rpm (CYCLIC) 400 rpm (Average)

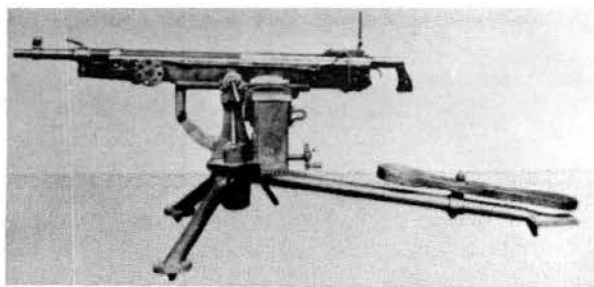
FEED DEVICE 40 round box magazine

FEED DEVICE WT 3.45kg

BASIC LOAD 24 magazines (960 rounds)

LOAD WT 27.6kg

The Gatling gun is considered to be the first successful "machine gun." Developed in 1862 and constantly upgraded, the Gatling is actually a manually operated repeater rather than a true automatic weapon. The model shown is mounted on a tripod rather than the more common wheeled carriage mount. Though the basic design is over a century old, the Gatling gun is still found in the modern military as the basic action behind the high speed Vulcan and Minigun weapon systems. In the Gatling gun, the weapon fires from the turning of a crank, the faster the crank is turned, the higher the rate of fire.



04-132-914

NAME Colt M1895/1914 "Potato-digger"

TYPE American machinegun

DATE ADOPTED 1914

CAL 7.62x63mm

LENGTH 103.5cm

MUZZLE VEL 2800 fps

WT (EMPTY) 15.87kg

WT (LOADED) 22.765kg

WT (MOUNTED) 50.565kg

EFF RNG 1200m

MAX RNG 3155m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 150 rpm (CYCLIC) 480 rpm

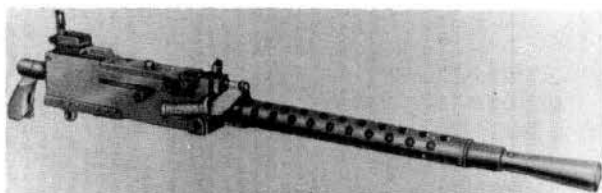
FEED DEVICE 250 round fabric belt

FEED DEVICE WT 6.895kg

BASIC LOAD 4 belts (1000 rounds)

LOAD WT 27.58kg

This weapon was the first true automatic weapon adopted by the U.S. military. A Browning design subsequently manufactured by Colt, the Model 95/14 was used by both the Navy and Army although the Army preferred the Gatling gun. The Model 95/14 was most commonly known as the "potato-digger" due to the piston lever swinging underneath the weapon when it was fired. This piston lever prevented the Colt from being mounted low to the ground without a trench first being dug to clear the swinging arm.



04-132-922

NAME Browning M1919A4

TYPE American machinegun

DATE ADOPTED 1922

CAL 7.62x63mm

LENGTH 104.4cm

MUZZLE VEL 2800 fps

WT (EMPTY) 14.06kg

WT (LOADED) 21.86kg (w/metallic belt)

WT (MOUNTED) 28.21kg

EFF RNG 1000m

MAX RNG 3660m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 120 rpm (CYCLIC) 500 rpm

FEED DEVICE 250 round metallic or fabric belt

FEED DEVICE WT (metallic) 7.8kg, (fabric) 6.895kg

BASIC LOAD 3 belts (750 rounds)

LOAD WT 23.4 (Met.)

A need for a lighter version of the watercooled M1917A1 Browning was felt by the U.S. Army and the

M1919A4 was developed as a relatively light machinegun to fill the need. Essentially the same as the earlier design, the M1919A4 has a perforated jacket around a heavy barrel and a much simpler tripod to allow it to be quickly put into action. The M1919A4 does not have the capacity for sustained fire as the earlier Browning M1917A1 did but is just as rugged in design. The quality of the weapon is demonstrated by the fact that it is still in use in some of the world's armies, most notably the Canadian and Israeli militaries.



04-132-933

NAME .50 M2HB

TYPE American machinegun

DATE ADOPTED 1933

CAL 12.7x99mm

LENGTH 165.3cm

MUZZLE VEL 2930 fps

WT (EMPTY) 38.1kg

WT (LOADED) 51.15kg

WT (MOUNTED) 70.5kg

EFF RNG 1300m

MAX RNG 6660m

TYPE OF FIRE Selective

RATE OF FIRE (SS) 70 rpm (A) 150 rpm (CYCLIC) 500 rpm

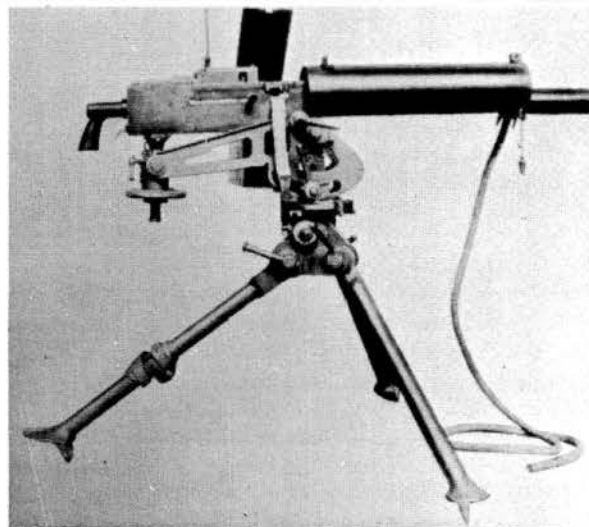
FEED DEVICE 105 round belt

FEED DEVICE WT 13.05kg

BASIC LOAD 3 belts (315 rounds)

LOAD WT 39.15kg

Originally a scaled-up Browning .30 caliber, the .50 is a massive, powerful weapon. Developed as a possible antitank weapon, the ammunition for the M2HB was designed from a WWI German antitank rifle cartridge. Though still found in infantry units, the M2HB is a very heavy weapon requiring three men to carry it for any distance. The M2HB has a very strong and rugged design. Although it is called a heavy machine gun, it is closer to being a semi-portable machine cannon.



04-132-936

NAME Browning M1917A1

TYPE American machinegun

DATE ADOPTED 1936

CAL 7.62x63mm

LENGTH 98.1cm

MUZZLE VEL 2800 fps

WT (EMPTY) 14.8kg (18.6kg w/water)

WT (LOADED) 24.495kg

WT (MOUNTED) 49.495kg

EFF RNG 2286m

MAX RNG 3155m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 250 rpm (CYCLIC) 600 rpm

FEED DEVICE 250 round fabric belt

FEED DEVICE WT 6.895kg

BASIC LOAD 4 belts (1000 rounds)

LOAD WT 27.58kg

This was the first of the Browning machineguns to see wide service. The M1917 saw limited action in WWI but was widely used in a modified form as the M1917A1 in WWII. The water jacket around the barrel as well as the complex tripod mount allows the M1917A1 to fire over the heads of advancing friendly troops for long periods of time. This weapon's basic design is very rugged and it saw use from WWI through the Korean conflict.



04-132-940

NAME BAR M1918A2

NAME (NATIVE) Browning Automatic Rifle M1918A2

TYPE American rifle

DATE ADOPTED 1940

CAL 7.62x63mm

LENGTH 121.5cm

MUZZLE VEL 2680 fps

WT (EMPTY) 8.82kg

WT (LOADED) 9.54kg

EFF RNG 800m

MAX RNG 3200m

TYPE OF FIRE Full automatic, two rates of fire

RATE OF FIRE (A) 120 rpm (CYCLIC) 350/550 rpm

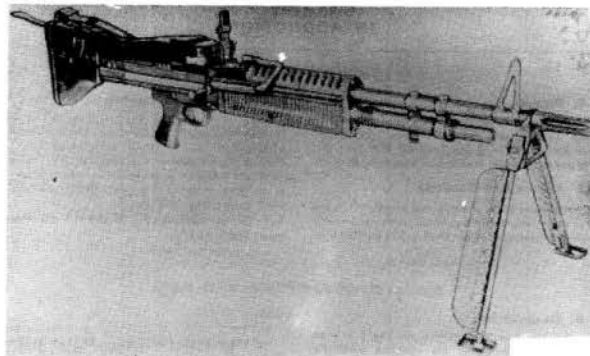
FEED DEVICE 20 round box magazine

FEED DEVICE WT .72kg

BASIC LOAD 12 magazines (240 rounds)

LOAD WT 8.62kg

This heavy rifle was designed by John Browning for use by troops attacking trenches in WWI. Though it saw limited action in WWI, the BAR was used as a squad level automatic weapon in the U.S. military until the adoption of the M14 in the 1950's. The BAR is an odd weapon in that it is too heavy to be properly a rifle but has too small a magazine capacity to be worthwhile as a machinegun. This weapon can be referred to as the predecessor of the modern assault rifle.



04-132-958

NAME M60

TYPE American machinegun

DATE ADOPTED c. 1958

CAL 7.62x51mm

LENGTH 110.5cm

MUZZLE VEL 2800 fps

WT (EMPTY) 10.51kg

WT (LOADED) 13.45kg

WT (MOUNTED) 20.25kg

EFF RNG 1000m

MAX RNG 3100m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 200 rpm (CYCLIC) 550 rpm

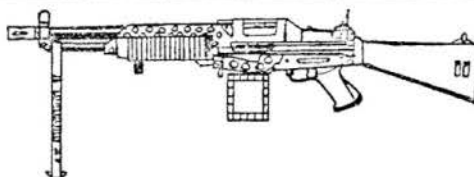
FEED DEVICE 100 round belt

FEED DEVICE WT 2.94kg

BASIC LOAD 5 belts (500 rounds)

LOAD WT 14.7kg

The M60 was developed and adopted by the U.S. military after the Korean war as a replacement for the M1918A2 BAR as well as the Browning .30 caliber machineguns. Both the belt feed mechanism of the MG-42 as well as the gas operating rod system of the FG-42 were incorporated into the M60 design. The barrel of the M60 is able to be quickly changed to give the weapon a sustained fire capability. A drawback of the design is that the entire gas system and bipod are part of the barrel assembly, adding considerably to the weight and cost of the spare barrel assembly (barrel wt. 3.75kg).



04-132-965

NAME Stoner Mk 23 Commando

TYPE American machinegun

DATE ADOPTED 1965

CAL 5.56x45mm

LENGTH 90.3cm

MUZZLE VEL 3000 fps

WT (EMPTY) 4.5kg

WT (LOADED) 6.45kg

WT (MOUNTED) 13.25kg

EFF RNG 700m

MAX RNG 2424m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 150 rpm (CYCLIC) 750 rpm

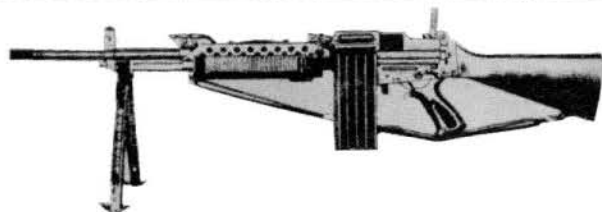
FEED DEVICE 150 round belt

FEED DEVICE WT 1.95kg

BASIC LOAD 4 belts (600 rounds)

LOAD WT 7.8kg

This is the "Commando" machinegun variant of the Stoner 63A weapons system. The Mk 23 uses the basic receiver, belt feed group, buttstock, bipod, machinegun forestock, machinegun sight, and commando barrel from the 63A system. As a very lightweight belt-fed machinegun, the Stoner Mk 23 was very popular among SEAL teams in Vietnam.



04-132-965a

NAME Stoner M207

TYPE American machinegun

DATE ADOPTED 1965

CAL 5.56x45mm

LENGTH 102.2cm

MUZZLE VEL 3280 fps

WT (EMPTY) 5.4kg

WT (LOADED) 7.35kg

WT (MOUNTED) 14.15kg

EFF RNG 800m

MAX RNG 2650m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 150 rpm (CYCLIC) 750 rpm

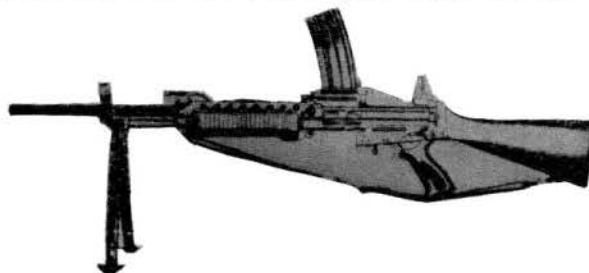
FEED DEVICE 150 round belt

FEED DEVICE WT 1.95kg

BASIC LOAD 4 belts (600 rounds)

LOAD WT 7.8kg

This weapon is the light machinegun variant of the Stoner 63A weapons system. The M207 uses the basic receiver group, belt feed group, machinegun forestock, machinegun sight, buttstock, bipod, and quick change barrel assembly from the 63A system. The Stoner M207 was the first successful 5.56x45mm machinegun but required meticulous cleaning to prevent jamming. The M207 was converted to the Medium machinegun by removing the buttstock, foregrip, and bipod, and by mounting it on the M122 tripod. The M207 was able to be tripod mounted by adding the tripod adapter (wt. .9kg) to the weapon.



04-132-965b

NAME Stoner LMG

TYPE American machinegun

DATE ADOPTED 1965

CAL 5.56x45mm

LENGTH 102.2cm

MUZZLE VEL 3280 fps

WT (EMPTY) 5kg

WT (LOADED) 5.54kg

WT (MOUNTED) 12.34kg

EFF RNG 800m

MAX RNG 2650m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 90 rpm (CYCLIC) 750 rpm

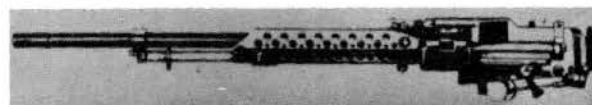
FEED DEVICE 30 round box magazine

FEED DEVICE WT .54kg

BASIC LOAD 8 magazines (240 rounds)

LOAD WT 4.32kg

This light machinegun variant of the Stoner 63A system uses the 30 round magazine of the rifle versions to feed ammunition. The use of the upper feed magazine allows the gunner to remain low, prone on the ground without the long magazine striking the ground. The weapon uses the basic receiver group, magazine and adapter, machinegun sight, machinegun barrel, bipod, buttstock, and machinegun forestock from the M63A weapons system.



04-132-965c

NAME Stoner fixed MG

TYPE American Machinegun

DATE ADOPTED 1965

CAL 5.56x45mm

LENGTH 77.5cm

MUZZLE VEL 3280 fps

WT (EMPTY) 4.62kg

WT (LOADED) 20.52kg

WT (MOUNTED) variable

EFF RNG 800m

MAX RNG 2650m

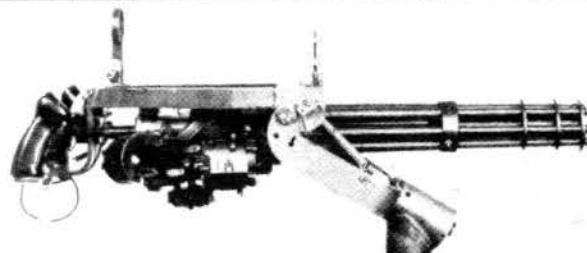
TYPE OF FIRE Full automatic

RATE OF FIRE (A) 150 rpm (CYCLIC) 750 rpm

FEED DEVICE 2000 round belt

FEED DEVICE WT 15.9kg

The fixed machinegun variant of the Stoner 63A system is designed for use on vehicular mounts. The weapon uses the basic receiver group, machinegun barrel, belt feed group, and solenoid and trigger linkage from the 63A system. The solenoid and trigger linkage allow the variant to be electrically triggered from a distance away from the gun.



04-132-967

NAME M134 Minigun

TYPE American machinegun

DATE ADOPTED c. 1967

CAL 7.62x51mm

LENGTH 80 cm

MUZZLE VEL 2850 fps

WT (EMPTY) 15.9kg

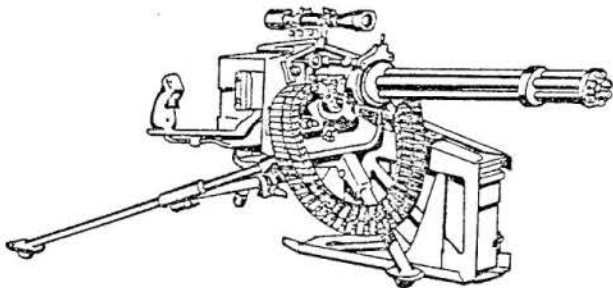
WT (MOUNTED) variable

EFF RNG 800m

MAX RNG 3100m

TYPE OF FIRE Full automatic
RATE OF FIRE (A) 400 rpm (CYCLIC) 6000 rpm
FEED DEVICE 1500 round belt

This weapon is a scaled down, redesigned version of the 20mm M61 Vulcan cannon. The Minigun was originally developed to give helicopters a high rate of fire weapon to saturate a target area. All of the American multibarrel guns are based in principal on the Gatling gun designed over 100 years ago (see M1874 Gatling, 04-132-874). One of the limitations in the use of Miniguns is their very fast rate of ammunition consumption. A normal helicopter load of 4,000 rounds of ammunition can be consumed in 40 seconds of firing. The weapon illustrated is the M134 in a mounting allowing it to be used on a pintle mount for vehicles or in helicopter doorways.



04-132-974
NAME XM-214 6-Pac
TYPE American machinegun
DATE ADOPTED 1974
CAL 5.56x45mm
LENGTH 68.6cm
MUZZLE VEL 3250 fps
WT (EMPTY) 12.3kg
WT (LOADED) 32.25kg (w/power pac)
WT (MOUNTED) 38.6kg
EFF RNG 800m
MAX RNG 2653m
TYPE OF FIRE Full automatic, selective rates
RATE OF FIRE (A) 300/600 rpm (CYCLIC) 400/4000 rpm
FEED DEVICE (1000 rounds) 2-500 round "cassettes"
FEED DEVICE WT (1000 rounds) 13.4kg
BASIC LOAD 2 cassettes (2000 rounds)
LOAD WT 26.8kg

The XM-214 is a smaller version of the M134 Minigun. Chambered for the 5.56x45mm round, the Six-Pac is designed to give a high rate of fire capability to small boats, vehicles, and, from a tripod, ground emplacements. The weapon has a selective rate of fire, either 400 or 4000 rounds a minute. The power source for the weapon is a rechargeable battery pack which has sufficient power to fire 3000 rounds on a single charge. When mounted on a vehicle or boat, the XM-214 can fire using the vehicle's power system.

MISCELLANEOUS WEAPONS

Miscellaneous weapons include shotguns, flamethrowers, and grenade launchers. Weapons that use ammunition larger than small arms ammunition have their rounds detailed following the weapon class.

Ø5A Shotguns :

A shotgun is a smoothbore weapon that shoots a group of projectiles for each round fired. The family includes multibarrel weapons, manually operated "pump" guns, and semiautomatic or automatic actions. The shotgun is a close-in weapon due to the shot spreading quickly and losing velocity within a relatively short range.

Ø5B Flamethrowers :

The flamethrower is a relatively new weapon in its present form. The first use of pressurized flamethrowers was by the German army during WWI. "Torches" advanced technically during WWII when they were developed into man portable, backpack weapons. The flamethrower is probably the most psychologically devastating weapon to face as an infantryman, though the weapon's inherent short range often allows it to be destroyed before it can come into effective range.

Ø5C Grenade launchers :

This group of weapons includes rifle grenade launchers, 40 mm grenade launchers, and smoothbore shell launchers such as tear gas guns. The rifle grenade was developed during WWI to give infantrymen greater range with their grenades. Generally, the standard launcher is a spigot type consisting of a short tube which clamps on the end of a rifle barrel. The tail of the rifle grenade would be slid over the launcher to the proper spacing for the range desired. A special blank cartridge would be loaded into the rifle and the expanding gases would drive the grenade off of the launcher. Many modern rifles have a flash suppressor that is modified to also act as a rifle grenade launcher.

40mm grenade launchers have a rifled barrel for accuracy and can throw a small shell (grenade) with much greater range and accuracy over that of the rifle grenade. Tear gas guns are relatively short range weapons and, since they have no rifling, fire fin stabilized projectiles.



05A-011-970

NAME Browning Automatic Riot Gun

TYPE Belgian shotgun

DATE ADOPTED 1970

LENGTH 101.6cm

WT (EMPTY) 3.7kg

WT (LOADED) 4.1kg

CAL 12 gauge

MUZZLE VEL 1175 fps

EFF RNG 90m

MAX RNG 510m

TYPE OF FIRE Semiautomatic

RATE OF FIRE 15 rpm

FEED DEVICE 5 round tubular magazine

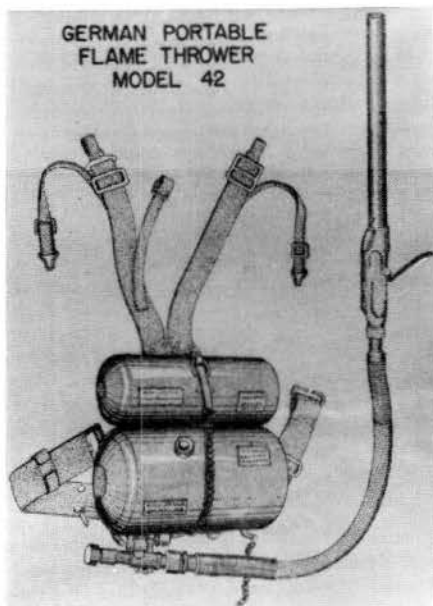
FEED DEVICE WT (5 rounds) .4kg

BASIC LOAD 50 rounds

LOAD WT 4kg

Data is for weapon loaded with Magnum 00 Buckshot

This semiautomatic shotgun was highly praised by the British soldiers who swore by them in the jungles of Malasia. The Browning is a recoil operated weapon and must be braced when fired. Allowing the weapon to move excessively when recoiling could prevent the action from receiving enough recoil energy to function. Regardless of this, the Browning is an excellent design and performs well in poor environments. Unlike their American counterparts who preferred pump action shotguns, the British soldiers developed a taste for the autoloading shotgun and its capacity for firing as quickly as the trigger can be pulled as well as being operated with one hand.



05B-040-942

NAME Flammenwerfer mit Strahlpatrone 41

TYPE German flamethrower

DATE ADOPTED 1942

WT (EMPTY) 13.15kg

WT (LOADED) 18.37kg

EFF RNG 25m

MAX RNG 35m

TYPE OF FIRE Semiautomatic

FEED DEVICE 5.7 liters fuel, 10 rounds igniter cartridges

FEED DEVICE WT (fuel) 5.154kg, (igniter) .066kg

BASIC LOAD 1 load fuel and igniters

LOAD WT 5.22kg

This flamethrower was used by German Engineer teams during WWII. The smaller of the two backpack tanks holds compressed nitrogen with the larger holding straight gasoline. The backpack carrying harness is designed to fit on the german combat harness. The flame gun has an integral magazine that holds 10 blank 9mm ignition cartridges. Each cartridge burns for about 4 seconds, igniting the fuel stream. The large lever on the flame gun controls the fuel flow as well as firing a cartridge. Since an ignition cartridge is always fired when the handle is pulled to fire the flamethrower, the weapon can only fire burning fuel, a "hot" shot, unless the igniter magazine is empty. The Flammenwerfer is able to fire 10 - 1 second "bursts" each of which will burn at 1200 degrees centigrade for about 20 seconds.



05C-040-944

NAME 2.7cm Sturmpistole

TYPE German flare/grenade launcher

DATE ADOPTED 1944

LENGTH 30.5/58.4cm

WT (EMPTY) 2.5kg

WT (LOADED) 2.619kg

CAL 23/27mm

BURST RADIUS 5m

MIN RNG 10m

EFF RNG 90m

MAX RNG 100m

TYPE OF FIRE Single shot, break open

RATE OF FIRE 15 rpm

FEED DEVICE 1 round

FEED DEVICE WT .119kg

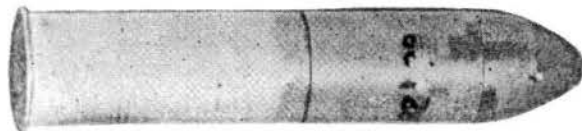
BASIC LOAD 6 rounds

LOAD WT .714kg

Data is for weapon loaded with the 26mm Wurfgranaate Patrone 326

This is a very modified flare pistol fitted with a removable rifled bore sleeve, a folding buttstock, and

adjustable sight. The Sturmpistol is something of an ancestor to the modern M79 grenade launcher but the cartridges for the weapon tended to be too small for much practical use. When used with the number 61 HEAT grenade, the Sturmpistol made a useful, close-in, antitank weapon.



05C-040-944-1
 NAME Wurfgranatpatrone 326
 TYPE High explosive
 WEAPON USED IN Sturmpistol, 05C-040-944
 SIZE 2.5x11.4cm
 WT .119kg
 CAL 26mm
 BURST RADIUS 2m
 FILLER TNT
 FILLER WT .007g
 EQUIVALENT TO TNT (R.E.) 1.0
 MIN RNG 10cm
 EFF RNG 90m
 MAX RNG 100m

This is a small grenade that chambers in the Sturmpistol. The grenade has a bore safe fuse which does not arm until the grenade has travelled about 10 meters. The very small explosive charge prevents this shell from having a useful effect in combat.



05C-040-944-3
 NAME Panzerwurfskörper 42
 TYPE High explosive antitank
 WEAPON USED IN Sturmpistol, 05C-040-944
 SIZE 6.1x18cm
 WT .602kg
 CAL 26mm
 BURST RADIUS 10m
 PENETRATION IN STEEL 12.6cm
 FILLER RDX/TNT
 FILLER WT .153kg
 EQUIVALENT TO TNT (R.E.) 1.00
 EFF RNG 100m
 MAX RNG 135m

This is the German antitank rifle grenade Number 61 modified for use in the Sturmpistol. The grenade will penetrate a fair amount of armor and is one of the more useful grenades made for the Sturmpistol. The Number 61 grenade is fitted with a new tail assembly containing a propellant cartridge and is loaded into the muzzle of the weapon. The fuse arms immediately upon firing and the grenade detonates on impact.



05C-040-944-2
 NAME Wurfkörper 361
 TYPE High explosive
 WEAPON USED IN Sturmpistol, 05C-040-944
 SIZE 5.1x17.5cm
 WT .397kg
 CAL 26mm
 BURST RADIUS 5m
 FUSE DELAY 4 seconds
 FILLER TNT
 FILLER WT .109kg
 EQUIVALENT TO TNT (R.E.) 1.0
 EFF RNG 75m
 MAX RNG 75m

This shell consists of the Eihandgranate 39 (Egg grenade) mounted on a plastic tube containing the propellant charge. The grenade is loaded into the Sturmpistol from the muzzle and is pressed in until it seats. The delay fuse ignites when the grenade is fired. After a 4 second delay, the main charge is detonated at about 75 meters range.



05B-041-972
 NAME HAFLA-35L
 NAME (NATIVE) Flammpatrone, Hand, RP, DM34
 TYPE German disposable flamethrower
 DATE ADOPTED c. 1972
 LENGTH 44.5cm
 WT (LOADED) .625kg
 CAL 35mm
 BURST RADIUS 8m
 MIN RNG 8m
 EFF RNG 70m
 MAX RNG 80m
 TYPE OF FIRE Single shot, disposable
 FEED DEVICE Single round
 FEED DEVICE WT .625kg
 BASIC LOAD 3 rounds
 LOAD WT 1.875kg

This is a disposable, single shot "flamethrower" used by the modern West German Army. The name HAFLA is abbreviated from the German words HAnd FLAmmpatrone, literally "hand flame cartridge." With the rear handle unfolded, the weapon is cocked and the trigger exposed. When fired, the HAFLA launches an incendiary/smoke

cartridge made of Red phosphorus. The projectile automatically detonates between 70 to 80 meters spreading burning phosphorus over an area 10 meters wide and 15 meters long along the line of flight. The projectile will also burst on impact, spreading phosphorus over an 8 meter burst radius. The Red phosphorus burns at 1300 degrees centigrade for 120 seconds. The HAFLA-35L comes packed 3 in a waterproof pouch.



05C-041-972
NAME Heckler & Koch 69A1
TYPE German grenade launcher
DATE ADOPTED c. 1972
LENGTH 43/61cm
WT (EMPTY) 1.8kg
WT (LOADED) 2.027kg
CAL 40mm
MUZZLE VEL 246 fps
BURST RADIUS 5m
MIN RNG 14m
EFF RNG 350m
MAX RNG 400m
TYPE OF FIRE Single shot, break open
RATE OF FIRE 15 rpm
FEED DEVICE Single round
FEED DEVICE WT .227kg
BASIC LOAD 20 rounds
LOAD WT 4.54kg

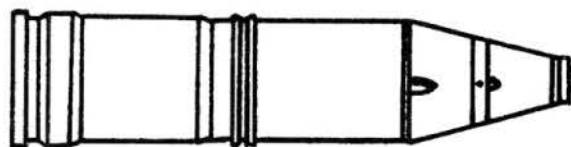
Data is for weapon loaded with the M406 HE round

This is a single shot, break open 40mm grenade launcher built along the lines of the M79. The weapon is fitted with a folding stock and sight and makes a compact package when collapsed. The HK69A1 can fire any of the standard family of 40mm grenades. An earlier version of the HK69A1 is the HK69. The 69 version does not have the folding stock and is fitted with a different sight and mounting lugs. The mounting lugs allow the HK69 to mount under the forearm of any of the Heckler and Koch rifles or carbines. These weapons include the G3 rifle and H & K 33A2 carbine.

EFF RNG 600m
MAX RNG 700m
TYPE OF FIRE Semiautomatic
RATE OF FIRE 30 rpm
FEED DEVICE 5 round box magazine
FEED DEVICE WT .6kg
BASIC LOAD 6 magazines (30 rounds)
LOAD WT 3kg

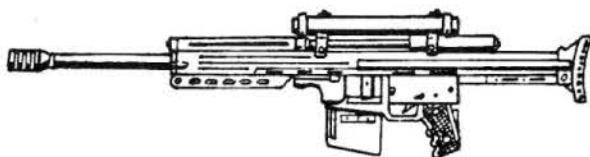
Data is for weapon loaded with HE offensive grenade.

This is a prototype weapon developed in Switzerland. The Falconet fires either high explosive or "flechette" rounds from a removable box magazine. The weapon has a built-in bipod and the barrel can collapse into the receiver to shorten the overall length of the weapon.



05C-113-972-1
NAME Offensive Grenade
TYPE High explosive/Fragmentation
WEAPON USED IN Falconet, 05C-113-972
SIZE 2.4x10.6cm
WT .115kg
CAL 24mm
MUZZLE VEL 1312 fps
BURST RADIUS 5m
FILLER Composition B
FILLER WT .024kg
EQUIVALENT TO TNT (R.E.) 1.25
MIN RNG 3m
EFF RNG 600m
MAX RNG 700m

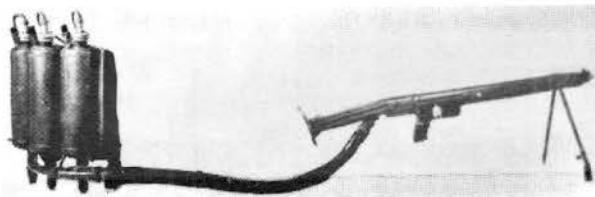
This is the high explosive round for the Falconet. The round has a belted rim around the case for added strength. Little data is known about the round since it is still experimental. The round is known to incorporate a tracer element and has a point detonating fuse that arms after travelling 3 meters and then will detonate on impact.



05C-113-972
NAME Falconet
TYPE Swiss grenade launcher
DATE ADOPTED c. 1972
LENGTH 90/110cm
WT (EMPTY) 6kg
WT (LOADED) 6.6kg w/HE
CAL 24mm
MUZZLE VEL 1312 fps
BURST RADIUS 5m
MIN RNG 3m

05C-113-972-2
NAME Defensive grenade
TYPE Antipersonnel
WEAPON USED IN Falconet, 05C-113-972
SIZE 2.4x10.6cm
WT .070kg
CAL 24mm
MUZZLE VEL 1969 fps
FILLER 12 - 6mm finned Darts
EFF RNG 150m
MAX RNG 150m

This is a "shotgun" shell type round for the Falconet grenade launcher. The cartridge releases 12 nine millimeter, fin stabilized darts or fletchettes when fired. The good velocity and aerodynamic shape of the darts gives them an effective range of 150 meters.



05B-125-965
 NAME LP0-50
 TYPE Russian flamethrower
 DATE ADOPTED c. 1965
 WT (EMPTY) 15kg
 WT (LOADED) 23kg
 EFF RNG 70m
 MAX RNG 70m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 3 - 3 second bursts
 FEED DEVICE 3 tanks, 3.3 liters each, 3 igniter rounds
 FEED DEVICE WT 8kg
 BASIC LOAD 1 Fill
 LOAD WT 8kg

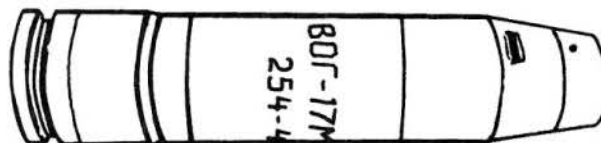
This is the current issue flamethrower in the Russian military. The backpack consists of three tanks each holding 3.3 liters of fuel and having its own pressure cartridge. The pressure cartridge is at the top of each tank and is fired electrically when the main trigger is pulled. Each pressure cartridge will generate enough gas pressure to empty its fuel tank. The flame gun looks something like a rifle and has a built-in bipod. There are three ignition cartridges at the muzzle of the weapon each of which is electrically fired when the flame gun's trigger is pulled. Since the ignition cartridges are automatically fired when the trigger is pulled, the LP0-50 can only fire a "hot" shot with the fuel ignited. Each burst burns for about one minute at 1200 degrees centigrade. Each flame "burst" lasts for about 3 seconds.



05C-125-974
 NAME AGS-17
 NAME (NATIVE) Automaticeski Granatomojot Stankovi (Planya)
 TYPE Russian grenade launcher

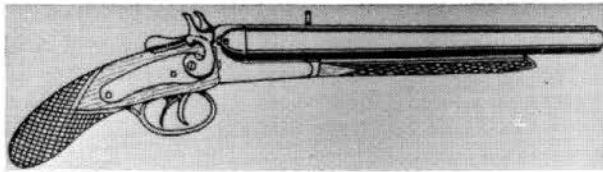
DATE ADOPTED c. 1974
 LENGTH 84cm
 WT (EMPTY) 18kg
 WT (LOADED) 28.8kg
 CAL 30mm
 BURST RADIUS 10m
 MIN RNG 10m
 EFF RNG 1200m
 MAX RNG 1730m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 30 rpm (A) 60 rpm (CYCLIC) 300 rpm
 FEED DEVICE 29 round belt (drum)
 FEED DEVICE WT 10.8kg
 BASIC LOAD 3 belts (87 rounds)
 LOAD WT 32.4kg

This 30mm grenade launcher is now being issued in the Russian military. Relatively little information is available on the weapon as none has yet, of the date of this book, been brought to the United States for study. The AGS-17 fires belted 30mm ammunition carried in a large drum mounted on the weapon. The weapon is selective fire but the cyclic rate of fire is so slow that on full automatic single rounds can still be easily fired. Due to the internal design of the AGS-17, it is a somewhat unsafe weapon to fire as a missed round can strike against the feed ramp and detonate. The AGS-17 is used either from a ground tripod or a vehicular mount. The possible use of this weapon mounted on a HIND attack helicopter has also been reported.



05C-125-974-1
 NAME AGS-17 HE
 TYPE High explosive fragmentation
 WEAPON USED IN AGS-17, 05C-125-974
 SIZE 3x13cm
 WT .35kg
 CAL 30mm
 BURST RADIUS 10m
 FILLER A-IX-1
 FILLER WT .04kg
 EQUIVALENT TO TNT (R.E.) 1.14
 MIN RNG 10m
 EFF RNG 1200m
 MAX RNG 1750m

This is the high explosive fragmentation round for the AGS-17. The casing of the round has a pronounced raised belt just ahead of the rim. The explosive used in the round is a mixture of 95 percent RDX and 5 percent Wax. The body of the projectile is wire wrapped to aid in fragmentation.



05A-132-880

NAME 10 gauge sawed-off

TYPE American shotgun

DATE ADOPTED c. 1880

LENGTH 45.7cm

WT (EMPTY) 3.2kg

WT (LOADED) 3.41kg

CAL 10 gauge

MUZZLE VEL 830 fps

EFF RNG 20m

MAX RNG 150m

TYPE OF FIRE Break open, single shot, double barrelled

RATE OF FIRE 20 rpm

FEED DEVICE 2 rounds

FEED DEVICE WT (2 rounds) .21kg

BASIC LOAD 50 rounds

LOAD WT 5.25kg

Data is for weapon loaded with 2 7/8 inch 00 Buckshot rounds.

This was undoubtedly the most devastating close-in weapon used in the American West. This style of shotgun, with the barrels and stock cut short, is also called a "Whipit" gun. The above model, representative of most in the era, is confirmed to have been used by "Doc" Holliday though not at his famous gunfight at the O.K. corral. The exposed hammers of the weapon have to be manually cocked before firing. Though the weapon can be fired with one hand there would be a good chance that the barrels could strike the firer when they recoil so both hands are normally used to control the weapon. The short barrels combined with the low velocity of the black powder shells of the era, allow a simultaneous discharge of both barrels to be controlled.



05A-132-898

NAME Winchester M1897 Riot Shotgun

NAME (NATIVE) M1917 Trench Gun

TYPE American shotgun

DATE ADOPTED 1898 (1917)

LENGTH 99.1cm

WT (EMPTY) 3.266kg

WT (LOADED) 3.526kg

CAL 12 gauge

MUZZLE VEL 1040 fps

EFF RNG 90m

MAX RNG 684m

TYPE OF FIRE Manual Pump action repeater

RATE OF FIRE 22 rpm

FEED DEVICE 5 round tubular magazine

FEED DEVICE WT (5 rounds) .26kg

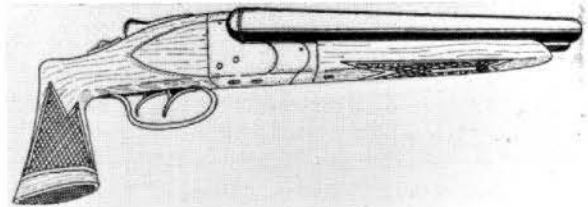
BASIC LOAD 50 rounds

LOAD WT 2.6kg

Data is for weapon loaded with M19 00 Buckshot guard round.

This was the first short barreled "riot" shotgun

manufactured by Winchester. The Model 97, as it was also known, was used by the American Army in the Philippine Insurrection and Mexican Border Wars before WWI. During WWI, the Model 97 was fitted with a barrel guard and bayonet adapter and issued for trench fighting as the Model M1917. One aspect of the Model 97 is that if the trigger is held back and the action worked, the weapon will fire as soon as the bolt is locked. This gives the Model 97 the ability to fire 6 rounds in about 2 seconds, giving 54 .33 caliber 00 buckshot fired downrange using standard ammunition. The effective rate of fire is slowed down by the magazine being loaded with individual rounds pushed into the magazine through the bottom of the receiver. The strength of the Model 97 is demonstrated by the fact that the weapon was used by the U.S. Army from before WWI through the end of WWII.



05A-132-925

NAME Ithaca Auto-Burglar Model B

TYPE American shotgun

DATE ADOPTED 1925

LENGTH 47.2cm

WT (EMPTY) 2.22kg

WT (LOADED) 2.304kg

CAL 20 gauge

MUZZLE VEL 1020 fps

EFF RNG 10m

MAX RNG 400m

TYPE OF FIRE Break open, single shot, double barrel

RATE OF FIRE 20 rpm

FEED DEVICE 2 rounds

FEED DEVICE WT (2 rounds) .084kg

BASIC LOAD 50 rounds

LOAD WT 2.1kg

The Auto-Burglar gun was developed by Ithaca Gun Co. to give travellers and homeowners an efficient way to defend themselves in the 1920's and early 30's. Derived from a standard shotgun, the Auto-Burglar has a sharply bent pistol grip and very short barrels. Chambered for standard 20 gauge shotgun rounds, the Auto-Burglar can be fired one-handed like a pistol but a two-handed hold is normally preferred. Concealed hammers automatically cocked when the action was opened, streamlining the weapon considerably. For a "Whipit" gun of this size, the 20 gauge shell is considered by police and other authorities to be the largest round that can be controllably fired.



05A-132-925a

NAME Savage 311-R Guard Gun

TYPE American shotgun

DATE ADOPTED c. 1925

LENGTH 90.8cm
 WT (EMPTY) 3.2kg
 WT (LOADED) 3.36kg
 CAL 12 gauge
 MUZZLE VEL 1175 fps
 EFF RNG 90m
 MAX RNG 510m
 TYPE OF FIRE Break open, single shot, double barrel
 RATE OF FIRE 20 rpm
 FEED DEVICE 2 rounds
 FEED DEVICE WT (2 rounds) .16kg
 BASIC LOAD 50 rounds
 LOAD WT 4kg

Data is for weapon loaded with Magnum 00 Buckshot

This is the last double-barreled riot style shotgun still manufactured in the United States. The 311-R is a standard shotgun built with short barrels and is generally representative of the type. The action "breaks" open at the receiver for loading and the internal hammers automatically cock when the action is opened. A very simple weapon, the double shotgun is very devastating when both barrels are fired simultaneously. Simultaneous fire also almost guarantees that at least one barrel will fire which is one of the reasons the weapon was so popular once among professional gunfighters.



05A-132-970
 NAME High-Standard M10B
 TYPE American shotgun
 DATE ADOPTED 1970
 LENGTH 68.6cm
 WT (EMPTY) 3.9kg (4.4kg w/Flashlight)
 WT (LOADED) 4.3kg (4.8kg w/ Flashlight)
 CAL 12 gauge
 MUZZLE VEL 1145 fps
 EFF RNG 90m
 MAX RNG 510m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 15 rpm
 FEED DEVICE 5 round tubular magazine
 FEED DEVICE WT (5 rounds) .4kg
 BASIC LOAD 50 rounds
 LOAD WT 4kg

Data is for weapon loaded with Magnum 00 Buckshot

This is an improved model of the earlier M10A. The M10B is a standard gas-operated shotgun action modified to a "bull pup" configuration. The modifications include a folding carrying handle, a removable flashlight, folding rifle type sights, an additional cocking lever on the left side, a rotating rear yoke, and a forward pistol grip. The rotating yoke allows the M10B to be fired from the shoulder or, with the yoke turned at right angles to the receiver, fired accurately one-handed with the gun lying along the forearm and the yoke braced against the upper arm. This arrangement allows for a very handy weapon that can be fired controllably one-handed as in the left hand of a

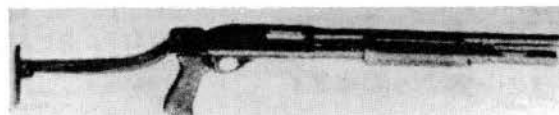
driver while driving a car. The flashlight on the M10B can have its mounting adjusted so that the shot group centers on the flashlight beam. The adjustment of the flashlight would allow it to be used as an aiming device. Whatever the light illuminated would be struck by the shot.



05A-132-972
 NAME Atchisson Assault Gun
 TYPE American shotgun
 DATE ADOPTED 1972
 LENGTH 99cm
 WT (EMPTY) 5.2kg
 WT (LOADED) 7.3kg (w/20 round drum)
 CAL 12 gauge
 MUZZLE VEL 1145 fps
 EFF RNG 90m
 MAX RNG 510m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 45 rpm (A) 90 rpm (CYCLIC) 360 rpm
 FEED DEVICE 5 round box or 20 round drum magazine
 FEED DEVICE WT (5 round) .6kg, (20 round) 2.1kg
 BASIC LOAD 3-20 round drums (60 rounds)
 LOAD WT 6.3kg

Data is for weapon loaded with Magnum 00 Buckshot

This is probably the most destructive close-range weapon yet developed. The Atchisson is a controllable, selective fire shotgun that fires from a 20 round drum magazine. The weapon illustrated above is one of the original prototype models which fired from an open bolt. There is an "Assault 12" version of the Atchisson presently under development which will fire from the closed bolt position and should be available in a semiautomatic only, civilian version. The power of the Atchisson is demonstrated in a single 4 round burst. When firing 00 Buckshot 2 3/4 inch Magnum loads, 48 .33 caliber projectiles are fired downrange. With the entire drum loaded with Magnum 00 Buckshot, 240 projectiles are available in 12 projectile groups. The in-line stock and raised sights allow the Atchisson to be completely controllable even when fired fully automatically. The style of the Atchisson's action also absorbs some of the recoil when the weapon is fired.



05A-132-972a
 NAME Remington 870 P
 TYPE American shotgun
 DATE ADOPTED 1972

LENGTH 77/102cm
 WT (EMPTY) 3.4kg
 WT (LOADED) 4.04kg
 CAL 12 gauge
 MUZZLE VEL 1175 fps
 EFF RNG 90m
 MAX RNG 510m
 TYPE OF FIRE Manual pump action repeater
 RATE OF FIRE 24 rpm
 FEED DEVICE 8 round tubular magazine
 FEED DEVICE WT (8 rounds) .64kg
 BASIC LOAD 50 rounds
 LOAD WT 4kg

Data is for weapon loaded with Magnum 00 Buckshot

This is a standard slide action shotgun that has been used in police work since the original model became available in 1951. In 1967, an extended magazine was developed by Remington, increasing the rounds available to 8. In 1972 a folding stock was designed for the 870P and the model illustrated above became available. The 870P can be comfortably fired with the stock folded. One drawback to a slide action shotgun is that it requires two hands for operation. The requirement for ammunition to be loaded singly into the magazine from below the receiver is also considered a drawback in a fighting shotgun. This drawback is partially nullified by experienced shotgunners who would load rounds into the magazine whenever there is a lull in the fighting. This constant replenishment gives the weapon a feel of almost endless firepower.



05A-132-974
 NAME Mossberg M500 ATP8S
 TYPE American shotgun
 DATE ADOPTED 1974
 LENGTH 99.7cm
 WT (EMPTY) 3.2kg
 WT (LOADED) 4.02kg
 CAL 12 gauge
 MUZZLE VEL 1175 fps
 EFF RNG 90m
 MAX RNG 510m
 TYPE OF FIRE Manual Pump action repeater
 RATE OF FIRE 24 rpm
 FEED DEVICE 8 round tubular magazine
 FEED DEVICE WT (8 rounds) .64kg
 BASIC LOAD 50 rounds
 LOAD WT 4kg

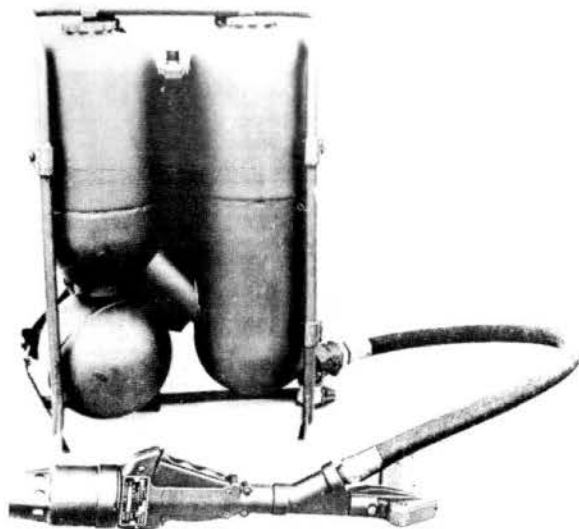
Data is for weapon loaded with Magnum 00 Buckshot

The M500 ATP8S is representative of a modern, slide action fighting shotgun. The extended magazine holds 7 rounds giving a total count of 8 rounds available with one in the chamber. The ATP8S also has rifle type sights for shooting slugs and a bayonet lug which can mount the M16A1 rifle's M7 bayonet. The receiver is also drilled and tapped to accept optical sights.



05B-132-945
 NAME M2A1 Flamethrower
 TYPE American flamethrower
 DATE ADOPTED 1945
 WT (EMPTY) 19.5kg
 WT (LOADED) 31.75kg
 EFF RNG 55m
 MAX RNG 55m
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 5rpm
 FEED DEVICE 17.98 liters gasoline w/1-5 round ignition cylinder
 FEED DEVICE WT 12.25kg
 BASIC LOAD 1 fuel fill, 2 ignition cylinders
 LOAD WT 12.25kg

This flamethrower was used in the U.S. military until replaced by the M2A1-7 which used the M2A1 tanks and M7 flame gun. The two large tanks on the backpack hold gasoline with the center small tank filled with compressed air or nitrogen. The fuel follows the flexible metal hose to the flame gun. The rear trigger lever of the flame gun controls the flow of fuel. The front trigger fires one of 5 ignition cartridges in the front cylinder. The ignition cartridge will burn for about six seconds, spitting sparks into the fuel stream. The tanks hold enough fuel for 5 two second "bursts" or 10 seconds of continuous fire. A single "burst" will burn at about 1200 degrees Centigrade for about 120 seconds. The separate fuel and ignition controls allow the weapon to fire either "Hot" or "Cold" shots. A "Cold" shot is one where the fuel was not ignited and is first allowed to "soak" into the target. A "Hot" shot is one in which the fuel was ignited by the ignition cylinder and emerges burning. The weapon will function either with gasoline or gasoline mixed with thickener (Napalm). Napalm gives the maximum range shown in the data. When used with straight gasoline, the range goes down to 25m. Normally, if struck by a bullet, the fuel tanks will neither ignite or explode, especially if the air tank is filled with nitrogen. If the tank is filled with air, a fuel tank may burst (explode) if struck with a tracer or incendiary bullet. The chances for ignition are highest with an incendiary bullet (about a 75% chance), as compared with a Tracer bullet with about a 10% chance.



05B-132-956

NAME M9A1-7 Flamethrower

TYPE American flamethrower

DATE ADOPTED 1956

WT (EMPTY) 11.8kg

WT (LOADED) 22.7kg

EFF RNG 55m

MAX RNG 55m

TYPE OF FIRE Semiautomatic

RATE OF FIRE 5 rpm

FEED DEVICE 16 liters fuel w/1-5 round ignition cylinder

FEED DEVICE WT 10.9kg

BASIC LOAD 1 fuel fill, 2 ignition cylinders

LOAD WT 10.9kg

This is an improved weapon similar to the M2A1 flamethrower. The backpack has two tanks with compressed air or nitrogen held in a spherical tank. The M7 flame gun uses a five round ignition cylinder with the front squeeze grip firing the ignition. The rear trigger lever of the M7 gun controls the fuel flow. A holster for the flame gun is attached to the tank harness. All other aspects of this weapon are similar to the M2A1 flamethrower.



05C-132-966

NAME Smith and Wesson Tear Gas Gun

TYPE American grenade launcher

DATE ADOPTED c. 1966

LENGTH 73.7cm

WT (EMPTY) 2.7kg

WT (LOADED) 3.182kg

CAL 37mm

MUZZLE VEL 328 fps

BURST RADIUS 10m

EFF RNG 137m

MAX RNG 150m

TYPE OF FIRE Single shot, break open, double action

RATE OF FIRE 8 rpm

FEED DEVICE Single round

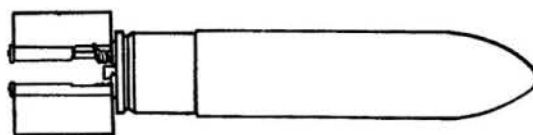
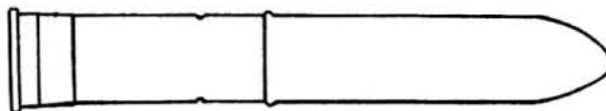
FEED DEVICE WT .482kg

BASIC LOAD 10 No. 17CS rounds

LOAD WT 4.82kg

Data is for weapon loaded with the Long Range Projectile No. 17CS

This large, smoothbore launcher is based on the S & W N frame used in the M27 and M29 Magnum pistols. The break open action allows any standard 37mm shell to be used. The Tear Gas Gun is normally used to fire tear gas munitions though there is a wide line of rounds to choose from. A very high velocity round cannot be fired from this type of weapon and so range is normally limited to less than 200 meters.



05C-132-966-1

NAME 37mm Long Range Projectile No.17CS

TYPE Tear gas shell

WEAPON USED IN S & W Tear Gas Gun 05C-132-966

SIZE 3.7x14cm

WT .482kg

CAL 37mm

MUZZLE VEL 328 fps

BURST RADIUS 10m

FUSE DELAY 3 seconds

BURN TIME 30 seconds

FILLER CS

FILLER WT .1kg

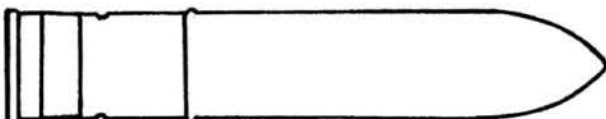
EFF RNG 137m

MAX RNG 150m

PACKAGING 12 rounds/Can

PACKAGE WT 7.78kg

This is a standard Tear gas gun round designed for long range use with any 37mm smoothbore weapon. Spring loaded fins stabilize the round in flight. This is a burning type round with the fuse delay igniting when the round is fired.



05C-132-966-2

NAME 37mm Standard Range Tear Gas

TYPE Tear gas shell

WEAPON USED IN S & W Tear Gas Gun 05C-132-966

SIZE 3.7x22cm

WT .2kg

CAL 37mm

MUZZLE VEL 328 fps

BURST RADIUS 10m

FUSE DELAY 2 seconds

BURN TIME 20 seconds

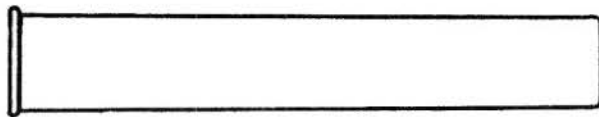
FILLER CS

FILLER WT .098kg

EFF RNG 100m

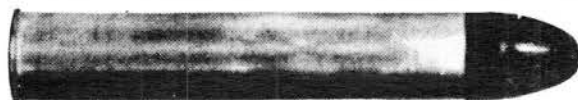
MAX RNG 320m
PACKAGING 12 rounds/Can
PACKAGE WT 4.396kg

This is the most common round used in shoulder fired tear gas guns. The velocity and style of the projectile is designed so it may be safely fired into crowds with a minimum chance of injuring someone. This is a burning type munition that released its chemical agent in a cloud of smoke. The delay fuse is ignited when the round is fired, after the fuses delay the round begins emitting tear gas.



05C-132-966-3
NAME 37mm Short Range No.21
TYPE Tear Gas Shell
WEAPON USED IN S & W Tear Gas Gun 05C-132-966
SIZE 3.7x24.5cm
WT .2kg
CAL 37mm
BURST RADIUS 5m
FILLER CS
MIN RNG 0m
EFF RNG 11m
MAX RNG 11m
PACKAGING 12 rounds/Can
PACKAGE WT 4.396kg

This is a standard tear gas shell casing filled with powdered CS tear gas. When fired, the round spreads gas crystals immediately in front of the weapon. There is no "projectile" as such, fired.



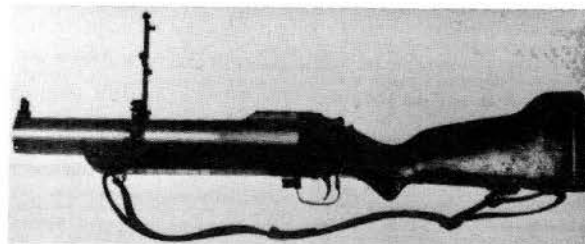
05C-132-966-4
NAME 37mm Baton
TYPE Rubber bullet
WEAPON USED IN S & W Tear Gas Gun 05C-132-966
SIZE 3.8x12cm
WT .17kg
CAL 37mm
MUZZLE VEL 328 fps
EFF RNG 60m
PACKAGING 25 rounds/Case
PACKAGE WT 9kg

This is a "rubber bullet" round used to subdue members of crowds with a minimum of physical injury. The round fires a rubber cylinder that has a low enough velocity and is soft enough that it can be fired directly at an individual. The round rapidly loses stability and it becomes difficult to hit an individual target much past 40m.

05C-132-966-5
NAME 37mm White Parachute Flare
TYPE Illuminating flare
WEAPON USED IN S & W Tear Gas Gun 05C-132-966
SIZE 3.7x22cm
WT .49kg

CAL 37mm
MUZZLE VEL 328 fps
BURST RADIUS 550m
FUSE DELAY 6 seconds
BURN TIME 40 seconds at 125,000 cp
EFF RNG 200m
MAX RNG 210m
PACKAGING 12 rounds/Can
PACKAGE WT 7.876kg

This is a standard illuminating flare for 37mm weapons. The round fires a shell that has a delay element ignited upon firing. When the delay has functioned, the shell ejects a burning magnesium flare suspended on a parachute. The flare burns for about 40 seconds illuminating an area 550 meters wide with 125,000 candlepower.



05C-132-958
NAME M79
TYPE American grenade launcher
DATE ADOPTED 1958
LENGTH 73.1cm
WT (EMPTY) 2.699kg
WT (LOADED) 2.926kg
CAL 40mm
MUZZLE VEL 250 fps
BURST RADIUS 5m
MIN RNG 14m
EFF RNG 350m
MAX RNG 400m
TYPE OF FIRE Single shot, break open
RATE OF FIRE 15 rpm
FEED DEVICE Single round
FEED DEVICE WT .227kg
BASIC LOAD 18 rounds
LOAD WT 4.086kg
Data is for weapon loaded with the M406 HE round

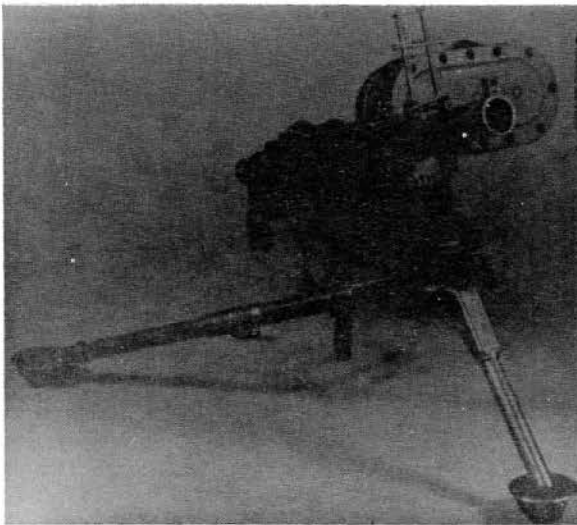
The M79 is the first weapon able to use the now wide family of 40mm grenades. Looking much like an oversized shotgun, the M79 has a simple, break open action. The weapon has excellent accuracy and is able to place a round through a small window at over 150 meters. Its reliability and simplicity gave the M79 an excellent reputation and it is still in use in many parts of the world. The M79 has been replaced in the U.S. military by the M203.



05C-132-969
 NAME M203
 TYPE American grenade launcher
 DATE ADOPTED 1969
 LENGTH 38.9cm (99cm w/M16A1)
 WT (EMPTY) 1.36kg (4.54kg w/M16A1)
 WT (LOADED) 1.587kg (5.222 kg w/M16A1+30 rounds)
 CAL 40mm
 MUZZLE VEL 235 fps
 BURST RADIUS 5m
 MIN RNG 14m
 EFF RNG 350m
 MAX RNG 400m
 TYPE OF FIRE Single shot, Pump action
 RATE OF FIRE 15 rpm
 FEED DEVICE Single round
 FEED DEVICE WT .227kg
 BASIC LOAD 36 rounds
 LOAD WT 8.172kg

Data is for weapon loaded with the M406 HE round

The M203 is a 40mm grenade launcher designed to mount on the M16A1 rifle. The weapon combination, referred to as an M203, gives the firer a choice of using either 40mm grenades or the 5.56mm rifle. One of the drawbacks of the M79 was that when the 40mm grenade was fired the gunner would normally only have an M1911A1 pistol to defend himself. The M203 gives the gunner a fully loaded M16A1 after the 40mm has been fired. The barrel of the M203 is unlocked and slid forward to load a round. This action also automatically recocks the weapon.

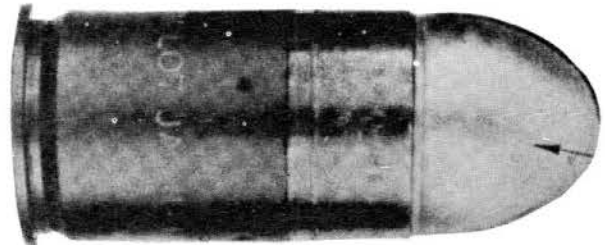


05C-132-972
 NAME M174E3
 TYPE American grenade launcher
 DATE ADOPTED c. 1972
 LENGTH 71.2cm
 WT (EMPTY) 7.25kg
 WT (LOADED) 11.75kg
 CAL 40mm
 MUZZLE VEL 250 fps
 BURST RADIUS 5m
 MIN RNG 14m
 EFF RNG 400m
 MAX RNG 400m
 TYPE OF FIRE Selective
 RATE OF FIRE (SS) 36 rpm (A) 90 rpm (CYCLIC) 300 rpm

FEED DEVICE 12 round drum
 FEED DEVICE WT 4.5kg
 BASIC LOAD 3 drums (36 rounds)
 LOAD WT 13.5kg

Data is for weapon loaded with the M406 HE round

This is a magazine fed, selective fire 40mm grenade launcher capable of firing most of the 40mm grenade family. The weapon cannot feed the M576E1 Multiple projectile round and the M651E1 CS and flare rounds must be loaded singly through the receiver as they are too long to fit in the magazine. The M174E3 is normally mounted on the M122 Tripod, as is the M60 machinegun, but can be hand held and fired. To hand hold the weapon, the pintle is held in the left hand with the magazine braced across the left arm and the weapon fired with the right hand.



05C-132-972-1
 NAME 40mm M381, M406 HE
 TYPE High explosive/Fragmentation
 WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, M174E3, 05C-132-972, H & K 69A1, 05C-041-972
 SIZE 4.4x9.9cm
 WT .227kg
 CAL 40mm
 MUZZLE VEL 250 fps
 BURST RADIUS 5m
 FILLER Composition B
 FILLER WT .035kg
 EQUIVALENT TO TNT (R.E.) 1.25
 MIN RNG (M381) 3m, (M406) 14m
 EFF RNG 350m
 MAX RNG 400m
 PACKAGING 6 rounds/Bandoleer, 12 Bandoleers/Case (72 rounds)
 PACKAGE WT 26.3kg

These rounds are both equal except for their fuses. The M381 arms after travelling three meters and is of especial use in house-to-house fighting where it can be fired, from cover, into a room and detonated when it strikes the far wall. The M406 round arms after travelling at least fourteen meters and is much safer and more commonly issued because of this. The high explosive is contained in a small round grenade with internal serrations for fragmentation. The rounds are packed three to a plastic carrier with two carriers, six rounds, to a bandoleer.



05C-132-972-2

NAME 40mm M433 HEDP

TYPE High explosive/fragmentation and Armor piercing

WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, M174E3, 05C-132-972, H & K 69A1, 05C-041-972

SIZE 4.4x9.9cm

WT .226kg

CAL 40mm

MUZZLE VEL 250 fps

BURST RADIUS 5m

PENETRATION IN STEEL 5cm

FILLER RDX

FILLER WT .028kg

EQUIVALENT TO TNT (R.E.) 1.14

MIN RNG 14m

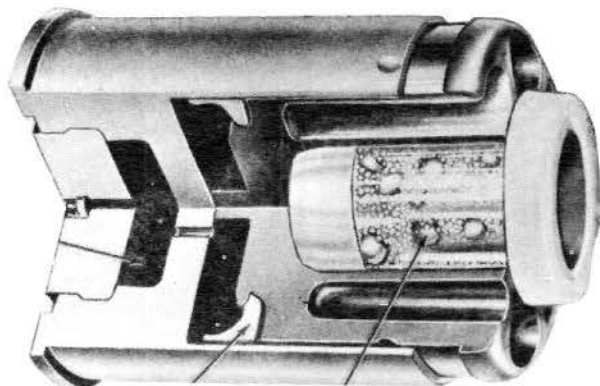
EFF RNG 350m

MAX RNG 400m

PACKAGING 6 rounds/Bandoleer, 12 Bandoleers/Case (72 rounds)

PACKAGE WT 26.3kg

This dual purpose round has a shaped charge for penetrating armor as well as a fragmentation sleeve for antipersonnel use. The M433 has 75% of the fragmentation of the M381 or M406 rounds and is packaged the same way.



05C-132-972-3

NAME 40mm M576E1 Multiple Projectile

TYPE Antipersonnel

WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, H & K 69A1, 05C-041-972

SIZE 4.4x6.4cm

WT .122kg

CAL 40mm

MUZZLE VEL 250 fps

FILLER 20 No. 4 Buckshot (.24 Cal.)

FILLER WT .027kg

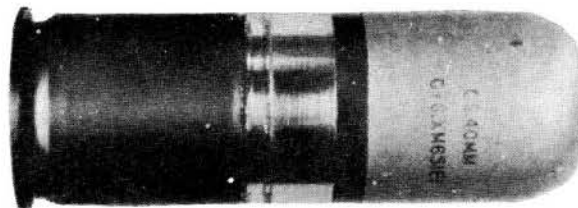
EFF RNG 35m

MAX RNG 50m

PACKAGING 12 rounds/Bandoleer, 12 Bandoleers/Case (144 rounds)

PACKAGE WT 27.5kg

This "buckshot" round was originally developed to give M79 gunners a close-in antipersonnel effect. The 20 number 4 buckshot are contained in a plastic cup carried by a plastic sabot. When fired, the sabot falls away soon after leaving the muzzle and the plastic cup breaks up, releasing the shot. The shot does not reach a high velocity and because of this, has limited effect. The rounds are packed six rounds placed nose-to-nose in a plastic carrier with two carriers, twelve rounds, in a bandoleer.



05C-132-972-4

NAME 40mm M651E1 CS

TYPE Tear gas round

WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, M174E3 05C-132-972, H & K 69A1, 05C-041-972

SIZE 4.4x11.4cm

WT .308kg

CAL 40mm

MUZZLE VEL 250 fps

BURST RADIUS 2.5x4.5x2m

BURN TIME 25 seconds

FILLER CS

FILLER WT .057kg

MIN RNG 20m

EFF RNG 350m

MAX RNG 400m

PACKAGING 22 rounds/Can, 2 Cans/Case (44 rounds)

PACKAGE WT 25kg

This gas round is designed to first penetrate a target, such as the window of a room, before functioning. After the round has travelled 30 meters the fuse arms and will ignite the CS mixture on impact. As the burning CS/smoke mixture builds up pressure, it blows out a plug in the base of the round enclosing the gas. The rim of the cartridge case has six equally spaced notches around the rim for easy identification at night.



05C-132-972-5

NAME 40mm M583 (White), M661 (Green), M662 (Red), M695 (Orange) Parachute flares

TYPE Illuminating and signalling flares

WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, M174E3, 05C-132-972, H & K 69A1, 05C-041-972

SIZE 4.4x13.4cm

WT .213kg

CAL 40mm

MUZZLE VEL 250 fps

BURST RADIUS 100m

FUSE DELAY 5 seconds

BURN TIME 40 seconds

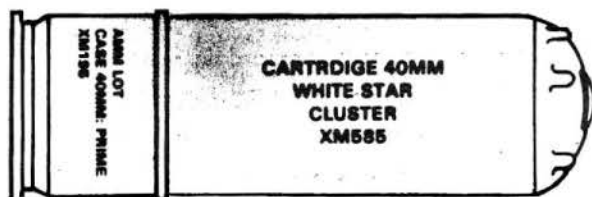
EFF RNG 170m

MAX RNG 170m

PACKAGING 22 rounds/Can, 2 Cans/Case (44 rounds)

PACKAGE WT 20.8kg

These rounds are used either for illumination, (M583 White), or signalling. A delay element ignites when the round is fired and, after a five second delay, fires an ejection charge. The ejection charge ejects and ignites the flare assembly at a height of approximately 170 meters. The round has the first letter of the flare's color raised on the nose of the round to aid in identification.



05C-132-972-6

NAME 40mm M585 (White), M663 (Green), M664 (Red), Star Clusters

TYPE Signalling flares

WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, M174E3, 05C-132-972, H & K 69A1, 05C-041-972

SIZE 4.4x13.4cm

WT .204kg

CAL 40mm

MUZZLE VEL 250 fps

FUSE DELAY 5 seconds

BURN TIME 8 seconds

FILLER 5 "Candles"

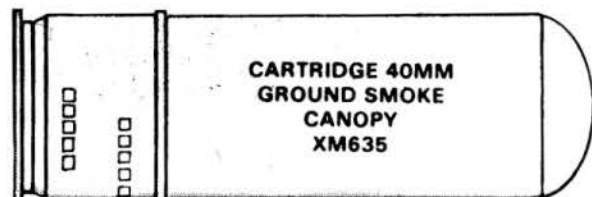
EFF RNG 170m

MAX RNG 170m

PACKAGING 22 rounds/Can, 2 Cans/Case (44 rounds)

PACKAGE WT 20.4kg

These rounds are used primarily for signalling. When the round is fired, a five second delay ignites. After the delay, an ejection charge ejects five candles, each of which burns for eight seconds. The round has the first letter of the flare's color raised on the nose of the round as well as five raised pips to aid in identification.



05C-132-972-7

NAME 40mm M676 (Yellow), M679 (Green), M680 (White), M681 (Violet), M682 (Red) Smoke canopy

TYPE Signalling flares

WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, M174E3, 05C-132-972, H & K 69A1, 05C-041-972

SIZE 4.4x13.3cm

WT .206kg

CAL 40mm

MUZZLE VEL 250 fps

FUSE DELAY 5 seconds

BURN TIME 90 seconds

FILLER Colored Smoke composition

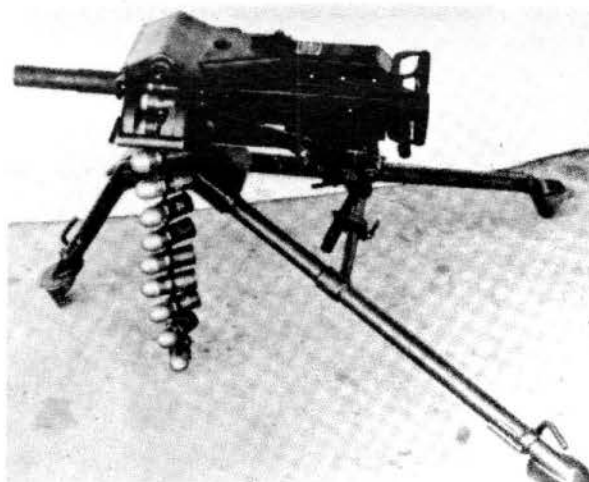
EFF RNG 110m

MAX RNG 110m

PACKAGING 22 rounds/Can, 2 Cans/Case (44 rounds)

PACKAGE WT 20.5kg

This round is especially designed for daylight signalling of aircraft through a jungle canopy. When fired, a five second delay element is ignited. The velocity of the round is enough to penetrate the overhead cover in the jungles. After the round has penetrated the trees, the delay fires an ejection charge that ejects the smoke charge. The smoke charge is suspended from a ribbon parachute which tangles in the upper branches of the trees holding the signal in sight of any passing aircraft.



05C-132-980

NAME Mk19

TYPE American grenade launcher

DATE ADOPTED 1980

LENGTH 102.8cm

WT (EMPTY) 35kg

WT (LOADED) 55.55kg

CAL 40mm

MUZZLE VEL 787 fps

BURST RADIUS 10m

MIN RNG 13m

EFF RNG 1600m

MAX RNG 3100m

TYPE OF FIRE Full automatic

RATE OF FIRE (A) 100 rpm (CYCLIC) 375 rpm

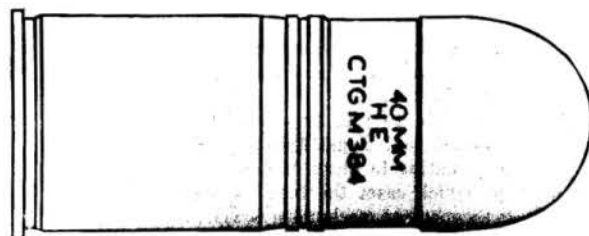
FEED DEVICE 50 round belt

FEED DEVICE WT 20.55kg

BASIC LOAD 1 belt (50 rounds)

LOAD WT 20.55kg

This belt fed grenade launcher fires a family of high velocity 40mm grenades that cannot be chambered or fired in weapons using the standard 40mm grenades. The weapon must be mounted to be fired and can be mounted on vehicular mounts or on the .50 M2HB machinegun's tripod. The variety of grenades for the Mk 19 is much more limited than that of other grenade launchers.



05C-132-980-1

NAME 40mm M384 HE

TYPE High Explosive/fragmentation

WEAPON USED IN Mk19, 05C-132-980

SIZE 4.4x11.4cm

WT .34kg

CAL 40mm

MUZZLE VEL 787 fps

BURST RADIUS 10m

FILLER Composition A5

FILLER WT .054kg

EQUIVALENT TO TNT (R.E.) 1.34

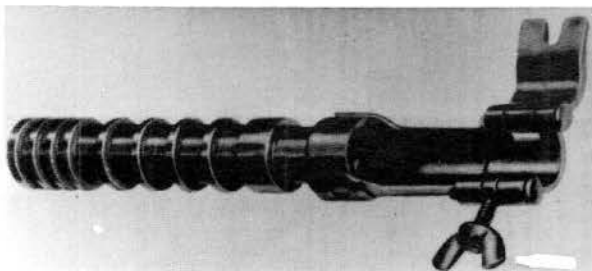
MIN RNG 13m

EFF RNG 1600m
 MAX RNG 3100m
 PACKAGING 50 rounds/belt, 1 belt/Case
 PACKAGE WT 24kg

This high explosive round has a much greater propellant charge to reach a higher muzzle velocity. To prevent this round from being chambered in weapons that could not withstand the higher chamber pressures, the cartridge case and overall length of the high pressure round is larger than the standard 40mm grenade. The M384 has a large charge of high explosive and is not internally serrated for fragmentation.

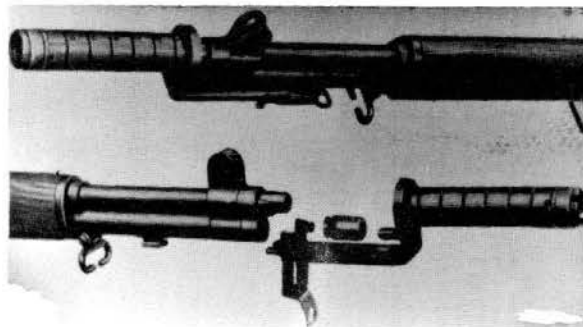
05C-132-980-2
 NAME M574E2 WP
 TYPE White Phosphorus
 WEAPON USED IN Mk19, 05C-132-980
 SIZE 4.4x11.4cm
 WT .34kg
 CAL 40mm
 MUZZLE VEL 787 fps
 BURST RADIUS 10m
 FILLER White phosphorus
 FILLER WT .054kg
 MIN RNG 18m
 EFF RNG 1600m
 MAX RNG 3100m
 PACKAGING 50 rounds/belt, 1 belt/Case
 PACKAGE WT 24kg

This round is the only 40mm white phosphorus round loaded. The M574E2 is a high pressure round and cannot be used in launchers which are not chambered for it. The white phosphorus filling is spread over the burst radius by the detonating fuse and ignites on contact with the air. The phosphorus burns for 20 seconds at a temperature of 2700 degrees centigrade. Though intended for signalling and target marking, M574E2 round can also be used for antipersonnel and incendiary work.



05C-132-918
 NAME Grenade Launcher M1
 TYPE American rifle grenade launcher
 DATE ADOPTED c. 1918
 LENGTH 18cm
 WT .24kg
 CAL 7.62x63mm
 MUZZLE VEL c. 165 fps
 WEAPON USED WITH M1903 Springfield

This is a spigot type grenade launcher for the M1903 Springfield rifle. The launcher slips over the muzzle of the rifle and clamps behind the front sight. The grenade is placed over the launcher and adjusted for range by placing it over the proper range ring on the launcher. Any rifle grenade with an internal tail diameter of 22 millimeters can be fired from the launcher. The 7.62x63mm M3 Rifle Grenade Blank is loaded into the weapon to launch the grenade.



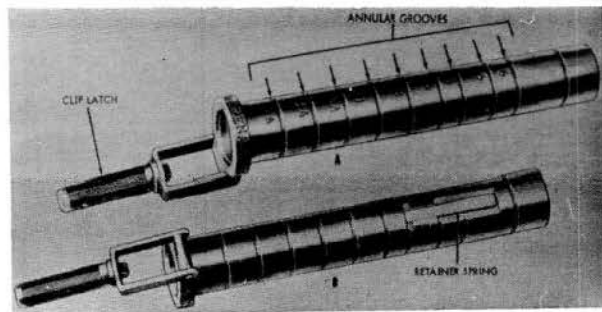
05C-132-936
 NAME Grenade Launcher M7
 TYPE American rifle grenade launcher
 DATE ADOPTED 1936
 LENGTH 19cm
 WT .34kg
 CAL 7.62x63mm
 MUZZLE VEL c. 165 fps
 WEAPON USED WITH M1 Garand

This grenade launcher is designed to fit over the muzzle and latch onto the bayonet lug of the M1 Garand rifle. The rifle will not fire semiautomatically with the launcher mounted and each rifle grenade blank must be hand loaded into the breech. The different rings on the launcher are for adjusting the range of the rifle grenade. The grenade is slipped over the launcher which will fire standard 22mm tail rifle grenades. The launcher is normally fired using the 7.62x63mm M3 Grenade launcher blank cartridge.



05C-132-942
 NAME Grenade Launcher M8
 TYPE American rifle grenade launcher
 DATE ADOPTED 1942
 LENGTH 15.2cm
 WT .34kg
 CAL 7.62x33mm
 MUZZLE VEL c. 145 fps
 WEAPON USED WITH M1 or M2 Carbine

This grenade launcher fits over the muzzle and clamps behind the front sight of the M1 or M2 carbines. The numbered rings are for adjusting the rifle grenades range according to how far onto the launcher the grenade is placed. The further over the launcher the grenade is fired from, the longer its range. The launcher is intended for use with the 7.62x33mm M6 rifle grenade cartridge and can fire any standard 22mm tail rifle grenades.



05C-132-956

NAME Grenade Launcher M76

TYPE American rifle grenade launcher

DATE ADOPTED 1956

LENGTH 21cm

WT .2kg

CAL 7.62x51mm

WEAPON USED WITH M14

This grenade launcher is designed for use with the M14 rifle. The Launcher slips over the flash suppressor and clamps onto the bayonet lug of the weapon. Range adjustment rings are found on the launcher. The gas cutoff switch in the gas system of the rifle must be turned off, easily done by turning the switch with the rim of a cartridge, before a grenade can get fired from the rifle. The rifle will have to be manually loaded when the gas cutoff is switched to fire grenades. The 7.62x51mm M64 grenade cartridge is used with the M14/M76 combination. The launcher will fire all standard 22mm tail rifle grenades.

HEAVY WEAPONS

The heavy weapons section is broken down into three groups. Most of the weapons in these classes require a crew to carry the weapon and a supply of ammunition but can be operated by a single person. The three sections are mortars, recoilless rifles, and 20 millimeter cannons.

Ø6A MORTARS :

The mortar is one of the oldest types of artillery dating back to 1451. A mortar fires a shell in a high arc so it drops on a target. The mortar also transmits its recoil directly to the ground eliminating the need for a complex mount. The modern mortar was developed from the original idea of Sir Wilfred Stokes in 1915. In the Stoke's mortar, a finned bomb with a percussion cartridge in the tail is dropped down a smooth barrel. The launch cartridge fires when the bomb strikes the fixed firing pin at the bottom of the barrel. This type of mortar is by far the most common and is referred to as a "drop-fire" mortar. All mortars in this section are drop fire types unless otherwise noted.

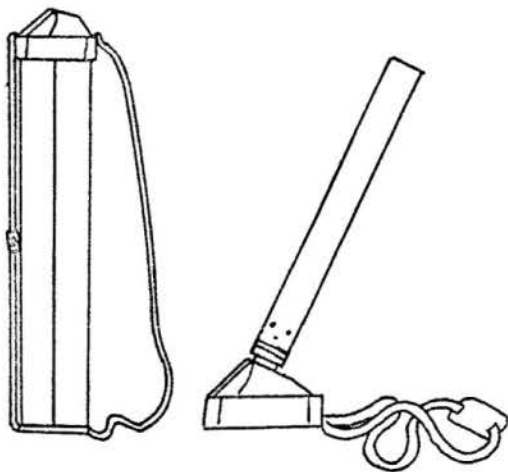
Ø6B RECOILLESS RIFLES :

During WWI a recoilless aircraft weapon, the Davis gun, was developed that fired a cannon shell. The gun worked by the counterforce principle where a mass equal to the weight of the shell is fired from the rear of the gun at the same time as the shell is fired from the front. Later, during WWII, the Germans fielded the first recoilless weapons using a counterblast for eliminating recoil.

In the counterblast system, the gases from the fired round are used to counter the weapons recoil. The cartridge case is pierced with holes or has a plastic base to allow the expanding gases to escape. The escaping gases are forced through a nozzle cone, at the breech, increasing their velocity and thereby cancelling the recoil of the fired shell. A drawback of this system is that the counter recoil gases cause a dangerous backblast behind the weapon. This backblast is an expanding cone of flame and smoke 50 meters long by 25 meters wide on the average and prevents these weapons from being fired inside bunkers or buildings.

Ø6C 20mm CANNON :

The 20mm shell is considered the upper limit of small arms ammunition. The caliber was originally developed for aircraft guns but found wide application in ground weapons. The 20mm was the largest round used in shoulder fired antitank rifles.



06A-011-972
 NAME PRB-424
 TYPE Belgian disposable silenced mortar
 DATE ADOPTED c.1972
 LENGTH 70cm
 WT (EMPTY) 6.46kg
 WT (LOADED) 7.18kg
 MUZZLE VEL 192 fps
 BURST RADIUS 15m
 MIN RNG 10m
 EFF RNG 450m
 MAX RNG 450m
 AMMUNITION TYPES HE frag
 TYPE OF FIRE Single shot, muzzle loaded
 RATE OF FIRE 20 rpm
 FEED DEVICE Single round
 FEED DEVICE WT .72kg
 BASIC LOAD 7 rounds w/launcher and shipping tubes
 LOAD WT 11.5kg
 Data is for weapon loaded with PRB-404 grenade

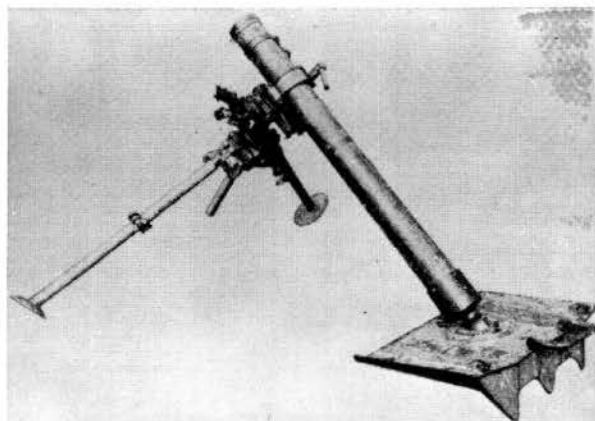
This is a unique disposable mortar manufactured in Belgium. The special feature of the weapon is that it is smokeless, flashless, and noiseless. These characteristics are achieved by using the "jet-shot" system. In the jet-shot system, a special cartridge propels the round with a rapidly moving drive rod. The cartridge has a sealed piston attached to the drive rod and the piston prevents any of the propellant gases from escaping. The high tensile steel cartridge case prevents the piston from moving beyond the end of the casing. Since the piston seals off any escaping gas there is no muzzle blast and thereby no noise.



06A-011-972-1
 NAME PRB-404 HE
 TYPE High explosive
 WEAPON USED IN PRB-424 mortar
 SIZE 25cm
 WT .72kg
 MUZZLE VEL 230 fps
 BURST RADIUS 15m (3m blast only)
 FILLER Comp. B
 FILLER WT .1kg
 EQUIVALENT TO TNT (R.E.) 1.25
 MIN RNG 30m

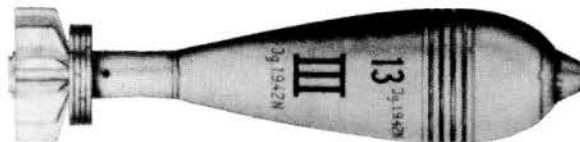
EFF RNG 450m
 MAX RNG 450m
 PACKAGING 24 per Case
 PACKAGE WT 24kg

This is a rifle grenade fitted with the jet shot cartridge for use with the PRB-424. The round has a point detonating fuse and a removable fragmentation sleeve. With the tail boom removed the notched wire coil fragmentation sleeve can be slipped off limiting the rounds effect to blast only.



06A-040-934
 NAME 8cm S. Gr. W. 34
 NAME (NATIVE) 8cm Schwerer Granatenwerfer 34
 TYPE German Mortar
 DATE ADOPTED 1934
 LENGTH 114.3cm
 WT (EMPTY) 62kg
 CAL 80mm
 MUZZLE VEL 571 fps
 BURST RADIUS 20m
 MIN RNG 60m
 EFF RNG 2400m
 MAX RNG 2400m
 AMMUNITION TYPES Type 34 HE, Type 39 HE, Type 34 Smoke
 TYPE OF FIRE Single shot, muzzle loaded, drop fired
 RATE OF FIRE 20 rpm
 FEED DEVICE single round
 FEED DEVICE WT 3.515kg
 Data is for weapon loaded with Type 34 HE

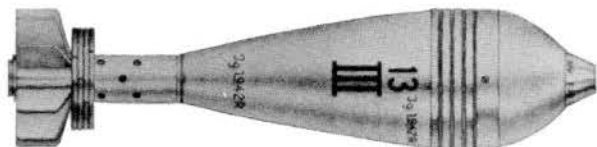
This was the standard German heavy infantry mortar of WWII. The weapon is a standard drop fired, smooth bore weapon which had a reputation for accuracy and reliability. Much of the credit for this reputation should go to the German crews of these weapons and their high standards of training.



06A-040-934-1
 NAME 80mm Type 34 HE
 TYPE High explosive
 WEAPON USED IN 80mm S. Gr. W. 34
 SIZE 33cm
 WT 3.515kg
 CAL 80mm
 MUZZLE VEL 477 fps

BURST RADIUS 20m
 FILLER TNT
 FILLER WT .503kg
 EQUIVALENT TO TNT (R.E.) 1.0
 MIN RNG 60m
 EFF RNG 2400m
 MAX RNG 2400m
 PACKAGING 3 rounds/Case
 PACKAGE WT 14.5kg

This was the standard explosive round for the S. G. W. 34. The fuse was non adjustable and detonated on impact.



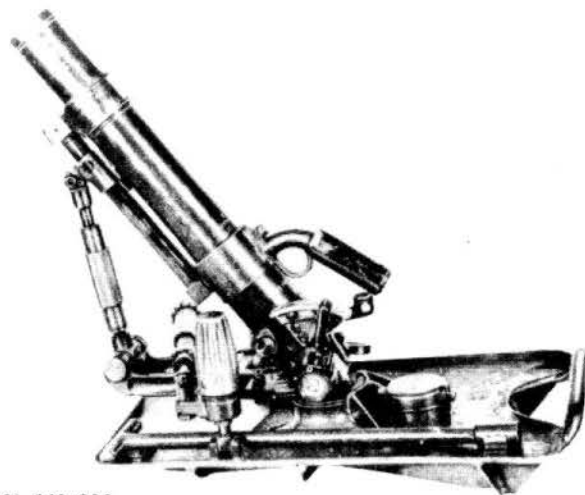
06A-040-934-2
 NAME 80mm Type 39 HE
 TYPE High explosive, rebound airburst
 WEAPON USED IN 80mm S. Gr. W. 34
 SIZE 33.3cm
 WT 3.515kg
 CAL 80mm
 MUZZLE VEL 477 fps
 BURST RADIUS 20m
 FILLER TNT
 FILLER WT .503kg
 EQUIVALENT TO TNT (R.E.) 1.0
 MIN RNG 60m
 EFF RNG 2400m
 MAX RNG 2400m
 PACKAGING 3 rounds/Case
 PACKAGE WT 14.5kg

Since an airburst is the most efficient way to attack troops, this round was developed for the 8 cm mortar. When the type 39 hits the ground, a small smokeless powder charge is set off under the nose cap. The powder charge ignites a delay and drives the body of the shell into the air. The shell "bounces" back into the air and detonates between 1.5 to 3 meters above the ground as an airburst.



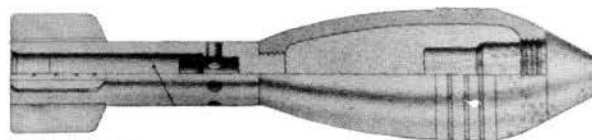
06A-040-934-3
 NAME 80mm Type 34 Smoke
 TYPE Smoke
 WEAPON USED IN 80mm S. Gr. W. 34
 SIZE 32.9cm
 WT 3.561kg
 CAL 80mm
 BURST RADIUS 10m
 FILLER Sulphur Trioxide
 FILLER WT .454kg
 MIN RNG 60m
 EFF RNG 2400m
 MAX RNG 2400m
 PACKAGING 3 rounds/Case
 PACKAGE WT 14.5kg

This is the standard smoke round for the 8cm mortar. The round is a bursting type munition filled with Liquid Sulfur trioxide. The Sulfur Trioxide reacts with air forming a dense cloud of smoke. The smoke is actually made up of particles of weak sulfuric acid. Due to the acid the smoke does have an irritating effect on the skin and eyes and should not be inhaled for any length of time.



06A-040-936
 NAME 50mm L. Gr. W. 36
 NAME (NATIVE) 5 cm Leichter Granatwerfer 36
 TYPE German Mortar
 DATE ADOPTED 1936
 LENGTH 46.5cm
 WT (EMPTY) 14.06kg
 WT (LOADED) 15.059kg
 CAL 50mm
 MUZZLE VEL 230 fps
 BURST RADIUS 20m
 MIN RNG 46m
 EFF RNG 503m
 MAX RNG 520m
 AMMUNITION TYPES HE
 TYPE OF FIRE Single shot, muzzle loaded
 RATE OF FIRE 18 rpm
 FEED DEVICE Single round
 FEED DEVICE WT .999kg
 BASIC LOAD 10 rounds
 LOAD WT 12.5kg
 Data is for weapon loaded with HE

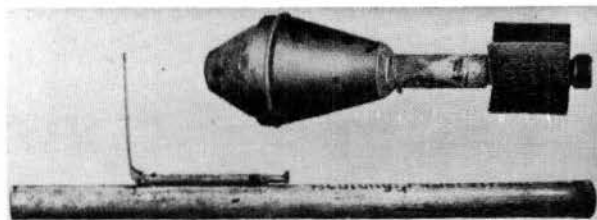
This small mortar was the standard light mortar of the German Army during the first half of WWII. Considerably more complicated than its small round warranted, the L. Gr. W. 36 had a complex leveling system and was trigger fired.



06A-040-936-1
 NAME 50mm HE
 TYPE High explosive
 WEAPON USED IN 50mm L. Gr. W. 36
 SIZE 21.9cm
 WT .999kg
 CAL 50mm

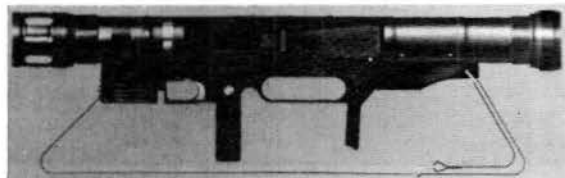
MUZZLE VEL 246 fps
 BURST RADIUS 20m
 FILLER TNT
 FILLER WT .112kg
 EQUIVALENT TO TNT (R.E.) 1.0
 MIN RNG 46m
 EFF RNG 503m
 MAX RNG 520m
 PACKAGING 10 rounds/Case
 PACKAGE WT 12.5kg

This is the only round loaded for the L. Gr. W. 36. When used in the North African campaign, the mortar and ammunition was soon found to be inadequate in terms of range and effect and was soon replaced by the S. Gr. W. 34.



06B-040-944
 NAME Panzerfaust 100
 TYPE German recoilless antitank weapon
 DATE ADOPTED 1944
 LENGTH 104cm
 WT (LOADED) 6.8kg
 CAL 15cm
 MUZZLE VEL 204 fps
 BURST RADIUS 10m
 MIN RNG 5m
 EFF RNG 60m
 MAX RNG 100m
 TYPE OF FIRE Single shot disposable
 RATE OF FIRE Single shot
 FEED DEVICE 1 round
 FEED DEVICE WT 6.8kg
 BASIC LOAD 1 round
 LOAD WT 6.8kg

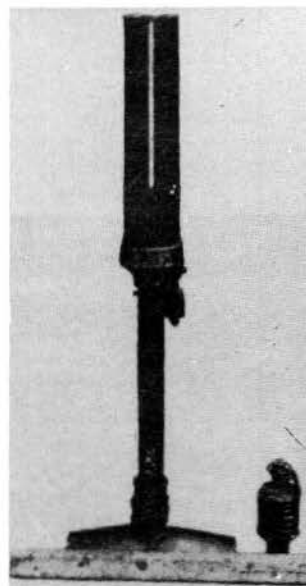
These German antitank launchers were the first of the disposable antitank weapons. Designed to be used only once, the launcher of the Panzerfaust was a simple steel tube with a firing mechanism and a simple sight system. Raising the rear sight cocks the launcher. Triggering the launcher fires a powder charge inside the tube that launches the fin stabilized grenade from one end and a counterforce blast of flame from the other. Though it had a relatively short effective range, the Panzerfaust was very popular among the troops for the efficient way it could dispatch a tank. This model, the Panzerfaust 100, was the most common of the series.



06B-041-972
 NAME Armbrust 300
 TYPE German Antitank weapon

DATE ADOPTED 1972
 LENGTH 85cm
 WT (LOADED) 6.3kg
 CAL 67mm
 MUZZLE VEL 722 fps
 BURST RADIUS 5m
 MIN RNG 10m
 EFF RNG 300m
 MAX RNG 1000m
 TYPE OF FIRE Single shot, disposable
 RATE OF FIRE Single shot
 FEED DEVICE 1 round
 FEED DEVICE WT 6.3kg
 BASIC LOAD 2 rounds
 LOAD WT 12.6kg

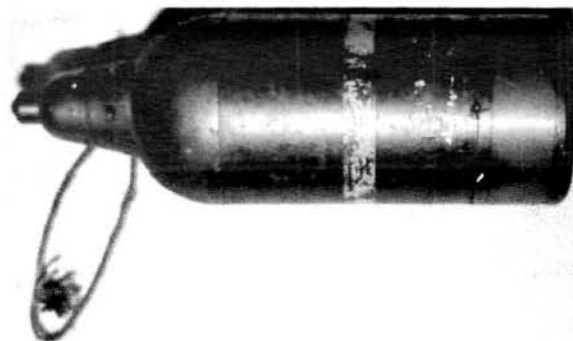
This is a new antitank weapon developed in Germany and now under consideration by a number of governments, including the US. The Armbrust uses the countermass principle to eliminate recoil. The countermass system drives a weight equal to the weight of the shell out the back of the weapon at the same velocity as the shell. The countermass of the Armbrust is made up of 5000 plastic flakes that start to break up as soon as they leave the weapon and are harmless within a few meters. The Armbrust is also a smokeless and flashless round since the shell and countermass are driven by pistons which seal the propellant gases inside the launcher. Since there is no muzzle blast, most of the noise of launching is eliminated and makes the firing of an Armbrust quieter than a pistol shot. The shaped charge warhead has excellent penetration which, combined with a dangerous backblast of less than .5 meters, makes the Armbrust an excellent antitank weapon.



06A-062-929
 NAME 50mm Model 89 Grenade discharger
 NAME (NATIVE) Hachikyu Shiki Jutekidanto
 TYPE Japanese Mortar
 DATE ADOPTED 1929
 LENGTH 60.9cm
 WT (EMPTY) 4.649kg
 WT (LOADED) 5.182kg
 CAL 50mm
 BURST RADIUS 10m

MIN RNG 50m
 EFF RNG 170m
 MAX RNG 170m
 AMMUNITION TYPES Mod 91 Grenade, Mod 89 Shell
 TYPE OF FIRE Single shot, muzzle loaded
 RATE OF FIRE 15 rpm
 FEED DEVICE Single round
 FEED DEVICE WT .533 kg
 BASIC LOAD 5 rounds
 LOAD WT 2.665 kg
 Data is for weapon loaded with Type 91 HE

This was a very common mortar with the Japanese forces in WWII. The Model 89 has a trigger to fire it and is rifled for accuracy. The mortar can use the Model 91 hand grenade when it is fitted with a propellant charge. The more common round for the Model 89 is the Model 89 shell which has an expanding base to fill the rifling of the mortar tube. Though known as the "knee mortar" to the allies due to the curved baseplate, this weapon cannot be fired when braced against the leg. The curved baseplate was for bracing against the ground and if fired braced against the thigh, as a number of allied soldiers discovered, the severe recoil shatters the thigh bones.



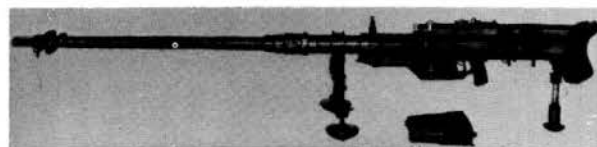
06A-062-929-2
 NAME 50mm Type 89 HE
 TYPE High explosive
 WEAPON USED IN 50mm Model 89 Mortar
 SIZE 5x14.9cm
 WT .79kg
 CAL 50mm
 BURST RADIUS 10m
 FILLER Picric Acid
 FILLER WT 0.164kg
 EQUIVALENT TO TNT (R.E.) 0.94
 MIN RNG 120m
 EFF RNG 650m
 MAX RNG 650m

This was the preferred round for use with the Model 89 mortar. The shell has an expanding disk in the base of the round that expands to fit the rifling of the mortar. The rifling spin stabilizes the round and the expanding disk seals off the gas, increasing the range of the shell.



06A-062-929-1
 NAME 50mm Mod 91 HE
 TYPE High Explosive
 WEAPON USED IN Model 89 Mortar
 SIZE 12.6cm
 WT .533kg
 CAL 50mm
 BURST RADIUS 10m
 FUSE DELAY 7 seconds
 FILLER TNT
 FILLER WT 0.065kg
 EQUIVALENT TO TNT (R.E.) 1.0
 MIN RNG 50m
 EFF RNG 170m
 MAX RNG 170m

This is the standard Japanese infantry grenade fitted with a screw in propellant cap in the base. The grenade does not fit the rifling of the mortar so does not have the range or accuracy of the Model 89 shell. With the pin pulled on the grenade, the fuse ignites when the mortar is fired, setting off the grenade four seconds later. Though somewhat inaccurate, the Type 91 grenade can be used as either a hand grenade or mortar shell, cutting down on the different kinds of ammunition an infantry troop has to carry.



06C-113-936
 NAME Pzb-785
 NAME (NATIVE) S18-1100 (2cm Panzerabwehrbuchse 785)
 TYPE Swiss (German) antitank cannon
 DATE ADOPTED 1936
 LENGTH 216cm
 WT (EMPTY) 50kg
 WT (LOADED) 57.94kg
 CAL 20x135mmB
 PENETRATION IN STEEL 2cm
 MUZZLE VEL 3000 fps
 EFF RNG 1500m
 MAX RNG 7000m
 AMMUNITION TYPES HE-T, AP-T
 TYPE OF FIRE Semiautomatic
 RATE OF FIRE 10 rpm
 FEED DEVICE 10 round magazine
 FEED DEVICE WT 7.94kg
 BASIC LOAD 5 magazines (50 rounds)
 LOAD WT 39.7kg

Data is for weapon loaded with AP-T

This massive 20mm cannon was developed in Switzerland as a shoulder fired antitank rifle. Adapted as an antitank weapon by Germany, the Solothurn was quickly outclassed by the increasing thickness of armor on the newer tanks. A very well designed and accurate weapon, the S18-1100 would eject the empty magazine when the last shot was fired, locking the bolt to the rear.

When a loaded magazine was inserted the bolt was released, chambering a round for firing.



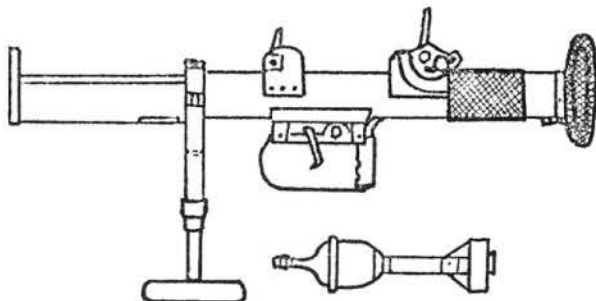
06C-113-936-1
NAME 20mm Solothurn AP-T
TYPE Armor Piercing-tracer
WEAPON USED IN S18-1100
WT .344kg
CAL 20x138mmB
MUZZLE VEL 2788 fps
PENETRATION IN STEEL 2cm
EFF RNG 1500m
MAX RNG 7000m

This was the standard round for the Pzb 785. The projectile was a solid slug of hardened steel with a tracer element in the base and a copper driving band to engage the barrel's rifling.



06C-113-936-2
NAME Solothurn HE-T
TYPE High explosive-tracer
WEAPON USED IN S18-1100
WT .341kg
CAL 20x138mmB
MUZZLE VEL 2788 fps
BURST RADIUS .5m
FUSE DELAY impact
FILLER Penthrite
FILLER WT .0037kg
EQUIVALENT TO TNT (R.E.) 1.66
MIN RNG 10m
EFF RNG 1200m
MAX RNG 1275m

This high explosive round gave the Pzb 785 the capability of engaging a greater variety of targets. The round is nose fused and detonates on impact. There is also a self destruct built into the tracer mechanism that detonates the round 1.5 seconds after firing.



06A-131-942
NAME PIAT
NAME (NATIVE) Projector, Infantry, AntiTank
TYPE British antitank weapon
DATE ADOPTED 1942

LENGTH 99cm
WT (EMPTY) 14.4kg
WT (LOADED) 15.75kg
CAL 89mm
MUZZLE VEL 450 fps
BURST RADIUS 10m
PENETRATION IN STEEL 7.5cm
EFF RNG 91m
MAX RNG 685m
AMMUNITION TYPES HEAT, Smoke
TYPE OF FIRE Single shot, muzzle loaded
RATE OF FIRE 6 rpm
FEED DEVICE Single round
FEED DEVICE WT 1.35kg
BASIC LOAD 6 rounds
LOAD WT 8.1kg

Data is for weapon loaded with HEAT

The PIAT was the standard British individual antitank weapon through the latter half of WWII. The weapon is of an unusual design known as a spigot mortar. In the spigot mortar a large rod (spigot) is used in place of a barrel and the round fits over the rod, much as in a rifle grenade. In the PIAT, a bomb would be placed in the front trough and the firing rod would be driven into the back of the bomb, firing it, and recocking from recoil.

The actuality of using this weapon varied considerable from the above "official" version. The spring driving the firing rod required a 200 lb (90.7kg) pull over 24 inches to cock it. The cocking instructions told the shooter to stand on the buttplate, hold the handle with both hands, and pull. If you were shorter than average, you did not cock the PIAT. Cocking in the prone position, a favorite of infantrymen while getting shot at, resembled a cross between a wrestling match and making violent love to the weapon. Firing was also a bit of an adventure because, if you did not hold the weapon solidly enough, the recoil was insufficient to recock the weapon. The result was, manual cocking. The large trigger needed the pull of all four fingers to fire it. A credit to the British Infantryman is that they did destroy a number of enemy tanks and buildings with this weapon.



06A-132-942

NAME 60mm M19 Mortar
TYPE American Mortar
DATE ADOPTED 1942
LENGTH .819m (barrel)
WT (EMPTY) 19.1kg
CAL 60mm
BURST RADIUS 20m
MIN RNG 45m
EFF RNG 1790m
MAX RNG 1814m

AMMUNITION TYPES M49A2E2 HE, M302E2 WP, M83A3 ILLUM
TYPE OF FIRE Single shot, muzzle loaded, drop fired
RATE OF FIRE 25 rpm
FEED DEVICE Single round
FEED DEVICE WT 1.451kg
BASIC LOAD 42 rounds
LOAD WT 60.942kg

Data is for weapon loaded with M49A2E2 High Explosive

This was the standard U.S. Infantry platoon mortar from 1942 through the 1960's. The weapon is still encountered today as it is a very light and maneuverable piece of artillery.



06A-132-942-1

NAME 60mm M49A2E2 HE
TYPE High Explosive
WEAPON USED IN M19 Mortar
SIZE 29.5cm
WT 1.451kg
CAL 60mm
MUZZLE VEL 520 fps
BURST RADIUS 20m
FILLER Comp. B
FILLER WT .191kg
EQUIVALENT TO C4 (R.E.) 1.25
MIN RNG 45m
EFF RNG 1790m
MAX RNG 1814m
PACKAGING 12 rounds/Case
PACKAGE WT 24.9kg

This is the high explosive round for the M19 60mm Mortar. The round is designed for maximum fragmentation for antipersonnel effect.

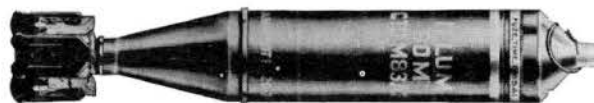


06A-132-942-2

NAME 60mm M302E2 WP
TYPE White Phosphorus
WEAPON USED IN M19 Mortar
SIZE 33.2cm
WT 1.86kg
CAL 60mm
BURST RADIUS 10m
BURN TIME 40 seconds at 2700 degrees Centigrade
FILLER White Phosphorus
FILLER WT .347 kg

MIN RNG 35m
EFF RNG 1450m
MAX RNG 1450m

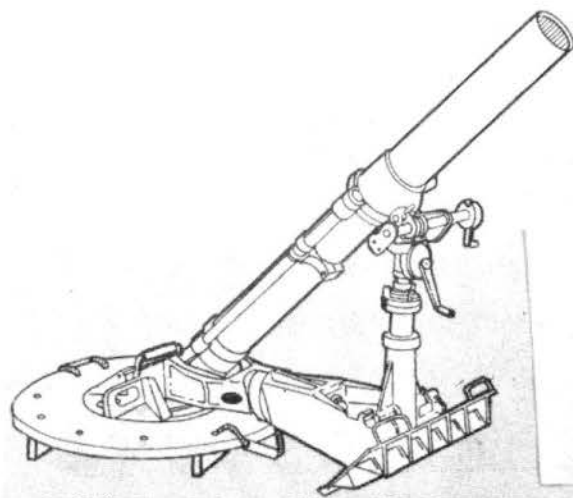
This white phosphorus round is used for both smoke production as well as antipersonnel effect from the phosphorus fragments.



06A-132-942-3

NAME 60mm M83A3 Illuminating
TYPE Parachute flare
WEAPON USED IN M19 Mortar
SIZE 36.3cm
WT 1.882kg
CAL 60mm
BURST RADIUS 400m
FUSE DELAY 14.5 seconds
BURN TIME 32 seconds at 250,000 candlepower
FILLER Magnesium flare
FILLER WT .222kg
MIN RNG 375m
EFF RNG 1000m
MAX RNG 1000m

This round ejects a magnesium flare suspended from a parachute when its time fuse functions. The fuse has a set time and starts functioning when the shell is fired. The height of the flare is determined by the angle of the mortar.



06A-132-951

NAME 107mm M30 Mortar
NAME (NATIVE) Four Deuce
TYPE American Mortar
DATE ADOPTED 1951
LENGTH 1.52m
WT (EMPTY) 295kg
CAL 107mm
MUZZLE VEL 960 fps
BURST RADIUS 40x20m
MIN RNG 920m
EFF RNG 5650m
MAX RNG 5650m
AMMUNITION TYPES M329A1 HE, M328A1 WP, M335A2 ILLUM, M630 CS
TYPE OF FIRE Single Shot, muzzle loaded, drop fired

RATE OF FIRE 22 rpm
FEED DEVICE Single round
FEED DEVICE WT 12.279kg

Data is for weapon loaded with M329A1 HE

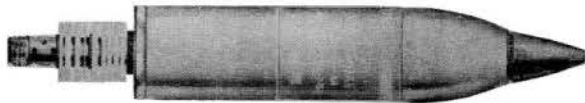
This is the largest mortar in the U.S. Military. Originally designed to fire chemical agent shells, the 4.2 inch mortar is now a battalion level weapon. The weapon needs a 8 man crew to move it but can be operated by a single person. The large shells fired by this mortar are spin stabilized instead of using fins which helps account for the weapon's excellent accuracy.



06A-132-951-1

NAME 107mm M329A1 HE
TYPE High Explosive
WEAPON USED IN M30 Mortar
SIZE 65.5cm
WT 12.279kg
CAL 107mm
MUZZLE VEL 960 fps
BURST RADIUS 40x20m
FILLER TNT
FILLER WT 3.538kg
EQUIVALENT TO TNT (R.E.) 0.75
MIN RNG 920m
EFF RNG 5650m
MAX RNG 5650m
PACKAGING 2 rounds/Case
PACKAGE WT 36.7 kg

This is the standard round of ammunition for the M30 mortar. The shell contains a large amount of explosive for its size and has a correspondingly large burst radius. The burst radius is oval in shape with the long axis in line with the direction of the round's flight.



06A-132-951-2

NAME 107mm M328A1 WP
TYPE White Phosphorus
WEAPON USED IN M30 Mortar
SIZE 65.5cm
WT 13kg
CAL 107mm
MUZZLE VEL 960 fps
BURST RADIUS 40m
BURN TIME 2 minutes at 2700 degrees Centigrade
FILLER White Phosphorus
FILLER WT 3.692kg
MIN RNG 920m

EFF RNG 5650m
MAX RNG 5650m
PACKAGING 2 rounds/Case
PACKAGE WT 34.5kg

This WP smoke round is primarily used as a smoke screen producer. Due to the heat of the burning Phosphorus, the shell also makes an excellent incendiary and antipersonnel round though the smoke from the Phosphorus would quickly obscure the target.



06A-132-951-3

NAME 107mm M335A2 Illuminating
TYPE Parachute flare
WEAPON USED IN M30 Mortar
SIZE 65.3cm
WT 12.111kg
CAL 107mm
MUZZLE VEL 990 fps
BURST RADIUS 1500m
FUSE DELAY adjustable: 1 to 100 seconds
BURN TIME 90 seconds at 850,000 candlepower
FILLER Magnesium flare
FILLER WT 1.5kg
MIN RNG 400m
EFF RNG 5490m
MAX RNG 5490m
PACKAGING 2 rounds/Case
PACKAGE WT 38.1kg

This illuminating round is also referred to as a "Star" shell. Upon functioning, the shell ejects a magnesium flare suspended from a parachute. The height of the flare is determined by adjusting the range and setting the time fuse.



06A-132-951-4

NAME 107mm M630 CS
TYPE Gas
WEAPON USED IN M30 Mortar
SIZE 65.3cm
WT 12.111kg
CAL 107mm
MUZZLE VEL 990 fps
BURST RADIUS 72x16x8m
FUSE DELAY 2 to 100 seconds (variable) or impact
BURN TIME 60 seconds
FILLER 4 CS/Pyrotechnic cannisters
FILLER WT .48kg per cannister, 1.92kg total
MIN RNG 1540m
EFF RNG 6182m
MAX RNG 6182m

This shell has a time fuse that, upon functioning, detonates the shell ejecting 4 CS cannisters. The cannisters burn releasing a mixture of CS gas and smoke.



06A-132-952
 NAME 81mm M29 Mortar
 TYPE American Mortar
 DATE ADOPTED c. 1952
 LENGTH 129.5cm
 WT (EMPTY) 40.665kg
 CAL 81mm
 BURST RADIUS 34m
 MIN RNG 50m
 EFF RNG 4412m
 MAX RNG 4737m
 AMMUNITION TYPES M374 HE, M375 WP, M301A3 ILLUM
 TYPE OF FIRE Single shot, muzzle loaded, drop fired
 RATE OF FIRE 12 rpm
 FEED DEVICE Single round
 FEED DEVICE WT 4.237kg
 BASIC LOAD 6 rounds
 LOAD WT 25.422kg
 Data is for weapon loaded with M374 HE

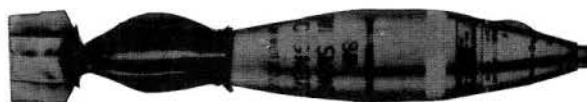
This is the standard company mortar in the U.S. Army. The weapon is normally crewed by 3 men but can be easily operated by one though the rate of fire is reduced by 50%. This general caliber of mortar is the most common in the World's militaries.



06A-132-952-1
 NAME 81mm M374 HE
 TYPE High Explosive
 WEAPON USED IN M29 Mortar
 SIZE 52.8cm
 WT 4.237kg
 CAL 81mm
 BURST RADIUS 34m
 FILLER Comp. B
 FILLER WT .953kg
 EQUIVALENT TO TNT (R.E.) 1.0
 MIN RNG 50m
 EFF RNG 4412m
 MAX RNG 4737m
 PACKAGING 3 rounds/Case
 PACKAGE WT 23.1kg

This is the standard HE round for the 81mm mortar. The fuse of the round can be set for SQ (superquick) or

delay. The SQ setting detonates the round at ground level for maximum fragmentation. The delay setting detonates the round immediately following impact to allow the shell to penetrate a target.

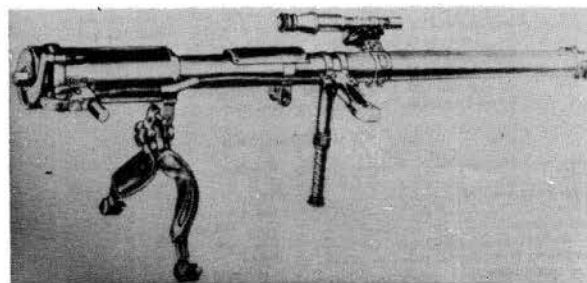


06A-132-952-2
 NAME 81mm M375 WP
 TYPE White Phosphorus
 WEAPON USED IN M29 Mortar
 SIZE 52.8cm
 WT 4.146kg
 CAL 81mm
 BURST RADIUS 20m
 BURN TIME 120 seconds at 2700 degrees Centigrade
 FILLER White Phosphorus
 FILLER WT .726kg
 MIN RNG 50m
 EFF RNG 4412m
 MAX RNG 4437m
 PACKAGING 3 rounds/Case
 PACKAGE WT 23.1kg
 This is the standard smoke round for the M29 mortar. The basic load of a mortar is normally made up of 10% WP rounds.



06A-132-952-3
 NAME 81mm M301A3 Illuminating
 TYPE Parachute flare
 WEAPON USED IN M29 mortar
 SIZE 62.8cm
 WT 4.581kg
 CAL 81mm
 BURST RADIUS 1200m
 FUSE DELAY 1 to 100 seconds
 BURN TIME 75 seconds at 500,000 candlepower
 FILLER magnesium flare
 FILLER WT .621kg
 MIN RNG 90m
 EFF RNG 2100m
 MAX RNG 3150m
 PACKAGING 3 rounds/case
 PACKAGE WT 27.2kg

This shell ejects a magnesium flare suspended by a parachute when it is triggered by its time fuse. The adjustable time fuse allows the height of the flare to be set by the gunner.



06B-132-945

NAME 57mm M18 Recoilless rifle

TYPE American recoilless

DATE ADOPTED 1945

LENGTH 156.5cm

WT (EMPTY) 21.0kg

WT (LOADED) 22.563kg

CAL 57mm

PENETRATION IN STEEL 8.6cm

MUZZLE VEL 1200fps

BURST RADIUS 10m

MIN RNG 10m

EFF RNG 450m

MAX RNG 4338m

AMMUNITION TYPES M307A1 HEAT, M306A1 HE, M308A1 WP, T25E5 Can.

TYPE OF FIRE Single shot

RATE OF FIRE 15 rpm

FEED DEVICE Single round

FEED DEVICE WT 2.463kg

Data is for weapon loaded with M307A1 HEAT

This is the first recoilless rifle used by the U.S. forces. The M18 can be either shoulder fired or the shoulder pads can be unfolded and the weapon ground mounted on its built-in tripod.



06B-132-945-1

NAME 57mm M306A1 HE

TYPE High Explosive

WEAPON USED IN M18 Recoilless rifle

SIZE 44.5cm

WT 2.477kg

CAL 57mm

MUZZLE VEL 1200fps

BURST RADIUS 24m

FILLER Comp B

FILLER WT .277kg

EQUIVALENT TO TNT (R.E.) 1.25

MIN RNG 10m

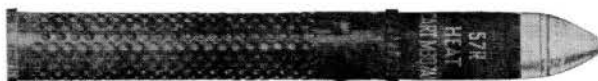
EFF RNG 450m

MAX RNG 4429m

PACKAGING 4 rounds/case

PACKAGE WT 19.958kg

This HE round has a fragmentation warhead for use against personnel and general ground targets.



06B-132-945-2

NAME 57mm M307A1 HEAT

TYPE High explosive antitank

WEAPON USED IN M18 recoilless rifle

SIZE 47.7cm

WT 2.463kg

CAL 57mm

MUZZLE VEL 1200 fps

BURST RADIUS 10m

PENETRATION IN STEEL 8.6cm

FILLER Comp. B

FILLER WT .184kg

EQUIVALENT TO TNT (R.E.) 1.25

MIN RNG 10m

EFF RNG 450m

MAX RNG 4338m

PACKAGING 4 rounds/case

PACKAGE WT 20.412kg

The warhead of this HEAT round contains a shaped charge. Due in part to the round having spin stabilization, a good deal of the shaped charge's effect is lost, giving relatively poor penetration.



06B-132-945-3

NAME 57mm M308A1 WP

TYPE White phosphorus

WEAPON USED IN M18 recoilless rifle

SIZE 44.5cm

WT 2.463kg

CAL 57mm

MUZZLE VEL 1200 fps

BURST RADIUS 17m

BURN TIME 30 seconds at 2700 degrees C.

FILLER White phosphorus

FILLER WT .168kg

MIN RNG 10m

EFF RNG 450m

MAX RNG 4129m

PACKAGING 4 rounds/case

PACKAGE WT 19.5kg

This is a smoke round for the M18. The burning temperature of the Phosphorus also gives the round excellent antipersonnel and incendiary uses.



06B-132-945-4

NAME 57mm T25E5 Cannister

TYPE Antipersonnel

WEAPON USED IN M18 recoilless rifle

SIZE 39.3cm

WT 2.463kg

CAL 57mm

MUZZLE VEL 1200 fps

BURST RADIUS 5m x 25 meters range

FILLER 154 cylindrical slugs

MIN RNG 0m

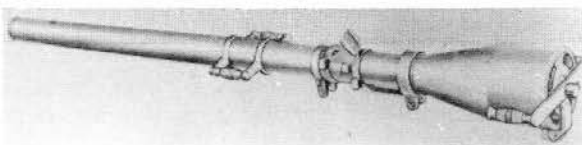
EFF RNG 175m

MAX RNG 175m

PACKAGING 4 rounds/case

PACKAGE WT 19.5kg

This cannister round turns the M18 into a giant "shotgun". The steel pellets carried in the warhead immediately start to spread upon leaving the muzzle of the weapon.





06B-132-945a

NAME 75mm M20 Recoilless rifle

TYPE American recoilless rifle

DATE ADOPTED 1945

LENGTH 208cm

WT (EMPTY) 51.9kg

WT (MOUNTED) 76.1kg

WT (LOADED) 86.653kg

CAL 75mm

PENETRATION IN STEEL 10.2cm

MUZZLE VEL 990 fps

BURST RADIUS 15m

MIN RNG 20m

EFF RNG 550m

MAX RNG 6343m

AMMUNITION TYPES M310A1 HEAT, M309A1 HE, M311A1 WP

TYPE OF FIRE Single shot

RATE OF FIRE 10 rpm

FEED DEVICE Single round

FEED DEVICE WT 9.533kg

Data is for weapon loaded with M310A1 HEAT.

This recoilless weapon was too heavy for shoulder firing and was mounted on a modified M1917A1 Browning machinegun tripod. The M20 was capable of excellent accuracy and could be used as a light artillery piece by small units.



06B-132-945a-1

NAME 75mm M310A1 HEAT

TYPE High Explosive antitank

WEAPON USED IN M20 recoilless rifle

SIZE 73.5cm

WT 9.553kg

CAL 75mm

MUZZLE VEL 1000 fps

BURST RADIUS 15m

PENETRATION IN STEEL 10.2cm

FILLER Comp. B

FILLER WT .454kg

EQUIVALENT TO TNT (R.E.) 1.25

MIN RNG 20m

EFF RNG 550m

MAX RNG 6653m

PACKAGING 2 rounds/Case

PACKAGE WT 34.02kg

This is the standard antitank round for the M20 recoilless rifle. The warhead uses a shaped charge and some of the effect of the charge is lost due to the shell using spin stabilization.



06B-132-945a-2

NAME 75mm M309A1 HE

TYPE High Explosive

WEAPON USED IN M20 Recoilless rifle

SIZE 73.5

WT 10.147kg

CAL 75mm

MUZZLE VEL 990 fps

BURST RADIUS 25m

FILLER TNT

FILLER WT .676kg

EQUIVALENT TO TNT (R.E.) 1.0

MIN RNG 20m

EFF RNG 600m

MAX RNG 6343m

PACKAGING 2 rounds/Case

PACKAGE WT 35.38kg

This round would be used for light-skinned targets such as trucks or buildings where the penetration of the HEAT would not be needed.



06B-132-945a-3

NAME 75mm M311A1 WP

TYPE White Phosphorus

WEAPON USED IN M20 Recoilless rifle

SIZE 73.5cm

WT 10.524kg

CAL 75mm

MUZZLE VEL 990 fps

BURST RADIUS 20m

BURN TIME 60 seconds at 2700 degrees Centigrade

FILLER White Phosphorus

FILLER WT .612kg

MIN RNG 20m

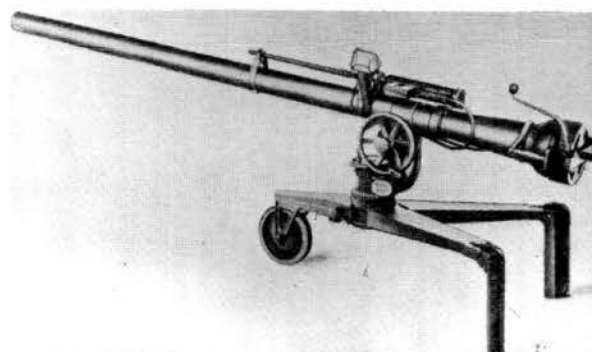
EFF RNG 550m

MAX RNG 6398m

PACKAGING 2 rounds/Case

PACKAGE WT 36.288kg

This round gives the M20 a smoke producing capability.



06B-132-953

NAME 106mm M40A2 Recoilless rifle

TYPE American recoilless rifle

DATE ADOPTED 1953

LENGTH 340cm

WT (EMPTY) 126.6kg (with M8C rifle)

WT (LOADED) 146.4kg (with 20 round magazine M8C)

WT (MOUNTED) 228.5kg

CAL 106mm

MUZZLE VEL 1650 fps

BURST RADIUS 20m

MIN RNG 50m

EFF RNG 1100m

MAX RNG 7700m

AMMUNITION TYPES M344A1 HEAT, M346A1 HEP-T, XM581 APERS-T

TYPE OF FIRE Single shot, breech loaded

RATE OF FIRE 5 rpm

FEED DEVICE Single round

FEED DEVICE WT 16.887kg

BASIC LOAD 6 rounds

Data is for weapon loaded with M344A1 HEAT

This was the heavy antitank weapon of the U.S Army until it was replaced by the TOW Missile System. When used with the M8C spotting rifle, the M40A2 has an excellent chance of a first round hit with the main gun. The M40A2 is often found mounted in a light vehicle for quick maneuverability.

03-132-953

NAME M8C Spotting rifle

TYPE American aiming rifle for use w/M40A2 recoilless rifle

DATE ADOPTED 1953

LENGTH 114cm

WT (EMPTY) 11.072kg

WT (LOADED) 13.989kg

CAL 12.7x77mm

MUZZLE VEL 1732 fps

EFF RNG 1500m

MAX RNG 3100m

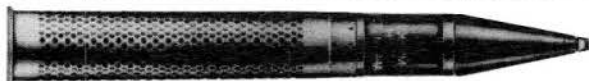
TYPE OF FIRE Semiautomatic

RATE OF FIRE (SS) 40 rpm

FEED DEVICE 20 round box magazine

FEED DEVICE WT 2.917kg

This gas operated rifle is always used mounted on the M40 or M40A1,2 recoilless rifle. The M8C is chambered for a special .50 caliber round that ballistically matches the HEAT round fired by the 106mm recoilless rifle. The special spotter round used by the M8C has a bright tracer element and explodes, releasing a white puff of smoke, on impact.



06B-132-953-1

NAME 106mm M344A1 HEAT

TYPE High explosive antitank

WEAPON USED IN M40A2 recoilless rifle

SIZE 99.8cm

WT 16.887kg

CAL 106mm

MUZZLE VEL 1650 fps

BURST RADIUS 20m

PENETRATION IN STEEL 45cm

FILLER Comp. B

FILLER WT 1.266kg

EQUIVALENT TO TNT (R.E.) 1.25

MIN RNG 50m

EFF RNG 1100m

MAX RNG 7700m

This is the standard antitank round for the M40A2. The improved shaped charge, fin stabilized round has excellent penetration as well as some fragmentation.



06B-132-953-2

NAME 106mm M346A1 HEP-T

TYPE High explosive, plastic-tracer

WEAPON USED IN M40A2 recoilless rifle

SIZE 96cm

WT 17.237kg

CAL 106mm

MUZZLE VEL 1650 fps

BURST RADIUS 14m

PENETRATION IN STEEL 15cm

FILLER A-3

FILLER WT 3.493kg

EQUIVALENT TO TNT (R.E.) 1.34

MIN RNG 50m

EFF RNG 1100m

MAX RNG 7700m

This projectile has a special "plastic" or "squash" warhead. The front of the projectile has a thin casing over a filler of plastic explosive. When the round strikes a target the warhead squashes, spreading the explosive over the target and then detonating. The detonating explosive builds up shock waves in the wall of the target causing spalling on the inside wall opposite the point of impact. Spalling is where a chunk of the wall breaks off and moves away from the wall at a high velocity. The round does not actually penetrate steel but has a certain thickness of steel over which spalling will not take place. This round also has a tracer in the rear of the projectile that traces the path of the round with a streak of light.



06B-132-953-3

NAME 106mm XM581 APERS-T

TYPE Antipersonnel-tracer

WEAPON USED IN M40A2 recoilless rifle

SIZE 108.9cm

WT 18.597kg

CAL 106mm

MUZZLE VEL 1440 fps

BURST RADIUS 400 x 130 cone

FUSE DELAY adjustable, 0 - 3,300m in 100m increments

FILLER 10,160 0.5g flechettes

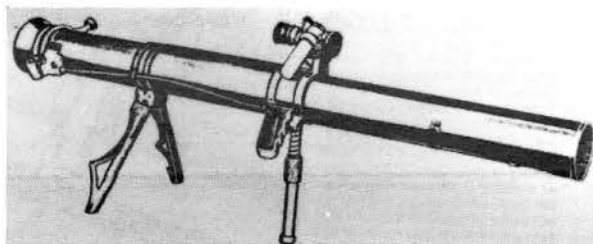
FILLER WT 5.08kg

MIN RNG 3m

EFF RNG 3300m

MAX RNG 3300m

This is an antipersonnel flechette round used to give the M40A2 a close in defense. The time fuse is marked in meters to adjust for range. When the fuse functions the projectile fires its load of flechettes in an expanding cone. When the projectile fires the flechettes it also releases a yellow marker indicating where the round detonated. The projectile also has a tracer element in the base to mark the flight path of the round.



06B-132-958

NAME 90mm M67 Recoilless Rifle

TYPE American recoilless rifle

DATE ADOPTED 1958

LENGTH 134.6cm

WT (EMPTY) 15.8kg

WT (LOADED) 19.996kg

CAL 90mm

MUZZLE VEL 700 fps

BURST RADIUS 10m

MIN RNG 20m

EFF RNG 400m

MAX RNG 2100m

AMMUNITION TYPES M371A1 HEAT, XM591 HE, XM590E1 Can

TYPE OF FIRE Single shot

RATE OF FIRE 5 rpm

FEED DEVICE Single round

FEED DEVICE WT 4.196kg

BASIC LOAD 5 rounds

LOAD WT 20.98kg

Data is for weapon loaded with M371A1 HEAT

This is the largest man-portable recoilless rifle in the U.S. inventory. The M67 is equal in firepower to some cannons used in WWII. The shoulder brace can be unfolded into the two rear legs of a built-in tripod allowing the weapon to be ground mounted. The M67 has been replaced by the Dragon Missile Launcher as the U.S. Army's medium antitank weapon.



06B-132-958-1

NAME 90mm M371A1 HEAT

TYPE High Explosive Antitank

WEAPON USED IN M67 recoilless rifle

SIZE 71.4cm

WT 4.196kg

CAL 90mm

MUZZLE VEL 700 fps

BURST RADIUS 10m

PENETRATION IN STEEL +20cm

FILLER Comp. B

FILLER WT .78kg

EQUIVALENT TO TNT (R.E.) 1.25

MIN RNG 20m

EFF RNG 400m

MAX RNG 2100m

This round uses a shaped charge for armor penetration. To keep projectile spin from dissipating the explosive jet, the round is fin stabilized.



06B-132-958-2

NAME 90mm XM591 HE

TYPE High explosive

WEAPON USED IN M67 recoilless rifle

SIZE 67.9cm

WT 6.033kg

CAL 90mm

MUZZLE VEL 475 fps

BURST RADIUS 34m

FILLER Comp. B

FILLER WT .953kg

EQUIVALENT TO TNT (R.E.) 1.25

MIN RNG 30m

EFF RNG 400m

MAX RNG 2100m

This is an experimental explosive round for the M67 recoilless rifle. The projectile is a modified M374 81mm mortar round. The 81mm round is carried in a sabot so it will fit the bore of the M67. The HE round is especially useful when attacking thin skinned targets, trucks, tents, etc., and for breaching walls in house to house fighting.



06B-132-958-3

NAME 90mm XM590E1 Cannister

TYPE Antipersonnel

WEAPON USED IN M67 Recoilless rifle

SIZE 48.6cm

WT 3.08kg

CAL 90mm

MUZZLE VEL 1300 fps

BURST RADIUS 7 meters x each 50 meters range, 35 m at 250m

FILLER 2400 0.5g flechettes

FILLER WT 1.2kg

MIN RNG 0m

EFF RNG 300m

MAX RNG 399m

This cannister round acts as a giant shotgun shell giving the M67 a close-in antipersonnel capability. The round breaks open at the muzzle when fired and the 2400 flechettes spread into a conical pattern.

GRENADES

Small flasks of pottery or metal were probably among the first weapons made using black powder as an explosive. Though their invention cannot be held to a definite date, various bomb-like grenades were in use as early as the 14th century. Due to fuses burning undependably, grenades gradually fell out of use and were only seen sporadically through the 19th century.

During the Russo-Japanese War of 1904-5 there was a resurgence of interest in grenades which increased during WWI. Today, every military group uses grenades of one kind or another. Developed in a vast array of specialized types, grenades have advanced far beyond the early simple hand bombs.

GRENADE TYPES

Blast (Offensive) : This type of grenade contains only explosive and has little fragmentation. The damage is caused by the shock wave of the explosion and effects a much more limited area than a fragmentation grenade would. This limited effect radius is normally less than the distance the grenade can be thrown by the average person. Because the thrower does not have to take cover from the effects of his own grenade, this is considered an "offensive" grenade. The term offensive means, in this instance, that the weapon can be used while attacking, on the offensive.

Fragmentation : This is the most common grenade type with every country which manufactures grenades assembling one. Early fragmentation grenades had a heavy cast iron body with segments cast into the outside of the body. It was found during experimentation that external segmentation did not materially affect how the body of the grenade fragmented. Modern fragmentation is ensured by either coiling a pre-notched steel wire in a sheet metal body, casting small pellets in a plastic body casing, or internally segmenting the body of the grenade. Internal segmentation has been found to direct the fragmentation of the body of a grenade along the score lines of segmenting.

Smoke (Burning type) : This is a canister type grenade filled with a chemical compound that gives off thick smoke while burning. Some fillers are designed for use as a smoke screen. Other fillers give off various colored smokes for signalling purposes. All burning type grenade munitions can reach a temperature of 800 degrees centigrade or greater while burning.

Smoke (WP) : This type of grenade has a White phosphorus filling which burns on contact with air, creating dense white smoke. The smoke from burning phosphorus is very quickly created, but rises fast due to it being very hot. Phosphorus munitions are of the "bursting" type, that is, they contain a small explosive charge which ruptures the casing and spreads the phosphorus particles. The phosphorus burns at over 1800 degrees centigrade and because of this, is also found in incendiary and antipersonnel usages.

Incendiary : This grenade is normally filled with a thermite composition and is used to destroy equipment. The thermite burns at around 2000 degrees centigrade, spraying molten iron around a small area.

Gas (burning type) : This is a canister type grenade which is filled with a chemical compound much like that of the burning smoke grenade. The compound is mixed with whatever chemical the grenade carries and releases the "gas" mixed with smoke. This grenade also has the drawback of the body reaching a high temperature while burning.

Gas (bursting type) : This grenade has a powdered chemical filler which is spread by a small core charge of explosive. The grenade is especially useful when instant dispersion is needed. With a plastic body and low velocity fragments, there is little or no dangerous fragmentation.

Stun : Designed primarily for use against terrorists in hostage situations, the stun grenade temporarily blinds and paralyzes anyone without protection inside of the blast radius. The paralysis only lasts for about 4 seconds and the blindness lasts from 30 seconds to several minutes, depending on how badly the person is affected. Special earplugs and glasses are required for protection from these grenades.

Illuminating : This is a simple flare grenade. Illuminating grenades have longer than normal fuse delays so that it is more difficult to detect where they were thrown from.

Antitank : This type of grenade uses the shaped charge principle to "burn" through armor. In a shaped charge, the explosive has a conical cavity with a metal liner. The cavity "focuses" the force of the explosion into a jet which actually pushes the armor out of its way. A drawback with a shaped charge is that it must strike point first so that the explosive jet is directed at the armor. To ensure this head first strike, the grenades either have folding fins or cloth streamers which control their flight.

Rifle grenades : A rifle grenade commonly has a hollow tail with a certain inside diameter which fits over a launcher on the muzzle of a rifle. The grenade is normally powered by a special blank cartridge which has no bullet. Some modern rifle grenades have "bullet traps" that allow them to be fired using ball ammunition.

FUSE TYPES

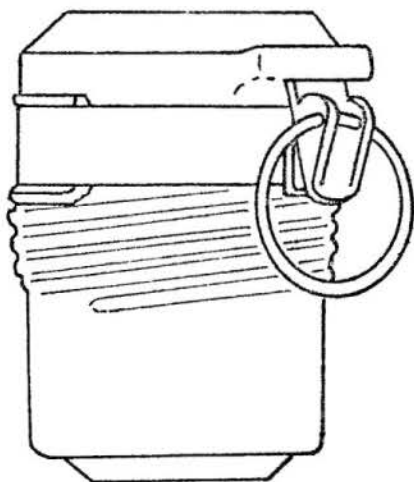
Pull ring/lever : In this, the most common fuse type, a pull ring connected to a cotter pin holds the safety lever in place. With the ring pulled, a lever is held against the grenade preventing the fuse from functioning. When the lever is released, the fuse functions igniting the delay train. One aspect of this fuse type is that the cotter pin can be reinserted, disarming the grenade as long as the lever has not been released.

Pull ring/Tape : Once a very popular system for British grenades, this fuse type is rarely seen today. With the pull ring removed, a flexible tape is released. The tape unwinds from the fuse

assembly when the grenade is thrown and arms the fuse which detonates on impact. The fuse "delay" is dependent on the length of the tape.

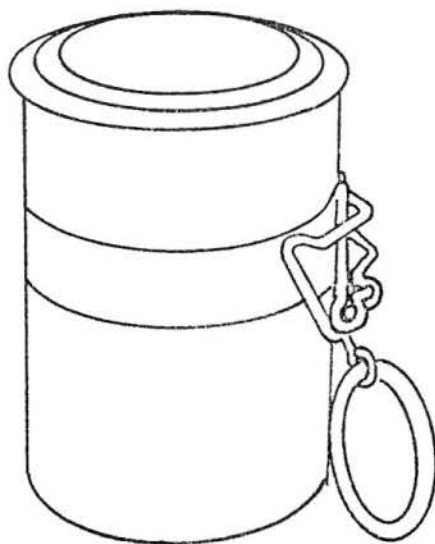
Pull igniter : One of the oldest fuse types, the pull ignition is also one of the simplest to make and use. To use the fuse, a pull ring or string is pulled, immediately igniting the delay train. A major drawback is that the fuse, once functioned, may not be disarmed.

NOTE : All grenades in this section use the Pull ring/lever fuse type unless otherwise noted.



08-029-934
 NAME RG-34
 TYPE Czechoslovakian blast grenade
 DATE ADOPTED c. 1934
 SIZE 7.6x6.4cm
 WT .34kg
 FILLER TNT
 FILLER WT .1kg
 BURST RADIUS 13m
 FUSE TYPE Pull ring/Tape
 FUSE DELAY Impact
 EFF RNG 35m

This cylindrical grenade is made in two parts screwed together. The body of the grenade is made of sheet steel and creates little fragmentation upon detonation. The fuse will detonate on impact immediately following removal of the safety clip and tape.



08-029-954
 NAME RG-4
 TYPE Czechoslovakian blast grenade
 DATE ADOPTED c. 1954
 SIZE 8.4x5.3cm
 WT .32kg
 FILLER TNT
 FILLER WT .105kg
 BURST RADIUS 13m
 FUSE TYPE Pull ring/Tape

FUSE DELAY Impact
 EFF RNG 35m

This is an improved version of the earlier RG-34. The body of the grenade is made of one piece of pressed steel with the explosive charge held in two compartments at the top and bottom of the body. The impact fuse is contained in the center of the grenade between the two explosive charges.



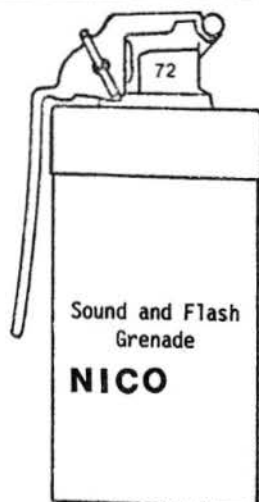
08-040-924
 NAME Gr 24
 NAME (NATIVE) Stielhandgranate 24
 TYPE German blast grenade
 DATE ADOPTED 1924
 SIZE 7x35.5cm
 WT .595kg
 FILLER TNT
 FILLER WT .166kg
 BURST RADIUS 2m
 FUSE TYPE Pull igniter
 FUSE DELAY 4 seconds
 EFF RNG 40m
 BASIC LOAD 3
 LOAD WT 1.785kg
 PACKAGING 15 per Case
 PACKAGE WT 15kg

This grenade is representative of the famous German "potato-mashers" of both World Wars. The handle of the Gr 24 allowed it to be thrown a good distance. The warhead was of the blast type with little fragmentation. The fuse was of the pull igniter type with the pull string in the handle of the grenade. The end cap on the handle was unscrewed to reach the string which had a porcelain ball tied to it for a better grip.



08-040-940
 NAME Geballte Ladung
 TYPE German improvised antitank grenade
 DATE ADOPTED c.1940
 WT 2.126kg
 FILLER TNT
 FILLER WT 1.191kg
 BURST RADIUS 12m
 FUSE TYPE Pull igniter
 FUSE DELAY 4 seconds
 EFF RNG 5m
 BASIC LOAD 1
 LOAD WT 2.12kg

This was a field made antitank weapon. Six heads without handles of other grenades were wired to a single grenade. The detonation of the one grenade would set off the other heads in one large explosion. The bomb was not thrown but placed on the rear deck of a tank where it was almost certain of knocking out the engine.



08-041-980
 NAME NICO Sound and Flash grenade
 TYPE German "Stun" grenade
 DATE ADOPTED c.1980
 SIZE 6x13.5cm
 WT .25kg
 FILLER 8 "Thunderflashes"
 BURST RADIUS 10 m
 FUSE DELAY 2.5 seconds
 BURN TIME Instantaneous 175 db at 2,500,000 cp
 EFF RNG 40m
 BASIC LOAD 2
 LOAD WT .5kg

This is a stun grenade for use in hostage situations. The body of the grenade is of waterproofed cardboard to prevent fragmentation. Upon functioning, the grenade releases 8 "thunderflashes" which detonate randomly with a loud explosion and bright flash having little damage potential.



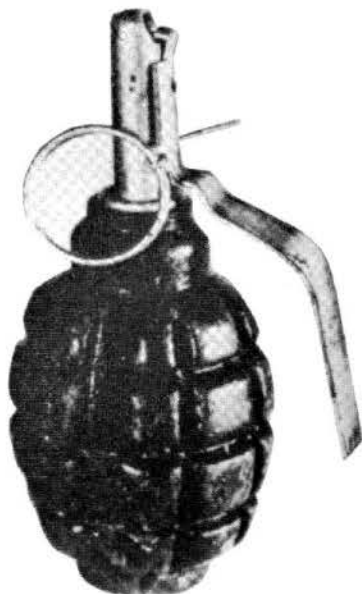
08-062-931
 NAME Mod 91
 TYPE Japanese fragmentation grenade/mortar shell
 DATE ADOPTED 1931
 SIZE 5x12.5cm
 WT .533kg
 FILLER TNT
 FILLER WT .065kg
 BURST RADIUS 10m
 FUSE TYPE Percussion ignition
 FUSE DELAY 8 seconds
 EFF RNG 40m

This grenade is also used as a projectile for the Model 89 mortar. A propellant case is screwed into the base of the grenade when it is used as a mortar round. The grenade has a different fuse system than other grenades. The safety pin is pulled, releasing a sliding cap. The cap is struck against a hard object, helmet, boot heel, etc., to fire the fuse and ignite the delay train.



08-084-970
 NAME V-40
 TYPE Dutch fragmentation grenade
 DATE ADOPTED 1970
 SIZE 4.5cm dia.
 WT .1kg
 FILLER Composition B
 FILLER WT .028kg
 EQUIVALENT TO TNT (R.E.) 1.25
 BURST RADIUS 5m
 FUSE DELAY 4 seconds
 EFF RNG 50m
 BASIC LOAD 5
 LOAD WT .5kg
 PACKAGING 5 per Bandoleer, 32 Band./Case (160 rounds)
 PACKAGE WT 32kg

This is one of the smallest available fragmentation grenades. the internal notching of the grenade casing allows for optimal fragmentation. The safety pin is locked in place and must be rotated 180 degrees before it can be pulled out. The small size, good effect, and safety of the V-40 allows for a much larger number to be safely carried by a soldier than the standard size fragmentation grenades.



08-125-938
 NAME F1
 TYPE Russian fragmentation grenade
 DATE ADOPTED 1938
 SIZE 6.4x10.2cm
 WT .576kg
 FILLER TNT
 FILLER WT .046kg
 BURST RADIUS 15m
 FUSE DELAY 4 seconds
 EFF RNG 40m
 PACKAGING 20 per Case
 PACKAGE WT 19.5kg

This WWII Russian grenade uses the inefficient external segmentation to attempt controlled fragmentation. Though long obsolete, the F1 is still occasionally encountered today.

FILLER WT .118kg
 BURST RADIUS 25m
 FUSE DELAY 4 seconds
 EFF RNG 35m
 PACKAGING 20 per Case
 PACKAGE WT 16kg

This grenade was also used during WWII by Russia. The thin metal casing held a notched steel fragmentation sleeve surrounding the explosive core.

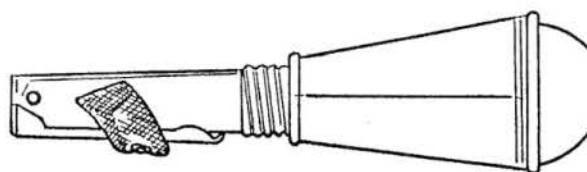


08-125-943
 NAME RPG-43
 TYPE Russian antitank grenade
 DATE ADOPTED c. 1943
 SIZE 27.9x10.2cm
 WT 1.2kg
 FILLER TNT
 FILLER WT .612kg
 BURST RADIUS 20m
 PENETRATION IN STEEL 7.5cm
 FUSE DELAY Impact
 EFF RNG 20m

This is the earliest Russian hand thrown antitank grenade. The explosive is formed in a shaped charge in the head of the grenade. When the ring is pulled, and the grenade thrown, two fabric strips connected to the conical cap and the grenade unwind, arming the impact fuse. The two strips and stabilizing drogue, guide the grenade so it impacts nose first.

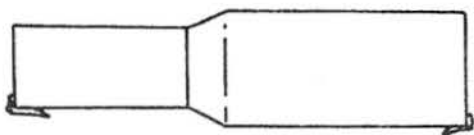


08-125-942
 NAME RG-42
 TYPE Russian fragmentation grenade
 DATE ADOPTED c. 1942
 SIZE 12.1x11.8cm
 WT .436kg
 FILLER TNT



08-125-944
 NAME RPG-6
 TYPE Russian antitank grenade
 DATE ADOPTED c. 1944
 SIZE 34.3x10.2cm
 WT 1.1kg
 FILLER TNT
 FILLER WT .562kg
 BURST RADIUS 20m
 PENETRATION IN STEEL 10cm
 FUSE TYPE Pull ring/Tape
 FUSE DELAY Impact
 EFF RNG 20m

This is an improved version of the RPG-43 with better penetration and lighter weight. The RPG-6 also has four trailing cloth strips that stabilize it in flight for a nose first impact. The unwinding strips also arm the impact fuse. The body of the grenade has a pronounced fragmentation effect and can be used for antipersonnel work.



08-125-948

NAME RDG-1

TYPE Russian smoke grenade

DATE ADOPTED 1948

SIZE 22.2x5.8cm

WT .5kg

BURST RADIUS 460 square meters

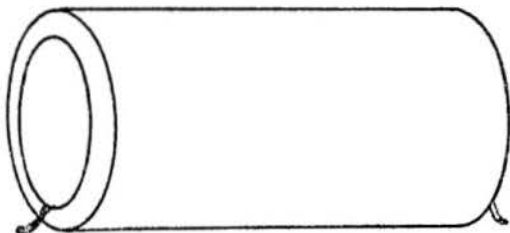
FUSE TYPE Match/fuse combination

FUSE DELAY 2 seconds

BURN TIME 90 seconds

EFF RNG 35m

This is a burning type stick grenade. The body of the grenade is of waxed cardboard with later models being said to have a wooden handle. The grenade produces either white or black smoke depending on the filler. The fuse is ignited with a striking surface found beneath the end cap of the grenade's larger end. The burning grenade will float and can be used to produce a smoke screen over water.



08-125-952

NAME RDG-2

TYPE Russian smoke grenade

DATE ADOPTED 1952

SIZE 4.5x25cm

WT .5kg

BURST RADIUS 20x10m

FUSE TYPE Pull igniter

FUSE DELAY 5 seconds

BURN TIME 90 seconds

EFF RNG 30m

BASIC LOAD 2

LOAD WT 1kg

PACKAGING

PACKAGE WT

This is the standard smoke grenade for the Warsaw Pact forces. This burning type grenade has a waterproofed cardboard body with a pull igniter. The grenade will not float and so cannot be used to produce smoke over water.



08-125-960

NAME RGD-5

TYPE Russian fragmentation grenade

DATE ADOPTED c. 1960

SIZE 5.6x11.4cm

WT .31kg

FILLER TNT

FILLER WT .11kg

BURST RADIUS 15m

FUSE DELAY 4 seconds

EFF RNG 35m

BASIC LOAD 4

LOAD WT 1.24kg

This is presently the standard issue fragmentation grenade for the Warsaw Pact forces. The smooth sheet metal casing holds a segmented fragmentation liner. The compact size of the RGD-5 allows it to be thrown further than the earlier Russian grenades.



08-125-964

NAME RKG-3M

TYPE Russian antitank grenade

DATE ADOPTED c. 1964

SIZE 36.2x5.6cm

WT 1.07kg

FILLER RDX/TNT

FILLER WT .567kg

EQUIVALENT TO TNT (R.E.) 1.15

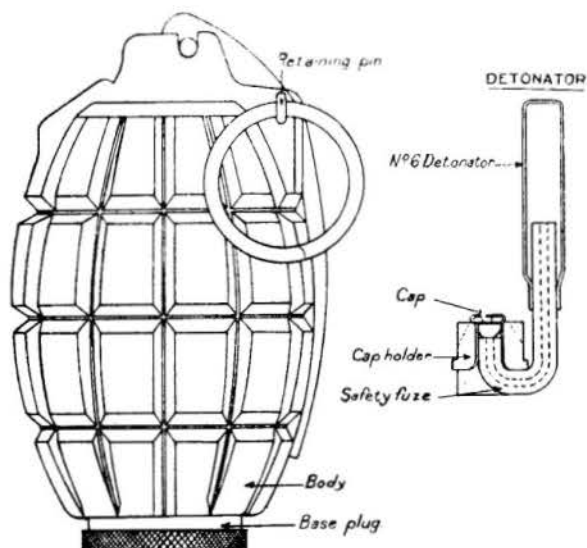
BURST RADIUS 20m

PENETRATION IN STEEL 16.5cm

FUSE DELAY Impact

EFF RNG 20m

This is the standard issue antitank grenade of the Warsaw Pact. The grenade has a four paneled drogue in the handle that is released when the grenade is thrown. The drogue arms the impact fuse and keeps the grenade point first.



08-131-928

NAME Mk 36 Mills bomb

TYPE British fragmentation grenade

DATE ADOPTED c. 1928

SIZE 5.7x8.9cm

WT .7kg

FILLER 80/20 Baratol

FILLER WT .069kg

EQUIVALENT TO TNT (R.E) 1.17

BURST RADIUS 10m

FUSE DELAY 4 or 7 seconds

EFF RNG 30m

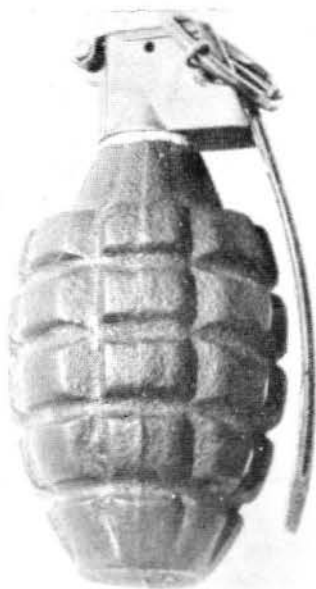
BASIC LOAD 4

LOAD WT 2.8kg

PACKAGING 12 per Case

PACKAGE WT 14 kg

This was the standard British fragmentation grenade through WWII and Korea. The heavy serrations on the exterior of the body did little to control fragmentation. The grenade did not come fused and the detonator had to be installed before use. To install the detonator, the large plug was unscrewed from the bottom of the grenade, the detonator inserted, and the plug screwed back in.



08-132-936

NAME Mk II Pineapple

TYPE American fragmentation grenade

DATE ADOPTED c. 1936

SIZE 5.7x11.4cm

WT .596kg

FILLER TNT

FILLER WT .056kg

BURST RADIUS 10m

FUSE DELAY 4 seconds

EFF RNG 30m

BASIC LOAD 4

LOAD WT 2.384kg

PACKAGING 25 per Case

PACKAGE WT 26.1kg

This is the famous "Pineapple" of WWII. The heavy serrated case usually fragmented into a few large pieces and a large amount of "dust."



08-132-939

NAME Mk 3A2 Offensive

TYPE American blast grenade

DATE ADOPTED c. 1939

SIZE 5.4x13.4cm

WT .442kg

FILLER TNT

FILLER WT .228kg

BURST RADIUS 2m

FUSE DELAY 4 sec

EFF RNG 40m

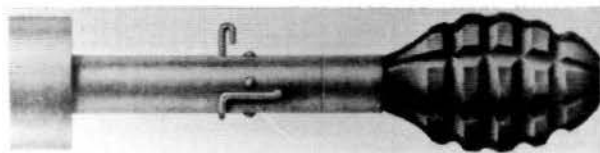
BASIC LOAD 2

LOAD WT .884kg

PACKAGING 20 per Case

PACKAGE WT 20.5kg

A packaged block of TNT, the Mk 3A2 has a cardboard body for minimum fragmentation. The Mk 3A2 is often referred to as a "concussion" grenade.



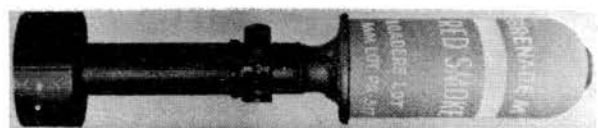
08-132-940
 NAME M17
 TYPE American fragmentation rifle grenade
 DATE ADOPTED c. 1940
 SIZE 5.7x22.4cm
 WT .717kg
 FILLER TNT
 FILLER WT .056kg
 BURST RADIUS 25m
 FUSE DELAY Impact
 EFF RNG 120m
 MAX RNG 183m w/7.62x63mm M3 Blank, 124m w/7.62x33mm M6 Blank
 BASIC LOAD 2
 LOAD WT 1.434kg
 PACKAGING
 PACKAGE WT

This is a modified Mk II casing mounted on a tail fin assembly with an impact fuse. The grenade is fired from any standard 22mm launcher.

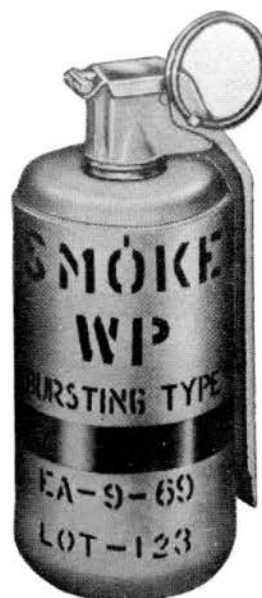


08-132-940
 NAME M9A1
 TYPE American antitank rifle grenade
 DATE ADOPTED c. 1940
 SIZE 5.5x28.5cm
 WT .59kg
 FILLER TNT
 FILLER WT .113kg
 BURST RADIUS 5m
 PENETRATION IN STEEL 10.1cm
 FUSE DELAY Impact
 EFF RNG 120m
 MAX RNG 235m w/7.62x63mm M3 Blank, 168m w/7.62x33mm M6 Blank
 BASIC LOAD 3
 LOAD WT 1.77kg
 PACKAGING
 PACKAGE WT

This was the more common AT rifle grenade used by U.S. forces in WWII. With its fin stabilization, stand off nose cone, and metal lined shaped charge, the M9A1 had excellent armor penetration. Its armor penetration combined with the high angle of attack of rifle grenades allowed the M9A1 to penetrate the relatively thin armor on the tanks' tops. The M9A1 may be launched from any standard 22mm rifle grenade launcher.



08-132-940
 NAME M22 Red, Green, Violet, or Yellow Smoke
 TYPE American colored smoke rifle grenade
 DATE ADOPTED c. 1940
 SIZE 4.6x27.2cm
 WT .572kg
 FILLER Smoke Composition
 FILLER WT .336kg
 BURST RADIUS 80 cubic meters
 FUSE DELAY Impact
 BURN TIME 60 seconds
 EFF RNG 200m
 BASIC LOAD 1
 LOAD WT .572kg
 PACKAGING 10 per Case
 PACKAGE WT 14.3kg
 This is a colored smoke grenade used for target marking and signalling. The grenade may be launched from any 22mm rifle grenade launcher and starts emitting smoke immediately on impact.



08-132-940
 NAME M15 WP
 TYPE American White phosphorus grenade
 DATE ADOPTED c. 1940
 SIZE 6x14.5cm
 WT .879kg
 FILLER White Phosphorus
 FILLER WT .425kg
 BURST RADIUS 15m
 FUSE DELAY 4 seconds
 BURN TIME 60 seconds
 EFF RNG 25m
 BASIC LOAD 2
 LOAD WT 1.758kg
 PACKAGING 16 per Case
 PACKAGE WT 20.8kg

This is a bursting type phosphorus grenade. The smooth metal body would rupture when the detonator exploded, spreading phosphorus fragments which ignite spontaneously on contact with air.



08-132-940

NAME AN-M8, HC Smoke

TYPE American smoke grenade

DATE ADOPTED c. 1940

SIZE 6.4x14.5cm

WT .68kg

FILLER Hexachlorothane Smoke composition

FILLER WT .539kg

BURST RADIUS 18x4x2m

FUSE DELAY 2 seconds

BURN TIME 125 seconds

EFF RNG 30m

BASIC LOAD 2

LOAD WT 2.04kg

PACKAGING 16 per case

PACKAGE WT 18.6kg

This is presently the standard smoke-screen producing grenade in the U.S. Army. The smoke produced by burning HC is a "heavier" smoke than that made by burning phosphorus and because of this it sticks to the ground longer with a better screening effect.



08-132-942

NAME M1A1 Rifle Grenade Adaptor

TYPE American Fragmentation grenade rifle adaptor

DATE ADOPTED c. 1942

SIZE 17.9cm

WT .17kg

EFF RNG 160m (M34 120m)

PACKAGING 24 per box, 2 boxes per Case (48)

PACKAGE WT 22.2kg

This adaptor allows any of the Mk II, M26, M34, or Mk I series grenades to be launched from a 22mm rifle grenade launcher. The grenade is held by the three metal "fingers" of the adaptor with the grenade's safety lever fitting through the tube on the largest "finger." The pull ring is pulled before the grenade is launched. After launch, the safety lever is released at the moment of firing by the tube sliding back from inertia. Since the fuse ignites at the moment of launch, an airburst can be achieved by using high-angle fire on a near target (range to target from 55 to 115 meters).



08-132-942

NAME M2A1 Rifle Grenade Adaptor

TYPE American chemical grenade rifle adaptor

DATE ADOPTED c. 1942

SIZE 12.7cm

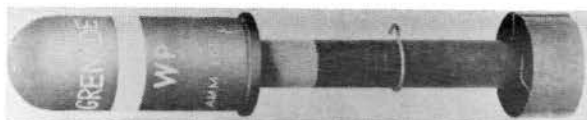
WT .16kg

EFF RNG w/AN-M14, TH3 120m, w/AN-M8, HC 135m, w/M6, M7, or M18 series 145m

PACKAGING 50 per Case

PACKAGE WT 22.2kg

This adaptor allows 6.4cm diameter canister type chemical grenades to be launched from 22mm rifle grenade launchers. The metal band is placed on the grenade over the safety lever. With the pull ring removed, the band slides off, releasing the safety lever when the grenade is launched. Due to the 2 second fuse delay of most chemical grenades, the grenades will start functioning while in flight if the target is more than 50 meters away.



08-132-944
 NAME M19A1 WP
 TYPE American white phosphorous smoke rifle grenade
 DATE ADOPTED c. 1944
 SIZE 5.1x28.7cm
 WT .68kg
 FILLER White Phosphorus
 FILLER WT .241kg
 BURST RADIUS 10m
 FUSE DELAY Impact
 BURN TIME 60 seconds
 EFF RNG 195m
 MAX RNG 195m w/7.62x63mm M3 or 7.62x51mm M64 Blanks
 BASIC LOAD 2
 LOAD WT 1.36kg
 PACKAGING 10 per Case
 PACKAGE WT 18.6kg
 A bursting type, white phosphorus grenade, the M19A1 can be fired from any standard 22mm launcher.



08-132-950
 NAME M34 WP
 TYPE American white phosphorous smoke grenade
 DATE ADOPTED c. 1950
 SIZE 6x13.2cm
 WT .68kg
 FILLER WP
 FILLER WT .425kg
 BURST RADIUS 35m
 FUSE DELAY 4 seconds
 BURN TIME 60 seconds
 EFF RNG 30m
 BASIC LOAD 2
 LOAD WT 2.04kg
 PACKAGING 16 per Case
 PACKAGE WT 19.1kg

This was the last WP grenade used by the U.S. Army and it was only recently (1983) declared obsolete. The serrated casing allowed for easier bursting than the M15 WP grenade. The conical base of the grenade with the indented ring on the grenade body allowed the M34 to be fired from a rifle using the M1A1 grenade adapter.



08-132-942
 NAME M18 Red, Green, Yellow, or Violet smoke
 TYPE American colored smoke grenade
 DATE ADOPTED c. 1942
 SIZE 5.6x14.6cm
 WT .539kg
 FILLER Smoke Composition
 FILLER WT .326kg
 BURST RADIUS 18x4x2m
 FUSE DELAY 2 seconds
 BURN TIME 70 seconds
 EFF RNG 35m
 BASIC LOAD 2 (Red, Green)
 LOAD WT 1.078kg
 PACKAGING 16 per Case
 PACKAGE WT 15.4kg

This is a series of various colored burning type smoke grenades. Though most often used for signalling purposes, the M18 can also produce a screening smoke though it is not as dense as the smoke from the AN-M8, HC grenade. Colored smokes, especially red and green, are also useful as a disbursing medium for riot control. They are especially useful in breaking up crowds when used in conjunction with tear gas.



08-132-952
 NAME AN-M14, TH3 Incendiary
 TYPE American incendiary grenade
 DATE ADOPTED c. 1952
 SIZE 6.4x14.5cm
 WT .907kg
 FILLER Thermite
 FILLER WT .752kg
 BURST RADIUS 2m
 PENETRATION IN STEEL 1.3cm
 FUSE DELAY 2 seconds
 BURN TIME 40 seconds at 2200 degrees Centigrade
 EFF RNG 25m
 BASIC LOAD 2
 LOAD WT 1.814kg
 PACKAGING 16 per Case
 PACKAGE WT 21.3kg

Developed as a quick method of destroying equipment, the AN-M14 burns with an intensely hot flame, releasing molten iron as a byproduct. The heat of the burning thermate can weld steel parts together as well as burn through steel. Thermate produces its own oxygen for burning and the grenade will continue to burn even underwater.



08-132-952
 NAME M7A1 CN
 TYPE American gas grenade
 DATE ADOPTED c. 1952
 SIZE 6.4x14.5cm
 WT .524kg
 FILLER CN/Smoke composition
 FILLER WT .355kg
 BURST RADIUS 18x4x2m
 FUSE DELAY 2 seconds
 BURN TIME 60 seconds
 EFF RNG 35m
 BASIC LOAD 2
 LOAD WT 1.048kg
 PACKAGING 16 per Case
 PACKAGE WT 15.9kg

This burning type grenade releases a cloud of smoke and CN tear gas. The gas takes effect almost immediately. The effects include tearing of the eyes and a running nose, pain in the eyes, and difficulty in breathing. The effects of the CN disappear within a few minutes.



08-132-952
 NAME M6A1 CN/DM
 TYPE American gas grenade
 DATE ADOPTED c. 1952
 SIZE 6.4x14.5cm
 WT .567kg
 FILLER CN/DM
 FILLER WT .268kg
 BURST RADIUS 18x4x2m
 FUSE DELAY 2 seconds
 BURN TIME 40 seconds
 EFF RNG 35m
 BASIC LOAD 2
 LOAD WT 1.134kg
 PACKAGING 16 per Case
 PACKAGE WT 15.6kg

This burning type gas grenade releases a mixture of tear and vomit gases. The tear gas takes immediate effect and the effects, watering eyes and breathing difficulty, last for about 15 minutes after exposure. The DM (Adamsite) takes effect after about one minute and causes severe vomiting and sneezing. The effects of DM last between 30 minutes to 3 hours, depending on the exposure.



08-132-954
 NAME Mk1 Illuminating
 TYPE American flare
 DATE ADOPTED c. 1954
 SIZE 5.6x11cm
 WT .283kg
 FILLER flare
 FILLER WT .099kg
 BURST RADIUS 200m
 FUSE DELAY 7 seconds
 BURN TIME 25 seconds at 55,000 cp
 EFF RNG 40m
 BASIC LOAD 4
 LOAD WT 1.132kg
 PACKAGING 25 per Case
 PACKAGE WT 23.1kg

This grenade is used either for ground signalling or for illumination of an area. The filler is the same magnesium flare composition as that used in illuminating shells and white parachute flares. The long fuse delay on this type of grenade adds to the difficulty in locating its thrower at night. Since the flare composition burns at a high temperature the Mk1 may be used for incendiary purposes.



08-132-956
 NAME M31 HEAT
 TYPE American antitank rifle grenade
 DATE ADOPTED c. 1956
 SIZE 6.6x43.1cm
 WT .707kg
 FILLER Comp B
 FILLER WT .28kg
 EQUIVALENT TO TNT (R.E.) 1.25
 BURST RADIUS 15m
 PENETRATION IN STEEL 25cm
 FUSE DELAY Impact
 MIN RNG 10m
 EFF RNG 115m
 BASIC LOAD 3
 LOAD WT 2.121kg
 PACKAGING 10 per Case w/20 M3 Cart.
 PACKAGE WT 34kg

This shaped charge grenade has a much better penetration than the earlier M9A1 grenade which it replaced. The M31 can be fired from any 22mm grenade launcher.



08-132-958
 NAME M26A1
 TYPE American fragmentation grenade
 DATE ADOPTED c. 1958
 SIZE 5.7x9.9cm
 WT .454kg
 FILLER Tetryl, Comp B
 FILLER WT .008kg, .156kg
 EQUIVALENT TO TNT (R.E.) 1.25 (both explosives)
 BURST RADIUS 15m
 FUSE DELAY 4 seconds
 EFF RNG 40m
 BASIC LOAD 4
 LOAD WT 1.816kg
 PACKAGING 30 per Case
 PACKAGE WT 23.6kg

Designed as replacement for the Mk II in the U.S. Military, the M26A1 uses a coil of pre-notched steel wire inside a sheet metal body for fragmentation.



08-132-964
 NAME M7A3 CS
 TYPE American gas grenade
 DATE ADOPTED c. 1964
 SIZE 6.4x14.5cm
 WT .439kg
 FILLER CS/Smoke composition
 FILLER WT .208kg, .127kg CS

BURST RADIUS 18x4x2m
 FUSE DELAY 2 seconds
 BURN TIME 25 seconds
 EFF RNG 40m
 BASIC LOAD 2
 LOAD WT .878kg
 PACKAGING 16 per Case
 PACKAGE WT 13.6kg

This burning type grenade releases a cloud of smoke and CS tear gas. The effects of the CS are felt immediately. CS causes pain in the skin, eyes, and throat with great difficulty in breathing. The effects of the gas disappear 5 to 10 minutes after exposure.



08-132-964
 NAME M25A2 CS
 TYPE American gas grenade
 DATE ADOPTED c. 1964
 SIZE 7.4x8.6cm
 WT .213kg
 FILLER CS powder
 FILLER WT .202kg
 BURST RADIUS 5m
 FUSE DELAY 2 seconds
 EFF RNG 50m
 BASIC LOAD 4
 LOAD WT .852kg
 PACKAGING 50 per Case
 PACKAGE WT 22.7kg

This is a bursting type CS grenade. The M25A2 releases a cloud of powdered CS instantly upon detonation. The plastic body minimizes fragmentation. The fuse of the M25A2 has a plunger button that is held in after the pin is pulled. When the button is released, the fuse fires, detonating the grenade in 2 seconds.



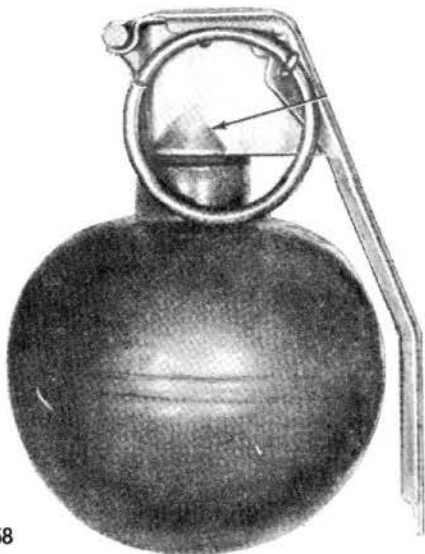
08-132-964
 NAME Miniature Smoke M166 White, M167 Green, M168 Red, and M169 Yellow
 TYPE American colored smoke grenade
 DATE ADOPTED c. 1964
 SIZE 3.2x4.2cm
 WT .04kg (M166), .027kg (All others)
 FILLER Smoke Composition
 FILLER WT .028kg (M166), .018kg (All others)
 BURST RADIUS 5 cubic meters
 FUSE TYPE Match/fuse combination
 FUSE DELAY 5 seconds
 BURN TIME 20 seconds
 EFF RNG 50m
 BASIC LOAD 6
 LOAD WT .54kg
 PACKAGING 6 per pack, 40 packs per Case (240)
 PACKAGE WT 25.4kg

This is a series of small, burning type smoke grenades normally used by ground personnel to signal aircraft. The grenade resembles an old style 35mm film canister and is often issued in Aircraft survival kits. Beneath the screw-on cap is a paper striker ring and the match composition fuse head. The fuse is ignited by striking the match head with the striker ring. There are also two books of paper matches issued in a plastic bag with the grenade as a secondary means of lighting the fuse.



08-132-966
 NAME Miniature CS
 TYPE American gas grenade
 DATE ADOPTED c. 1966
 SIZE 3.2x4.6cm
 WT .035kg
 FILLER CS/Smoke composition
 FILLER WT .006kg CS, .01 kg Smoke composition
 BURST RADIUS 5 cubic meters
 FUSE TYPE Match/fuse combination
 FUSE DELAY 5 seconds
 BURN TIME 20 seconds
 EFF RNG 50m
 BASIC LOAD 4
 LOAD WT .14kg
 PACKAGING 6 per pack, 40 packs per Case (240 rounds)
 PACKAGE WT 24.2kg

This burning type CS grenade is packaged in an old style 35mm metal film canister. There is a paper striker ring underneath the screw cap that is used to ignite the match composition on the head of the grenade's fuse. The fuse may also be lit with a regular match or other source of flame.



08-132-968

NAME M33

TYPE American fragmentation grenade

DATE ADOPTED c. 1968

SIZE 6.4x9cm

WT .390kg

FILLER Comp B

FILLER WT .18kg

EQUIVALENT TO TNT (R.E.) 1.25

BURST RADIUS 15m

FUSE DELAY 4 sec

EFF RNG 40m

BASIC LOAD 4

LOAD WT 1.56kg

PACKAGING 30 per Case

PACKAGE WT 23.6kg

This is the new issue grenade for the U.S. Army. A very small grenade, the M33 uses internal segmenting for fragmentation.



08-132-968

NAME M58 CS

TYPE American gas grenade

DATE ADOPTED c. 1968

SIZE 3.3x8.3cm

WT .913kg

FILLER CS/Smoke composition

FILLER WT .039kg

BURST RADIUS 4x2x1m

FUSE DELAY 2 seconds

BURN TIME 18 seconds

EFF RNG 50m

BASIC LOAD 4

LOAD WT .452kg

PACKAGING 10 per box, 10 boxes per Case (100 rds)

PACKAGE WT 20.4kg

This is a small pocket sized burning type CS grenade.



08-132-960

NAME Illumination Signal, Star Parachute M126A1 Red, M127A1 White, and M195 Green

TYPE American Rocket flare signal

DATE ADOPTED c. 1960

SIZE 4.2x25.8cm

WT (M127A1, M126A1) .544kg, (M195) .59kg

BURST RADIUS 200m

FUSE DELAY 5 seconds

BURN TIME M195 - 60 seconds at 5000 cp, M126 - 60

seconds at 10,000 cp, M127 - 30 seconds at 125,000 cp

EFF RNG 210m

BASIC LOAD 2 (M126A1, M127A1)

LOAD WT 1.088kg

PACKAGING 36 per Case

PACKAGE WT 24.9kg

This is a self contained pyrotechnic signal. The launcher is a small aluminum tube with a cap holding a firing pin on one end. To use the signal, the cap is placed on the opposite end of the launcher and struck with the hand. The launcher fires a rocket to an altitude of 210 meters where it ejects a burning flare on a parachute.



08-132-960

NAME Illumination Signal, Star Cluster, M125A1 Green, M158 Red, M159 White

TYPE American rocket flare

DATE ADOPTED c. 1960

SIZE 4.2x25.8cm

WT .59kg

BURN TIME 8 seconds

EFF RNG 200m

BASIC LOAD 2 (M125A1, M158)

LOAD WT 1.18kg

PACKAGING 36 per Case

PACKAGE WT 24.9kg

This rocket flare works in the same manner as the star parachute flares. After reaching maximum height, the rocket ejects a cluster of five burning stars.



08-132-960

NAME Signal, Smoke parachute, M128A1 Green, M129A1 Red, M194 Yellow

TYPE American rocket signal

DATE ADOPTED c. 1960

SIZE 4.2x25.8cm
WT (M128A1, M129A1) .59kg, (M194) .544kg
FUSE DELAY 5 seconds
BURN TIME 12 seconds
EFF RNG 200m
BASIC LOAD 2 (M128A1, M129A1)
LOAD WT 1.18kg
PACKAGING 36 per Case
PACKAGE WT 24.9kg

This rocket signal works the same way as the Star parachute flare. After reaching an altitude of 200 meters, the rocket ejects a burning smoke candle on a parachute. This signal is designed for use during the day when an illuminating signal may not be seen.

SMALL ARMS AMMUNITION

Small arms ammunition began in the last quarter of the sixteenth century with the development of the paper cartridge. Prior to paper cartridges, ammunition for small arms consisted of loose powder in flasks and a bag of lead shot. The paper cartridge combined the proper powder charge with a lead ball wrapped and sealed in greased paper for waterproofing. To use the round, the end of the cartridge was torn off, the flash pan primed, and the main charge, ball, and paper, rammed down the barrel.

With the development of percussion primers the need for priming the pan was eliminated and the development of metallic cartridge ammunition soon followed. The first metallic cartridge to see wide use was the .22 Short for pistols. The .22 Short is a rimfire round with the priming composition inside the cartridge's rim. When fired, the firing pin crushes the rim between itself and the barrel, firing the primer and igniting the cartridge (see 5.7x17mmR, 5.7x24.5mmR, and 13.9x22mmR).

Early metallic rounds tended to have large capacity cases and large bullets to obtain good results when using black powder as a propellant. With the invention of smokeless powder in the 1880's, smaller bore sizes were used, generally around 30 caliber. In WWII Germany a new style of military round was developed. This was the "Intermediate" round with a rifle caliber bullet in a smaller capacity case (see 7.92x33mm). This early round from Germany was quickly modified by Russia into their popular 7.62x39mm round. In the 1950's, the United States began using the 5.56x45mm round introducing the small caliber bullet fired at high velocity from a large capacity casing.

In the 1960's, several new developments took place. The invention of the Gyrojet rocket round allowed for completely recoilless large bore weapons to be developed for individual use. However, all of the problems inherent in such a radical new round have not been solved and the development of it has been suspended by the designers. Another development at around the same time was the fletchette round. The fletchette was a fin stabilized "needle" that was fired from a smoothbore rifle at a very high velocity. The full efficiency of the round is yet to be developed due, in part, to manufacturing processes being unable to economically produce the ammunition to the required tolerances to insure accuracy.

One of the latest developments has been the perfection of a "caseless" round by Heckler and Koch of Germany. The development of this round allows a much lighter as well as simpler mechanism to be developed as since there is no cartridge case to extract or eject.

TERMINOLOGY

Cartridges in this section are listed by their caliber and case length in millimeters. An example of this is the 7.62x63mm round.

This round has a 7.62mm bullet (.30 caliber) in a cartridge case 64mm long (the 30-06). This style of designation is NATO standard and prevents confusion between rounds. Three types of rounds are shown in this section : rimmed, rimless, and belted. The rimmed is one of the oldest style of round and is most commonly used in modern revolvers. The rimmed round is indicated by the letter R following the millimeter (mm) designation as in, 7.62x51mmR. The rimless cartridge is the most common round used today. The lack of a rim allows for easy feeding through belts and magazines where a rim would hang up in the feedway. A rimless round is indicated when there is no letter following the cartridge's designation such as in the 7.62x51mm round. A Belted round is used in very powerful rounds to give extra strength to the cartridge's base. The "belt" is the raised portion directly above the extraction groove in the rounds base. A letter B following the round's designation indicates a belted round, such as in the 7.62x66mmB round. The letters SR indicate a semi-rimmed round. This round is found less often today as it is a compromise between the easy extraction allowed by a rimmed case and the simpler magazine feeding allowed by a rimless case.

BULLET TYPES

Ball: This is the most common bullet type. Most military cartridges are of the Jacketed ball type. In the Jacketed ball, the lead core of the bullet is surrounded by a gilding metal jacket.

Semi Armor Piercing (Semi AP) : This bullet resembles the Jacketed ball. In this round, the lead core is partially replaced by a mild steel core. The bullet saves on lead in time of war and has a better penetrating quality against hard targets.

Armor Piercing (AP) : This bullet has a hardened steel or Tungsten core with a lead sleeve and gliding metal jacket. The bullet has excellent penetration against hard targets especially if it has a Tungsten core. Some modern "super" armor piercing bullets (KTW) have a solid metal bullet coated with Teflon. The Teflon acts as a high pressure lubricant and allows the bullet to penetrate very resistant materials.

Tracer (T) : This is a jacketed ball bullet with a container of trace mixture in the base of the bullet. The trace mixture ignites when the round is fired, burning with a bright light. This light "traces" the path of the bullet allowing its flight path to be seen and corrected.

Incendiary (I) : These bullets are intended to ignite any flammable target that they may hit. Inside the nose of the bullet is an incendiary composition that ignites when the bullet hits a hard target. Early incendiary rounds had a small amount of White Phosphorus in the bullet which burned while the bullet travelled. These rounds were developed to ignite the hydrogen in balloons during WWI. Incendiary bullets are credited with saving London from being bombed by zeppelins during WWI.

Observation (O) : This bullet is designed to indicate where it strikes with a burst of light and a puff of smoke. The nose of the bullet has either an Incendiary composition or White

Phosphorus as a filler. There is also a small explosive charge incorporated into the bullet which detonates on impact. This round is also sometimes called an Incendiary/Observation (I/O) round.

Explosive (Ex) : This bullet contains a small explosive charge which detonates on impact. The explosion takes place before the bullet has penetrated deeply and usually results in a shallow large wound. The explosive bullet is rarely seen but can add some destructive power to the relatively weak, small caliber pistol rounds.

Duplex (D) : This round contains two light bullets instead of one heavier one. The intent of the duplex round is to increase the chance of hitting a target. The rear bullet is slightly heavier than the front one, with the front bullet having a higher muzzle velocity.

Frangible (F) : This is a special bullet made up of powdered lead and plastic. The bullet breaks up on impact and will not penetrate a hard target. The round is intended for target practice on moving targets that should not be damaged in training, such as tanks.

Jacketed Hollow Point (JHP) : This bullet has part of the jacket removed from the nose exposing the soft lead core. The tip of the lead core has a hollow cavity in it to aid in expansion. The bullet is intended to quickly "mushroom" (expand) in the target to cause the greatest possible wounding effect.

Rifle Grenade Blank : This is a non-bulleted round. The round has a charge of powder designed to propel rifle grenades from the proper muzzle adaptor.

Armor Piercing Tracer (APT) : This is an armor piercing bullet with a tracer in the base of the bullet.

Armor Piercing Incendiary (API) : This bullet combines a steel core with an incendiary composition in the nose of the bullet.

Armor Piercing Incendiary Tracer (API-T) : This bullet has a steel armor piercing core with an incendiary nose filling and tracer cup at the base.

Incendiary Tracer (I-T) : This bullet combines the action of an incendiary bullet with that of a tracer round.

NAME 5.56x29mm
COMMON NAMES .22 SCAMP
COUNTRY OF ORIGIN America
WEAPONS USED IN Colt SCAMP, (02-132-970)
BULLET TYPE Ball
BULLET DIA .223 in
BULLET WT 2.6g
MUZZLE VEL 2100 fps

This round was developed as a low recoil round for the Colt SCAMP. The weight of the round was cut down but the lethality was kept equal to the 9x19mm round by using a small bullet fired at a high velocity. The SCAMP is the only weapon chambered for this round.

NAME 5.56x36mm
COMMON NAMES .221 Fireball
COUNTRY OF ORIGIN America
WEAPONS USED IN XP-100, (01-132-963a)
BULLET TYPE JSP
BULLET DIA .224 in.
BULLET WT 3.25g
CHARGE WT .98g
ROUND WT 10g
MUZZLE VEL 2650 fps
BARREL LENGTH (For Mv) 25.4cm
PACKAGING 50 rounds/Box

This is a shortened version of the .222 Remington rifle cartridge. The Fireball was developed at the same time as the XP-100 to make a very accurate Pistol/Ammunition combination. At present the XP-100 is the only weapon chambered for this round commercially.

NAME 5.7x17mmR
COMMON NAMES .22 Long Rifle
COUNTRY OF ORIGIN America
WEAPONS USED IN High Standard .22, (01-132-964), American 180 M2, (02-007-972), AR-7, (03-132-960)
BULLET TYPE Ball
BULLET DIA .223 in.
BULLET WT 2.6g
CHARGE WT .16g
ROUND WT 3.45g
MUZZLE VEL 1150 fps
PACKAGING 50 rounds/Box, 10 Boxes/Case (500 rounds), 10 Cartons/Can (5000 rounds), 2 Cans/Case (10,000 rounds)
PACKAGE WT 20.9kg
OTHER LOADINGS

TYPE	Bul. Wt.	Rnd. Wt.	Mv
.22 High Velocity	2.6g	-	1350 fps

This is one of the oldest cartridges still made. The .22 Long Rifle is one of the world's most common rounds of ammunition. Available in a variety of bullets and velocities, the .22 round can be tailored to fit almost any need if the limitations of the round's size are kept in mind.

NAME 5.7x24.5mmR
COMMON NAMES .22 Magnum
COUNTRY OF ORIGIN America
WEAPONS USED IN High Standard Derringer, (01-132-963)
BULLET TYPE JHP
BULLET DIA .224 in.
BULLET WT 2.9g
ROUND WT 4.3g
MUZZLE VEL 1550 fps
BARREL LENGTH (For Mv) 16.5cm

PACKAGING 50 rounds/Box

The .22 Magnum round is a larger version of the popular .22 Long Rifle. The round is a high velocity rimfire, combining economy with a reasonable amount of power. This round is especially popular for small game hunting.

NAME 6.35x15.5mmSR
COMMON NAMES .25 ACP, .25 Automatic
COUNTRY OF ORIGIN Belgium
WEAPONS USED IN Colt .25, (01-132-908)
BULLET TYPE Ball
BULLET DIA .251 in.
BULLET WT 3.25g
ROUND WT 5.1g
MUZZLE VEL 810 fps
BARREL LENGTH (For Mv) 5cm
PACKAGING 50 rounds/Box

This is one of the smallest centerfire rounds manufactured today. Developed in Belgium in 1906 by Fabrique National for their Browning automatic, the .25 automatic has been a very popular round for pocket automatics. The SR after the rounds designation stands for Semi-Rimmed. This type of casing has a very slight rim to assist in extraction.

NAME 7.62x25mm
COMMON NAMES .30 Mauser, 7.63mm Mauser, 7.62mm Type P, 7.62mm Tokarev
COUNTRY OF ORIGIN Germany
WEAPONS USED IN Mauser M1896, (01-040-896), Tokarev M1933, (01-125-933), Type 64, (02-023-964), Mauser M32, (02-040-932), PPsh 41, (02-125-941), PPS 43, (02-125-943), K 50, (02-136-960)
BULLET TYPE Ball
BULLET DIA .307 in.
BULLET WT 5.6g
CHARGE WT .5g
ROUND WT 10.87g
MUZZLE VEL 1410 fps
BARREL LENGTH (For Mv) 14cm
PACKAGING (Russian) 70 rounds/Box, 18 Boxes/Can (1260 rounds), 2 Cans/Case (2520 rounds)
OTHER LOADINGS

TYPE	Bul. Wt.	Rnd. Wt.	Mv
API (Type P41, Russian)	4.82g	10.18g	1600 fps
Tracer (Type PT, Russian)	5.51g	10.87g	1500 fps

This round was developed from the 7.65x25mm Borchardt round which has a much lighter loading. Though the exterior of the rounds are exactly the same, the Mauser round has a much more powerful loading since the Mauser M1896 is so much stronger than the Borchardt. Until the development of the .357 Magnum round, the 7.62x25mm Mauser round had the highest velocity of any commercial pistol ammunition.

NAME 7.62x25mm Czech
NAME (NATIVE) Vz 58
COUNTRY OF ORIGIN Czechoslovakia
WEAPONS USED IN Vz 52, (01-029-952)
BULLET TYPE Ball
BULLET DIA .307 in.
BULLET WT 5.6g
CHARGE WT .595g
ROUND WT 10.8g
MUZZLE VEL 1600 fps
BARREL LENGTH (For Mv) 12cm

Externally the same as the 7.62x25mm Mauser round, the Czech round is loaded about 10% more powerfully than the standard Mauser load. Though quite safe in Czechoslovakian weapons chambered for it, the 7.62x25mm Czech round should not be fired in other than Czech weapons.

NAME 7.65x17mmSR
COMMON NAMES 7.63x17mmSR, .32 ACP, .32 Automatic, 7.65mm Browning
COUNTRY OF ORIGIN Belgium
WEAPONS USED IN Welrod, (01-131-942), Vz 61 Skorpion (02-029-961)
BULLET TYPE Ball
BULLET DIA .308 in.
BULLET WT 4.75g
CHARGE WT .16g
ROUND WT 7.88g
MUZZLE VEL 960 fps
BARREL LENGTH (For Mv) 10.2cm
PACKAGING 50 rounds/Box, 50 Boxes/Case (2500 rounds)
PACKAGE WT 18.1kg

This is one of the most popular pistol cartridges ever developed. Designed in 1899, the round is used in a wide variety of pocket pistols. Though somewhat underpowered when compared to other pistol rounds, the .32 Automatic continues in wide use today. There is at least one military weapon, the Vz-61 Skorpion, chambered for this round. The SR at the end of the cartridge's designation indicates that it is a semi-rimmed round.

NAME 7.62x25mm Borchardt
COMMON NAMES .30 Borchardt
COUNTRY OF ORIGIN America
WEAPONS USED IN Borchardt, (01-040-893)
BULLET TYPE Ball
BULLET DIA .307 in.
BULLET WT 5.5g
MUZZLE VEL 1263 fps
BARREL LENGTH (For Mv) 19cm

Identical to the 7.62x25mm Mauser round, the Borchardt cartridge is loaded to a lower velocity.

NAME 8x21mm
COMMON NAMES 8mm Nambu
COUNTRY OF ORIGIN Japan
WEAPONS USED IN Type 14 Nambu, (01-062-925)
BULLET TYPE Ball
BULLET DIA .320 in.
BULLET WT 6.64g
CHARGE WT .33g
ROUND WT 11.55g
MUZZLE VEL 1066 fps
BARREL LENGTH (For Mv) 11.6cm

This odd bottlenecked cartridge was only used in Japan. A weak combat round, the 8x21 cartridge was only used in a few pistols and some experimental submachineguns.

NAME 9x17mm
COMMON NAMES .380 ACP, .380 Automatic, 9mm Short, 9mm Kurz
COUNTRY OF ORIGIN America
WEAPONS USED IN Walther PPK, (01-040-930), Ingram M11, (02-132-971a), M84, (01-059-976)
BULLET TYPE Ball
BULLET DIA .356 in.

BULLET WT 6.18g
CHARGE WT .23g
ROUND WT 9.69g
MUZZLE VEL 955 fps
BARREL LENGTH (For Mv) 9.5cm
PACKAGING 50 rounds/Box

This is a very popular cartridge among European Police departments and has been adopted by the militaries of a few countries. Although it is underpowered for most combat use, the .380 Automatic has some excellent weapons chambered for it.

NAME 9x18mm
COMMON NAMES 9mm Makarov
COUNTRY OF ORIGIN Russia
WEAPONS USED IN P64, (01-097-963), Makarov, (01-125-952), Stechkin, (02-125-951), PM-63, (02-097-963)
BULLET TYPE Ball
BULLET DIA .363 in.
BULLET WT 6.63g
CHARGE WT .26g
ROUND WT 10.16g
MUZZLE VEL 1100 fps
BARREL LENGTH (For Mv) 9.7cm

Developed in Russia to replace their 7.62x25mm ammunition, the 9x18mm round has a relatively light loading and bullet. The round is rarely used outside of the areas under Russian influence. A recent development in West Germany is the 9mm Ultra or 9mm police which is interchangeable with the 9mm Makarov.

NAME 9x19mm
COMMON NAMES 9mm Luger, 9mm Parabellum
NAME (NATIVE) 9mm Pistolen Patrone 08
COUNTRY OF ORIGIN Germany
WEAPONS USED IN S & W M39, (01-132-971), Styer G880, (01-007-981), HP35, (01-011-935), MAB P15, (01-037-970), P 08, (01-040-908), P 38, (01-040-938), P9S, (01-041-966), M1951, (01-059-951), M92S, (01-059-976a), Mamba, (01-108-979), SIG P 210 2, (01-113-949), S & W M76, (02-132-968a), Ingram M10, (02-132-971), Sidewinder SS 1, (02-132-978), Owen Mk 1, (02-006-941), F1A1, (02-006-960), MPi 69, (02-007-969), Sten MkII (02-131-941), Sten MkIIS, (02-131-942), L2A3, (02-131-943), L34A1, (02-131-964), Vz 23/25, (02-029-948), M50, (02-030-950), MAT 49, (02-037-949), PM 9, (02-037-954), MP 18 1 (02-040-916), MP 40, (02-040-940), MP5A2, (02-041-965), MP5SD3, (02-041-975), MP5K, (02-041-976), VP 70, (02-041-972), UZI, (02-058-951), MINI-UZI, (02-058-982), M38A, (02-059-938), M93R, (02-059-980), M12, (02-059-959), HM 3, (02-079-973), M45, (02-112-945), Rexim F.V. Mk4, (02-113-953)

BULLET TYPE Ball
BULLET DIA .355 in.
BULLET WT 7.49g
CHARGE WT .36g
ROUND WT 10.68g
MUZZLE VEL 1165 fps
BARREL LENGTH (For Mv) 10.2cm
PACKAGING 50 rounds/Box, 40 Boxes/Case (2000 rounds)
OTHER LOADINGS

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Ball Semi AP (Pist: Patr: 08			
m. E., Germany)	6.35g	9.5g	1475 fps
Tracer (Balle, T, France)	8.04g	11.26g	1300 fps

This is the world's most popular submachinegun and military pistol cartridge. More different military

weapons are chambered for this cartridge then any other round. A long debate has been going on in the United States military about replacing the old .45 Automatic round with this cartridge.

NAME 9x29mmR

COMMON NAMES .38 Special, .38 S & W Special, .38-44

COUNTRY OF ORIGIN America

WEAPONS USED IN Colt Police Positive & Detective Special, (01-132-907), S & W M36, (01-132-950)

BULLET TYPE Ball

BULLET DIA .357 in.

BULLET WT 10.29g

CHARGE WT .33g

ROUND WT 15.04g

MUZZLE VEL 810 fps

BARREL LENGTH (For Mv) 15.2cm

PACKAGING 50 rounds/Box, 40 Boxes/Case (2000 rounds)

PACKAGE WT 42.8kg

OTHER LOADINGS

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Tracer (American)	10.29g	15.04g	870 fps

This round is the most common police cartridge in the United States. A very accurate cartridge, the .38 Special is widely used for target shooting with revolvers. With the relatively light recoil of the .38 Special, it is very easy to instruct a new shooter in firing it.

NAME 9x33mmR

COMMON NAMES .357 Magnum

COUNTRY OF ORIGIN America

WEAPONS USED IN S & W M27, (01-132-935), Colt Python, (01-132-955), S & W M19, (01-132-955a), C.Q.P. .357, (01-132-978)

BULLET TYPE Ball

BULLET DIA .357 in.

BULLET WT 10.3g

CHARGE WT 1.04g

ROUND WT 16.04g

MUZZLE VEL 1450 fps

BARREL LENGTH (For Mv) 21.3cm

PACKAGING 50 rounds/Box, 40 Boxes/Can (2000 rounds)

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Metal Piercing (Semi AP)	10.3g	16.04g	1410 fps

This cartridge fires the same bullet as the .38 Special. The .357 Magnum was developed from the .38 Special in 1935. The casing of the .357 Magnum round is slightly larger than the .38 Special round. The extra length of the casing prevents the .357 Magnum round from being chambered in any .38 Special weapons although the .38 Special round can be easily chambered and fired from the .357 Magnum weapons. Until the development of the .44 Magnum, the .357 Magnum was the most powerful pistol cartridge commercially available.

NAME 10.97x33mmR

COMMON NAMES .44 Magnum

COUNTRY OF ORIGIN America

WEAPONS USED IN S & W M29, (01-132-956a)

BULLET TYPE Ball

BULLET DIA .430 in.

BULLET WT 15.6g

CHARGE WT 1.5g

ROUND WT 24.4g

MUZZLE VEL 1470 fps

BARREL LENGTH (For Mv) 16.5cm

PACKAGING 50 rounds/Box

This cartridge is presently the most powerful pistol cartridge commercially made. The power and recoil of the .44 Magnum requires very strong and heavy weapons to control the round. A very accurate cartridge, the .44 is easily capable of taking most North American big game.

NAME 11.2x32mm

COMMON NAMES .44 Automag

COUNTRY OF ORIGIN America

WEAPONS USED IN M180 .44 Automag, (01-132-972)

BULLET TYPE Ball

BULLET DIA .430

BULLET WT 15.6g

CHARGE WT 1.6g

ROUND WT 25.3g

MUZZLE VEL 1455 fps

BARREL LENGTH (For Mv) 16.5cm

PACKAGING 50 rounds/Box

The .44 Automag is one of the most powerful pistol cartridges available, easily the equal to the .44 Magnum. The cartridge is made by cutting off the bottom section of a 7.62x51mm casing and reaming it out to accept the .429 inch bullet. The round has been intermittently available in factory loads but the M180 Automag pistol is presently discontinued.

NAME 11.43x19mmR

COMMON NAMES .455 Webley, .455 Revolver Mk I

COUNTRY OF ORIGIN Britain

WEAPONS USED IN Webley-Fosbury, (01-131-901), Webley Mk 6, (01-131-915)

BULLET TYPE Ball

BULLET DIA .454 in.

BULLET WT 17.3g

CHARGE WT .49g

ROUND WT 22.8g

MUZZLE VEL 600 fps

BARREL LENGTH (For Mv) 15.2cm

PACKAGING 12 rounds/Pack

This Mark II loading of the .455 Webley was the heaviest pistol round used by the British military. The cordite loading and large bullet make for a very slow moving but very efficient slug.

NAME 11.43x23mm

COMMON NAMES .45 ACP

COUNTRY OF ORIGIN America

WEAPONS USED IN Colt M1911A1, (01-132-922), Liberator M1942, (01-132-942), Thompson M1928A1, (02-132-938), Thompson M1, (02-132-940), OSS M3, (02-132-943), M3A1, (02-132-944), Ingram M10, (02-132-971), Delisle carbine, (03-131-942)

BULLET TYPE Ball

BULLET DIA .452 in.

BULLET WT 15g

CHARGE WT .33g

ROUND WT 21.5g

MUZZLE VEL 850 fps

BARREL LENGTH (For Mv) 12.7cm

PACKAGING 50 rounds/Box, 20 Boxes/Can (1000 rounds), 2 Cans/Case (2000 rounds)

PACKAGE WT 46.4kg

OTHER LOADINGS

TYPE Tracer M26 (America)
Bul. Wt. 13.54g **Rnd. Wt.** 18.9g **Mv** 885 fps
 Developed in 1905 and adopted by the U.S. Military as their standard pistol round, the .45 Automatic cartridge has seen military service for the last 72 years. The .45 Automatic is the most powerful military handgun cartridge in use in the world today. A very difficult cartridge to master, the .45 Automatic is used by experts as a world class target round for match shooting.

NAME 11.56x33mmR
COMMON NAMES .45 Colt
COUNTRY OF ORIGIN America
WEAPONS USED IN Colt M1873, (01-132-873)
BULLET TYPE Ball
BULLET DIA .454 in.
BULLET WT 16.3g
ROUND WT 22.3g
MUZZLE VEL 860 fps
BARREL LENGTH (For Mv) 14cm
PACKAGING 50 rounds/Box

One of the most famous American handgun cartridges, the .45 Colt served as the official handgun caliber of the U.S. Army in the Old West. A large round developed during the black powder era, the .45 Colt fires a large, slow moving, lead bullet which is devastating to anyone it hits.

NAME 13x36mm Gyrojet
COUNTRY OF ORIGIN America
WEAPONS USED IN Mk II Gyrojet, (01-132-966)
BULLET TYPE Ball
BULLET DIA .512 in.
BULLET WT 12.18g
CHARGE WT 3.17g
ROUND WT 15.35g
MUZZLE VEL 1250 fps
PACKAGING 25 rounds/Box

This is an actual rocket designed to be fired from a handgun. Though rocket rounds have been intermittently developed over the years, the Gyrojet was the first successful one. The round has a primer in the base surrounded by four canted exhaust ports. The entire cartridge is fired downrange. One of the major drawbacks is the lack of accuracy and velocity of the round. The round does not reach peak velocity (listed as Muzzle Vel.) until it is about five meters in front of the weapon with all the propellant consumed. When fired, all that the firer feels is a slight puff of warm air from the rocket's exhaust.

NAME XM645 Flechette
COUNTRY OF ORIGIN America
WEAPONS USED IN XM19, (03-132-973)
BULLET TYPE Finned flechette
BULLET DIA .22 in. Sabot/.070 in. Flechette
BULLET WT .648g flechette
CHARGE WT 1.36g
ROUND WT 7.52g
MUZZLE VEL 4850 fps
BARREL LENGTH (For Mv) 57.8cm

This was the most successful of the experimental flechette rounds. The cartridge fires a thin steel needle that is carried in a fiberglass sabot that peels away at the muzzle. The flechette is fin stabilized and tends to bend into a hook when it strikes a target,

tearing a large wound. The difficulty in manufacturing the flechettes to close enough tolerances for accuracy while keeping them economical has caused the project to be temporarily shelved.

NAME 4.6x36mm
COUNTRY OF ORIGIN Germany
WEAPONS USED IN HK 36 (03-041-976)
BULLET TYPE Ball
BULLET DIA .185 in.
BULLET WT 2.7g
CHARGE WT .99g
ROUND WT 7.65g
MUZZLE VEL 2789 fps
BARREL LENGTH (For Mv) 38.1cm
PACKAGING 30 rounds/Ammunition Box (clip)
PACKAGE WT .281kg
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Armor Piercing	3.5g	8.5g	2559 fps

This experimental round is being developed by Heckler and Koch in Germany. This very small bullet is shaped to cause tumbling when it strikes a target, tearing a massive wound. The low recoil of the light bullet adds greatly to the controllability and accuracy of the weapon system.

NAME 4.7x21mm Caseless
NAME (NATIVE) Patronen 4.7 DE11
COUNTRY OF ORIGIN Germany
WEAPONS USED IN H & K G11 (03-041-980)
BULLET TYPE Ball
BULLET DIA .185 in.
BULLET WT 3.4g
CHARGE WT 1.6g
ROUND WT 5g
MUZZLE VEL 3051 fps
BARREL LENGTH (For Mv) 54cm
PACKAGING 10 rounds/Box or 50 rounds/Magazine box
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Tracer			

This exotic cartridge has been under development in Germany for over 13 years. The round does not have a conventional metallic casing. Instead, a solid block of propellant holds both the primer and the bullet. The propellant is a high explosive derivative, probably based on the RDX group. The cartridge is made up of this explosive, and mixed with a binder. Then, it is made into a 9x9x21mm block with a primer composition at one end, and a hole for the bullet at the other. The square cross-section of the round uses the maximum potential of the available space. Since there is no casing to be extracted or ejected, the round can be made into any practical shape.

NAME 4.85x49mm
COMMON NAMES 485 British XP
COUNTRY OF ORIGIN Britain
WEAPONS USED IN XL-64 (03-131-976), Light Support Weapon, (04-131-976)
BULLET TYPE Ball
BULLET DIA .19 in.
BULLET WT 3.11g
CHARGE WT 2950 fps
ROUND WT 11.6g
MUZZLE VEL 2950 fps

BARREL LENGTH (For Mv) 51.8cm

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Tracer			

This was a recent experimental round developed in Britain. Interest in the new round has been temporarily shelved in favor of the 5.56x45mm cartridge.

NAME 5.45x39mm

COUNTRY OF ORIGIN Russia

WEAPONS USED IN AKS-74, (03-125-974)

BULLET TYPE Ball

BULLET DIA .21 in.

BULLET WT 3.44g

CHARGE WT 1.39g

ROUND WT 16.5g

MUZZLE VEL 2950 fps

BARREL LENGTH (For Mv) 40cm

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Incendiary-Tracer			
Armor Piercing			

This is the new round developed in Russia as a replacement for the 7.62x39mm cartridge. Old rifles chambered for the 7.62x39mm round can apparently be easily changed to using the new round simply by changing barrels. Some converted weapons have been found in Afghanistan. Incendiary-tracer, and armor piercing rounds have been reported though data is difficult to confirm.

NAME 5.56x45mm

COMMON NAMES .223 Remington

NAME (NATIVE) Cartridge, 5.56mm, Ball, M193

COUNTRY OF ORIGIN America

WEAPONS USED IN CAR-15, (02-132-968), Bushmaster, (02-132-970a), M16A1, (03-132-957), Stoner M23, (03-132-965), Stoner M22, (03-132-965a), AR-18, (03-132-965b), MINI-14, (03-132-973a), TRW-LMR, (03-132-973b), AUG, (03-007-972), FN-CAL, (03-011-966), Valmet M82, (03-063-982), FA-MAS, (03-037-974), H&K 33A2, (03-041-968), AR-70, (03-059-970), Galil ARM, (03-058-970), MKS, (03-112-976), Stoner Machineguns, XM-214, 6-PAC, (04-132-974), MINIMI, (04-011-974)

BULLET TYPE Ball

BULLET DIA .223 in.

BULLET WT 3.65g

CHARGE WT 1.86g (WC 846)

ROUND WT 11.85g

MUZZLE VEL 3250 fps

BARREL LENGTH (For Mv) 61cm

PACKAGING 20 rounds/Box, 41 Boxes/Can (820 rounds), 2 Cans/Case (1640 rounds)

PACKAGE WT 25.9kg

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Tracer M196 (America)	3.52g	11.52g	3200 fps
Rifle Grenade Blank M195	-	8.2g	-

This is the new standard military cartridge for the U.S. Military. Due to the round's success in the United States a number of NATO countries are developing weapons to fire it. The 5.56mm bullet has tremendous wounding capability due, in part, to the bullet tumbling when it enters a body. This tumbling is due to the density of tissue and not any inherent instability of the round. Contrary to popular belief there is no "tumbler" round designed for the 5.56x45mm. If a round

did tumble in flight it would have such poor accuracy as to be almost useless.

NAME 7.5x54mm

COMMON NAMES 7.5mm MAS

NAME (NATIVE) M1e 1929 "0"

COUNTRY OF ORIGIN France

WEAPONS USED IN MAS 49/56, (03-037-956), Fusil FR-F1, (03-037-965), AAT-52, (04-037-952)

BULLET TYPE Ball

BULLET DIA .307 in.

BULLET WT 9.05g

CHARGE WT 2.86g

ROUND WT 23.6g

MUZZLE VEL 2600 fps

BARREL LENGTH (For Mv) 52.1cm

PACKAGING 15 rounds/Box

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Tracer M1e 1958A "T0"	9.11g	24g	-
Armor Piercing	9.44g	-	-
Armor Piercing Tracer	9.4g	-	-

This is the standard French rifle round. This round is gradually being replaced in French service rifles by the 5.56x45mm cartridge.

NAME 7.62x33mm

COMMON NAMES .30 Carbine

NAME (NATIVE) Cartridge, Cal .30, Carbine, Ball, M1

COUNTRY OF ORIGIN America

WEAPONS USED IN M1, M2 Carbine, (03-132-941)

BULLET TYPE Ball

BULLET DIA .308 in.

BULLET WT 7.23g

CHARGE WT .85g (WC 820)

ROUND WT 12.76g

MUZZLE VEL 1900 fps

BARREL LENGTH (For Mv) 45.7cm

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Tracer M27 (America)	6.7g	12.43g	1800 fps
Rifle Grenade Blank M6 (America)	-	6.7g	-

This round was developed for the M1 Carbine as a lightweight supplement to the M1 Garand. The round is underpowered for combat use and is no longer found in the U.S. Military.

NAME 7.62x39mm

COMMON NAMES 7.62mm Short

NAME (NATIVE) M1943, Type PS

COUNTRY OF ORIGIN Russia

WEAPONS USED IN SKS, (03-125-945), AK-47, AKM-47, (03-125-951), RPD, (04-125-953), RPK (04-125-964)

BULLET TYPE Ball

BULLET DIA .311 in.

BULLET WT 7.94g

CHARGE WT 1.62g

ROUND WT 16.47g

MUZZLE VEL 2330 fps

BARREL LENGTH (For Mv) 41.4cm

PACKAGING 20 rounds/Box, 33 Boxes/Can (660 rounds), 2 Cans/Case (1320 rounds) or 10 rounds/Clip, 55 Clips/Can (550 rounds), 2 Cans/Case (1100 rounds)

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Tracer, Type T45	9.66g	16.01g	-

Armor Piercing Incendiary,
Type BZ 9.98g 16.34g -
Incendiary/Observation
Type ZP 9.66g 15.18g -
This round was developed from the German 7.92x33mm cartridge. A very successful round, the 7.62x39mm is the widest used military round in the world as both the Red Chinese and Warsaw Pact armies use it.

NAME 7.62x51mmR
COMMON NAMES .30-30, .30 WCF
COUNTRY OF ORIGIN America
WEAPONS USED IN Winchester 94, (03-132-894)
BULLET TYPE Ball
BULLET DIA .308 in.
BULLET WT 9.76g
CHARGE WT 2.15g
ROUND WT 22g
MUZZLE VEL 2410 fps
BARREL LENGTH (For Mv) 55.9cm
PACKAGING 20 rounds/Box

This is the oldest commercial centerfire, smokeless cartridge in the United States. Developed by Winchester in 1895, there are several million Model 94 carbines in circulation chambered for this round. The .30-30 is one of the world's most popular sporting cartridges.

NAME 7.62x51mm
COMMON NAMES 7.62 NATO, .308 Winchester
NAME (NATIVE) Cartridge 7.62mm Ball, M59
COUNTRY OF ORIGIN America
WEAPONS USED IN AR-10, (03-132-955), M14, (03-132-956a), Remington M700, (03-132-960), SATS-G3, (03-132-982), SSG-69, (03-007-969), FN-FAL, (03-011-950), L42A1, (03-131-966), G-3, (03-041-960), BM-59, (03-059-959), Type 64, (03-062-964), SIG 510-4, (03-113-957), M60, (04-132-958), M134 Minigun, (04-132-967), MAG 58, (04-011-958), HK-21, (04-041-972), Type 62, (04-062-962)
BULLET TYPE Ball
BULLET DIA .308 in.
BULLET WT 9.8g
CHARGE WT 3g (WC 846)
ROUND WT 25.6g
MUZZLE VEL 2750 fps
BARREL LENGTH (For Mv) 61cm
PACKAGING 20 rounds/Box, 12 Boxes/Can (240 rounds), 4 Cans/Case (960 rounds)
PACKAGE WT 34.7kg
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Armor Piercing M61	9.8g	25.6g	2750 fps
Tracer M62	9.2g	24.9g	2750 fps
Duplex M198	5.47/5.53g	26.8g	2750/2200 fps
Frangible M160	7.1g	20.5g	1320 fps
Rifle Grenade Blank M64	-	19.2g	-
Ball, Reduced load (Japan)	9.8g	25.3g	2470 fps

This is the standard ammunition of the NATO countries. Developed after WWII in the United States, the 7.62x51 has very much the same ballistics as the 7.62x63mm round but is slightly smaller and lighter. Though gradually being phased out as an infantryman's round in favor of the 5.56x45mm cartridge, the 7.62mm NATO remains a very popular round, especially in light

machineguns.

NAME 7.62x54mmR
COMMON NAMES 7.62mm Russian
NAME (NATIVE) Type D
COUNTRY OF ORIGIN Russia
WEAPONS USED IN Mosin - Nagant M1891/30, (03-125-930), SVD, (03-125-963), DP, (04-125-928), SG-43, (04-125-943), PKM, (04-125-964a), Vz 59, (04-125-959)
BULLET TYPE Ball
BULLET DIA .311 in.
BULLET WT 11.79g
CHARGE WT 3.05g
ROUND WT 22.6g
MUZZLE VEL 2580 fps
BARREL LENGTH (For Mv) 72.4cm
PACKAGING 20 rounds/Pack, 22 Packs/Can (440 rounds), 2 Cans/Case (880 rounds)
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
API, Type BS-40 (Russian)	12.11g	-	2641 fps
Tracer, Type T46 (Russian)	9.65g	-	2750 fps
API-T, Type BZT (Russian)	9.2g	-	2575 fps
INCN/ob, Type ZP (Russian)	10.36g	-	2710 fps

This was the first "small" caliber round adopted by Russia in 1891. Though a clumsy round by modern standards, the 7.62x56mmR is capable of excellent accuracy. The round is still in use with the Warsaw Pact forces as a light machinegun and sniper rifle cartridge.

NAME 7.62x63mm
COMMON NAMES 30-06, .30 M2, .30 Springfield
NAME (NATIVE) Cartridge, Caliber .30, Ball, M2
COUNTRY OF ORIGIN America
WEAPONS USED IN Springfield M1903, (03-132-903), M1 Garand, (03-132-932), Colt M1895/1914, (04-132-914), M1919A4, (04-132-922), M1917A1, (04-132-936), BAR M1918A2, (04-132-940)
BULLET TYPE Ball
BULLET DIA .308 in.
BULLET WT 9.9g
CHARGE WT 3.25g (IMR 4895)
ROUND WT 27.1g
MUZZLE VEL 2740 fps
BARREL LENGTH (For Mv) 61cm
PACKAGING 20 rounds/Box, 20 Boxes/Can (400 rounds)
2 Cans/Case (800 rounds)
PACKAGE WT 30.2kg
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Armor Piercing M2	10.8g	27.6g	2715 fps
Tracer M25	9.47g	26.1g	2665 fps
Incendiary	9.11g	26.7g	2950 fps
Armor Piercing Incendiary M14	9.83g	26.3g	2780 fps
Frangible M22	7.05g	20.8g	1320 fps
Rifle Grenade M3	-	16g	-

One of the most popular all-purpose rounds in the United States is the 30-06. Originally designed in 1903 and fitted with a new bullet in 1906, this round is still used by a great many of the world's smaller militaries. The accuracy of the 7.62x63 has long been known and it is still used as a standard other rounds are measured by. With the proper bullet, the 30-06 is capable of dispatching any big game found in North America.

NAME 7.62x66mmB
 COMMON NAMES .300 Winchester Magnum
 COUNTRY OF ORIGIN America
 WEAPONS USED IN WA-2000, (03-041-982)
 BULLET TYPE Ball
 BULLET DIA .308 in.
 BULLET WT 11.7g
 CHARGE WT 4.75g
 ROUND WT 31.8g
 MUZZLE VEL 3070 fps
 BARREL LENGTH (For Mv) 61cm
 PACKAGING 20 rounds/Box

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Ball (Light)	9.76g	29.86g	3400 fps

This belted Magnum round is one of the most powerful 30 caliber cartridges commercially available. Designed for long distance hunting, the .300 Winchester has a very flat trajectory. Recent studies by various police and antiterrorist groups recommended the .300 Winchester Magnum as a precision sniper cartridge.

NAME 7.7x56mmR
 COMMON NAMES .303 British
 NAME (NATIVE) Mark 7z Ball
 COUNTRY OF ORIGIN Britain
 WEAPONS USED IN Enfield No. 4, Mk I, (03-131-941), .303 Vickers Mk I, (04-131-912), Lewis Mk I, (04-131-914), Bren Mk II, (04-131-938)
 BULLET TYPE Ball
 BULLET DIA .311 in.
 BULLET WT 11.28g
 CHARGE WT 2.4g (cordite)
 ROUND WT 25g
 MUZZLE VEL 2440 fps
 BARREL LENGTH (For Mv) 61cm

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Tracer G Mk 8	10.95g	24.57g	2370 fps
Incendiary B Mk 7	11.47g	24.4g	2370 fps
Observing O Mk 1	11.28g	25g	2400 fps
Armor Piercing W Mk 1	11.34g	25.03g	2500 fps

This was the standard service round of the British military from 1888 to 1957. Originally a black powder round the .303 British was changed to smokeless powder (cordite) in 1892. Cordite is a nitrocellulose based propellant that resembles bundles of thin tan spaghetti and has a distinctive smell when fired.

NAME 7.7x58mm
 COMMON NAMES 7.7mm Arisaka
 NAME (NATIVE) Type 99
 COUNTRY OF ORIGIN Japan
 WEAPONS USED IN Arisaka Model 99, (03-062-939), Type 99, (04-062-939)
 BULLET TYPE Ball
 BULLET DIA .310 in.
 BULLET WT 11.73g
 CHARGE WT 2.79g
 ROUND WT 27.01g
 MUZZLE VEL 2300 fps
 BARREL LENGTH (For Mv) 79.8cm

PACKAGING 5 rounds/Clip, 3 Clips/Box (15 rounds)

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Tracer	-	-	-
Armor Piercing	-	-	-

Incendiary	-	-	-
Explosive	10.69g	26.15g	-

This was a replacement round developed by the Japanese to take the place of their older 6.5mm cartridge. A cartridge comparable to the 7.62x63mm round, the 7.7 Arisaka was also loaded occasionally with one of the most dangerous explosive bullets used by any military. The bullet held almost a gram of high explosive and was known to detonate if dropped on a hard surface.

NAME 7.92x33mm
 COMMON NAMES 7.92 Kurz
 NAME (NATIVE) 7.92mm Pistolenpatrone 43 mit Eisenkern
 COUNTRY OF ORIGIN Germany
 WEAPONS USED IN MP-44, (03-040-943)
 BULLET TYPE Semi Armor Piercing
 BULLET DIA .311 in.
 BULLET WT 8.1g
 CHARGE WT 1.48g
 ROUND WT 16.5g
 MUZZLE VEL 2297 fps
 BARREL LENGTH (For Mv) 41.9cm
 PACKAGING 15 rounds/Box

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Tracer	-	-	-

This round was developed in Germany during WWII for a new class of weapon. The shortened case and lighter bullet met the needs of the average infantryman without needing a heavy weapon to fire it. The "Intermediate" round, as this later became known, was the first of the Assault rifle cartridges.

NAME 7.92x57mm
 COMMON NAMES 8mm Mauser
 NAME (NATIVE) 7.92mm Patr (Ss)
 COUNTRY OF ORIGIN Germany
 WEAPONS USED IN Kar 98k, (03-040-935), FG-42, (03-040-935), MG-08, (04-040-908), MG-34, (04-040-934), MG-42, (04-040-942)
 BULLET TYPE Ball
 BULLET DIA .311 in.
 BULLET WT 12.89g
 CHARGE WT 3.06g
 ROUND WT 26.56g
 MUZZLE VEL 2477 fps
 BARREL LENGTH (For Mv) 59.7cm
 PACKAGING 5 rounds/Clip, 3 Clips/Box (15 rounds), 20 Boxes/Case (300 rounds), 5 Cartons/Case (1500 rounds)
 PACKAGE WT 53.5kg

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Semi Armor piercing			
(Patr Sm E)	11.59g	25.26g	2860 fps
Armor piercing			
(Patr Sm KH)	11.59g	25.26g	2860 fps
Armor piercing Tracer			
(Patr Sm KL'spur)	10.22g	22.89g	2720 fps
Armor piercing Incendiary			
(Patr Pmk)	10.16g	23.83g	2740 fps
Observation (B Patr.)	10.87g	24.54g	2670 fps
Rifle Grenade blank	-	-	-

This was the standard issue rifle and machinegun round for Germany through both of the world wars. Ballistically comparable to the 7.62x63mm round, the 7.92x57mm cartridge was available in a wide variety of

specialized loads.

NAME 7.92x95mm
NAME (NATIVE) 7.92 Patronen 318
COUNTRY OF ORIGIN Germany
WEAPONS USED IN PzB 39, (03-040-939)
BULLET TYPE Armor Piercing
BULLET DIA .311 in.
BULLET WT 14.5g
CHARGE WT 14.7g
ROUND WT 64g
MUZZLE VEL 3800 fps
BARREL LENGTH (For Mv) 108.6cm
PACKAGING 5 rounds/Box, 50 Boxes/Case (250 rounds)
PACKAGE WT 33kg

Developed for use against light tanks, this round was one of the very few that had a powder charge weight which almost equalled the weight of its bullet.

NAME 10.8x33mmR
COMMON NAMES .44-40
COUNTRY OF ORIGIN America
WEAPONS USED IN Winchester M1873, (03-132-873a)
BULLET TYPE Ball
BULLET DIA .427 in.
BULLET WT 13g
CHARGE WT 2.6g black powder
ROUND WT 20.8g
MUZZLE VEL 1325 fps
BARREL LENGTH (For Mv) 61cm

This is one of the oldest centerfire rifle cartridges still manufactured in the U.S. Introduced in 1873, the 1873 Colt was also available chambered for this round. The rifle/pistol combination firing a single round was very popular in the American Old West.

NAME 11.43x60mmR
COMMON NAMES .577/450, .45 Martini
COUNTRY OF ORIGIN Britain
WEAPONS USED IN Martini - Henry Mk I, (03-131-871)
BULLET TYPE Ball
BULLET DIA .455 in.
BULLET WT 31.2g
CHARGE WT 5.53g
ROUND WT 54g
MUZZLE VEL 1350 fps
BARREL LENGTH (For Mv) 84.3cm

This cartridge was developed by necking down the earlier .577 Snyder round. The .577/450 terminology indicates a .577 original casing necked down to accept a .45 caliber bullet. Widely used in the Martini - Henry, British models of the Gatling gun were also chambered for this caliber. The heavy bullet of the .577/450 carries with fair accuracy for, what would be now, extreme ranges with tremendous knock-down power.

NAME 11.6x54mmR
COMMON NAMES .45-70
NAME (NATIVE) .45-70-405
COUNTRY OF ORIGIN America
WEAPONS USED IN Springfield Trapdoor, (03-132-873), 1874 Gatling gun, (04-132-874)
BULLET TYPE Ball
BULLET DIA .457 in.
BULLET WT 26.36g
CHARGE WT 4.6g black powder
ROUND WT 39.8g

MUZZLE VEL 1350 fps
BARREL LENGTH (For Mv) 76.2cm

This was the standard issue round for the U.S. military in the late 1800's and was the most common round used in the American Indian Wars. The original terminology of the .45-70-500 indicated the caliber, charge weight of black powder grains, and the weight of the bullet in grains. The carbine load of the 11.6x54mmR was known as the .45-55-405, a 45 caliber, 405 grain bullet which was propelled by 55 grains of black powder.

NAME 11.6x63.5mmB
COMMON NAMES .458 Winchester Magnum
COUNTRY OF ORIGIN America
WEAPONS USED IN Winchester M70 African, (03-132-956)
BULLET TYPE Ball
BULLET DIA .458 in.
BULLET WT 32.55g
CHARGE WT 4.95g
ROUND WT 53.3g
MUZZLE VEL 2130 fps
BARREL LENGTH (For Mv) 61cm
PACKAGING 20 rounds/Box

This cartridge was developed by Winchester - Western in 1956 as an American dangerous game round for Africa. Loaded with full jacketed (called "solids" in this case) bullets, the .458 is easily capable of dropping elephant and Cape buffalo with a single shot. Loaded with soft nosed bullets for expansion, the .458 gives a good margin of safety when hunting the great Alaskan bears.

NAME 11.6x74mmB
COMMON NAMES .460 Weatherby Magnum
COUNTRY OF ORIGIN America
WEAPONS USED IN .460 Weatherby Mk V, (03-132-958)
BULLET TYPE Ball
BULLET DIA .458 in.
BULLET WT 32.55g
CHARGE WT 8.07g
ROUND WT 65g
MUZZLE VEL 2700 fps
BARREL LENGTH (For Mv) 66cm
PACKAGING 20 rounds/Box

The .460 Weatherby cartridge legitimately claims the title "world's most powerful commercial cartridge." With its massive belted case and large bullets, the .460 looks more like a round for an antitank rifle than a hunting round. Designed for very large, dangerous game, the .460 Weatherby Magnum round is far too powerful for any lesser game. The large, heavy slug is very stable in flight but the recoil is considered to severe for the round to be used in target shooting.

NAME 12.7x77mm
NAME (NATIVE) Cartridge Caliber .50, Spotter-tracer, M48A1
COUNTRY OF ORIGIN America
WEAPONS USED IN M8C (03-132-953)
BULLET TYPE Observation-Tracer
BULLET DIA .511 in
BULLET WT 54.2g
CHARGE WT 7.16g (IMR 7383)
ROUND WT 113.5g
MUZZLE VEL 1732 fps
BARREL LENGTH (For Mv) 81.3cm

PACKAGING 10 rounds/Box

Developed for the M8C Spotting Rifle, this round has been ballistically matched to the HEAT ammunition fired by the 106mm recoilless rifle. The bullet follows the flight path the 106mm round would take and indicates where the round would strike, greatly increasing the chance of a first-round hit.

NAME 12.7x83mmR

COMMON NAMES .50-140 (3 1/4 in.) Sharps

COUNTRY OF ORIGIN America

WEAPONS USED IN Sharps Model 1874, (03-132-874)

BULLET TYPE Ball

BULLET DIA .509 in.

BULLET WT 45.6g

CHARGE WT 9.1g

ROUND WT 100.2g

MUZZLE VEL 1355 fps

BARREL LENGTH (For Mv) 66cm

Available as a special order round for the Sharps sporting rifle, this was the largest commercial rifle round native to the United States. Introduced around 1880, the .50-140 was referred to as a "buffalo" cartridge but, as the last commercial hunt was in 1884, this round was introduced too late to see much actual buffalo hunting. The large, heavy bullet was very stable in flight and was occasionally used as a long distance black powder target round.

NAME 12.7x99mm Belted

COMMON NAMES .50 Browning

NAME (NATIVE) Cartridge, Caliber .50, Ball, M2

COUNTRY OF ORIGIN America

WEAPONS USED IN .50 M2HB, (04-132-933)

BULLET TYPE Ball

BULLET DIA .510 in.

BULLET WT 46.2g

CHARGE WT 15.3g (WC 860)

ROUND WT 118g

MUZZLE VEL 2810 fps

BARREL LENGTH (For Mv) 114.3cm

PACKAGING 100 rounds/Belt, 1 Belt/Can,

2 Cans/Case (200 rounds)

PACKAGE WT 35kg

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Armor Piercing M2	46.1g	118g	2810 fps
Tracer M1/M21	44.0g	116.2g	2700 fps
Armor Piercing Tracer			
Incendiary M23	30.9g	102.9g	3400 fps
Armor Piercing Incendiary			
M8	40.5g	114.8g	2910 fps
Armor Piercing Incendiary			
Tracer M20	40.3g	111.8g	2910 fps

Combat Loads

4-AP M2 to 1 API-T M20

4-Ball M2 to Tracer M1/M21

This round was originally developed for a possible antitank weapon in WWI. Though perfected too late to see service in WWI, the .50 Browning cartridge is presently the most common heavy machinegun round in NATO. At the time of this writing, a new weapon to fire the .50 round is being developed, helping to ensure this cartridge's service for a number of years to come.

NAME 12.7x108mm Belted

NAME (NATIVE) Type BZ

COUNTRY OF ORIGIN Russia

WEAPONS USED IN DshK M38/46, (04-125-946)

BULLET TYPE Armor piercing Incendiary

BULLET DIA .511 in.

BULLET WT 47.9g

CHARGE WT 16.53g

ROUND WT 140.6g

MUZZLE VEL 2750 fps

BARREL LENGTH (For Mv) 107cm

PACKAGING 85 rounds/Can, 2 Cans/Case (170 rounds)

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Armor Piercing Incendiary-			
Tracer, Type BZT	44.3g	137.6g	2750 fps
Explosive/Incendiary			
Type ZP	44.39g	137g	2750 fps
Armor Piercing Type B.30	52.49g	146.2g	2750 fps
Armor Piercing Incendiary			
Type BZ	47.95g	139.3g	2750 fps

This cartridge was developed as a heavy machinegun round prior to WWII in Russia. Ballistically in the same class as the .50 Browning, the 12.7x108 has not been loaded in as wide a variety of bullet types.

NAME 13x71mm Gyrojet

COUNTRY OF ORIGIN America

BULLET TYPE Ball

BULLET DIA .512 in.

BULLET WT 23g

CHARGE WT 6.25g

ROUND WT 29.25g

MUZZLE VEL 1600 fps

This is a longer version of the 13x36mm Gyrojet pistol round. A completely self contained solid fuel rocket, this long case version held more propellant than the 36mm long casing. This is a very rare version of the Gyrojet rocket system and acts much the same as the standard 13x36mm rocket.

NAME 13.9x22mmR

COMMON NAMES .56/50 Spencer

COUNTRY OF ORIGIN America

WEAPONS USED IN Spencer .56/56 Carbine, (03-132-863)

BULLET TYPE Ball

BULLET DIA .548 in.

BULLET WT 22.78g

CHARGE WT 2.86g black powder

ROUND WT 33g

MUZZLE VEL 1200 fps

BARREL LENGTH (For Mv) 72cm

This was the ammunition for the original Spencer rifle introduced in 1860. This rimfire cartridge was the first metallic cartridge used by the U.S. military as an issue weapon. At the time of the Civil War, several military experts stated that the firepower of the repeating Spencer, if it had been obtained in greater quantity, could have shortened the war by as much as a year.

NAME 13.9x99mmB

COMMON NAMES .55 Boys

COUNTRY OF ORIGIN Britain

WEAPONS USED IN .55 Boys Mk I, (03-131-938)

BULLET TYPE Armor Piercing

BULLET DIA .562 in.

BULLET WT 60.28g

CHARGE WT 13.8g
 ROUND WT 133g
 MUZZLE VEL 2900 fps
 BARREL LENGTH (For Mv) 91.7cm
 PACKAGING 5 rounds/Clip, 2 Clips/Bandoleer
 This is one of the largest belted rifle rounds ever made. Developed in 1937 as a large bore antitank rifle round, the .55 Boys was a tremendous handful for the gunner to fire.

NAME 14.5x114mm
 COMMON NAMES 14.5mm BS-41
 COUNTRY OF ORIGIN Russia
 WEAPONS USED IN PTRS-41, (03-125-941)
 BULLET TYPE Armor piercing Incendiary
 BULLET DIA .588 in.
 BULLET WT 64.4g
 CHARGE WT 31.1g
 ROUND WT 201g
 MUZZLE VEL 3200 fps
 BARREL LENGTH (For Mv) 139cm

Developed for a large bore antitank rifle, this round was retained after WWII as a heavy machinegun cartridge. The round has sufficient power that some modern light armored vehicles use weapons chambered for it as their primary armament.

NAME 14.5x114mm Belted
 NAME (NATIVE) Typed BS-41
 COUNTRY OF ORIGIN Russia
 WEAPONS USED IN KPU, (04-125-954)
 BULLET TYPE Armor piercing Incendiary
 BULLET DIA .588 in.
 BULLET WT 64.4g
 CHARGE WT 31.1g
 ROUND WT 201g
 MUZZLE VEL 3280 fps
 BARREL LENGTH (For Mv) 134.6cm
 PACKAGING 42 rounds/Can, 2 Cans/Case (84 rounds)
 OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Armor Piercing Incendiary-			
Tracer, Type BZT	59.6g	-	3200 fps
Incendiary-Tracer, Type ZP	60g	-	-
High Explosive Incendiary			
Type MDZ	58.5g	-	3200 fps

The largest machinegun round presently used, these loadings of the 14.5mm are designed for the KPV machinegun rather than the antitank rifle.

NAME 15.7x76mmR
 COMMON NAMES .600 Nitro Express
 COUNTRY OF ORIGIN Britain
 WEAPONS USED IN .600 Nitro Double Rifle, (03-131-905)
 BULLET TYPE Ball
 BULLET DIA .620 in.
 BULLET WT 58.6g
 CHARGE WT 6.5g Cordite
 ROUND WT 95g
 MUZZLE VEL 2050 fps
 BARREL LENGTH (For Mv) 61cm
 PACKAGING 10 rounds/Box, 5 Boxes/Case (50 rounds)

This was the largest of the smokeless powder rifle cartridges. The .600 Nitro Express was a large straight sided case loaded with nitrocellulose powder (cordite). The very heavy bullet of the .600 Nitro would knock an elephant unconscious immediately upon striking it in the head. Considering that the skull of an elephant can

have over one foot of spongy bone protecting the brain, a "knock-out" blow would take a good deal of power.

NAME 20 gauge 2 3/4 inch
 WEAPONS USED IN Ithaca Auto-Burglar Mod 10B, (05A-132-925)
 BULLET DIA #3 Buckshot (20 pellets)
 BULLET WT .25 in.
 CHARGE WT 1.5g each (30g total)
 ROUND WT 42g
 MUZZLE VEL 1230 fps
 BARREL LENGTH (For Mv) 66cm
 PACKAGING 5 rounds/Box

This is one of the smaller, practical shotgun shells. With modern high velocity loads this shell is well able to hold its own position for hunting. The good quantity of shot combined with the fairly light recoil makes this the best modern cartridge for the whippet style shotguns.

NAME 12 gauge 2 3/4 in.
 COMMON NAMES 12 gauge "All Brass"
 NAME (NATIVE) Cartridge, 12 GAGE, Shotgun, No. M19
 WEAPONS USED IN M1897 Riot shotgun, (05A-132-898), Savage 311-R, (05A-132-925a), High Standard M10B, (05A-132-970), Atchisson Assault gun, (05A-132-972), Remington 870P, (05A-132-972a), Mossberg M500 ATP8S, (05A-132-974), Browning Riot shotgun, (05A-011-970)
 BULLET TYPE 00 Buckshot (9 pellets)
 BULLET DIA .33 in.
 BULLET WT 4g ea. (36g total)
 CHARGE WT 1.69g
 ROUND WT 60.5g
 MUZZLE VEL 1125 fps
 BARREL LENGTH (For Mv) 50.8cm
 PACKAGING 10 rounds/Box, 24 Boxes/Can (240 rounds), 2 Cans/Case (480 rounds)
 PACKAGE WT 39.9kg
 OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv
Standard 00 Buckshot			
(9 pellets) Paper case	36g	51.5g	1325 fps
Magnum 00 Buckshot,			
(12 pellets) Plastic case	48g	63.5g	1325 fps
M274 #4 Buckshot (27 pellets,			
Paper or Plastic	35.1g	50.6g	1335 fps
BARREL LENGTH (For Mv's)	76.2cm		

This is the most popular shotgun round in the United States and the most common size of shotgun shell in the world. Available in a wide variety of loads, there is also an all brass casing version available (listed above). The all brass case makes for a very waterproof round and, except for its weight, the best available combat round.

NAME 12 gauge Teleshot
 COMMON NAMES Silent shotgun round
 COUNTRY OF ORIGIN America
 WEAPONS USED IN A11 manual 12 gauge shotguns
 BULLET TYPE #4 Buckshot (12 pellets)
 BULLET DIA .24 in.
 BULLET WT 1.3g ea. (15.6g total)
 MUZZLE VEL 450 fps
 EFF RNG 20m

This silent shotgun shell was developed in 1968 during the Vietnam War. The round uses an expanding steel capsule to push the pellets and retain the

propellant gases. Since no gas leaves the barrel, there is no effective noise from the firing of the shell. Because the pellets are not pushed by gas but by the expanding capsule, the barrel length of the firing weapon has no effect on the velocity of the pellets.

The changes in velocity for shotguns are calculated in the same way as those for rifle rounds. The results are an approximation of the true velocity. Due to all of the possible variations in velocity, this system is one of the most accurate and simple available.

NAME 10 gauge 2 7/8 in.
 WEAPONS USED IN 10 ga. Sawed Off, (05A-132-880)
 BULLET TYPE 0 Buckshot (16 pellets)
 BULLET DIA .32 in.
 BULLET WT 3.2g ea. (51g total)
 ROUND WT 73g
 MUZZLE VEL 1330 fps
 BARREL LENGTH (For Mv) 76.2cm
 PACKAGING 10 rounds/Box, 25 boxes/Can (250 rounds), 2 Cans/Case (500 rounds)
 PACKAGE WT 42.6kg

This is the largest caliber shotgun shell still manufactured in the United States. The very large size of the round allows a large amount of shot to be carried. With the heavy recoil of the 10 gauge, it is not as popular as the 12 gauge.

MUZZLE VELOCITIES

The muzzle velocities given in the ammunition section are based, whenever possible, upon the nominal barrel length as used by the manufacturers. These nominal lengths have been standardized here in the United States as well as most NATO countries. Velocities vary within groups of ammunition, some by 75 feet per second or more, with subsequent loss of some accuracy. Differing barrel lengths also account for velocity variance from that of a nominal length barrel.

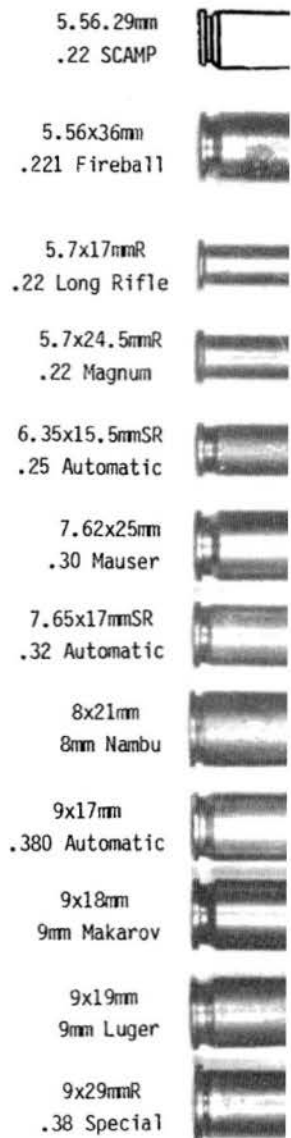
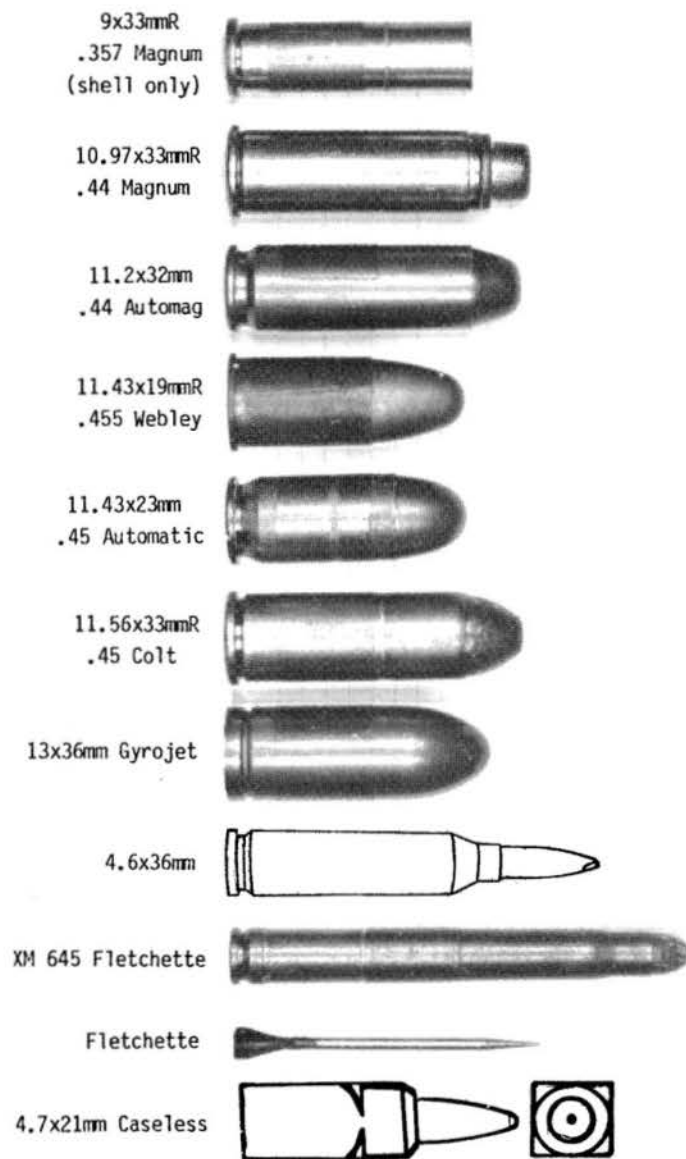
Most modern rifle cartridges have their velocities based on a standard barrel length of 24 inches (61 centimeters). The following table is the approximate difference in velocity for different barrel lengths according to the nominal velocity of the round.

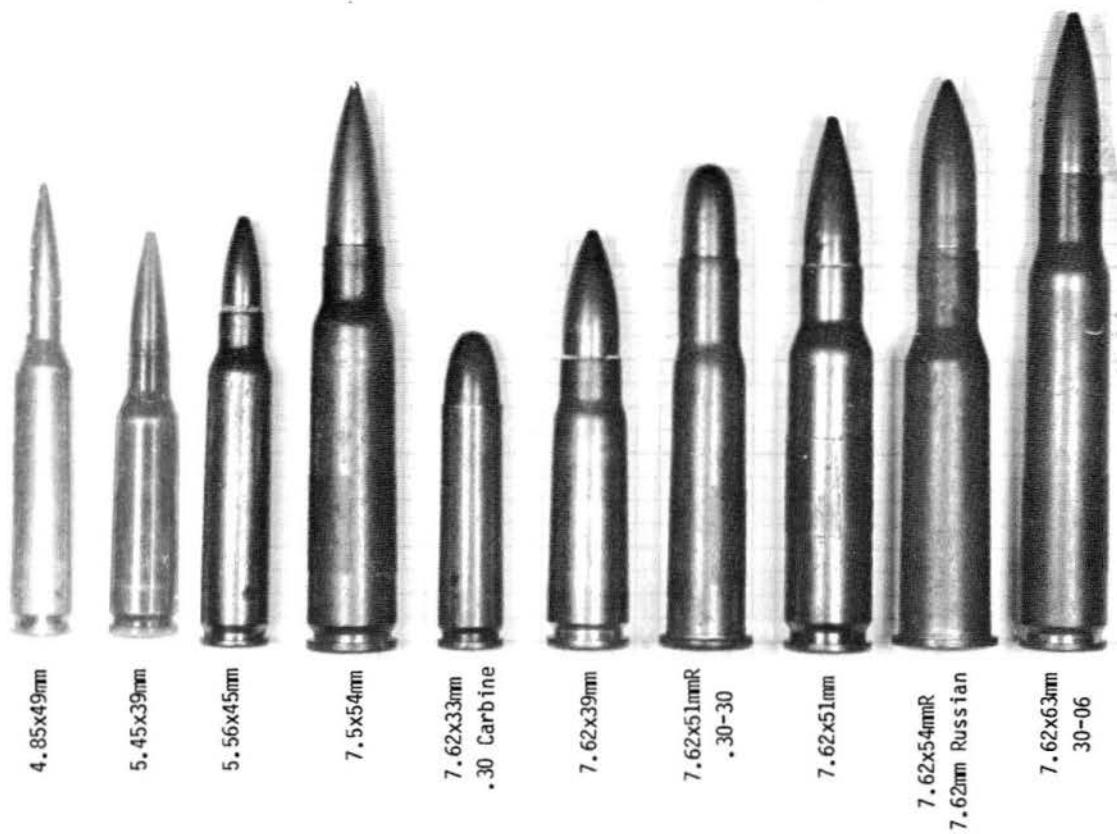
Muzzle Vel. Range in fps (Nominal length barrel)	+ or - change in Velocity	
	Per inch bbl	Per cm bbl
up to 2000	5 fps	1.97 fps
2001-2500	10 fps	3.94 fps
2501-3000	20 fps	7.87 fps
3001-3500	30 fps	11.81 fps
3501-4000	40 fps	15.75 fps

To use the table, determine first what the velocity of the round is when fired from a nominal barrel length. Then see what the change in velocity per inch or cm of the barrel is. Multiply the Velocity per inch/cm by the difference in barrel length of the firing weapon from the nominal length for the cartridge. Subtract the result from the nominal velocity for barrels below nominal length and add the result for barrels longer than nominal.

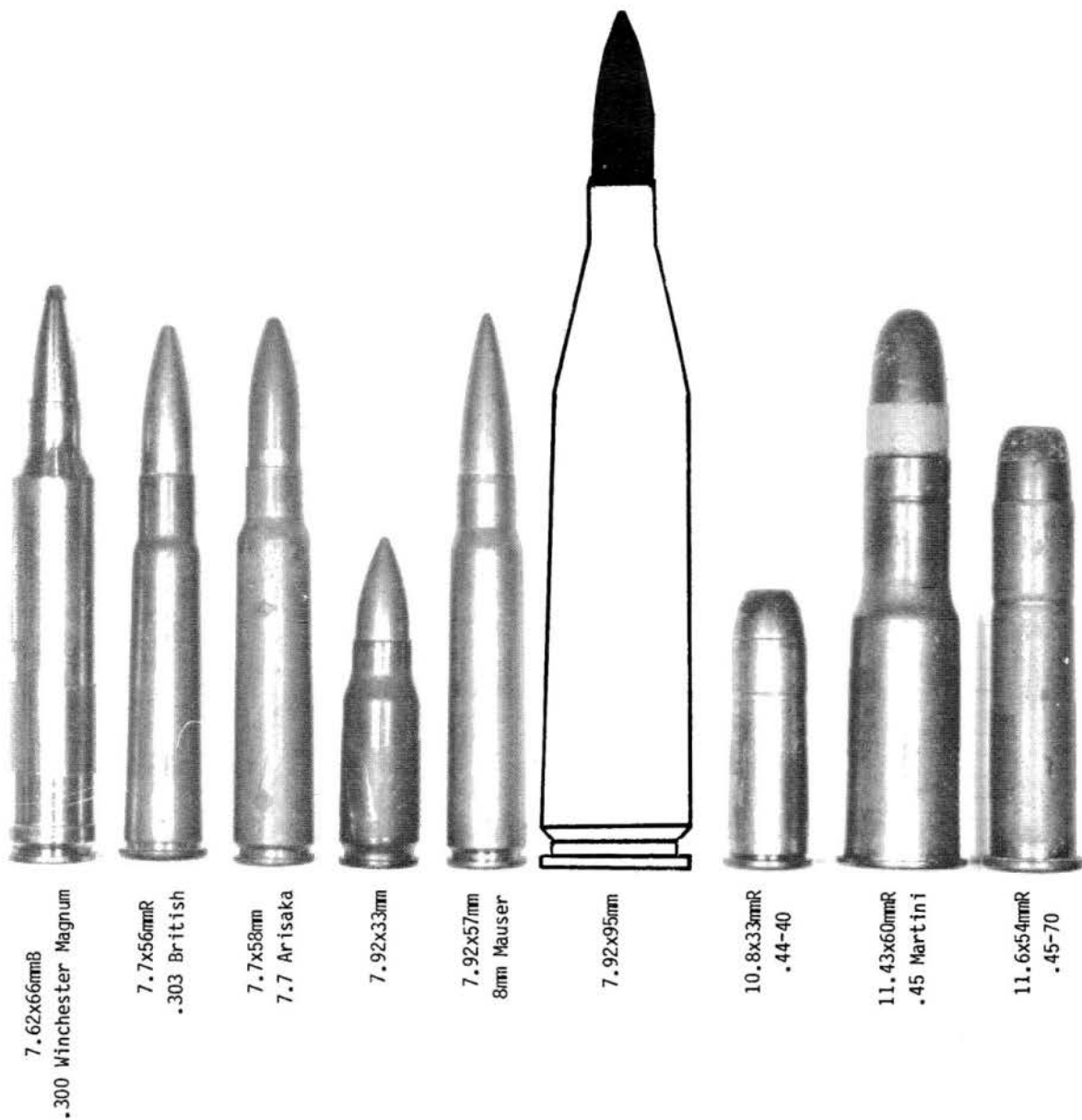
Shotgun velocities vary according to caliber, shot type and barrel length for the following table:

Gauge	Velocity change for buckshot loads	
	per inch bbl	per cm bbl
10	7.5 fps	2.95 fps
12	7.5 fps	2.95 fps
20	7.5 fps	2.95 fps





This is the 13mm Gyrojet round. The standard percussion primer in the center is surrounded by the four canted exhaust ports which propel the round.

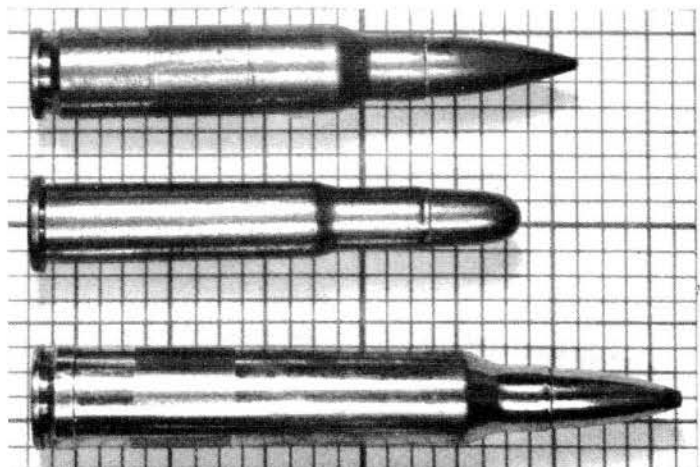


CARTRIDGE BASE TYPES

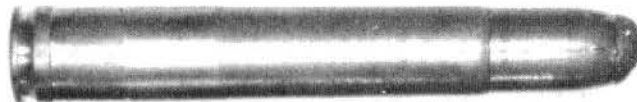
7.62x51mm
(Rimless Case)

7.62x51mmR
(Rimmed Case)

7.62x66mmB
(Belted Magnum Case)



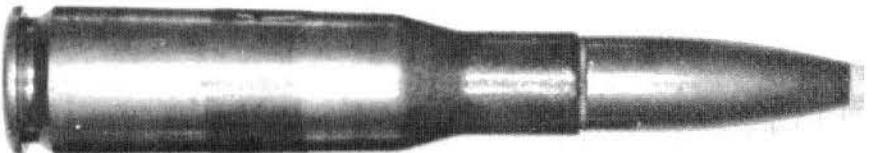
11.6x63.5mmB
.458 Winchester Magnum



11.6x74mmB
.460 Weatherby Magnum



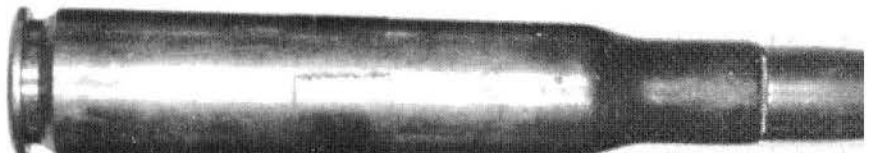
12.7x77mm
.50 Spotter-Tracer



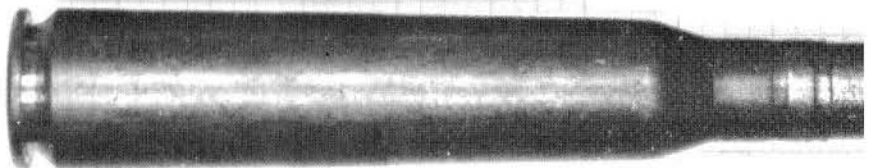
12.7x83mmR
.50-140 Sharps
(shell only)



12.7x99mm
.50 Browning



12.7x108mm



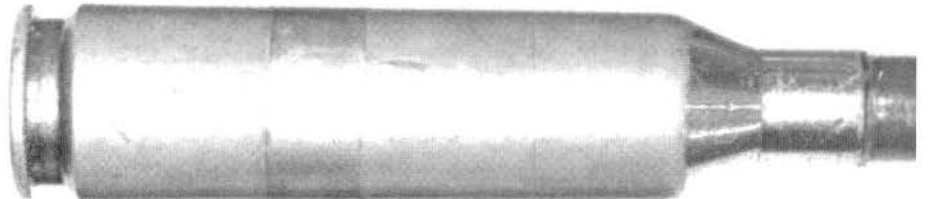
13.9x22mmR
.56/50 Spencer



13.9x99mmB
.55 Boys



14.5x114mm



15.7x76mmR
.600 Nitro Express



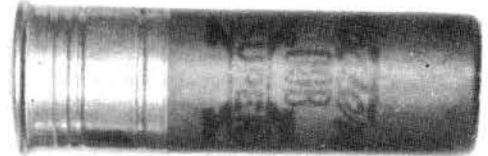
20 gauge 2 3/4 inch



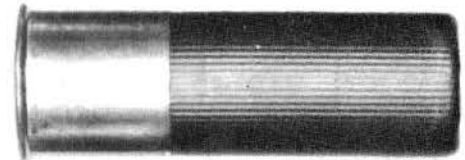
12 gauge 2 3/4 inch
M19 Brass Case



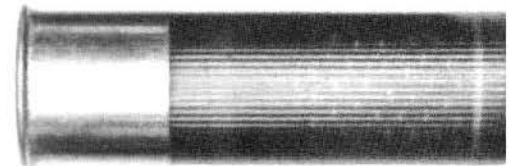
12 gauge 2 3/4 inch
Paper Case



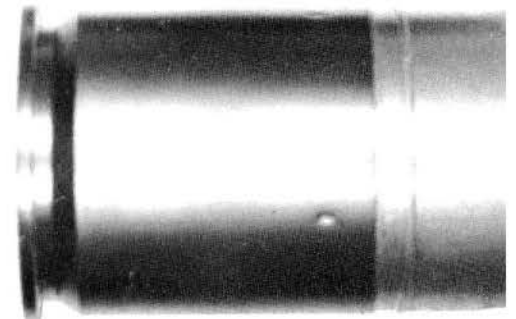
12 gauge 2 3/4 inch
Plastic Case



10 gauge 2 7/8 inch



40mm Grenade



Appendix A Metric-English Conversions

Symbol	Multiply	by	to Get
C	Centigrade + 17.8	1.8	Fahrenheit
cm	Centimeters	0.3937	Inches
cm	Centimeters	0.0328084	Feet
cm	Centimeters	0.01	Meters
F	Fahrenheit - 32	5/9	Centigrade
Ft	Feet	30.48	Centimeters
Ft	Feet	0.3048	Meters
fps	Feet per Second	0.3048	Meters/second
ft/lb	Foot-pounds	0.1383	MKP
ft/lb	Foot-pounds	1.356	Joules
gr	Grains	0.06480	Grams
gr	Grains	0.0022857	Ounces
g	Grams	15.432	Grains
g	Grams	0.001	Kilograms
g	Grams	0.0352739	Ounces
g	Grams	0.0022046	Pounds
in	Inches	2.54	Centimeters
in	Inches	0.083333	Feet
in	Inches	0.0254	Meters
in	Inches	25.4	Millimeters
j	Joules	0.7376	Foot-pounds
kg	Kilograms	15432.358	Grains
kg	Kilograms	35.273962	Ounces
kg	Kilograms	2.2046226	Pounds
km	Kilometers	0.6213712	Miles
L	Liters	0.2641794	Gallons
L	Liters	33.81497	Ounces
L	Liters	1.056718	Quarts
M	Meters	3.2808399	Feet
M	Meters	39.37	Inches
M	Meters	1.0936133	Yards
M	Meters/second	3.2808399	Feet/second
mi.	Miles	1.6093	Kilometers
mm	Millimeters	0.0032808	Feet
mm	Millimeters	0.03937	Inches
oz.	Ounces	437.5	Grains
oz.	Ounces	28.349523	Grams
oz.	Ounces	0.0625	Pounds
oz.	Ounces (Liquid)	0.0295727	Liters
lb.	Pounds	7000	Grains
lb.	Pounds	453.59237	Grams
lb.	Pounds	0.4535923	Kilograms
qt.	Quarts	0.9463264	Liters
yd.	Yards	0.9144	Meters

Appendix B Glossary

A-3; Composition A-3 is a high explosive filler developed during WWII by the British. The explosive is made up of 91% RDX with a 9% wax desensitizer.

A-5; This is a flexible plastic explosive developed for use in HEP rounds.

Baratol; This is an explosive primarily used as a grenade filler by Great Britain in WWI. Baratol is a variation of the explosive Amatol. In this case, Amatol is a mixture of 80 parts ammonium nitrate and 20 parts of TNT.

Basic Load; This is a basic allowance of ammunition and magazines or other feed devices issued with a weapon. Basic Load is also a recommended amount of munition, such as hand grenades, to be carried.

Box Magazine; This is a removable box shaped, spring loaded ammunition feed device. Cartridges are held in the magazine by the feed lips that help guide them into the chamber of the weapon. The cartridges are pressed against the feed lips by the action of the spring loaded follower, a small platform on top of the magazine's spring. The box magazine is the most common feed device in semiautomatic and non belt-fed automatic weapons.

Burst Control; This is a mechanical limiter used on automatic weapons to set the number of rounds fired for each pull of the trigger. The number of rounds is set to prevent waste of ammunition on automatic fire.

Burst Radius; The radius of an area in which a munition has its effect. Within the radius, the munition has its primary effect, (i.e. fragmentation causes casualties, Smoke or Gas is at an effective concentration). Casualty causing munitions are considered to effect at least 50% of exposed personnel at the maximum distance of the radius with the percentage increasing closer to the function point of the weapon. The burst radius for smoke producing munitions is listed as the average size of the cloud under standard conditions.

Caliber; (A) Caliber is the diameter of the inside of a rifle barrel stated in thousandths of an inch or in hundredths of a millimeter, (i.e. .308 Winchester, 7.62mm NATO).

(B) Caliber is commonly used to indicate the size and type of ammunition for which a particular weapon is chambered.

Chamber; The section of a firearm where the cartridge is seated to be fired.

Clip; A device used to hold a number of cartridges to facilitate loading a weapon. Also called a "stripper clip" or, in Great Britain, a "Charger." Sometimes used as a slang term for an ammunition magazine.

CN; The military abbreviation for one of the most commonly used tear gases, chloroacetophenone. Normally mixed with a smoke composition or dissolved in a solvent for use, CN causes immediate heavy production of tears, pain, and burning in the upper respiratory

tract. In higher concentrations it also causes itching and burning of the skin. The effects of CN disappear within about 15 minutes of removal from exposure. CN is only slightly toxic and it would require at least a ten minute exposure to a very high concentration level to cause death. There have been no reported deaths from the use of CN.

Comp. B; Composition B is a powerful explosive used as a bursting charge in modern grenades and shells. The explosive is made of a mixture of 60% RDX, 39% TNT, with 1% of a wax desensitizer.

CS; This is the most powerful of the modern tear gases. CS is the military abbreviation for O-chlorobenzylmalononitrile. CS is normally mixed with a smoke producing compound for burning type munitions, with powdered talc, or as a 2% solution in kerosene for use as a liquid (Mace). CS causes extreme burning of the eyes with a copious flow of tears. The pain in the eyes increases with further exposure causing involuntary closing of the eyes. There is also increasing pain in the nose and throat with difficulty in breathing. Strong concentrations induce nausea and vomiting. The symptoms go away rapidly upon removal from exposure to clean air. Heavy concentrations of CS can be toxic though there have not been any reported deaths due to CS poisoning.

Date Adopted; For the purpose of this book, the Date Adopted indicates the year that the specific model of weapon described was first available. In some cases it is the year that the first functional prototype was developed.

DM; The military designation for Diphenylamine-chlorarsine, one of the most common of the "vomiting gases." DM takes one to two minutes for symptoms to appear with another minute being required for the gas to fully take effect. The first symptoms are sneezing and coughing, both of which increase in severity as exposure to the gas continues. After two to three minutes exposure, severe headache sets in followed by acute pains in the nose, sinus, and chest. The increasing symptoms finally result in violent vomiting and strong mental depression. The symptoms gradually go away in about three hours following exposure. Due to DM being a toxic compound, exposure to strong concentrations for ten to thirty minutes can cause lethal poisoning.

Double action; This is a type of firing action where a single pull of the trigger will both cock and fire the weapon. A double action weapon may also be fired single action that is, manually cocked and then fired. Some weapons are double action only and the action cannot be cocked manually.

Drum Magazine; This is a high capacity style magazine used primarily in automatic weapons. The drum style feeds rounds through a spiral built around the circumference of the drum. There is also a pan type drum magazine that lays flat across the top of the weapon's receiver. In the pan magazine, the cartridges are held flat across the radius of the magazine pointing to the center. Drum magazines are most often found on submachineguns with pans used more often on

light machineguns.

EFF RNG; Effective range, the maximum range that an average qualified marksman can be expected to hit a standard target 50% of the time.

Equivalent to TNT (R.E.); This is also referred to as the Relative Effectiveness (R.E.) of an explosive. The term is used as a measure of the brisance or shattering effect of an explosive with TNT being used as an international standard (R.E. = 1). The R.E. number is the amount of TNT required to equal the brisance of the given explosive.

Feed Device; The feed device includes all the materials required to supply and feed ammunition to a weapon. The materials include all ammunition, belts, magazines, clips, ammunition boxes, or in some cases, loose rounds of ammunition.

Filler; The filler is the active agent in a grenade or shell. It can be, but is not limited to, explosives, chemical agents, smoke producers, flechettes, or inert materials.

Flechette; A small, fin stabilized dart used as a high velocity individual projectile or, in mass groups, as a "shotgun" like charge for a large bore weapon.

Full Automatic; In this type of fire the weapon uses the forces of firing (gas, recoil, blowback, etc.) to load fire, extract, eject, and reload, continuously firing the weapon as long as there is ammunition and the trigger is pulled.

Gauge; The unit of measurement for shotgun bores. The gauge number is the number of pure lead balls of a given bore diameter that weigh one pound. Twelve 12 gauge lead balls would equal one pound.

HC; The military designation for a Hexachlorethane/Zinc dust mixture that burns to produce a harmless, dense grey-white smoke.

HE; The military abbreviation for High Explosive

HEAT; The military abbreviation for High Explosive Anti Tank. In the HEAT shell the power of the explosive is focused in a shaped charge to penetrate armor.

HEP; The military abbreviation for High Explosive Plastic. In a HEP Round, the explosive is a relatively soft plastic compound carried in a thin-skinned shell. The explosive spreads over an area of the target and then explodes. The explosion causes "spalling" on the opposite side of the armor. Spalling is where a section of the armor breaks away from the main body, moving at a high velocity. This type of round is also referred to as a "Squash head" in Great Britain.

Integral (Internal) Magazine; This type of magazine is a permanent part of the weapon and cannot be easily removed. The magazine is often loaded through the use of a stripper clip.

Length; This is the overall length of a weapon. In the case of a folding stock weapon, the first number

given is with the stock folded with the second being with the stock extended.

LMG; The military abbreviation for Light Machine Gun. A light machinegun often weighs between nine and fourteen kilograms and is fired from a bipod.

MAX RNG; Maximum range, the greatest distance a given projectile can fly, normally much greater than the effective range.

MG; The military abbreviation for Machine Gun.

MIN RNG; Minimum range, the shortest distance that a weapon will fully function. The distance travelled during the time it takes a projectile's fuse to Arm.

Munitions; all materials required to conduct offensive or defensive war including ammunition, weapons, transport, food, fuel, and clothing. The term is also used occasionally in place of Ordnance.

Muzzle Vel; Muzzle Velocity.

Ordnance; Military ammunition, explosives, combat vehicles, and weaponry.

Penthrite; another term for the explosive PETN.

PETN; An abbreviation for Pentaerythritol tetranitrate, one of the most powerful explosives available. PETN has an R.E. of 1.66 compared to TNT.

Picric Acid; This is an obsolete explosive commonly used by the Japanese during WWII. Due to Picric acid creating unstable metallic compounds with the metal casings in which it was loaded, it was quickly dropped from use when improved explosives became available.

Pyrotechnics; This is a type of ammunition including rockets, flares, and fireworks used for signalling, illuminating, or indicating targets.

Rate of Fire (RoF);

(SS) single shot; the number of aimed rounds that can be fired from a non-automatic weapon in one minute by an average qualified operator.

(A) Automatic; this is the recommended maximum practical rate of fire on full automatic. The practical rate includes time needed to change feed devices and to prevent overheating.

(Cyclic); The maximum rate at which an automatic weapon, given unlimited ammunition, could cycle (fire) in one minute. The cyclic rate is the maximum speed at which the weapons action can work.

Round; A complete piece of ammunition with all the parts needed to fire it. The projectile, a propellant, and igniter (primer) needed to fire a weapon once.

RDX; The military designation for the high explosive Cyclotrimethylenetrinitramine, also called cyclonite or hexogen. The term RDX is derived from the British Research Department formula X. A powerful explosive, RDX is used as the main ingredient for many plastic explosive compounds.

RPM; Rounds per minute.

SC; Star Cluster, a pyrotechnic that releases several, short burning length, stars as a signal.

Selective fire; This type of action allows the firer to choose between semiautomatic or automatic fire. In some modern designs, the selector may also have a burst-fire position in place of or in addition to full automatic fire.

Semiautomatic; Also referred to as autoloading. A semiautomatic weapon reloads itself automatically when fired but requires a pull of the trigger to fire each round.

Shaped Charge; In this type of explosive device, there is a hollow cavity in the explosive charge. When the charge is detonated, the cavity, often in the shape of a cone, focuses the blast of the explosive into a high speed jet of gases. The jet is moving at such speed that it pushes the steel of the target out of the way and can thereby penetrate a much greater thickness of steel than a simple explosive charge of equal weight.

Silencer; A silencer suppresses the noise of firing a bullet by slowing down the escape of the propellant gases. Though with a specially designed weapon, a silencer can be very effective, it cannot control the noise of the weapon's action or the supersonic crack of the bullet if it has a velocity greater than 1,130 feet per second. Due to a silencer having to work on the escaping gases, it cannot be easily fitted to a revolver because of the gases escaping through the gap between the cylinder and barrel. The term silencer is a popular though incorrect term, the proper term for this type of device is a suppressor.

Single Action; This type of action requires the hammer to be manually cocked into the firing position for each shot fired.

SmC; Smoke Canopy, a pyrotechnic shell that ejects a burning smoke canister attached to a ribbon parachute. The ribbon of the chute is designed to entangle itself in the treetops of the jungle canopy thereby being visible to aircraft during the day.

SP; Star Parachute, this pyrotechnic device is also referred to as a "Star shell" when fired from a mortar or other artillery. The round ejects a magnesium (white) or colored flare suspended from a parachute. The Star parachute shell is used for either illumination or as a signal with a red star parachute being an international distress signal.

Suppressor; Also Sound Suppressor, the technically correct term for a silencer. Since a silencer does not silence a weapon but only suppresses the sound of firing, suppressor is considered the correct term. This type of device is also called a sound moderator in parts of Europe.

Tetryl; A military designation for the high explosive Trinitrophenylmethyl nitramine also called tetralite or pyronite.

Appendix C Index

TH3; The military designation of a specific mixture of thermite and oxidizers, generally referred to as thermate. TH3 burns at about 2,200 degrees centigrade and produces white hot molten iron as a byproduct.

TNT; The common abbreviation for the high explosive Trinitrotoluene. With TNT being widely used and easily purified to a specific grade, it is used as an international standard by which other explosives are measured.

Tubular magazine; This type of magazine holds the rounds in a spring loaded tube either underneath the barrel or in the buttstock of a weapon. A limitation of the tubular magazine is that it must use either flat tipped or rimfire rounds. If a standard primed pointed bullet round is used in a tubular magazine, the recoil of firing could drive the primer of one round onto the point of a bullet behind it firing the round in the magazine.

WP; The military abbreviation for White Phosphorus. White phosphorus ignites spontaneously on contact with air, burning with a hot flame and giving off dense clouds of smoke. Primarily used as a smoke producer, WP rapidly produces a dense cloud of white smoke but due to the heat of burning, the smoke rapidly rises.

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Appendix D Gaming Section

INTRODUCTION TO ROLE-PLAYING SECTION

The first part of The Armory deals with facts and figures: the actual physical parameters and effects of the many weapons covered in this volume. What is presented in this gaming section is a simulation of those parameters and effects for use with two contemporary role-playing games: Espionage_{tm} by Hero Games, and Mercenaries, Spies, and Private Eyes_{tm} by Blade.

This section is divided into two major parts, a few pages of description, new rules covering the weapons not covered in the original rulebooks, and several pages of charts of weapons' characteristics for every weapon in The Armory. Characteristics and rules for both Espionage and M,S & PE are covered.

The rules section is split into different sections but the section numbers in the first part of the book are used for reference. This is done to organize the rules into logical parts. For example, explosive shells and grenades can be found in several parts of the reference section, logically following their launchers, but it is more convenient to group these shells in one section to describe their damage characteristics.

ESPIONAGE! : A paragraph beginning like this one describes specific game-related information for the Espionage rules. In many cases, these paragraphs will explain how to treat a particular weapon within the rules. There are several instances in which new and updated information is being presented (e.g. indirect fire rules, offensive gas rules, and shotgun rules). Any added rules have been approved by Hero Games for use with Espionage!.

M,S & PE : A paragraph beginning like this one describes specific game-related information for the Mercenaries, Spies and Private Eyes rules. These paragraphs may explain how to treat a particular weapon or they may add new rules (i.e. for grenade types). The weapons charts and rules have been included as part of an ongoing agreement between Hero Games, Blade and now, Firebird Ltd., to include characteristics for both games in our products.

The Armory strives to reflect both accuracy and playability within the parameters set forth by each game system. We feel that this section is a unique addition and sincerely hope that this and future volumes of the Armory will add depth and enjoyment to your role-playing games.

- 01 Pistols
- 02 Submachineguns
- 03 Rifles

Weapons falling under these three classes are the most common in any contemporary role-playing game. Both the Espionage and M,S & PE rules completely cover these weapons. The charts for pistols, submachineguns, and rifles give the characteristics for these weapons in both games using standard ammunition.

The only exception is the Tannenburg Hand Cannon (01-000-399) which, although regarded as the first pistol, should be treated like a shotgun because it fires loose pellets. The characteristics are given on the pistol chart for its shotgun characteristics, and the shotgun rules may be referred to for further information.

An additional relevant section is the Small Arms Ammunition section, which contains additional rounds utilized by these weapons.

04 Machine Guns

Machine guns are generally not found outside of the military and only the recent ones can be fired by a single man without a mount. They are used in operations where a very high rate of fire is required, either for antipersonnel or suppression work. It is unlikely that non-paramilitary player-characters would find a machine gun, although discovering a vintage Gatling gun is a very popular plot device.

Characteristics for the alternate rounds of some machine guns listed on this chart can be found in the Small Arms Ammunition section.

ESPIONAGE! : All of the characteristics on the machine gun chart are the same as those for weapons such as pistols and rifles, being used the same way with the exception of the Range Modifier (RNG MOD). RNG MOD has been replaced by the Modified Range Modifier, (MRM), which is to be used for tripod mounted machine guns, sniper rifles, 20mm cannons, grenade launchers, and recoilless rifles. It already includes the x4 bonus for Bracing and Setting and is applied differently.

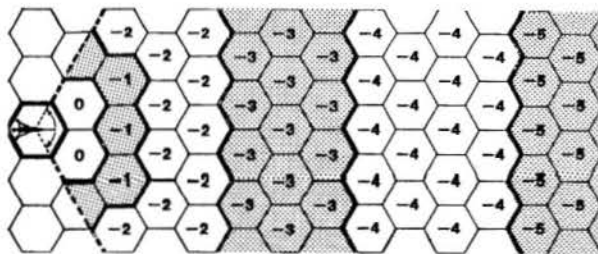
Instead of the usual method of a reduction of ONE to the attack roll per MULTIPLE of the Range Modifier, the successive reductions are taken over increasingly greater distances.

Taking a RNG MOD of -1/10" for an example:

RANGE	0-10	11-20	21-30	31-40	41-50	51-60	61-70
RNG MOD	0	-1	-2	-3	-4	-5	-6
MRM	0	-1	-2	-2	-3	-3	-3
							etc.

As shown, no reduction is taken between 0" and 10". Another -1 is applied between 20" and 40", twice the usual distance. A third -1 is applied between 40" and 70", three times as much, and a fourth -1 would be applied between 70" and 110", etc.

The following hex diagram illustrates this at a scale of 1 hex=10".



M, S & PE : The existing M, S & PE rules cover the use of machine guns.

05A Shotguns

Shotguns can be looked at as rifles which fire a number of very small bullets. They are popular for game hunting, as well as being the choice weapon of some "survivalists" for their effectiveness against people. The availability of shotguns allows them to be encountered in the hands of businessmen or "hill billy" grandmothers.

ESPIONAGE : The damage that a shotgun will do against a target has changed. The damage given in the chart in the Espionage rulebook should read "1D6", rather than "1/2D6."

Another characteristic for shotguns, the point-blank range (PBRNG), has been added. The PBRNG represents the damage that is done if the weapon is fired at a target from a very short distance. The pellets in the shotgun shell will not spread out to do separate hits within this range, and the damage from the shot can be treated as if a single bullet had struck the target. Hunters are warned not to fire shotguns at small game from a range that is too close so their target will not be disintegrated.

The damage within the PBRNG is calculated by multiplying the effect of one pellet hit by 2.

EXAMPLE: A shotgun which normally does 4x1D6-1 damage will do 2D6-2 within the PBRNG. A shotgun which does 4x1 1/2D6 damage will do 3D6 within the PBRNG.

M, S & PE : The M, S & PE rules cover the use of shotguns. Remember that shotguns do not hit Very Long range.

05B Flamethrowers

The flamethrower is probably the single most terrifying antipersonnel weapon to face, although it has a short enough range that it can be destroyed with relative ease.

Flamethrowers are generally available only through the military, and in wartime they are assigned to assault or engineer units for antipersonnel or material destruction work.

The operator of a flamethrower has a few firing options. He can fire several short bursts or a smaller number of long ones. He can decide to ignite the fuel as it leaves the weapon (a "hot" burst) or, let the fuel soak into the target before igniting it with a succeeding burst (a "cold" burst). He may choose to shoot straight ahead or he may swing the nozzle from side to side. High or variable winds can affect the

direction and intensity of the burst, and high headwinds can cause the flame to hit the operator.

The fuel inside of a flamethrower can be either a straight flammable liquid, such as gasoline, or it may be a jellied fuel such as napalm. Jellied fuel is more effective in sticking to the target once it is hit, and it is more difficult to extinguish once lit. Puncturing the fuel tank is not likely to explode the remaining fuel, unless an incendiary or tracer round is used. The fuel is propelled through the weapon's nozzle by a pressurized canister of nitrogen. The weapon can be rendered useless by piercing this canister. The HAFLA-35L flamethrower (05B-041-972) is an exception; it shoots a cartridge filled with red phosphorus which either detonates at range or bursts on impact. We are simulating this as a special case of an incendiary grenade and launcher.

Material damage from a flamethrower burst is simple: burnable materials will ignite and continue to burn after the blast is exhausted. Non-flammable materials will react to the heat of the blast only while the flamethrower is functioning. The fuel burns at approximately 1200°F, but only for a short period of time. Flamethrowers do two types of damage against a living target. These are external and internal. External damage is caused by the burning of the target's clothing and skin, causing fourth degree burns over 95% of the body. Internal damage is caused by inhaling superheated air and flame. The combination of the two is immediately fatal.

ESPIONAGE! : The flamethrower introduces a new type of damage to the rules: Energy Killing attacks. Energy Killing attacks are treated as normal (or physical) killing attacks, except that only energy-resistant armor defends against the STUN and BODY of such an attack. The body armor described in the Espionage rules is not energy resistant. An asbestos body suit could be treated as DEF 2 energy-resistant armor. The inherent defense in structures such as buildings or cars will usually apply against this kind of an attack. For example: stronger metals tend to resist higher temperatures but wood catches fire easily.

The flamethrower chart contains the following characteristics for each type of flamethrower: Weapon Code and name, Fire Rate, Effective Range, Type of Fuel, and Burn Time. The Fire Rate characteristic gives the number of short bursts and long bursts available to an operator until some part of the weapon has to be replaced, such as a discharged pressure canister or an empty fuel tank. Refer to the particular weapon for the part needed.

Flamethrowers shoot a stream of flammable liquid in a straight line in front of the operator. If no obstructions are encountered, the ignited fuel will land in a hex as many inches away as the Effective Range indicates. To hit a target or a hex, an attack roll is made. If the attack roll is missed, the fuel stream strays 1/2 hex to the left or right for every point by which the roll is missed. The RNG MOD for all flamethrowers is -1/3".

The damage caused by a flamethrower depends on several conditions. If the target is hit with a standard "hot" burst, it takes 3D6 in energy killing damage. Living targets will take an additional 3D6 in energy killing dice for internal damage, unless by some

chance his respiratory system is protected. The STN MOD for a flamethrower attack is 0.

Further damage against a target depends on the type of fuel being shot and the nature of the target. If a liquid fuel is used, a flammable target will take 1D6 EK on each segment until the Burn Time is reached, or the flames extinguished. On non-flammable targets, the fuel will roll off and only do damage (1D6 EK/segment) if rolling off is not possible. If a thickened fuel is used, damage for succeeding segments is figured by subtracting 1/2D6 EK from the previous segment's damage: on the second segment, the target will take 2 1/2D6 EK; on the third it will take 2D6 EK, and so on. This will continue until the Burn Time is reached, until 1/2D6 EK in damage has occurred, or until the flames are out. From 1/2D6 EK, the damage drops to 1 pip EK until the Burn Time is expired. A "long" burst is treated as an Autofire attack; the number of shots in the attack is the number of "short" bursts used up by the "long" burst. The damage of a "cold" burst is increased by 1/2D6 EK on the first and second segments.

If the attack is spread over several hexes, the first segment's damage is reduced by 1D6, and the subsequent segment's damage by 1 pip. For "cold" bursts, the damage is reduced by 1D6 on the first segment, and 1/2D6 on succeeding segments. The Burn Time is also halved for every extra two hexes over which the blast is spread. The maximum number of hexes over which the blast can be spread is equal to the number of short bursts used, plus two.

This chart summarizes the damage done by a flamethrower burst. Remember that non-flammable targets hit by liquid fuel will not take any damage past the first segment unless the fuel cannot roll off.

FLAMETHROWER DAMAGE

Type of Blast	Segment		
	First	Second	Succeeding
<u>Liquid fuel</u>			
"hot"	3D6	1D6	1D6
"cold"	3 1/2D6	1 1/2D6	1D6
"hot" spread	2D6	1D6-1	1D6-1
"cold" spread	2D6	1D6	1/2D6
<u>Thickened Fuel</u>			
"hot"	3D6	2 1/2D6	2D6
"cold"	3 1/2D6	3D6	2D6
"hot spread"	2D6	1 1/2D6	1D6-1
"cold spread"	2 1/2D6	1 1/2D6	1D6

The protective clothing a flamethrower operator wears is treated as DEF 2 (energy only) body armor. Should the fuel tanks explode, the operator will take 2D6 EK for every short burst remaining in the fuel tank. A weapon hit from behind that hits locations 10-13 will have an even chance of hitting either the fuel tank or the pressure canister. To aim directly for these requires an INT roll and an attack roll at -5 (fuel tank), or -7 (pressure canister) OCV. The fuel tank has a DEF of 4 and the pressure canister has a DEF of 7.

The damage done by a hot flamethrower nozzle is 5D6 energy normal dice, a character's ED will protect him from damage done in this way.

Non-player characters, and even player characters, facing a flamethrower should make an EGO roll before

movement will be made against the operator. A -3 should be applied to the roll if the flamethrower has already been used against a character. Charging a flamethrower can be considered a rash, dangerous, and even stupid action for purposes of character disadvantages.

M,S & PE : The rules given in the book cover the basics of flamethrower effects. The number of shots a flamethrower would have is given in our charts.

Add 3 dice to the damage of a flamethrower in the first hand-to-hand combat round for a "cold" burst, add 5 dice to the damage in the first round, and add 2 dice to the succeeding rounds for a "long" burst. Also for a "long" burst, the character should make a second level saving roll to avoid continued burning.

A hot flamethrower nozzle does 4 dice of damage. A hit in the spinal area is equally likely to hit the pressure canister instead of the fuel tank, rendering the weapon useless, but not explosive. The fuel tank and pressure canister should absorb 2 dice of damage before puncturing.

Characters facing a flamethrower should make a second level saving roll on INT to overcome their fear of the weapon. The level of the roll is increased for each successful use of the weapon against the character's companions.

05C Grenade Launchers

06B Recoilless Rifles

06C 20mm Cannon

These weapons are grouped together because they all fire rounds which are not considered small arms ammunition or, in the case of grenade launchers, they fire grenades. They are all direct-fire weapons: the operator of these weapons aims directly at his target in order to hit it. Some of these weapons are also meant to be used as indirect-fire weapons, weapons which may be fired at an unseen target. Refer to the mortar section for rules on indirect fire.

Many of these weapons require a crew of several men to move and set up the weapon, although it takes only one man to fire it. An obvious exception is rifle grenade launchers. As a class, we call these weapons "direct-fire heavy weapons."

Tear gas guns are commonly used by law enforcement officials for crowd control and other purposes. Recoilless rifles and 20mm cannon are generally found in anti-tank or similar applications. Grenade launchers are used to fire grenades accurately over long distances.

Player characters should find it extremely difficult obtain these types of weapons since they are almost exclusively military weapons with the exception of tear gas grenade launchers.

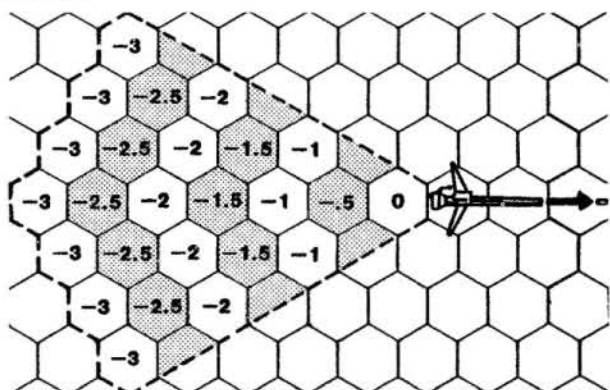
The shells used by these weapons are described in several of the following sections, depending on the type of shell (e.g. high explosive, smoke, gas etc.). This section and its charts only discuss the characteristics of the launchers.

ESPIONAGE! : The chart of the direct-fire heavy weapons include these characteristics: Weapon Code and Name, OCV MOD, MOD RNG MOD, and SIZE. The MOD RNG MOD is applied in the special manner described in the machine gun section. The OCV MOD is an additional modifier which reflects the stability of the weapon.

Most heavy direct fire weapons have a Minimum

Range (MIN RNG) damage listed. Rounds fired from these weapons take a little time to arm and this damage accounts for this. Any target hit at Minimum Range or less will take the listed dice of damage as a NORMAL attack. There is a stun modifier that applies; roll 1D6-1, add this number and multiply by the number of Stun only from the attack. The resulting number gives the stun amount to be applied to the target.

A second characteristic of heavy-direct fire weapons is that all recoilless weapons have a back blast (e.g. it is unsafe to stand behind these weapons). It is treated as a killing explosive attack expanding in a cone from the hex in which the weapon is located.



M,S & PE : Direct-fire heavy weapons target on Missile Weapon Chart II. Grenade launcher skill can be considered as rifle skill (for rifle grenade launchers) or as assault rifle skill (for all others). Recoilless rifle skill can be part of anti-tank weaponry skill and 20mm cannon skill can be considered part of the machinegun skill.

In M,S & PE, Minimum Range Damage can be handled in two ways. For shells under 50mm, use the listed damage given in the charts. For all shells larger than 50mm, assume the character becomes unconscious due to the high velocity and weight of the round upon impact.

The second and more deadly method is also simple: roll for hit location and that part of the body will be missing (e.g. push a piece of metal the size of a shoe box through your body and try to keep going).

Recoilless weapons have back blast which is treated as an explosion (TNT effects). The number of dice in damage is equal to the number of meters of the back blast. Subtract 1D6 for every meter (3 feet) that the target stands from the weapon hex.

06A Mortars

Mortars are indirect-fire weapons. Indirect-fire weapons are aimed so that the mortar round travels a high arc in the air before it lands on the target. There are three functions involved with firing a mortar. These are: targeting, loading and firing, and observing where the round lands. The last function is generally performed by a person called a forward observer. He instructs the targeter (or himself) as to what change in angle is necessary for the mortar to reach the target.

Mortars are rarely found outside of the military because they tend to be useful only in changing the geography of the target area. Additionally, larger mortars need a crew of from three to eight men to set

up and move the weapon.

The damage done by a mortar round is described in the following sections according to the type of damage they do (e.g. high explosive, gas, smoke, etc.). This section only discusses the characteristics of the mortar itself.

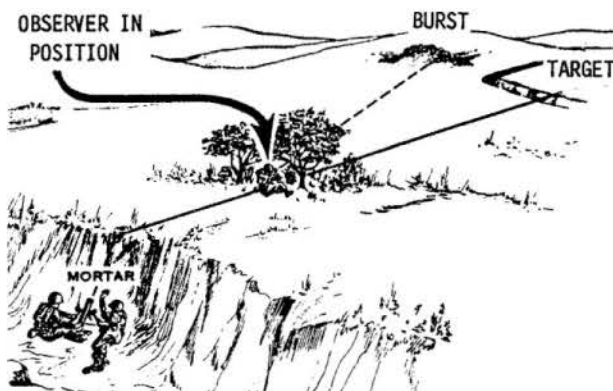
ESPIONAGE! : All indirect-fire weapons such as mortars have a base 8 or less chance to hit any intended hex within their maximum range. Size modifiers do apply as do the following two new rules.

1. All indirect-fire weapons have a minimum range (MIN RNG) listed. This is the closest distance that the weapon may fire to reach its location. Anything closer can not be hit. There is also a maximum range (MAX RNG) listed. This is the farthest possible distance that the weapon may fire. Apply the following formula:

MIN RNG to 1/2 MAX RNG, all modifiers apply normally

1/2 MAX RNG to MAX RNG, all modifiers apply but nothing better than a roll of eleven or less is possible.

2. FORWARD OBSERVATION is a new GENERAL skill, costing 3 points for a base 11 or less chance on 3D6 and an additional 2 points per +1. It is the art of directing fire from a position other than the one in which the firer is located. For each round of fire, the forward observer must make his skill roll to see if he delivers correct information to the firer. This takes into account that he must see the target and have some way of communicating with the firer. Normal sight perception modifiers apply as do size modifiers. If the skill roll is made, the firer may add a +2 cumulative modifier to his "to hit" chance.



Without a forward observer, the firer of an indirect-fire weapon may only use one-half (round down) of his skill levels to aid in hitting the target. With a forward observer, all normal levels apply.

OPTION : A ground radar system may be used in place of a forward observer. In this case, a roll is made for sighting by the person operating the radar and normal modifiers then apply.

EXAMPLE : Tim and Kevin have set up a mortar to fire at another mortar crew who is firing at their machinegun emplacement. The initial attack roll is an 11 which misses. Kevin makes his forward observation skill roll and adds two to the attack roll, making it 10 or less. The attack roll is another 11, which still misses. Kevin makes his roll again, and the attack roll increases to 12 or less. The attack roll is an 8, so...

M,S, & PE : A character may fire an indirect-fire weapon, such as a mortar, and hit the target if he makes a second level saving roll on IQ. If the character has Mortar skill, he can add the level to his IQ for the roll. If the character has the new Forward Observation skill, the IQ saving roll is made against his IQ, and successful use of the skill adds his level in the skill to his IQ for the saving roll. Forward Observation is an IQ 11 skill.

FORWARD OBSERVATION (1 point) : Forward Observation skill allows the player to accurately correct targeting errors for indirect-fire weapons such as mortars. The player makes a first-level IQ saving roll and, if the saving roll succeeds, adds twice his level in forward observation to his IQ for the targeting roll. The level number minus 1 is used as an IQ modifier for this saving roll. The skill can be used each shot until the target is successfully hit, any additions to the skill accumulating. If a new target is chosen, the IQ modifier is lost and the skill must be reapplied.

EXAMPLE : Mark (IQ 10) and Bob (IQ 12) are shelling a rebel machine gun emplacement with their mortar. Bob notices that the shell landed to the left, rolling a 10 on his IQ saving roll of (20-12) 8, and adds twice his level number in Forward Observation, (unfortunately only 1), to his IQ making a saving roll of (25 - (12+2)) 11, somewhat better. The targeting roll is a 5, a miss, so Bob makes his Forward Observation skill roll again, (rolling a 9 on his IQ roll), adding 2 more to the IQ for the targeting roll, making it a 9. As another shell is launched.....

- 05C Grenade Launcher Grenades
- 06A Mortar Rounds
- 06B Recoilless Rifle Shells
- 06C 20mm Cannon Shells
- 08 Grenades

While all of the shells and grenades are obviously launched by a variety of hardware, their effects can be lumped into several broad categories: Explosive (with fragmentation), Smoke, Incendiary, Gas, Stun, Illuminating, and Antipersonnel. Anti-tank and armor-piercing shells and grenades are special cases in the explosive category.

While heavy weapons shells are as difficult to get as their launchers, grenades are another common staple of contemporary role-playing games.

a. Explosive

This category includes a wide variety of grenades and shells, from the classic "pineapple" grenade to anti-tank shells. Explosive grenades can be given a fragmentation casing so that the damage from flying pieces of metal is added to the damage of the blast. Specially designed shells or shaped charge explosives are used to pierce thick metal armor on tanks and emplacements. Thrown grenades of this type are stabilized so that the grenade is oriented in the proper direction upon reaching the target.

ESPIONAGE! : Grenade combat is covered in the Espionage rules. Note that damage from an explosive blast can be figured in normal dice, armor-piercing dice, killing dice, or in the case of shaped charges, killing armor-piercing dice. Damage from shrapnel is

always figured in killing dice.

Two damages are listed for shells and grenades with shaped charges. The first number is the damage done in the direction that the charge was travelling and it is listed as killing armor-piercing dice. The second number is the general blast effect in the area of impact, usually defined as a 180° arc opposite the direction of flight of the charge. Both damage effects take place for every attack.

M,S & PE : Grenade combat is covered in the M,S & PE rules. The damage (and the damage radius) done by a shaped charge grenade or shell should be divided by three when figuring damage in directions other than that of the shaped charge.

b. Smoke

Smoke grenades are used to obscure a victim's sight, or to hide movement within the smoke. Some incendiary grenades produce obscuring smoke as a side effect, and vice versa.

One of the smoke grenades listed here, the HAFLA-35L (05B-041-972) is actually the cartridge from a disposable flamethrower. Another shell, the 80mm Type 34 Smoke (06A-040-934-3) produces smoke by creating sulfuric acid, which produces a caustic smoke that can be treated as an offensive gas shell.

ESPIONAGE! : The obscurement done by a smoke grenade is represented as a negative modifier to the PER roll of a character. On the segment the grenade or shell is dropped, no subtraction takes place. On succeeding segments, -1 is applied to the PER roll, until the total modifier given in the chart is reached.

The duration of the smoke is also given in turns. The PER roll modifier will increase by 1 until it reaches zero for every turn after the duration expires.

If a grenade of this type is set off in an unventilated area, the duration of the smoke is tripled, and an additional 1 is subtracted from the PER roll.

Characters caught in a smoke cloud who fail their Perception roll lose their DCV, except for cover modifiers. Characters coming out of the cloud have their DCV halved unless they make their PER roll. Characters waiting outside the cloud to attack characters coming from within the cloud gain a +1 to their OCVs.

M,S & PE : Characters who are caught within a smoke cloud will need to make an IQ saving roll to be able to see outside of the cloud. The smoke grenade and shell chart gives a Saving Roll Level Add which is added to any level already imposed on such a roll.

The Saving Roll Level Add is applied on the next missile fire round after the grenade or shell has been set off. The smoke cloud will last the number of missile fire rounds given on the chart.

If a grenade of this type is set off in an unventilated area, the duration of the cloud is tripled, and another level added to the IQ saving roll.

Characters caught within the smoke cloud must take the penalty for "night shooting", and are unable to defend themselves in hand-to-hand combat unless they make a first level saving roll on IQ.

c. Incendiary

Incendiary grenades are used both to cause material destruction and for antipersonnel purposes. The most common type of incendiary grenade is a bursting white phosphorus grenade. These types of grenades also tend to cause obscuring smoke. One incendiary grenade listed here, the HAFLA-35L (05B-041-972) is also listed as a smoke grenade.

ESPIONAGE! : Damage from an incendiary shell is figured as an energy killing armor-piercing "sticky" attack. "Sticky attacks will do damage every segment until they have burned themselves out. On each segment after the first, the damage is figured as 1/2D6 K AP (1/3D6 for Thermite) until the damage goes to zero.

For bursting type grenades, a character standing in the area receives a shrapnel (Autofire) attack by burning white phosphorous or molten iron. The OCV of the particles is 7, RNG MOD of -2/1", and the damage of each particle does 1/2 D6 EK AP.

M,S & PE : Damage from incendiary grenades is made to be effective against metallic armor, therefore, armor being attacked by an incendiary grenade will absorb one less die of damage than they normally would.

A character standing near a bursting-type incendiary grenade makes a Luck roll at the indicated level to avoid getting hit by incendiary shrapnel. The amount of damage that the shrapnel would do is indicated.

A target will take an additional amount of damage equal to one die less than the indicated number of dice for two hand-to-hand combat rounds after the shell explodes. Of course, flammable targets will catch fire and continue to burn until put out.

d. Offensive Gas

Offensive gases serve one major purpose. They force victims to run away, surrender, or at least stop fighting effectively. Some gases, (none included in this volume of The Armory), are toxic enough to kill victims. A secondary purpose of offensive gases is the reducing of a victim's sight, both through the obscuring effect, and through physical effects such as watering eyes.

The effects of offensive gases such as CN (tear gas), and CS (irritant gas), generally take effect almost immediately, wearing off in a few minutes. Other offensive gases such as Adamsite (DM), take a period of time after exposure before the effects appear, and these effects can last for hours. Characters breathing either filtered or stored air will not succumb to the effects of common offensive gases, particularly those listed in this volume of The Armory.

CN, (tear gas), cause a victim's eyes to water and burn, his nose to run, and difficulty in breathing. The effects wear off a few minutes after exposure. CS, (irritant gas), has many of the same effects, but to a greater degree. CS also causes pain in the throat and skin. The effects of CS wear off within five to ten minutes of exposure. Sulfuric acid gas is produced by releasing sulfur trioxide in some smoke grenades and causes burns in the mucous membranes of the nose, throat, and lungs as well as burning eyes. The effects of short exposure to sulfuric acid will wear off in minutes but prolonged exposure can have a damaging

effect on those organs exposed. DM gas (Adamsite) takes up to one minute before its effects are felt by the victim. DM causes sneezing, vomiting, and diarrhea. The effects of DM last anywhere from 30 minutes to three hours.

ESPIONAGE! : A gas grenade or shell attack is targeted against a hex. Within that hex, all characters must make EGO rolls (with modifications listed below), and continue making them for each phase that they remain in the gassed area. The listed minuses to a character's sight PER roll are also taken. For every hex out from the attack, the EGO roll modifier is 2 less and the PER roll modifier is 1 less. In the last hex, the character only makes an EGO roll. In an unventilated area, there are no subtractions to the EGO and PER rolls for distance. In a very small area, the modifiers could increase at the discretion of the GM.

This chart summarizes the effects of the EGO roll for a character under the effects of a gas.

Ego roll made with minuses : Character may continue doing whatever he wants.

Ego roll made with no minuses applied : Character may remain in the area of the gas, but must abort his current action.

Ego roll not made : Character must attempt to flee the area and must abort other actions.

There are further modifiers to the EGO roll based on certain physical or psychological facets of the character, as shown in the following chart. Thus a character who had a Psychological Limitation that made him try to save women and children would get a +6 to his EGO roll if charging into a cloud of gas to save one.

In a Charge	+3	Scared/Uncertain	-3
Working with a Psych Limit	+3	Working against	
On Drugs/Berserk	+5	a Psych Limit	-3

Gases which cause more drastic physical effects, i.e., DM, require a CON roll to be made by the character, with the listed minuses. A character's base CON roll is figured as for other characteristics, 9+(CON/5). The chart below summarizes the effects of the CON roll for a character under the effects of such a gas. The same psychological/physical modifiers shown above for EGO rolls would also apply to this CON roll.

CON roll made with minuses : Character may continue actions.

CON roll made with no minuses : Character is barely able to control effects, and can remain in the area. If EGO roll is also made, the character may defend himself. If EGO roll is made with minuses, the character can attempt an offensive action with a subtraction to his OCV equal to the amount by which the CON roll was missed.

CON roll not made : Character has a violent reaction, and is unable to defend himself effectively. Character may try to leave the area if the Ego roll is made.

EXAMPLE : A character with an EGO of 13, (therefore an Ego roll of 12 or less), is 2" from an M7A3 CS gas grenade when it goes off. He must make an EGO roll at -4, (8 or less), to perform any action. If

he makes his Ego roll without the minuses, (9 through 12), he may stay in the area if he wants to or he may move. He may not perform any other action. If he rolls 13 or more, he must flee the area. In all cases his Perception Rolls are at -1.

EXAMPLE : A character with an EGO of 10, (EGO roll = 11 or less), and a CON of 13, (CON roll = 12 or less), is 1" from a M6A1 CN/DM grenade when it goes off. Initially, he must make an EGO roll at -4, and he does so for the three phases that he acts in the turn. On his next phase, he must make a CON roll at -4 as well as his EGO roll. He continues his luck with EGO rolls and rolls a 7, but rolls an 11 for his CON roll. He continues being able to stay in the area, but his reaction to the DM takes concentration to control, forcing him to take a -3, (his roll of 11 minus the modified CON roll of 8), to any of his offensive actions. Additionally, if he remains in the gassed area on his next phase, he must make his Ego roll at -6.

M,S & PE : A character caught in a cloud of an offensive gas has to make the indicated saving roll on Luck, or be out of action for the number of dice of combat rounds indicated in the Turns column.

e. "Stun" Grenades

The only grenade of this type in this volume of *The Armory* is the NICO Sound and Flash grenade (08-041-980). Due to the particular nature of the sonic concussion and light disorientation, they do very little damage but will stun unprotected targets.

ESPIONAGE! : This grenade acts as a 5D6 STUN only, Armor Piercing, explosion.

M,S & PE : Treat this grenade as a Concussion Grenade from the rules.

f. Illumination and Signal grenades and shells

Illumination grenades are used to brighten an area so that it can be seen more easily. Signal grenades are used as signals and guides to nearby fellows or potential rescuers. Most non-smoke type signalling munitions create enough light to be used for illumination but the various colored lights which they produce are relatively dim and deceptive because of their coloration. Signal grenades can be used to point characters toward the origin of a signal.

ESPIONAGE! : A positive modifier is given to a character's Perception roll when looking into an illuminated area. These modifiers are added to any other modifiers for darkness or obscurement. Characters in a suddenly illuminated area who are trying to look out from it would receive the die modifier listed in the chart subtracted from their PER roll.

A character may try to determine location from which a signal grenade was fired. A modifier is given to the PER roll in this case based on the effects of the signal. This modifier is called the Spotter's Perception Roll Modifier (SPRM) and is given in the chart. Different modifiers are given for day and nighttime spotting.

The duration of the illumination or of the signal is given in the chart in turns.

M,S & PE : An illumination grenade negates the +10 "night shooting add" for missile weapon combat. The new number for the particular illuminary is given in the chart.

A character trying to determine the location from which a signal grenade was fired can make a Spotter's IQ Saving Roll at the level indicated in the chart under the horrible acronym "SIQSRL". Note that different modifiers are given for day and nighttime spotting.

The duration of an illuminary or signal is given in missile combat turns.

g. Antipersonnel Shells

Antipersonnel heavy weapons shells turn the launcher into a gigantic shotgun, spreading a deadly stream of pellets or flechette rounds. These rounds tend to disintegrate anything within range.

ESPIONAGE! : Treat the damage done by such a round as shotgun damage. The damage range (DMG RNG), and Point Blank Range (PBRNG), are given in the Antipersonnel Shells chart. An antipersonnel shell will affect all targets in a 60° arc in front of the weapon.

M,S & PE : The amount of dice that these shells do at all four ranges are given in the chart. Note that the large caliber antipersonnel rounds do hit Very Long range. All targets in a 60° arc in front of the weapon will be hit by the antipersonnel shell.

09 Small Arms Ammunition

This section covers alternate rounds for weapons such as pistols, submachineguns, rifles, machine guns, and shotguns. There are several types of rounds available for many weapons, and they are used for a variety of purposes. Tracer bullets are useful in automatic weapons as a way for the firer to increase his accuracy. Observation or explosive rounds are useful to point out targets to other firers. Frangible rounds are used where damage to targets, such as vehicles, is to be avoided, and armor-piercing rounds are intended to effectively pierce metal and armor.

ESPIONAGE! : The rounds in the chart may be marked as doing normal damage instead of the usual killing damage. Damage marked as armor-piercing is killing as well. Incendiary shells do energy killing damage, (as described in the flamethrower section), in addition to normal physical damage. Tracer shells are marked in the chart.

An additional characteristic, STR MIN BASE, is given to help determine the STR MIN of the weapon with a different round in it. The STR MIN BASE should be added to the STR MIN ADD found in the following chart, based on the weight of the weapon in which it is used.

Weight of weapon (kg)	STR MIN ADD
up to .567	+0
.567 to 1.107	+1
1.135 to 2.242	+2
2.270 to 4.512	+3
4.540 to 9.052	+4
9.080 to 18.132	+5
18.160 to 36.291	+6
36.320 to 72.611	+7

M,S & PE : The dice that the various rounds do in damage are given. Extra damage is done by some ammunition if it has armor-piercing or incendiary characteristics.

	DAMAGE	M,S & PE DAMAGE	STN MOD	SIZE	STR MIN	RNG MOD	OCV
nnenburg Hand Cannon ³	4*1D6	6	0	14	9	-1/10"	0
eellock pistol	1D6	4+3	+2	9	8	-1/2"	+2
aphaunce pistol	1 1/2D6	7	+2	9	11	-1/3"	-1
4 Flintlock	2D6	6+3	+2	8	14	-1/3"	-1
yer GB80	1D6+1	3	0	4	10	-1/3"	+1
owning .25	1D6-1	1	-1	0	2	-1/1"	0
owning HP-35	1D6+1	3	0	3	9	-1/3"	0
-52	1D6+1	3	0	4	9	-1/2"	0
B-P15	1D6+1	3	0	4	10	-1/2"	+1
irchardt	1D6	2	0	7/10 ¹	8/3 ¹	-1/2"	+1/+2 ¹
user M1896	1D6+1	2+3	0	5/10 ¹	10/5 ¹	-1/3"	+1/+2 ¹
iger, P-08	1D6+1	3	0	4	9	-1/2"	+1
iger, Naval	1D6+1	3	0	5	10	-1/3"	+1
iger, Artillery	1D6+1	3+1	0	6	10	-1/3"	+1
ilther PPK	1D6	3	0	4	7	-1/2"	+1
ilther P-38	1D6+1	3	0	4	9	-1/3"	+1
user HSc	1D6	2	0	2	7	-1/2"	+1
W P9S	1D6+1	3	0	3	9	-1/2"	0
retta M34	1D6	2	0	2	7	-1/2"	+1
retta M1951	1D6+1	3	0	4	9	-1/2"	+1
retta M84	1D6	2	0	2	7	-1/2"	+1
beretta M92S	1D6+1	3	0	4	9	-1/3"	0
14 Nambu	1D6	2+2	0	4	7	-1/2"	+1
-64	1D6	2+2	0	2	7	-1/2"	+1
amba	1D6+1	3	0	4	10	-1/3"	+1
IG P-210-2	1D6	3	0	4	7	-1/2"	+1
skarrev M1933	1D6+1	2+3	0	3	9	-1/2"	+1
skarov PM	1D6	2+2	0	2	7	-1/2"	+1
abley-Fosbury	1D6	4	+1	5	8	-1/2"	+1
abley Mark 6	1D6	3+3	0	5	8	-1/2"	+1
elrod	1D6-1	1+1	0	6	5	-1/1"	+1
14 New Model Army	1D6+1	3+2	0	6	10	-1/3"	+1
olt M1873	1D6+1	4+3	+1	5	10	-1/2"	+1
olt M1873	1D6+1	5	+1	5	10	-1/3"	+1
olt M1873	1D6+1	5+2	+1	6	10	-1/3"	+1
olt Detective Special	1D6	2+3	0	2	7	-1/2"	+1
olt Police Positive	1D6	3	0	4	7	-1/2"	+1

	DAMAGE	M,S & PE DAMAGE	STN MOD	SIZE	STR MIN	RNG MOD	OCV
olt Police Positive	1D6	3	0	4	7	-1/2"	+1
olt Police Positive	1D6	3	0	5	7	-1/2"	+1
olt M1911A1	1D6+1	4+2	+1	4	10	-1/3"	+1
W M27	1D6+1	4+1	0	4	10	-1/2"	+1
W M27	1D6+1	4+2	0	5	10	-1/3"	+1
W M27	1D6+1	4+2	0	5	10	-1/3"	+1
W M27	1 1/2D6	4+3	0	6	12	-1/3"	0
iberator M1942	1D6+1	4	+1	1	8	-1/2"	-2
W Model 36, Chief's Special	1D6	2+3	0	2	7	-1/1"	+1
olt Python	1D6+1	4	0	3	9	-1/2"	+1
olt Python	1D6+1	4+1	0	4	10	-1/2"	+1
olt Python	1D6+1	4+2	0	5	10	-1/3"	+1
olt Python	1 1/2D6	4+3	0	6	12	-1/3"	+1
W Model 19, Combat Magnum	1D6+1	4	0	3	9	-1/2"	+1
W Model 19, Combat Magnum	1D6+1	4+1	0	4	9	-1/2"	0
W Model 19, Combat Magnum	1D6+1	4+2	0	5	10	-1/3"	0
W Model 39	1D6+1	3	0	3	9/10 ²	-1/2"	+1
W Model 29	1 1/2D6	7+2	+1	4	12	-1/2"	0
W Model 29	1 1/2D6	8	+1	5	12	-1/3"	0
W Model 29	2D6	8	+1	6	14	-1/3"	0
gh Standard Derringer	1D6	1+2	-1	0	6	-1/2"	0
emington XP-100	1 1/2D6	3	0	8	12	-1/3"	+1
gh Standard .22	1D6-1	1	-1	4	6	-1/1"	+1
II Gyrojet	1 1/2D6	5+1	+1	5	0	-1/3"	+2
W Model 59	1D6+1	3	0	3	9/10 ²	-1/2"	+1
4 Automag	2D6	7+3	+2	5	14	-1/3"	0
O.P. .357	1D6+1	4+2	0	1	9	-1/2"	-1

PB RNG=1", DMG=4"

	DAMAGE	M,S & PE DAMAGE	STN MOD	SIZE	STR MIN	RNG MOD	OCV
wen Mk I	1D6+1	3	0	12	7/12 ¹	-1/3"	+2/+2
IA1	1D6+1	3	0	11	6/11 ¹	-1/3"	+2/+2
IPi 69	1D6+1	3+1	0	8/10 ²	8/13 ¹	-1/3"	+1/0//+2/+1 ⁵
merican 180 M2	1D6	1+1	-1	12	5/10 ¹	-1/2"	+2/+2
merican 180 M2 w/laser loc sight	1D6	1+1	-1	12	5/10 ¹	-1/2"	+3/+3
ype 64	1D6+1	3+1	0	10/12 ²	8/13 ¹	-1/3"	+1/0//+2/+1 ⁵
z 23	1D6+1	3+1	0	10	6/11 ¹	-1/3"	+2/+2
z 25	1D6+1	3+1	0	8/10 ²	8/13 ¹	-1/3"	+1/+1//+2/+2 ¹
z 24	1 1/2D6	3+2	0	10	10/15 ¹	-1/4"	+2/+1
z 26	1 1/2D6	3+2	0	8/10 ²	10/15 ¹	-1/3"// -1/4" ²	+1/0//+2/+1 ⁵
z 61	1D6	1+3	0	5/9 ²	5/10 ¹	-1/2"	+1/0//+2/+1 ⁵
z 61 w/silencer	1D6	1+3	0	8/11 ²	5/10 ¹	-1/2"	+1/0//+2/+1 ⁵
ladson M50	1D6+1	3+2	0	9/11 ²	8/13 ¹	-1/3"	0//+1 ⁶
AT-49	1D6+1	3	0	9/10 ²	14	-1/3"	+1//+2 ⁶
M-9	1D6+1	3	0	7/10 ²	8/13 ¹	-1/3"	+2/+1 ⁷
IP18/1	1D6+1	3+1	0	11	14	-1/3"	+2
lauser M32	1D6+1	2+3	0	5/10 ²	10/15/5/10 ⁵	-1/3"	+1/-1//+2/+1 ¹
IP-40	1D6+1	3+1	0	10/12 ²	14	-1/3"	+1//+2 ⁶
IP5A2	1D6+1	3+2	0	10	6/11 ¹	-1/3"	+1/0//+2/+1 ⁵
P-70	1D6+1	3	0	4/9 ²	10/5/10 ⁴	-1/2"	+1//+2/0 ⁴
IP5SD3	1D6	2+2	0	10/11 ²	6/11 ¹	-1/2"	+1/+1//+2/+2 ¹
IP5K	1D6+1	3+1	0	6	8/13 ¹	-1/2"	+1/0
MD-65	2D6	6+2	0	10/12 ²	12/17 ¹	-1/3"// -1/4" ²	+1/-1//+2/0 ⁵
IZI	1D6+1	3+2	0	8/10 ²	8/13 ¹	-1/3"	+1/+1//+2/+2 ¹
INI-UZI	1D6+1	3	0	7/9 ²	8/13 ¹	-1/3"	+1/0//+2/+1 ⁵
eretta M38A	1D6+1	3+3	0	12	7/12 ¹	-1/3"	+2/+2
eretta M12	1D6+1	3+1	0	8/10 ²	8/13 ¹	-1/3"	+1/0//+1 ⁵
eretta M93R	1D6+1	3+1	0	4/8/9 ³	10/15/7/12 ⁵	-1/3"	+1/-1//+2/0 ⁵
M-3	1D6+1	3+2	0	7/10 ³	8/13 ¹	-1/3"	+1/0//+2/+1 ⁵
M-63	1D6	2+2	0	6/9 ²	5/10 ¹	-1/2"	+1/0//+2/+1 ⁵
I-45	1D6+1	3	0	9/11 ²	8/13 ¹	-1/3"	+1//+2 ⁶
exim F.V. Mk IV	1D6+1	3+2	0	10/12 ²	9/14 ¹	-1/3"	+1/+1//+2/+2 ¹
Psh-41	1D6+1	3	0	12	7/12 ¹	-1/3"	+1/+1
PS-43	1D6+1	3	0	10/12 ²	13	-1/3"	0//+1 ⁶
techkin	1D6	2+3	0	4/9 ²	8/13/3/8 ⁵	-1/2"	+1/-1//+2/+1 ¹
TEN Mk II	1D6+1	3	0	11	6/11 ¹	-1/3"	+2/+1
TEN Mk IIS	1D6	2+3	0	12	4/9 ¹	-1/2"	+2/+2

	DAMAGE	M,S & PE DAMAGE	STN MOD	SIZE	STR MIN	RNG MOD	OCV
terling L2A3	1D6+1	3+2	0	8/10 ²	8/13 ¹	-1/3"	+1/0//+2/+1 ⁵
terling L34A1	1D6	2+3	0	10/12 ²	6/11 ¹	-1/2"	+1/+1//+2/+2
hompson M1928A1	1D6+1	4+3	+1	10/12 ²	12/17/7/12 ⁵	-1/3"	+1/+1//+2/+2
hompson M1	1D6+1	4+3	+1	11	7/12 ¹	-1/3"	+2/+2
SS M3	1D6+1	4	+1	11/12 ²	12	-1/3"	+1//+2 ⁶
3A1	1D6+1	4+3	+1	9/11 ²	13	-1/3"	+1//+2 ⁶
AR-15 (XM177E2)	2D6-1	3+2	-1	11/11 ²	10/15 ¹	-1/3"	+2/0
S&W M76	1D6+1	3+1	0	9/11 ²	8/13 ¹	-1/3"	+1/+1//+2/+2
olt SCAMP	1D6+1	2	-1	5	10/15 ¹	-1/3"	+1/-1
Bushmaster	2D6-1	3+3	0	9	10/15 ¹	-1/4"	+2/0
ngram M10 (.45 Auto)	1D6+1	4+3	+1	5/9 ²	8/13 ¹	-1/3"	+1/0//+2/+1 ⁵
ngram M10 (.45 Auto w/silencer)	1D6+1	4+3	+1	9/11 ²	8/13 ¹	-1/3"	+1/+1//+2/+2
ngram M10 (9mm)	1D6+1	3	0	5/9 ²	8/13 ¹	-1/3"	+1/0//+2/+1 ⁵
ngram M10 (9mm w/silencer)	1D6+1	3	0	9/11 ²	8/13 ¹	-1/3"	+1/+1//+2/+2
Ingram M11	1D6	2	0	4/8 ²	5/10 ¹	-1/2"	+1/+1//+2/+2
Ingram M11 w/silencer	1D6	2	0	8/10 ²	5/10 ¹	-1/2"	+1/+1//+2/+2
idewinder SS-1	1D6+1	3	0	8/10 ²	8/13 ¹	-1/3"	+2/+1//+2/+1
-50	1D6+1	3	0	9/11 ²	8/13 ¹	-1/3"	+1/0//+2/+1 ⁵

for Full automatic fire
 k extended or without stock/with stock
 ck folded/stock extended
 miautomatic/with stock, semiautomatic/with stock, Full automatic
 mi/without stock, Full auto/with stock, semiauto/with stock, Full auto
 ck // Full auto w/stock
 fired with stock folded

	DAMAGE	M,S & PE DAMAGE	STN MOD	SIZE	STR MIN	RNG MOD	OCV
.69 Musket	1D6+1	6+1	+2	13	7	-1/3"	+2
Styer SSG-69 ¹²	2D6+1	9+2	+1	13	13	-1/9"	+2 ⁸
Styer AUG, Rifle	2D6	4	0	11	10/15 ²	-1/5"	+2/0 ^{2,7}
Styer AUG, Carbine	2D6-1	4	0	10	8/13 ²	-1/4"	+2/0 ^{2,7}
Styer AUG, Machinegun	2D6	4	0	12	10/15//7/12 ³	-1/5"	+2/0 ^{2,7}
FN-FAL	2D6+1	9+1	+1	13	13/18 ²	-1/5"	+1/0 ²
FN-CAL	2D6	4	0	12	10/15 ²	-1/4"	+2/0 ²
Fz-58v	2D6	6+2	0	10/12 ¹	12/17 ²	-1/4" ⁶	+1/-1//+2/0 ¹⁰
Falmet M82	2D6-1	3+3	0	11	8/13 ²	-1/4"	+2
IAS-49/56	2D6	8+2	0	12	10	-1/5"	+1
Iusil FR-F1 ¹²	2D6+1	9+2	+1	13	13/10 ⁴	-1/7"	+2
IA-MAS	2D6	4	0	11	10/15//7/12 ³	-1/4"	+2/0 ²
AR-98k	2D6+1	11	+1	13	12	-1/5"	+1
zB-39	2 1/2D6	15	+1	14/15 ¹	18/15 ⁴	1/6" ⁶	0/+1 ¹
IG-42	2D6+1	11	+1	12	13/18 ²	-1/5"	+1/0 ²
IP-44	2D6	6+2	0	12	11/16 ²	-1/4"	+2/0 ²
i-3	2D6	9	+1	13	11/16 ²	-1/4"	+1/0 ²
I&K 33A2	2D6	4	0	12	10/15 ²	-1/4"	+2/0 ²
I&K 36	2D6-1	2+3	0	11/12 ¹	10/15 ²	-1/4" ⁶	+1/0//+2/+1 ¹⁰
i-11	2D6-1	3+3	0	11	8/8/13 ⁵	-1/4"	+2/+2/0 ^{5,7}
Valther WA-2000 ¹²	2D6+1	12+2	+1	12	13/10 ⁴	-1/10"	3 ⁸
Salil-ARM	2D6	4	0	11/12 ¹	13/18//10/15 ³	-1/4" ⁶	+1/-1//+2/0
3M-59	2D6+1	9	+1	13	13/18//10/15 ³	-1/4"	+1/0 ²
AR-70	2D6	4	0	12	10/15//7/12 ³	-1/4"	+2/0 ²
Irisaka Model 99	2D6	9	+1	13	10	-1/5"	+1
Type 64	2D6	8+3	+1	12	11/16//8/13 ³	-1/4"	+1/0 ²
IKS	2D6	4	0	10/12 ¹	12/17 ²	-1/4" ⁶	+1/-1//+2/0 ¹⁰
SIG 510-4	2D6	8+3	+1	13	11/16 ²	-1/5"	+2/+1 ²
Mosin-Nagant M1891/30	2D6+1	10+2	0	14	13	-1/5"	+1
PTRS-41	3D6+1	71+1	+5	16	18	-1/7"	0
SKS	2D6	6+3	0	13	10	-1/5"	+2
AK-47	2D6	7	0	13	11/16 ²	-1/4"	+2/0 ²
AKM-47	2D6	7	0	13	10/15 ²	-1/4"	+1/0 ²
SV0 ¹²	2D6+1	11	0	14	13	-1/11"	+2 ⁸
AK-74	2D6-1	3+3	0	10/12 ¹	10/15 ²	-1/4" ⁶	+1/-1//+2/0 ¹⁰
Martini-Henry Mk I	2D6	14+2	+2	14	10	-1/5"	+1
I&H .600 Nitro	2 1/2D6	41	+5	13	15	-1/5"	0
Mk I Boys .55	3D6	60	+5	16	18/15 ⁴	-1/5"	0
Enfield No. 4, Mk I	2D6	9+2	+1	13	11	-1/5"	+1

	DAMAGE	M,S & PE DAMAGE	STN MOD	SIZE	STR MIN	RNG MOD	OCV
elisle Carbine	1 1/2D6	6+2	+1	12	10	-1/3" ⁶	+1/+2 ¹
42A1	2D6+1	9+1	+1	13	13	-1/5"	+2 ⁸
L-64	1 1/2D6	3+1	0	11	8	-1/4"	+2 ⁸
50 Hawkins	2D6	7+2	+2	13	10	-1/5"	+2
pencer .56/56 Carbine	2D6-1	9+2	+2	12	8	-1/4"	+2
pringfield Trapdoor	2D6	12	+2	14	11	-1/5"	+2
Winchester M1873	1 1/2D6	6	+1	13	8	-1/4"	+2
harps .50-140	2 1/2D6	28	+4	14	15	-1/5"	+1 ⁹
inchester M1894	2D6	8	0	12	10	-1/4"	+1
pringfield M1903	2D6+1	9	+1	13	12	-1/5"	+1
arand M1	2D6+1	9+2	+1	13	12	-1/5"	+1
1 Carbine	1 1/2D6	5	0	12	8	-1/4"	+2
2 Carbine	1 1/2D6	5	0	12	8/13 ²	-1/4"	+2/0 ²
R-10	2D6+1	9+1	+1	13	13/18 ²	-1/5"	+1/0 ²
inchester M70 African	2 1/2D6	23+3	+3	13	14	-1/5"	0
M14	2D6+1	9+2	+1	13	13/18 ²	-1/5"	+1/0 ²
M21 ¹²	2D6+1	9+2	+1	13	13	-1/9"	+2 ⁸
16A1	2D6	4	0	12	10/15 ²	-1/5"	+2/0 ²
eatherby .460 Mk V	2 1/2D6	30+3	+4	13	15	-1/5"	0
emington M700	2D6+1	9+2	+1	13	12	-1/5"	+2 ⁸
AR-7	1D6-1	1+1	-1	12	1	-1/1"	+2
toner M23 Carbine	2D6-1	3+3	0	10/12 ¹	10/15 ²	-1/4" ⁶	+1/-1//+2/0 ¹¹
Stoner M22 Rifle	2D6	4	0	13	10/15 ²	-1/5"	+2/0 ²
AR-18	2D6	4	0	11/12 ¹	12/17 ²	-1/4" ⁶	+1/-1//+2/0 ¹¹
yrojet Carbine 13x71mm	2D6	12+1	+3	10	2	-1/4"	+2
yrojet Carbine 13x36mm	1 1/2D6	5+1	+1	10	2	-1/4"	+2
19 SPIW	1D6+1	1	-1	13	6/11 ²	-1/3"	+2/+1 ²
MINI-14	2D6	4	0	12	10/15 ²	-1/4"	+2
TRW-LMR	2D6	4	0	12	15	-1/4"	0 ¹¹
ATS-G3	2D6	9	+1	11	10/15 ²	-1/4"	+1/0 ²

open

c/Fired Full automatic

iauto/shoulder fired Full auto

semiauto/Fired from bipod Full auto

ed from bipod

rolled Burst/Full automatic

Mod with stock folded

⁷Fitted with Telescopic sight

⁸Fitted with high powered telescopic sight

⁹With micrometer sights

¹⁰Fired semiauto, stock folded/fired full auto stock folded

//fired semiauto w/stock/fired full auto w/stock

¹¹Full automatic fire only

¹²Use Modified Range Modifier rules with this weapon

	DAMAGE	M,S & PE DAMAGE	STN MOD	SIZE	STR MIN	RNG MOD	OCV
i-58 ¹	2D6+1	9+1	+1	14	19/16 ⁸	-1/5"	+1
i-58 ²	2D6+1	9+1	+1	-	14	-1/16"	+1
imi ¹	2D6-1	3+3	0	13	15/12 ⁸	-1/4"	+1
-59 ¹	2D6+1	11	+1	13	19/16 ⁸	-1/5"	0
-59 ²	2D6+1	11	+1	-	14	-1/18"	+1
iel 24/29 ¹	2D6+1	8+3	+1	13	14/19//11/16 ⁹	-1/4"	+2/0 ¹¹
Γ-52 ¹	2D6	8+3	+1	12/13 ⁷	17/14 ⁸	-1/4"	+1
Γ-52 ²	2D6	8+3	+1	-	12	-1/11"	+1
-08 ²	2D6+1	13	+1	-	15	-1/15"	+2
-34 ¹	2D6+1	11	+1	14	14/19//11/16 ⁹	-1/5"	+2/0 ¹¹
-34 ²	2D6+1	11	+1	-	9/14 ¹¹	-1/27"	+2/+2 ¹¹
-42 ¹	2D6+1	11+3	+1	14	19/16 ⁸	-1/5"	0
-42 ²	2D6+1	11+3	+1	-	14	-1/27"	+2
-21 ¹	2D6	8+3	+1	13	16/13 ⁸	-1/4"	0
pe 99 ¹	2D6	9	+1	13	17/14 ⁸	-1/5"	+1
pe 62 ¹	2D6+1	9+2	+1	13	19/16 ⁸	-1/5"	+1
pe 62 ²	2D6+1	9+2	+1	-	14	-1/11"	+1
1	2D6+1	11+1	+1	14	19/16 ⁸	-1/5"	0
-43 ²	2D6+1	10+3	+1	-	14	-1/13"	+2
hK M Model 38/46 ²	3D6	46+2	+4	-	18	-1/27"	+2
D ¹	2D6	6+3	0	13	16/13 ⁸	-1/5"	+1
√ ³	3D6+1	72+2	+5	-	20	-1/15"	+1
K ¹	2D6	6+3	0	13	11/16//8/13 ⁹	-1/5"	+2/0
KM ¹	2D6+1	11	+1	13	19/16 ⁸	-1/5"	0
KM ²	2D6+1	11	+1	-	14	-4/13"	+1
03 Vickers Mk I ²	2D6	9+2	+1	-	12	-1/49"	+2
wis Mk I ¹	2D6	9+2	+1	14	17/14 ⁸	-1/5"	+1
en Mk II ¹	2D6	9+2	+1	13	12/17//9/14 ⁹	-1/5"	+2/+1
85mm LSW ¹	1 1/2D6	3+2	0	12	9	-1/4	+2
74 Gatling ²	2D6	12	+2	-	7	-1/5"	+2
lt M1895/1914 ²	2D6+1	9+2	+1	-	14	-1/16"	+2
owning M1919A4 ²	2D6+1	9+2	+1	-	14	-1/13"	+2
0 M2HB ²	3D6	46+2	+4	-	13/18 ¹¹	-1/17"	+2/+1 ¹¹
owning 1917A1 ²	2D6+1	9+2	+1	-	14	-1/31"	+2
R M1918A2 ¹	2D6	9	+1	13	17/14 ⁸	-1/5"	0
0 ¹	2D6+1	9+2	+1	13	19/16 ⁸	-1/5"	+1
0 ²	2D6+1	9+2	+1	-	14	-1/13"	+1

	DAMAGE	M, S & PE DAMAGE	STN MOD	SIZE	STR MIN	RNG MOD	OCV
oner Mk 23 ¹	2D6-1	3+3	0	12	14/11 ⁸	-1/4"	+1
toner M207 ¹	2D6	4	0	13	16/13 ⁸	-1/5"	+1
toner M207 ²	2D6	4	0	-	11	-1/11"	+2
toner LMG ¹	2D6	4	0	13	16/13 ⁸	-1/5"	0
toner LMG ²	2D6	4	0	-	11	-1/11"	+1
toner fixed MG ³	2D6	4	0	-	11	-1/5"	+2
34 Minigun ³	2D6+1	9+2	+1	-	14	-1/11"	+1
-214 6-PAC ²	2D6	4	0	-	12	-1/11"	+2

or Bipod mounted
Modified Range Modifier rules
hts

ht, Maximum weight is dependent on mount
open
/Fired from bipod
Full auto, hand held//semiauto from bipod/Full auto from bipod
ounted/Full auto, tripod mounted

	NAME	DAMAGE RANGE	POINT BLANK RANGE	M,S & PE DAMAGE	ESPIONAGE DAMAGE	SIZE	STR MIN	OCV	bb1 lg
11-970	Browning Automatic Riot Gun	9"	1"	11+3/5/0	4x1D6+1	13	5	+2	50.8cm
32-880	10 gauge sawed off	4"	1"	10+1/1+1/0	4x1D6	8	6/8 ²	+1	25.4cm
32-898	Winchester M1897 Riot Shotgun	6"	1"	7+3/3+1/0	4x1D6+1	12	5	+2	50.8cm
32-925	Ithaca Auto-Burglar	9"	1"	8+2/1+1/0	4x1D6	8	6/8 ²	+1	30.5cm
32-925a	Savage 311-R Guard Gun	9"	1"	11+3/5/0	4x1D6+1	12	5	0	50.8cm
32-970	High Standard M10B	9"	1"	11+2/4+3/0	4x1D6+1	10	5/6 ³	+1	45.7cm
32-972	Atchisson Assault Gun ⁴	9"	1"	11+2/4+3/0	4x1D6+1	12	8/13 ⁵	+2/+2 ⁵	45.7cm
32-972a	Remington 870 P	9"	1"	11+3/4+3/0	4x1D6+1	11/13 ¹	6/8 ¹	+1/+2 ¹	50.8cm
32-974	Mossberg M500 ATP8S	9"	1"	11+3/4+3/0	4x1D6+1	12	5	+1	50.8cm

extended/stock extended
 barrel/firing both barrels
 ashlight/with flashlight
 Fire
 t/Autofire

Appendix J Flamethrowers

	NAME	FIRE ⁴ RATE	BURN TIME	EFF RNG	FUEL TYPE	
1	05B-040-942	Flammenwerfer mit Strahlpatrone 41	10/0	20 sec	12"	liquid
2	05B-125-965	LPO-50	3/0	3 sec	35"	ether
3	05B-132-945	M2A1 ²	5/1	12 sec	27"	liquid
4	05B-132-956	M9A1-7 ²	5/1	12 sec	27"	thickened
5	05B-041-972	HAFLA-35L ³	1	120 sec	35"	incendiary

¹see text for damage and effect

²weapon can fire cold bursts

³one shot disposable, for damage see incendiary grenades/shells

⁴number of long bursts/short bursts when applicable

Appendix K Grenade Launchers

		NAME	SIZE	STR MIN	RNG MOD	OCV
1	05C-040-944	2.7 Sturmpistole	6/9 ¹	4	-1/1"	+1/+2 ¹
2	05C-041-972	Heckler & Koch 69A1	8/10 ¹	10	-1/5" ²	+1/+2 ¹
3	05C-113-972	Falconet	12/13 ¹	16	-1/7" ²	+1 ⁴
4	05C-125-974	AGS-17	12	6	-1/8" ²	0/+2 ³
5	05C-132-966	Smith & Wesson Tear Gas Gun	11	10	-1/2" ²	+2
6	05C-132-958	M79	11	8	-1/5" ²	+2
7	05C-132-969	M203	12	8	-1/5" ²	+2
8	05C-132-972	M174E3	11	13/3 ³	-1/3"//-1/5" ^{2,3}	+1/+2 ³
9	05C-132-980	Mk 19	13	8	-1/21" ²	+3

¹stock not extended/stock extended

²weapon uses modified range modifier, see machine gun text

³normal (hand held) fire/tripod fire

⁴weapon cannot be fired with barrel collapsed

Appendix L Mortars

		NAME	STR MIN	SIZE	MIN RNG	MAX RNG
1	06A-011-972	PRB-424 ¹	0	10	5"	225"
2	06A-040-936	8cm S. Gr. W. 34	8	13	30"	1200"
3	06A-040-936	50mm L. Gr. W. 36	0	8	23"	260"
4	06A-062-929	50mm Model 89 Grenade Discharger	0	10	25"	85"
5	06A-132-942	60mm M19 Mortar	0	25	22"	907"
6	06A-132-951	107mm M30 Mortar	18	28	460"	2825"
7	06A-132-952	81mm M29 Mortar	5	20	25"	2368"

¹silenced

	ESPIONAGE RADIANT DAMAGE	M,S & PE DAMAGE	STN MOD	SIZE	STR MIN	RNG MOD	OCV	MINIMUM RANGE DAMAGE ESPIONAGE				E
								MIN RNG	NORMAL DAMAGE	STN MOD	M,S & PE ⁹ DAMAGE	
faust 100	9D6/5D6 ³	5x22	+6	13	6	-1/1"	-1	3"	3D6	+10	111	
st 300	11D6/5D6+1 ³	5x20	+7	12	10	-1/4"	0	5"	3 1/2D6	+10	245+1	
5	*2	*2	*2	22	20	-1/20"	0	5"	4D6 ⁵	+8	326	
	*2	*2	*2	12	15	-1/1"	+1	-	-	-	-	
18 Recoilless Rifle	*2	*2	*2	15	0	-1/6"	-1	5" ⁶	4D6	+13	*12	
20 Recoilless Rifle	*2	*2	*2	22	10	-1/7"	-1	10"	4 1/2D6	+14	*12	
M40A2 Recoilless Rifle	*2	*2	*2	25	13	-1/15"	-1	25" ⁷	5D6+1	16	*12	
otting Rifle	2D6 +1K ⁴	34+1	+4	13	16	-1/15"	-1	0"	-	-	-	
67 Recoilless Rifle	*2	*2	*2	14	0	-1/5"	-1	10" ⁸	3 1/2D6	+14	*12	

: Modified Range Modifier rules

1, see Grenade/Shell charts

ng dice explosion/killing armor piercing damage

y effect, +1/3D6 EK damage

id only, see Large Caliber Ammunition chart for Solothurn AP-T round

pt the T25E5 Cannister which has a 0" Min Rng, see Anti-Personnel Grenades/Shells chart

pt the XM 581 APERS-T which has a 2" MIN RNG, see Anti-Personnel Grenades/Shells chart

pt XM391 (Min Rng of 15") and XM590E1 (Min Rng of 0"), see Anti-Personnel Grenades/Shells chart

ind damage

ge decreases by 1/2D6 for every 2 hexes

.D6 for every 3 feet of distance

um Range Damage of shells larger than 50mm

NAME	DAMAGE	TYPE	-1D6/# of hexes	M, S & PE DAMAGE	OCV	RNG MOD	DAMAGE/ HIT	RADIUS	MIN RNG	MINIMI DAI (NOI)
Offensive Grenade	1D6	NE	1/2	8	5	-3/1"	1/2 pip	5	2"	3
AGS-17 HE	2D6	NE	1/2	5	7	-3/1"	1 pip	5	5"	2
40mm M381, M406 HE	2D6	NE	1/2	6	7	-2/1"	1 pip	6	2"/7" ⁵	2
40mm M433 HEDP ³	1D6	NEAP	1/2	8	5	-3/1"	1/2 pip	5	7"	2
40mm M384 HE	4D6	NE	1/2	12	6	-3/1"	1/3D6	5	6"	3
PRB-404 HE ¹	5D6	NE	1	18	8	-2/1"	1/2D6	7	-	-
80mm Type 34 HE	10D6	NE	1	48	7	-3/2"	1D6	11	-	-
80mm Type 39 HE	12D6	NE	1	60	9	-2/3"	1 1/2D6	11	-	-
50mm HE	5D6	NE	1	16	6	-2/1"	1/3D6	7	-	-
50mm Mod 91 HE ²	4D6	NE	1/2	2	6	-3/1"	1/3D6	4	-	-
50mm Type 89 HE	6D6	NE	1	16	6	-2/1"	1/2D6	7	-	-
60mm M49A2E2 HE	7D6	NE	1	24	8	-1/1"	1 1/2D6	17	-	-
107mm M329A1 HE	15D6	NE	1	213	9	-1/1"	1 1/2E6	18	-	-
81mm M374 HE	12D6	NE	1	72	8	-3/2"	1D6	11	-	-
57mm M306A1 HE	8D6	NE	1	32	7	-2/1"	1D6-1	8	5"	4
75mm M309A1 HE	10D6	NE	1	51	7	-3/2"	1D6	11	10"	4
90mm XM591 HE	12D6	NE	1	72	8	-3/2"	1D6+1	11	15"	3
V-40	1D6	NE	1/2	6	7	-2/1"	1 pip	6		
F-1	2D6	NE	1/2	5	5	-3/1"	1 pip	4		
RG-42	5D6	NE	1	15	8	-2/1"	1/2D6	7		
RPG-6 ³	10D6	NEAP	1	5x12	7	-3/2"	1D6	11		
RGD-5	5D6	NE	1	18	8	-3/2"	1/2D6	7		
Mk 36 Mills bomb	4D6	NE	1	10	6	-3/1"	1/3D6	4		
Mk II Pineapple	3D6	NE	1	10	6	-3/1"	1/3D6	4		
M17	3D6	NE	1	10	6	-3/1"	1/3D6	4		
M26A1	7D6	NE	1	25	9	-2/1"	1D6-1	8		
M33	7D6	NE	1	24	9	-3/2"	1D6-1	9		

tion sleeve this is a blast type shell

rge, see shaped charges

nd Damage

for the M381, the second is for the M406
n Range Damage of shells larger than 50mm

Appendix O Blast Grenades/Shells

	NAME	ESPIONAGE DAMAGE	TYPE	-106/ # of hexes	M,S & PE DAMAGE
05C-040-944-1	Wurfgranatpatrone 326	106	NE	1/2	1
05C-040-044-2	Wurfkorper 361	506	NE	1	8
06A-011-972-1	PRB-404 HE ¹	506	NE	1	3
06C-113-936-2	Solothurn HE-T	106	NE	1/2	1
06B-132-953-2	106mm M346A1 HEP-T ²	1506	NAP	1	40
08-024-934	RG-34	506	NE	1	2
08-029-954	RG-4	506	NE	1	2
08-040-924	Gr-24	606	NE	1	4
08-040-940	Geballte Ladung	1206	NE	1	24
08-132-939	Mk 3A2 offensive	706	NE	1	5

¹may also be a fragmentation type grenade

²no hole is created unless penetration is achieved

Appendix P Shaped Charges

	NAME	ESPIONAGE ¹ DAMAGE	M,S & PE DAMAGE
05C-040-944-3	Panzerwurfkorper 42	606/506-1	5x4
05C-132-972-2	40mm M433 HEDP ²	106/406	5x1
06A-131-942	PIAT HEAT	706/406+1	5x5
06B-132-945-2	57mm M307A2 HEAT	706/406+1	5x4
06B-132-945a-1	75mm M310A1 HEAT	1006/4 1/206	5x6
06B-132-953-1	106mm M344A1 HEAT	130/5 1/206	5x32
06B-132-958-1	90mm M371A1 HEAT	1106/3 1/206	5x16
08-132-940	M9A1	506/4 1/206	5x3
08-132-956	M31 HEAT	806/506	5x6
08-125-943	RPG-43	1006/406+1	5x13
08-125-944	RPG-6 ²	1006/4 1/206	5x12
08-125-964	RKG-3M	1006/506	5x13

¹normal armor piercing dice explosion/killing armor piercing damage

²contains fragmentation sleeve, see fragmentation type grenades

Appendix Q Smoke Grenades/Shells

NAME	ESPIONAGE		M,S & PE		
	PER ROLL	DURATION	SAVING ROLL	DURATION	
	MODIFIER		LEVEL ADD		
05B-041-972	HAFLA-35L ¹	-2	5	+1	4
05C-132-980-2	M574E2 WP ¹	-2	2	+1	2
06A-040-934-3	80mm Type 34 Smoke ²	-2	3	+1	2
06A-131-942	PIAT Smoke	-3	8	+2	5
06A-132-942-2	60mm M302E2 WP ¹	-2	4	+1	3
06A-132-951-2	107mm M328A1 WP ¹	-3	10	+2	8
06A-132-952-2	81mm M375 WP ¹	-3	10	+2	8
06B-132-945-3	57mm M308A1 WP ¹	-2	3	+1	2
06B-132-945a-3	75mm M311A1 WP ¹	-3	5	+1	4
08-125-948	RDG-1	-2	6	+1	5
08-125-952	RDG-2	-2	7	+1	6
08-132-940	M22 Smoke ³	-2	5	+1	4
08-132-940	M15 WP ¹	-2	5	+1	4
08-132-940	AN-M8, HC Smoke	-4	20	+2	16
08-132-944	M19A1 WP ¹	-2	5	+1	4
08-132-950	M18 Smoke ³	-2	6	+1	5
08-132-950	M34 WP ¹	-2	5	+1	4

¹this grenade (or shell) also has an incendiary effect, see Incendiary Grenade/Shells chart

²this shell also has an offensive gas effect, see Offensive Grenades/Shells chart

³this grenade is also used for signalling, see Illumination/Signal Grenades/Shells chart

Appendix R Incendiary Grenades/Shells

ESPIONAGE						M,S & PE		
INCENDIARY SHRAPNEL						INCENDIARY SHRAPNEL		
		RNG				LUCK		
NAME	DAMAGE ¹	OCV	MOD	DAMAGE ¹	DAMAGE ³	ROLL	DAMAGE ³	
05B-041-972	HAFLA-35L ²	1 1/2D6	7	-2/1"	1/2D6	2	1	1
05C-132-980-2	M574E2 WP ²	1 1/2D6	7	-2/1"	1/2D6	2	1	1
06A-132-942-2	60mm M302E2 WP ²	1 1/2D6	7	-2/1"	1/2D6	2	1	1
06A-132-951-2	107mm M328A1 WP ²	2 1/2D6	11	-1/1"	1/2D6	3	3	2
06A-132-952-2	81mm M375 WP ²	2D6	9	-3/2"	1/2D6	3	2	1+2
06B-132-945-3	57mm M308A1 WP ²	1 1/2D6	9	-3/2"	1/2D6	2	2	1+2
06B-132-945a-3	75mm M311A1 WP ²	2D6	9	-3/2"	1/2D6	3	2	1+2
08-132-940	M15 WP ²	1 1/2D6	8	-2/1"	1/2D6	2	2	1
08-132-944	M19A1 WP ²	1 1/2D6	7	-2/1"	1/2D6	2	1	1
08-132-950	M34 WP ²	1 1/2D6	10	-1/1"	1/2D6	2	2	1+2
08-132-952	AN-M14 TH3 Incendiary	3D6	-	-	-	4	-	-

¹damage done by incendiaries is figured as Energy Killing dice; refer to text

²this grenade (or shell) also produces smoke, see Smoke Grenades/Shells chart

³armor stops one less die of damage against this attack; refer to text

Appendix S Antipersonnel Grenades/Shells

	NAME	DAMAGE	ESPIONAGE		M,S & PE	
			PB RNG	DMG ¹ RNG	DAMAGE	
05C-113-972-2	Falconet Defensive Grenade	4x1D6+1 ²	2"	10"	6/2+3/1/0	
05C-132-972-3	40mm M576E1 MP	4x1/3D6	1"	6"	3/2/1/0	
06B-132-945-4	57mm T25E5 Canister	4x2 1/2D6	10"	20"	95/38/13/4	
06B-132-953-3	106mm XM581 APERS-T	4x4D6	25"	75"	610/244/81/24	
06B-132-958-3	90mm XM590E1 Canister	4x3D6	20"	50"	133/54/18/5	

¹when firing this round, apply this Damage Range, NOT the Modified Range Modifier

² -1 to STN MOD at all ranges

Appendix T Offensive Gas Grenades/Shells

	NAME	ESPIONAGE			M,S & PE	
		SUBTRACTIONS FROM:			LUCK SAVING	DICE OF
		EGO ROLL	PER ROLL	CON ROLL	ROLL LEVEL	URNS
05C-132-966-1	37mm Long Range Proj. #17CS	-6	-3	-	2	1
05C-132-966-2	37mm Standard Range Tear Gas (CS)	-6	-3	-	2	1
05C-132-966-3	37mm Short Range Tear Gas (CS)	-5	-2	-	2	1
05C-132-972-4	40mm M651E1 CS	-6	-3	-	2	1
06A-040-934-3	80mm Type 34 Smoke ¹	-4	-2	-	1	1+2
06A-132-951-4	107mm M630 CS	-10	-5	-	3	2
08-132-952	M7A1 CN	-6	-3	-	2	2
08-132-952	M6A1 CN/DM	-6/-8 ²	-3	-6	2	3
08-132-964	M7A3 CS	-8	-4	-	3	2
08-132-964	M25A2 CS	-7	-4	-	2	1
08-132-966	Miniature CS	-4	-2	-	1	1
08-132-968	M58 CS	-5	-2	-	2	1

¹shell produces smoke, see smoke grenades/shells chart

²number to the left represents effects of CN only, after one full turn (12 seconds), effects of DM start, use number to the right of slash.

Appendix U Illumination Signal Grenades/Shells

NAME	PER ROLL MODIFIER	ESPIONAGE		DURATION	NIGHT		M,S & PE	
		SPRM ¹			SHOOTING	ADD	SIQSRL ²	DURATION
05C-132-966-5	37mm White Parachute Flare	+1	+1/+3	4	+5		2/1	3
05C-132-972-5	40mm M583	+2	-/-	4	+5		2/1	3
05C-132-972-5	40mm M661, M662, M695	-	+1/+3	4	-		2/1	3
05C-132-972-6	40mm M585, M663, M664	-	+0/+2	1	-		3/2	1
05C-132-972-7	40mm M676, M679, M680, M681, M682	-	+3/+0	8	-		1/3	6
06A-132-942-3	60mm M83A3 Illuminating	+2	-/-	3	+5		-/-	2
06A-132-951-3	107mm M335A2 Illuminating	+4	-/-	8	-5		-/-	6
06A-132-952-3	81mm M301A3 Illuminating	+3	-/-	6	0		-/-	5
08-132-940	M22 Colored Smoke ³	-	+3/+0	5	-		1/3	4
08-132-950	M18 Colored Smoke ³	-	+3/+0	6	-		1/3	5
08-132-954	Mk I Illuminating	+2	-/-	2	+5		-/-	2
08-132-964	Miniature Smoke M166-M169	-	+2/+0	2	-		1/3	2
08-132-960a	Illumin. Signal, Star Parachute M126A1	+1	+1/+2	5	+5		2/2	4
08-132-960a	Illumin. Signal, Star Parachute M127A1	-	+1/+3	5	-		2/1	4
08-132-960	Illumin. Signal, Star Parachute M195	-	+1/+3	3	-		2/1	2
08-132-960	Illumin. Signal Star Cluster M125A1, M158, M159	-	+1/+2	1	-		2/2	1
08-132-960	Signal, Smoke Parachute M128A1, M129A1, M194	-	+2/+0	1	-		2/3	1

¹Spotter's Perception Roll Modifier for day/night

²Spotter's IQ Saving Roll level for day/night

³this grenade is also used as a smoke grenade, see Smoke Grenades/Shells chart

Appendix V Large Caliber Solid Shot Ammunition

NAME	DAMAGE	ESPIONAGE		M,S & PE DAMAGE
		DAMAGE	TYPE	
05C-132-966-4	37mm Baton	5D6	STUN	19 ¹
06C-113-936-1	20mm Solothurn AP-T	3 1/2D6	KAP	361

¹treat as Hand-to-Hand damage

Appendix W Rifle Grenades

	NAME	SIZE	STR MIN	RNG MOD	OCV
1	08-132-940 M9A1	5	-	-1/2"	-
2	08-132-940 M17	4	-	-1/2"	-
3	08-132-940 M22 Smoke rifle grenade	5	-	-1/3"	-
4	08-132-942 M1A1 Rifle Grenade Adapter	3 ²	-	-	-
	with Mk II	5	-	-1/2"	-
	with M26	5	-	-1/2"	-
	with M34	6	-	-1/2"	-
	with Mk I	5	-	-1/2"	-
5	08-132-942 M2A1 Rifle Grenade Adapter	1 ²	-	-	-
	with AN-M14, TH3	5	-	-1/2"	-
	with AN-M8, HC	5	-	-1/2"	-
	with M6 series	5	-	-1/2"	-
	with M7 series	5	-	-1/2"	-
	with M18 series	5	-	-1/2"	-
6	08-132-944 M19A1 WP	5	-	-1/3"	-
7	08-132-956 M31 HEAT	8	-	-1/2"	-

GRENAD LAUNCHERS (RIFLE)

8	05C-132-918 Grenade Launcher M1 w/rifle	14	8	* ³	+2
9	05C-132-936 Grenade Launcher M7 w/rifle	14	8	* ³	+2
10	05C-132-942 Grenade Launcher M8 w/rifle	14	8	* ³	+2
11	05C-132-956 Grenade Launcher M76 w/rifle	14	8	* ³	+2

¹All weapons use the modified range modifier rules, see text

²Adapter only, size with grenade included follows

*³Dependent upon rifle grenade launched, see above

Appendix X Small Arms Ammunition

NAME	ESPIONAGE DAMAGE	STN MOD	STR MIN BASE	M,S & PE DAMAGE
5.56x29mm	1D6+1	0	8	2
5.56x36mm	1 1/2D6 ¹	1	10	3
5.7x17mmR	1D6-1	-1	4	1
5.7x17mmR High Velocity	1D6	-1	6	1+1
5.7x24.5mmR	1D6 ¹	0	6	1+3
6.35x15.5mmSR	1D6-1	-1	4	1
7.62x25mm Borchardt	1D6+1	0	8	2+2
7.62x25mm Czech	1D6+1	0	8	3
7.62x25mm	1D6+1	0	8	2+3
7.62x25mm P41	1/2D6+1 AP ⁴	0	8	4
7.62x25mm PT	1D6+1 T	0	8	3
7.65x17mmSR	1D6	0	6	1+3
8x21mm	1D6	0	6	2+2
9x18mm	1D6	0	6	2+2
9x17mm	1D6	0	6	2
9x19mm	1D6+1	0	8	3
9x19mm Semi AP	1/2D6+1 AP	0	8	3+1

NAME	ESPIONAGE	STN	STR MIN	M,S & PE
	DAMAGE	MOD	BASE	DAMAGE
9x19mm Tracer	1D6+1 T	0	8	3+3
9x29mmR	1D6	0	6	3
9x29mmR Tracer	1D6 T	0	6	3
9x33mmR	1 1/2D6	0	10	5+1
9x33mmR Semi AP	1D6 AP	0	10	5
10.97x33mmR	2D6	1	12	8
11.2x32mm	2D6-1	1	10	8
11.43x19mmR	1D6	1	6	3+3
11.43x23mm	1D6+1	1	8	4+2
11.43x23mm Tracer	1D6+1 T	1	8	4+1
11.56x33mmR	1D6+1	1	8	5
13x36mm Gyrojet	1 1/2D6	1	0 ³	5+1
XM645 Flechette	1D6+1 ²	-2	8	1+1
4.6x36mm	1 1/2D6	-1	10	2+3
4.6x36mm AP	1 1/2D6 AP	0	10	4
4.7x21mm Caseless	2D6-1	0	10	3+3
4.85x49mm	2D6+1	0	14	11+3
5.45x39mm	1 1/2D6	0	10	3+2
5.56x45mm	2D6	0	12	4
5.56x45mm Tracer	2D6 T	0	12	4
7.5x54mm	2D6	1	12	8
7.62x33mm	1 1/2D6	0	10	4+3
7.62x33mm Tracer	1 1/2D6 T	0	10	4+1
7.62x39mm	2D6	0	12	6+2
7.62x39mm Tracer	2D6 T	0	12	7+3
7.62x39mm BZ	1 1/2D6 AP ⁴	1	12	10
7.62x39mm ZP	2D6 ⁴	0	12	8+3
7.62x51mmR	2D6	1	12	8
7.62x51mm	2D6+1	1	14	9+1
7.62x51mm AP M61	2D6+1 AP	1	14	10+1
7.62x51mm Tracer M62	2D6 T	1	14	8+3
7.62x51mm Duplex M198	2D6//1 1/2D6	0//0	12//12	5+2//4+2
7.62x51mm Frangible M160	4D6 N	0	8	3+2
7.62x51mm Ball	2D6	1	12	8+2
7.62x54mmR	2D6+1	1	14	10+2
7.62x54mmR BS-40	2D6 AP ⁴	1	14	11
7.62x54mm Tracer	2D6 T	1	12	8+3
7.62x54mmR BZT	1D6+1 AP T ⁴	1	12	10+2
7.62x54mmR ZP	1 1/2D6 ⁴	1	14	10
7.62x63mm	2D6+1	1	14	9+2
7.62x63mm AP M2	2D6+1 AP	1	14	12
7.62x63mm Tracer M25	2D6+1 T	1	14	8+3
7.62x63mm Incendiary	1 1/2D6 ⁴	1	14	10+1
7.62x63mm API M14	2D6 AP ⁴	1	14	11+2
7.62x63mm Frangible M22	4D6 N	0	8	3+1
7.62x66mmB	2D6+1	1	14	12+2
7.62x66mmB Ball	2D6+1	1	14	11+2
7.7x56mmR	2D6+1	1	14	9+2
7.7x56mmR Tracer GMk8	2D6 T	1	12	9
7.7x56mmR Incendiary BMk7	1D6+1 ⁴	1	12	9+2
7.7x56mmR AP WMk1	2D6+1 AP	1	14	10+3
7.7x58mm	2D6	1	12	9+1
7.7x58mm Explosive	2D6 ⁴	0	12	9+2
7.92x33mm	2D6	0	12	6+2
7.92x57mm	2D6+1	1	14	11
7.92x57mm Semi AP	1 1/2D6 AP	1	14	11+2
7.92x57mm AP	2D6+1 AP	1	14	13+2

NAME	ESPIONAGE DAMAGE	STN MOD	STR MIN BASE	M,S & PE DAMAGE
7.92x57mm AP-I	2D6 AP ⁴	1	14	10+3
7.92x57mm AP-T	2D6 AP T	1	14	11+3
7.92x57mm Observation	2D6+1 ⁴	1	14	10
7.92x95mm	3D6+1 AP	4	20	19
10.8x33mmR	1 1/2D6	1	10	6
11.43x60mmR	2D6	2	12	14+2
11.6x54mmR	2D6	2	12	12+1
11.6x63.5mmB	2 1/2D6	3	16	24
11.6x74mmB	2 1/2D6	4	16	30+1
12.7x77mm	2D+1 T ⁴	4	16	34+1
12.7x83mmR	2D6+1	3	14	21+1
12.7x99mm	3D6	4	18	44+3
12.7x99mm AP M2	3D6 AP	4	18	49+2
12.7x99mm Tracer M1	3D6 T	4	18	40+3
12.7x99mm Incendiary M23	3D6 ⁵	4	18	38
12.7x99mm API M8	2 1/2D6 AP ⁴	4	18	48+2
12.7x99mm APIT M20	2D6 AP T ⁴	4	18	48+1
12.7x108mm BZ	2 1/2D6 AP ⁴	4	18	55+1
12.7x108mm BZT	2D6 AP T ⁴	4	18	52
13x71mm Gyrojet	2D6	3	0 ³	12+3
13.9x22mmR	2D6-1	2	10	9+2
13.9x99mmB	3D6 AP	5	18	60
14.5x114mm	3D6 AP ⁵	5	20	80+3
14.5x114mm	3D6 AP ⁵	6	20	82+2
14.5x114mm APIT	2D6+1 AP T ⁵	5	20	75+2
14.5x114mm I-T	3D6 T ⁵	5	20	69
15.7x76mmR	2 1/2D6	5	16	41+1

SHOTGUN ROUNDS

NAME	ESPIONAGE ⁶ DAMAGE	M,S & PE ⁷ DAMAGE
20 ga. 2 3/4 in. #3 Buckshot	4 * 1D6	8+2/1+1/0
12 ga. 2 3/4 in. "All Brass"	4 * 1D6	8+2/3+2/0 ⁸ 7/3+2/1+3 ⁹ 7/4+3/3 ¹⁰
12 ga. 2 3/4 in. 00 Buckshot	4 * 1D6+1	8+3/3+3/0 ⁸ 7+1/3+3/2 ⁹ 7+1/5/3 ¹⁰
12 ga. 2 3/4 in. Magnum Buck.	4 * 1D6+1	11+3/5/0 ⁸ 9+3/5/2+2 ⁹ 9+3/6+2/4 ¹⁰
12 ga #4 Buckshot	4 * 1D6+1	8+2/3+3/0 7/3+3/2 7/4+3/3
12 ga. Teleshot	4 * 1/2D6	2/1/0 ⁸ 1+3/1/0+2 ⁹ 1+3/1+1/0+3 ¹⁰
10 ga. 2 7/8 in. 00 Buckshot	4 * 1D6	10+1/1+1/0 ⁸ 9/2+2/1+3 ⁹ 8+1/3+2/2+3 ¹⁰

N indicates normal, not killing, damage
T indicates a tracer round, refer to rules
AP indicates armor-piercing round, use
1/2x armor defenses against this round

¹use 1 1/2x armor defenses
against this round

²+1 OCV and +1 RNG MOD to
a weapon firing this round

³Gyrojet rounds have no recoil so the total
STR MIN is just the weight of the weapon

⁴+1/3D6 EK

⁵+1/2D6 EK

⁶Damage and STN MOD varies according
to distance, refer to shotgun rules

⁷Damage at Short/Medium/Long range,
Shotgun shells do not hit Very Long range

⁸Open or cylinder choke weapon

⁹Improved cylinder or half-choke weapon

¹⁰Full choke weapon

Appendix Y Gaming Glossary

Autofire; (ESP) Some weapons in The Armory are capable of autofire. In Espionage, it is figured on 10 rounds per pull of the trigger. In The Armory, the rate of fire varies from weapon to weapon. If GMs wish to accurately depict this, divide the automatic (or cyclic) rate of fire by 12 for the number of rounds, fired per second (phase). Remember to use all other Espionage rules pertaining to Autofire, (ex: -1 OCV per hex fired into in spreading).

Burst Fire; (ESP) Weapons capable of firing Autofire can also Burst fire. Espionage uses a 5 shot rule. Some weapons in The Armory fire bursts of 3 rounds. If a GM uses the Autofire modification, he should use the Burst Fire rule change as well.

Con Roll (ESP) A roll made on 3D6 to determine if a player's character is physically capable of performing some action. Usually used in offensive gas areas and required to see if the character succumbs to the effects of a gas.

Damage (Espionage); Espionage Damage in The Armory is of 12 various types that may be combined to accurately depict the capabilities of various rounds.

Normal (N); The total of the dice equals the amount of Stun Pips done to the target. BODY for these attacks are as follows: a "1" on a die means "0" Body. "2-5" is "1" Body and a "6" is "2" Body. A character's PD (or ED if energy attack) is subtracted from these totals and any remainder applied.

Killing (K); This is subdivided into Physical (PK) and Energy (EK) attacks. Unless protection is specifically stated as Energy Resistant, assume that it is not and ignore any protection. To figure Body, just total the pips on the dice. The resulting number is the Body damage done. Stun damage is figured by rolling 1D6-1, add any Stun Modifier and multiply the sum by the body. Ignore normal defenses.

Explosion (E); An explosive attack extends from the hex in which the attack occurs. At that hex, it is the full amount of dice listed. For every hex distant, subtract one die starting with the highest number rolled and continue on down to the lowest. Any characters within the explosive radius are automatically hit (i.e. no attack roll is needed). Most blast waves are explosions.

Area Effect; An attack that occurs in every hex over a stated distance with equal strength, (unlike explosions which decline in strength). A character caught in an area effect radius is automatically hit.

Armor-Piercing (AP); A shell specifically designed to penetrate better. It does a lesser amount of body but, the defense of the target is halved.

Physical; A type of attack where the defense is applicable to normal physical attacks, (i.e. PD).

Energy; A type of attack where the defense is applicable to normal energy attacks (i.e. ED).

Resistant Defenses; Those defenses which apply against killing type of attacks.

Shrapnel; Fragments of a shell/grenade that spread out from a given point. Usually figured as a killing attack, it occurs as a small autofire attack in a radius around the target hex. A Shrapnel attack will be given an OCV and a Range Modifier. Remember, characters do not get DEX based DCVs.

Damage/Hit; The amount of damage each shrapnel piece does upon hitting a target.

Radiant; The normal armor-piercing explosive damage that extends from an impact hex of a shaped-charge.

Back blast; The type of attack resulting from firing a recoilless weapon. It extends in a cone from the rear of the weapon backwards from the firer and is treated as a killing dice explosion.

DCV; The combat value of a character used for defense. It is figured by DEX/3 plus any modifiers for skill levels, combat maneuvers, size, and covering.

Damage Range (DMG RNG); The distance used for shotguns and antipersonnel shells to determine how many pellets strike a target. It is determined by the length of the barrel and the type of choke on the weapon.

Duration...Dice of Turns; The amount of time an attack takes to expire. Usually used for smoke, gas, and illuminating types of rounds. In Espionage, it is the number of segments and in M,S & PE, it is the number of turns.

EGO Roll; A roll made on 3D6 to determine if a player's character is psychologically capable of performing some action. Usually used in situations involving offensive gases and required to see if the character succumbs to the effects of the gas.

Espionage Damage; see Damage (Espionage).

Fire Rate (ESP); Also known as rate of fire. Simply tells how many shots can be fired in one phase. Flamethrowers use a fire rate based upon whether a long burst or short bursts are desired.

Intelligence (IQ) Saving Roll (M,S & PE); A 2D6 roll made to determine if a character succeeds in an action that requires intelligence.

Luck (LK) Saving Roll (M,S & PE); A 2D6 roll made to determine if a character succeeds in an action (or is saved from injury) based on luck.

Minimum Range (MIN RNG), (ESP); The closest distance that a target can be hit with the desired effect. This differs on whether the weapon fires in an arc (indirect fire), or a straight line (direct fire).

Modified Range Modifier (MRM), (ESP); A modification to the range modifier for long range weapons that allows targets to be hit when their effective ranges are 800+ meters.

Maximum Range (MAX RNG), (ESP); The farthest distance that a target can be hit with the desired effect.

M,S & PE Damage; Number of dice of damage a target takes in M,S & PE with any special modifications explained respectively in the text.

Night Shooting Add (M,S & PE); The number to be added to a character's "to hit" chance reflecting the amount of light given off by illumination grenades/shells

OCV (ESP); The combat value of a character for offensive purposes. It is figured by DEX/3 plus any modifiers for skill levels, combat maneuvers, size, and covering.

PER Roll (ESP); A roll made on 3D6 to determine if a character has noticed something. It could be of any of the 5 senses (i.e. sight PER roll, hearing PER roll, etc.), and it may be positive or negative, reflecting the relative difficulty of the situation.

PIP (ESP); One point of damage. This may be either Stun or Body.

Point Blank Range (PBRNG), (ESP); Used for shotguns and antipersonnel shells to reflect being hit at very close ranges. The pellets at this point have had no chance to spread much so it is basically a large pellet striking the target.

Radius (ESP); The distance over which the OCV of an attack drops by one (i.e. -1/3" means a -1 OCV occurs every 3 game inches). Used to describe the accuracy of the weapon.

Selective Fire (ESP); The term used to describe a weapon that can fire either semiautomatic or automatic. The mode change is usually accomplished by a "selective switch" although the most modern weapons have a "progressive trigger," (the more you pull, the more rounds fired).

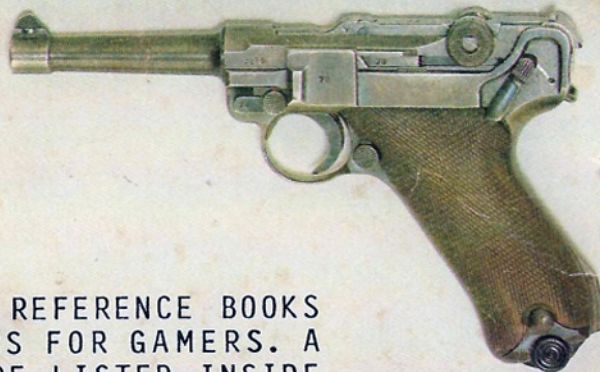
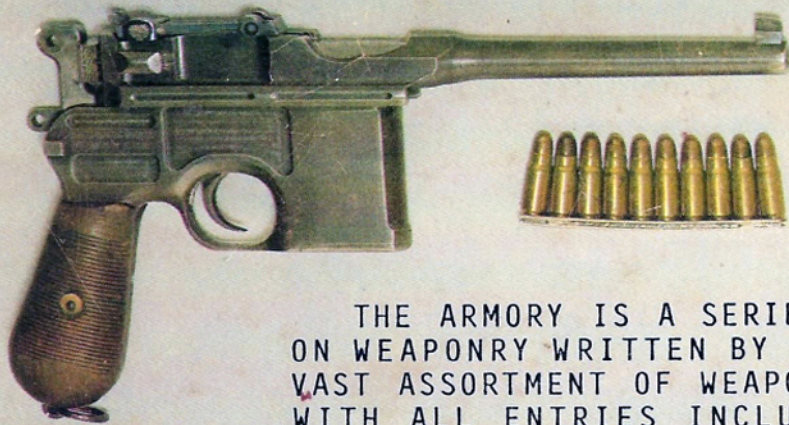
SIZE (ESP); The number used to describe the overall size of an object. It tells how easily concealable the object may be.

Spotter's PER roll Modifier (SPRM), (ESP); The number added to a character's perception roll to locate a firer's position. This applies to illumination grenade/shells and will vary from one to another and according to the time of day.

Spotter's Intelligence Saving Roll Level (SIQSRL), (M,S & PE); The level at which a character tries to make a saving roll to locate the firer of an illumination grenade/shell. It will vary from round to round and according to the time of day.

Strength Minimum (STR MIN); The minimum amount of strength necessary to fully control a gun with recoil when firing. In the cases of both mortars and recoilless weapons, the strength minimum is simply the amount necessary to carry the weapon.

Stun Modifier (ESP); The number that modifies the Stun multiple of a gun's attack. In most cases, the attack is a killing attack but there are weapons where the attack is normal or Stun only.



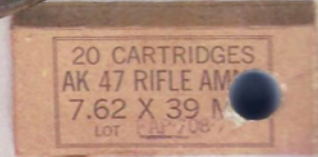
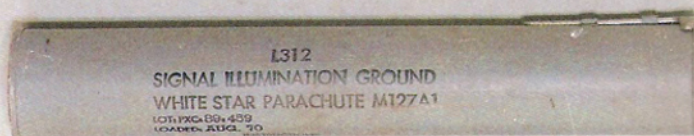
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