

# THE ARMORY VOLUME 1

WRITTEN  
BY  
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A COMPENDIUM OF WEAPONRY FOR GAMERS  
AND STUDENTS OF ORDNANCE

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VERMIN CONTROL, COMIC RELIEF,  
AND FELINE TOLERANCE "FOOL"

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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 that the weapon is native to. 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 weapon that can be aimed and fired with one hand. Early hand cannons pressed 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, true one hand pistols were possible to make, but were still relatively a rich man's toy. 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

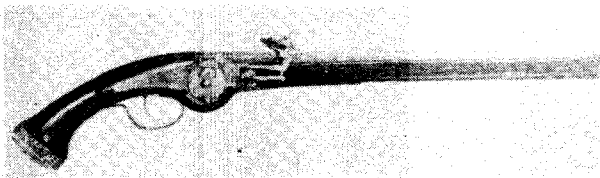
contains the ammunition supply and rotates to line up a fresh round each time the hammer is cocked. In the single action revolvers, the hammer must be cocked back manually each time the weapon is to be fired. In the later, double action pistols, the hammer could be manually cocked or, a long pull of the trigger would lift and fire the hammer.

The self loading pistol, wrongly 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. They 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  
 E-FACTOR 6  
 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 rds (25kg powder, 1.25kg ball)  
 LOAD WT 1.5kg

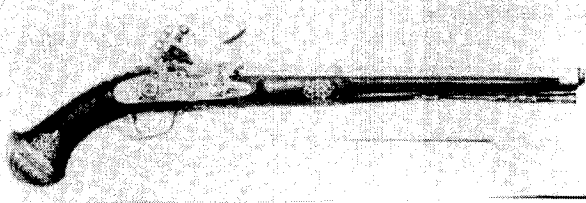
This is one of the very earliest "handguns" that can be accurately dated. The weapon was found during the 1840's in the ruins of an infamous robber-barons castle in Tannenburg Germany. The castle was known to have been leveled in 1399. The weapon is effectively a small cannon on the end of a wooden shaft. 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  
 E-FACTOR 6  
 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)

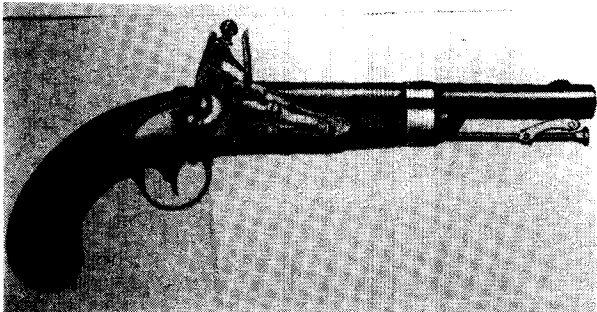
FEED DEVICE WT .031kg (28g ball, 3g powder)  
BASIC LOAD 50 rounds (1.4kg ball, .15kg powder)  
LOAD WT 1.55kg

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  
E-FACTOR 5  
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

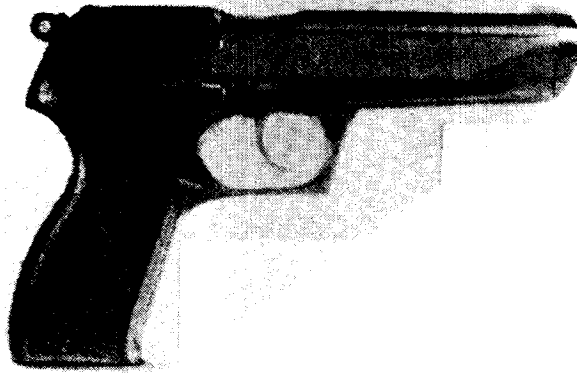
The Snaphaunce action preceded the flintlock for both hand and shoulder weapons. The action was simpler to make than that of a wheellock but still more complicated than the action of a true flintlock. The Snaphaunce, though effective, was quickly superseded by more efficient weapons.



01-000-806  
NAME .54 Flintlock  
TYPE Early (American) flintlock pistol  
DATE ADOPTED 1806  
E-FACTOR 8  
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 GB80  
TYPE Austrian autoloader  
DATE ADOPTED 1981  
CAL 9x19mm  
LENGTH 21.4cm  
E-FACTOR 9  
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

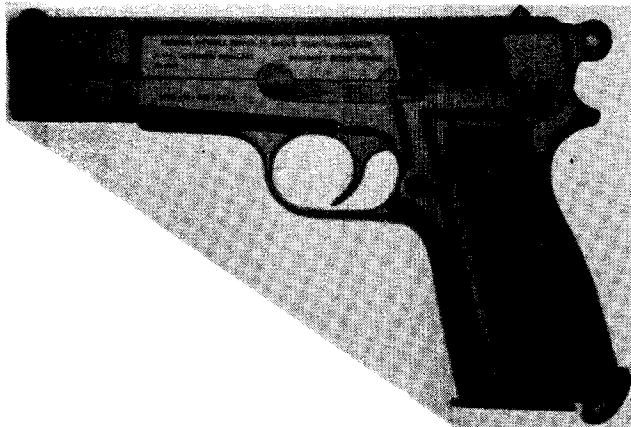
This is a very new weapon on the market. The GB is built of high quality stainless steel reducing possible corrosion. The double action trigger as well as the large magazine capacity make this pistol a very efficient combat weapon. The sights of the weapon have a luminous material built into them to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





01-011-906  
 NAME Browning .25  
 TYPE Belgian autoloader  
 DATE ADOPTED 1906  
 CAL 6.35x15.5mmSR  
 LENGTH 11.5cm  
 E-FACTOR 5  
 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

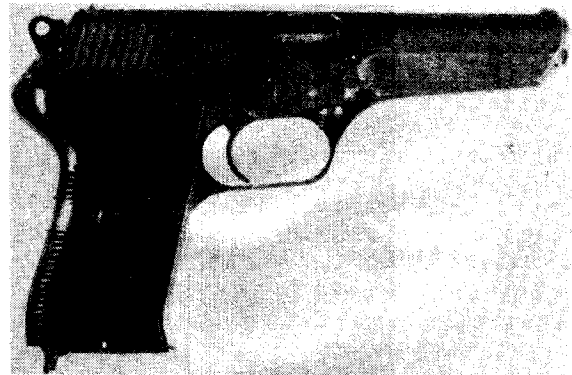
This is one of the smallest commercially available automatic pistols on today's market. The .25 automatic cartridge is lower in power than a .22 Long Rifle cartridge and because of this comparative lack of power it is only recommended as a lastditch defensive weapon. The small size of the weapon allows 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.



01-011-935  
 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

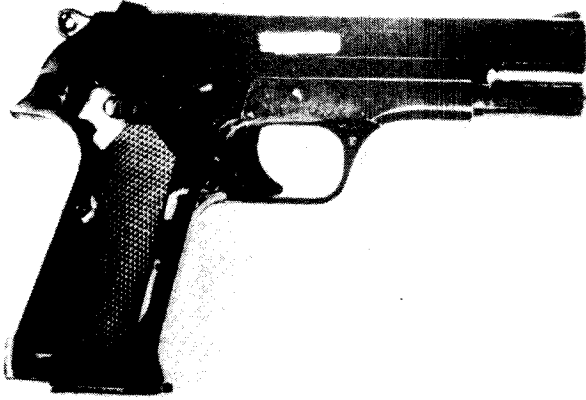
E-FACTOR 9  
 MUZZLE VEL 1161 fps  
 WT (EMPTY) .88kg  
 WT (LOADED) 1.085kg  
 EFF RNG 45m  
 MAX RNG 2012m  
 TYPE OF FIRE Semiautomatic  
 RATE OF FIRE 40 rpm  
 FEED DEVICE 13 round box magazine  
 FEED DEVICE WT .205kg  
 BASIC LOAD 3 magazines (39 rounds)  
 LOAD WT .615kg

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.



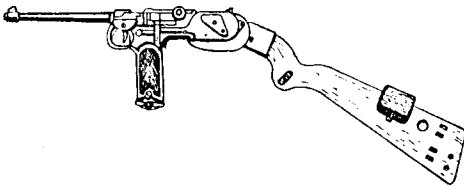
01-029-952  
 NAME Vz-52  
 NAME (NATIVE) 7.62mm Pistole vz/52  
 TYPE Czechoslovakian autoloader  
 DATE ADOPTED 1952  
 CAL 7.62x25mm  
 LENGTH 21cm  
 E-FACTOR 10  
 MUZZLE VEL 1615 fps  
 WT (EMPTY) .887kg  
 WT (LOADED) 1.045kg  
 EFF RNG 50m  
 MAX RNG 1927m  
 TYPE OF FIRE Semiautomatic  
 RATE 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  
 E-FACTOR 9  
 MUZZLE VEL 1148 fps  
 WT (EMPTY) 1.09kg  
 WT (LOADED) 1.323kg  
 EFF RNG 50m  
 MAX RNG 1990  
 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

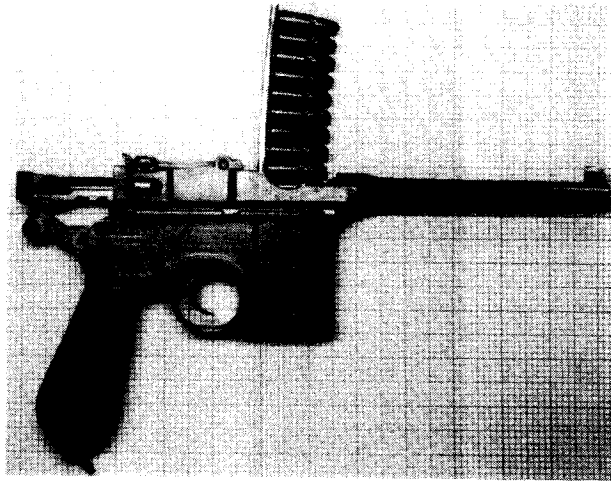
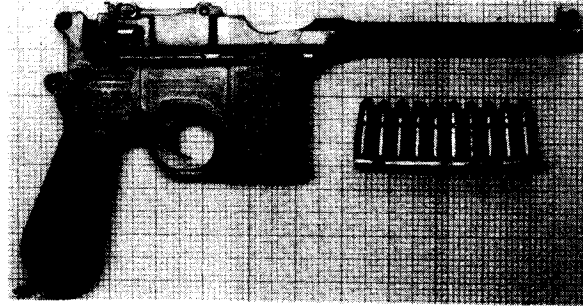
This is the modern French Army's issue pistol. The weapon is essentially a militarized version of a French commercial pistol, the Unique Modele R Para. The large magazine capacity and simple action make this weapon one of the most effective of the French designs.



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)  
 E-FACTOR 7  
 MUZZLE VEL 1100 fps  
 WT (EMPTY) 1.3kg  
 WT (LOADED) 1.456kg  
 EFF RNG 75m  
 MAX RNG 1400m  
 TYPE OF FIRE semiautomatic  
 RATE OF FIRE 24 rpm  
 FEED DEVICE 8 rd box magazine  
 FEED DEVICE WT .156kg  
 BASIC LOAD 3 magazines ( 24 rounds)  
 LOAD WT .468kg

This weapon was the forerunner of the P-08 (Luger) pistol.

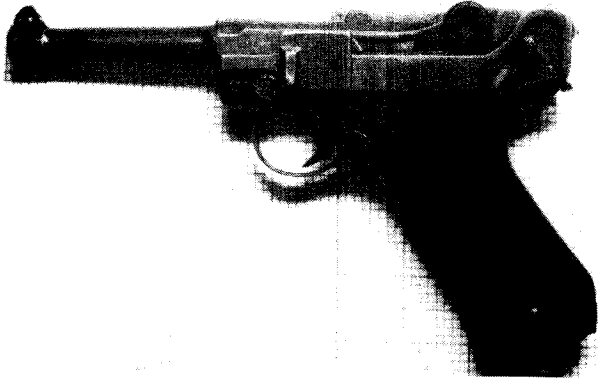
The Borchardt is a very long, ungainly looking weapon. This length is due, in part, to the mainspring of the action being above and behind the grip. The toggle action used in the Borchardt was only commonly seen on the descendent of the Borchardt, the Luger, and no other weapon. Though clumsy appearing, the Borchardt was well-balanced as a pistol and, when used with its attachable shoulder stock, 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-Selbstlade-pistole Construction 96 (C96)  
 TYPE German autoloader  
 DATE ADOPTED 1896  
 CAL 7.62x25mm  
 LENGTH 28.8cm (63cm w/stock)  
 E-FACTOR 9  
 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 rd. 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-Marinern-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  
 E-FACTOR w/10.2cm bbl 9, w/15.2cm bbl (naval) 9, w/19cm bbl (artillery) 9  
 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/8rd mag) 1.248kg, (w/32rd mag) 2.117kg  
 EFF RNG 50m (200m w/stock)  
 MAX RNG 2012m  
 TYPE OF FIRE Semiautomatic  
 RATE OF FIRE 32 rpm  
 FEED DEVICE 8 rd box magazine or 32 rd "snail" drum magazine  
 FEED DEVICE WT (8rd) .198kg, (32 rd 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 weapons 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 Selbstladepistol Modell Polizei Pistole Kriminal  
 TYPE German autoloader  
 DATE ADOPTED 1930  
 CAL 9x17mm  
 LENGTH 17.3cm  
 E-FACTOR 7  
 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

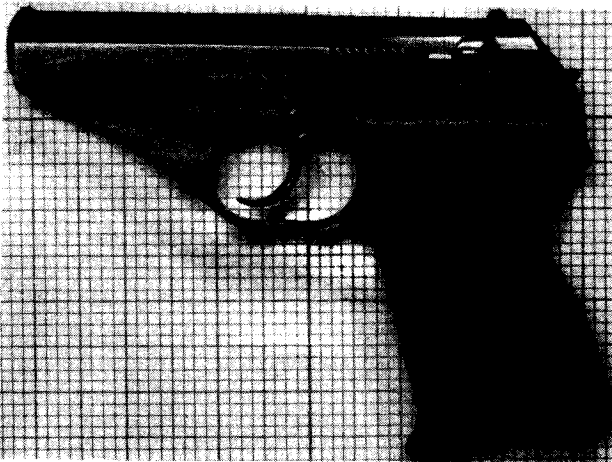
This pistol was often carried by high-ranking German officers who did not wish to carry a heavier, more powerful pistol just for personal defense. Also favored by the Gestapo and other intelligence services, the PPK was originally designed for police detectives. The letters PPK stand for the German words 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  
 E-FACTOR 9  
 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

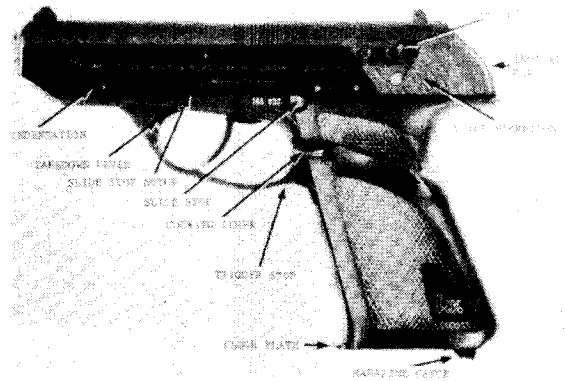
This weapon was designed as a modernized, easier to manufacture, replacement for the P-08 Luger. The P-38 is not as prone to jamming as the Luger being much less sensitive to dirt. Equipped with a double action trigger, the P-38 can be safely carried with the hammer down on a loaded chamber. To fire 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-pistole Modell HSc  
 TYPE German autoloader  
 DATE ADOPTED 1940  
 CAL 9x17mm  
 LENGTH 16.5cm  
 E-FACTOR 7  
 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

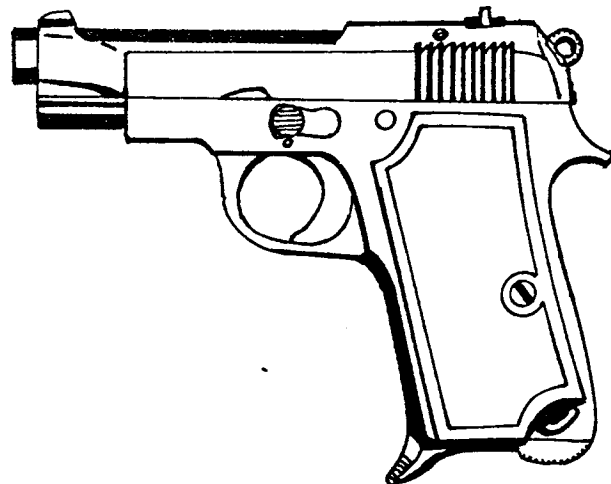
This small automatic was developed by Mauser before World War II as a commercial weapon but was adopted by the German Air Force and Navy during the war. The hammer on the HSc is covered by the slide with only a small ridge exposed to allow for single action cocking. The slide locks to the rear

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.



01-040-966  
 NAME Heckler and Koch P9S  
 TYPE German autoloader  
 DATE ADOPTED c. 1966  
 CAL 9x19mm  
 LENGTH 13.7cm  
 E-FACTOR 9  
 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

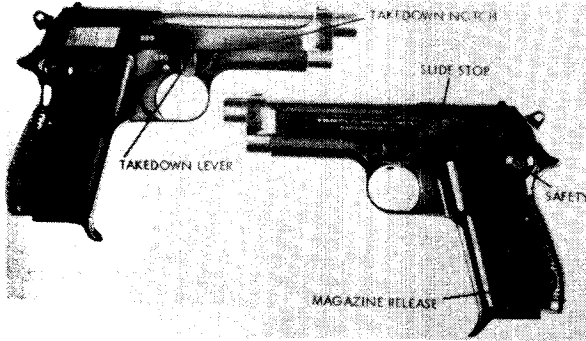
This modern German pistol has several new design features. The weapon utilizes the same roller-locking feature as the G-3 rifle series resulting in a very safe and reliable weapon. The barrel of the P9S is rifled with polygonal rifling, that is, the barrel has no lands or grooves but is slightly oval 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 auto-loader  
DATE ADOPTED 1934  
CAL 9x17mm  
LENGTH 15.2cm  
E-FACTOR 7  
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

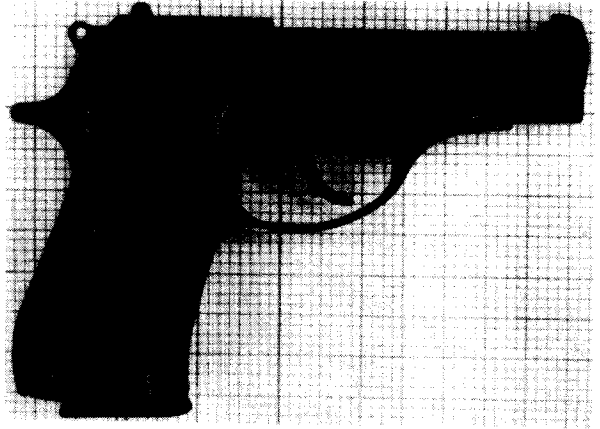
This small pistol was one of the first Beretta automatics to see wide use. The M34 was standard issue in the Italian military throughout WWII and was highly coveted by men on both sides of the war due to the weapon's small size and weight. The weapon fires the 9mm short round and because of this has 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 auto-loader  
DATE ADOPTED 1951  
CAL 9x19mm  
LENGTH 20.3cm  
E-FACTOR 9  
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 auto-loader  
DATE ADOPTED 1976  
CAL 9x17mm  
LENGTH 17.1cm  
E-FACTOR 7  
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 rd. 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 auto-loader  
DATE ADOPTED 1976  
CAL 9x19mm  
LENGTH 21.6cm  
E-FACTOR 9  
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.

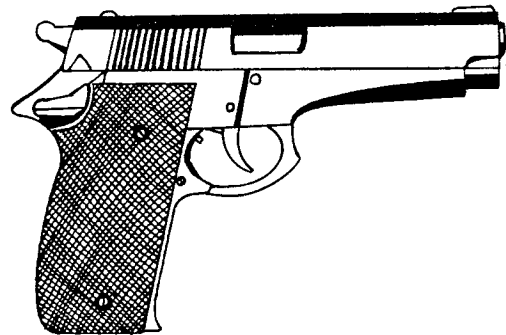


01-097-964  
 NAME P-64  
 TYPE Polish pistol  
 DATE ADOPTED 1964  
 CAL 9x18mm  
 LENGTH 15,5cm  
 E-FACTOR 8  
 MUZZLE VEL 1030 fps  
 WT (EMPTY) .636kg  
 WT (LOADED) .68kg  
 EFF RNG 50m  
 MAX RNG 1094m  
 TYPE OF FIRE Double-action semiautomatic  
 RATE OF FIRE 30 rpm  
 FEED DEVICE 6 round box 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.

01-062-925  
 NAME M14 Nambu  
 NAME (NATIVE) 14 Nen Shiki Kenju  
 TYPE Japanese auto-loader  
 DATE ADOPTED 1925  
 CAL 8x21mm  
 LENGTH 22,8cm  
 E-FACTOR 7  
 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

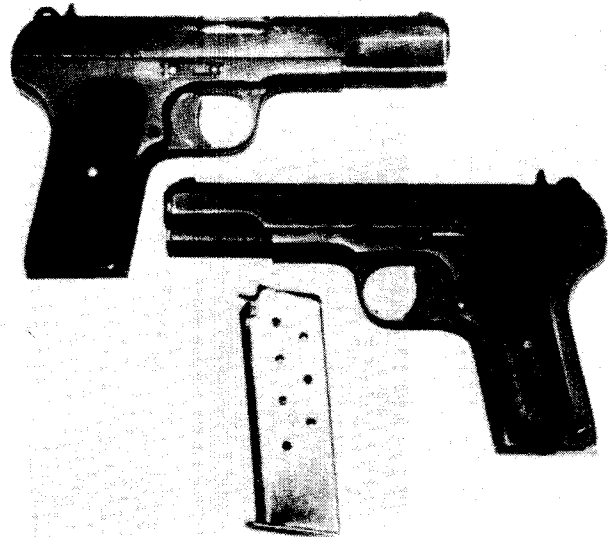
The most commonly issued pistol used by Japan during WWII, the P-14 also known as the Nambu, can be found with a wooden holster/stock (see Mauser M1896, 01-040-896). The Nambu fires a low-powered round that is unique to this weapon. There is also a version of this pistol approximately 1/3 smaller than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



01-108-979  
 NAME Mamba  
 TYPE South African auto-loader  
 DATE ADOPTED 1979  
 CAL 9x19mm  
 LENGTH 21,8cm  
 E-FACTOR 9  
 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.

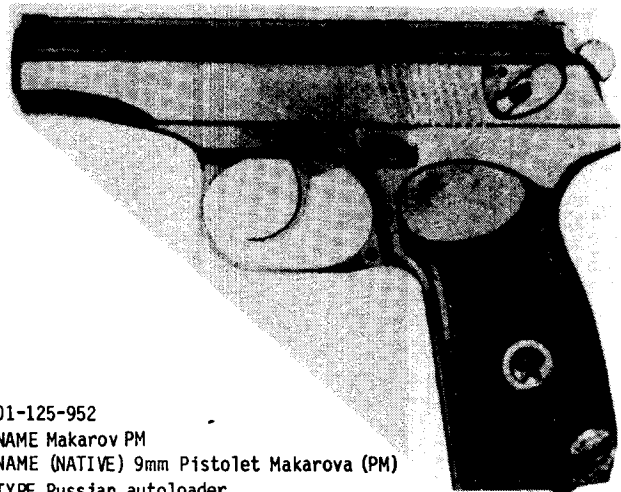


01-125-933  
 NAME Tokarev M1933  
 NAME (NATIVE) 7.62mm Pistolet Obr 1933 g, Tul'skiy Tokarev (TT)  
 TYPE Russian auto-loader  
 DATE ADOPTED 1933  
 CAL 7.62x25mm  
 LENGTH 19.5cm  
 E-FACTOR 9  
 MUZZLE VEL 1378 fps  
 WT (EMPTY) .769kg  
 WT (LOADED) .94kg  
 EFF RNG 50m  
 MAX RNG 1644m  
 TYPE 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.

01-113-949  
 NAME SIG P-210-2  
 NAME (NATIVE) Selbstlade-pistole Modell 49 (SP47/8)  
 TYPE Swiss auto-loader  
 DATE ADOPTED 1949  
 CAL 9x19mm  
 LENGTH 21.6cm  
 E-FACTOR 8  
 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

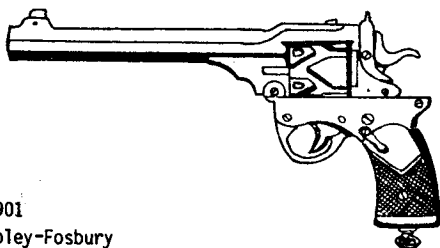
This pistol is considered to be the most accurate military issue handgun in the world today. The SIG is standard issue in the Swiss army. The weapon's close fitting of parts and careful design allow for excellent accuracy while minimizing jamming due to dirt build-up.



01-125-952  
 NAME Makarov PM  
 NAME (NATIVE) 9mm Pistolet Makarova (PM)  
 TYPE Russian auto-loader

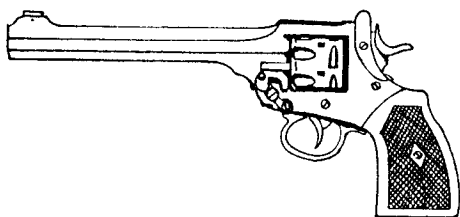
DATE ADOPTED 1952  
 CAL 9x18mm  
 LENGTH 16cm  
 E-FACTOR 8  
 MUZZLE VEL 1033 fps  
 WT (EMPTY) .68kg  
 WT (LOADED) .79kg  
 EFF RNG 40m  
 MAX RNG 1097m  
 TYPE OF FIRE Double-action semiautomatic  
 RATE OF FIRE 35 rpm  
 FEED DEVICE 8 round box magazine  
 FEED DEVICE WT .11kg  
 BASIC LOAD 3 magazines (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.



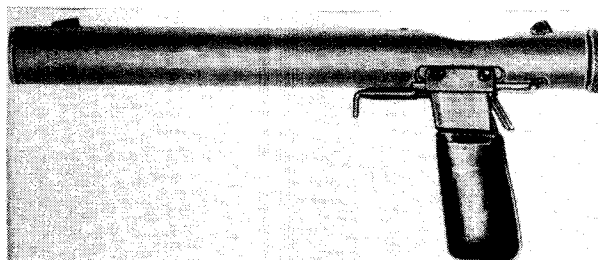
01-131-901  
 NAME Webley-Fosbury  
 NAME (NATIVE) Webley-Fosbury Self-cocking Revolver  
 TYPE British semiautomatic revolver  
 DATE ADOPTED 1901  
 CAL 11.43x19mmR  
 LENGTH 28cm  
 E-FACTOR 6  
 MUZZLE VEL 650 fps  
 WT (EMPTY) 1.25kg  
 WT (LOADED) 1.37kg  
 EFF RNG 50m  
 MAX RNG 793m  
 TYPE OF FIRE Single action self-cocking revolver  
 RATE OF FIRE 18 rpm  
 FEED DEVICE 6 round cylinder  
 FEED DEVICE WT 6 rds. .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 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  
 E-FACTOR 6  
 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 rds.) .12kg  
 BASIC LOAD 18 rounds  
 LOAD WT .36kg

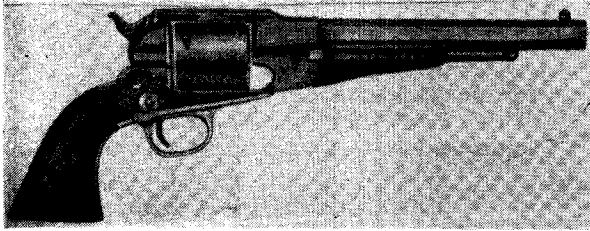
Prior to the acceptance of the Browning HP-35, this revolver was the standard issue sidearm of the British army. The revolver fires a very heavy, slow moving bullet that is now considered obsolete. The weapon is easy and quick to load due to the top break action of the Webley. To load or unload the weapon 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  
 E-FACTOR 5  
 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 rd. Internal magazine  
 FEED DEVICE WT .031kg  
 BASIC LOAD 6 rounds  
 LOAD WT .031kg

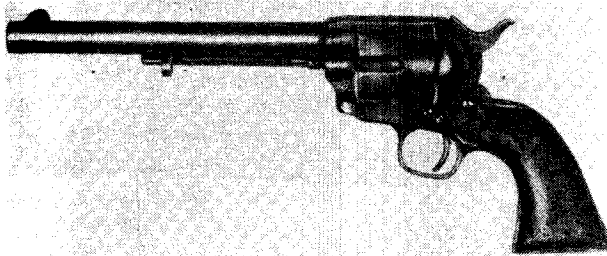
This unusual pistol was specifically designed for use as a "silent" assassination weapon. The action of the pistol is a manual, twist-bolt repeater, using a subsonic round and a built-in silencer to quiet the weapon's firing. The result of this design is a very quiet weapon that is difficult to locate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





01-132-860  
 NAME .44 New Model Army  
 TYPE American percussion revolver  
 DATE ADOPTED 1860  
 CAL 11.2mm  
 LENGTH 34.3cm  
 E-FACTOR 10  
 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

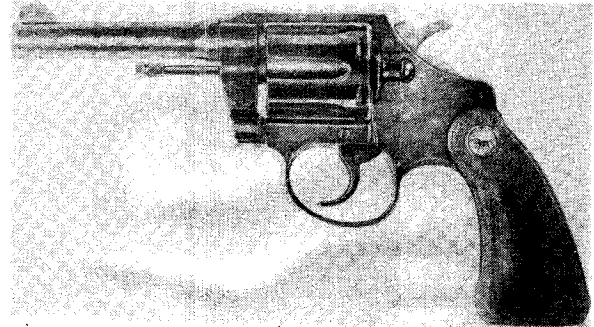
One of the first widely used revolvers, This weapon was designed before metallic cartridges were in wide use. This type of weapon is known as a "cap and ball" black powder firearm. Cap and ball means that the cylinder of the revolver is first loaded with black powder and a lead bullet is pressed down 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 back 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  
 E-FACTOR w/12cm bbl 8, w/14cm bbl 8, w/19.1cm bbl 9  
 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 rds .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 28.6cm  
 E-FACTOR w/5cm bbl\* 6, w/10.2cm bbl 6, w/12.7cm bbl 7, w/15.2cm bbl 7  
 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 snubnosed 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.



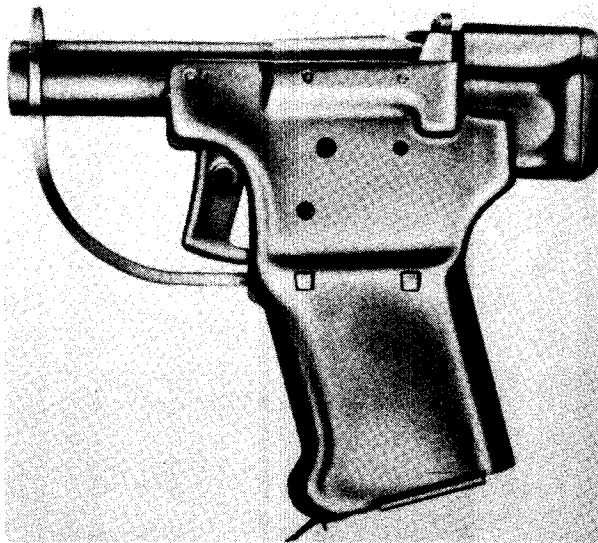
01-132-921  
NAME Colt M1911A1  
TYPE American autoloader  
DATE ADOPTED 1921  
CAL 11.43x23mm  
LENGTH 21.9cm  
E-FACTOR 8  
MUZZLE VEL 860 fps  
WT (EMPTY) 1.106kg  
WT (LOADED) 1.36kg  
EFF RNG 50m  
MAX RNG 1463m  
TYPE OF FIRE Semiautomatic  
RATE OF FIRE 35 rpm  
FEED DEVICE 7 round box magazine  
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  
E-FACTOR w/8.9cm bbl 9, w/12.7cm bbl 9, w/15.2cm bbl 10, w/21.3cm bbl 10  
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  
E-FACTOR 8  
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 Chiefs Special  
TYPE American revolver  
DATE ADOPTED 1950  
CAL 9x29mmR  
LENGTH 16.5cm  
E-FACTOR 8  
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 Chiefs 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.



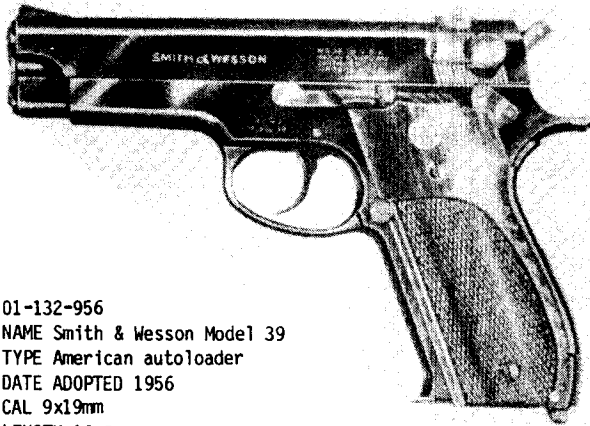
01-132-955  
NAME Colt Python  
TYPE American revolver  
DATE ADOPTED 1955  
CAL 9x33mmR  
LENGTH w/6.6cm bbl 19.9cm, w/10.2cm bbl 23.5cm, w/15.2cm bbl 28.5cm, w/20.3cm bbl 33.6cm  
E-FACTOR w/6.6cm bbl 8, w/10.2cm bbl 9, w/15.2cm bbl 9, w/20.3cm bbl 10  
MUZZLE VEL w/6.6cm bbl 1086 fps, w/10.2cm bbl 1179 fps, w/15.2cm bbl 1259 fps, w/20.3cm bbl 1310  
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.



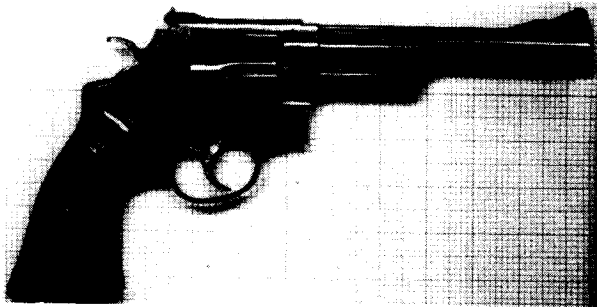
01-132-955a  
NAME Smith & Wesson Model 19 Combat Magnum  
TYPE American revolver  
DATE ADOPTED 1955  
CAL 9x33mmR  
LENGTH w/6.6cm bbl 19cm, w/10.2cm bbl 24.1cm, w/15.3cm bbl 29.2cm  
E-FACTOR w/6.6cm bbl 8, w/10.2cm bbl 9, w/15.3cm bbl 10  
MUZZLE VEL w/6.6cm bbl 1086 fps, w/10.2cm bbl 1206 fps, w/15.3cm 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 auto-loader  
 DATE ADOPTED 1956  
 CAL 9x19mm  
 LENGTH 18.9cm  
 E-FACTOR 9  
 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

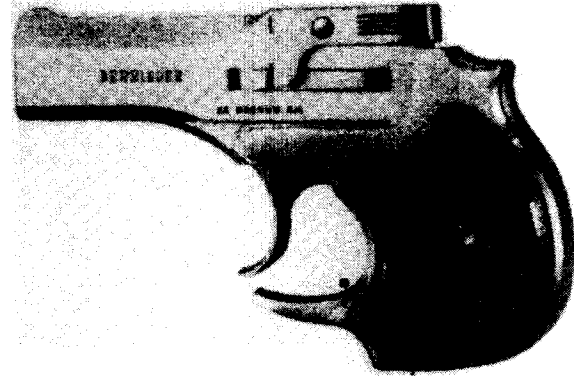
This weapon was developed by Smith & Wesson as a possible replacement for the U. S. government's M1911A1 pistol. Though turned down as an issue military weapon, the M39 is an excellent handgun for general use. The M39 is available in either of two different frames, a lightweight alloy frame (the M39) 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  
 E-FACTOR w/10.2cm bbl 12, w/16.5cm bbl 13, w/21.3cm bbl 13  
 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

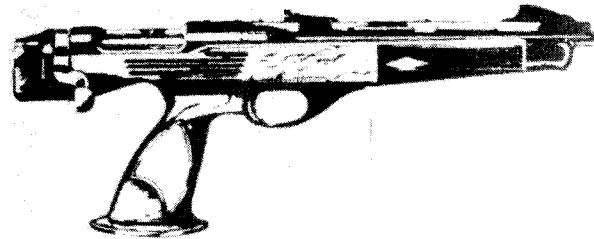
RATE OF FIRE 24 rpm  
 FEED DEVICE 6 round cylinder  
 FEED DEVICE WT 6 rounds .14kg  
 BASIC LOAD 24 rounds  
 LOAD WT .56kg

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.



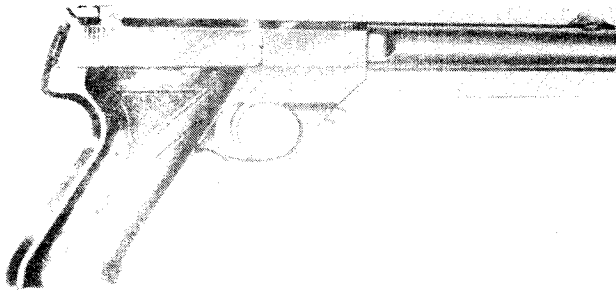
01-132-963  
 NAME High Standard Derrenger  
 TYPE American pistol  
 DATE ADOPTED 1963  
 CAL 5.7x24.5mmR  
 LENGTH 12.5cm  
 E-FACTOR 7  
 MUZZLE VEL 1350 fps  
 WT (EMPTY) .310kg  
 WT (LOADED) .318kg  
 EFF RNG 15m  
 MAX RNG 1450m  
 TYPE OF FIRE Double action 2 shot repeater  
 RATE OF FIRE 8 rpm  
 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 barrelled pistol chambered for the arm. 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.



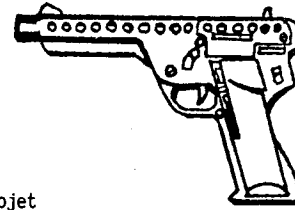
01-132-963a  
 NAME Remington XP-100  
 TYPE American pistol  
 DATE ADOPTED 1963  
 CAL 5.56x36mm  
 LENGTH 42.5cm  
 E-FACTOR 12  
 MUZZLE VEL 2650 fps  
 WT (EMPTY) 1.7kg  
 WT (LOADED) 1.71kg  
 EFF RNG 300m  
 MAX RNG 2143m  
 TYPE OF FIRE bolt action single shot  
 RATE OF FIRE 5 rpm  
 FEED DEVICE single round  
 FEED DEVICE WT .01g  
 BASIC LOAD 50 rounds  
 LOAD WT .5kg

A specialized weapon designed for long range accurate fire, the XP100 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.



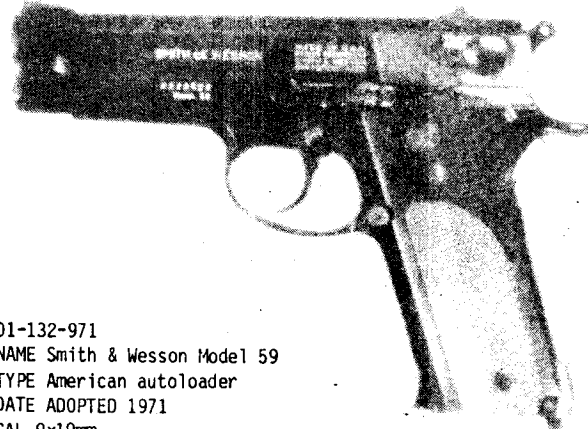
01-132-964  
 NAME High Standard .22  
 TYPE American autoloader  
 DATE ADOPTED 1964  
 CAL 5.7x17.5mmR  
 LENGTH 22.8cm  
 E-FACTOR 6  
 MUZZLE VEL 975 fps  
 WT (EMPTY) 1.105kg  
 WT (LOADED) 1.262kg  
 EFF RNG 40m  
 MAX RNG 1050m  
 TYPE OF FIRE semiautomatic  
 RATE OF FIRE 40 rpm  
 FEED DEVICE 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  
 E-FACTOR 13  
 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 rds.) .122kg  
 BASIC LOAD 21 rounds  
 LOAD WT .336kg

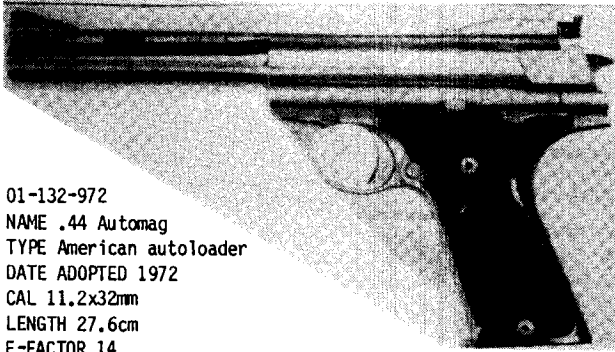
This is a pistol that fires a self-contained rocket. When the weapon is fired, the entire cartridge (rocket) is launched leaving no cartridge case to be ejected. The rocket is fired by the hammer of the pistol striking the nose of the rocket back onto the firing pin. The rocket is ignited by a standard 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 gyrojets 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  
 E-FACTOR 9  
 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 M59 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  
 E-FACTOR 14  
 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 its 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  
 E-FACTOR 9  
 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

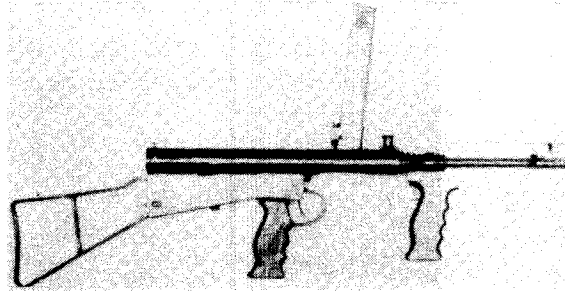
This pistol was especially designed for use as a concealed defensive weapon for off duty policemen. Instead of using the revolving cylinder of a revolver, the C.O.P. has 4 short barrels and a rotating firing pin on the hammer. The action is double action only and each time the trigger is pulled the hammer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

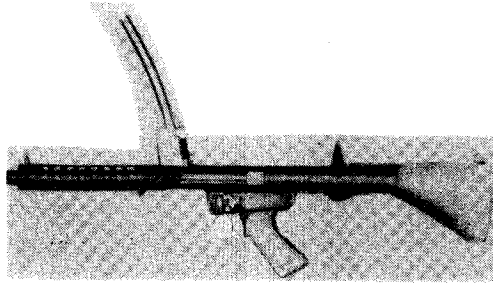
With new developments in design and ammunition technology, the submachinegun is even more compact and easy to use than it was twenty years ago. With the advent of specialist strike teams and antiterrorist groups, the handiness and firepower of the submachinegun ensure that it will be a part of the world's 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  
 E-FACTOR 9  
 MUZZLE VEL 1200 fps  
 WT (EMPTY) 4.23kg  
 WT (LOADED) 4.86kg

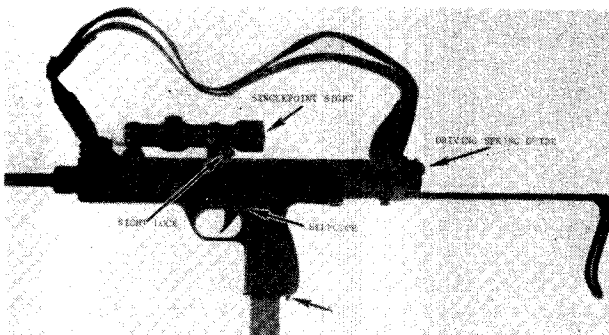
EFF RNG 200m  
 MAX RNG 2080m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 700 rpm  
 FEED DEVICE 33 rd. box magazine  
 FEED DEVICE WT .63kg  
 BASIC LOAD 6 magazines (198 rounds)  
 LOAD WT 3.78kg

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  
 E-FACTOR 9  
 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 rd. box magazine  
 FEED DEVICE WT .726kg  
 BASIC LOAD 6 magazines (204 rounds)  
 LOAD WT 4.356kg

This weapon was developed to replace the World WarII weapons still in service with the Australian military. Unusual in appearance weapon, 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  
 E-FACTOR 9  
 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 rd.) .5kg, (32 rd.) .62kg  
 BASIC LOAD 8-32 rd. 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 a 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  
 E-FACTOR 6  
 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  
 E-FACTOR 11 (7)  
 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

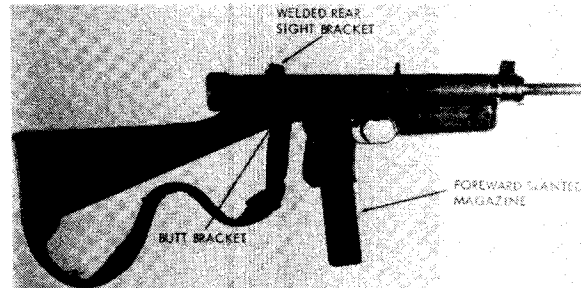
This submachinegun was designed for silenced operation and is not based on another design. The weapon superficially resembles an AK-47 with the safety/selector in the same location. The Type 64 will fire standard 7.62x25mm ammunition though the silencing action works best with a special heavy bullet 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  
 E-FACTOR 9  
 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 rd. box magazine  
 FEED DEVICE WT .6kg  
 BASIC LOAD 4 mags (160 rounds)  
 LOAD WT 2.4kg

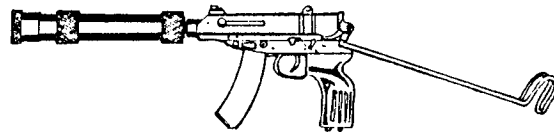
These submachineguns were developed in Czechoslovakia to replace all the World War II weapons still in the Czech military. The weapons are effectively the same with the primary difference being that the model 25 has a metal

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  
 E-FACTOR 12  
 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 rd. 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 metal folding stock.

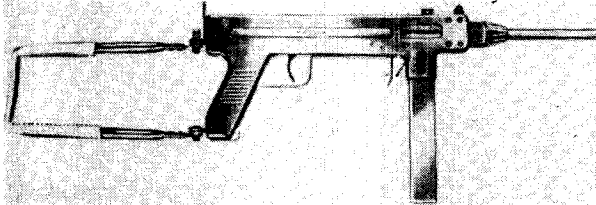


02-029-961  
 NAME Vz 61 Skorpio  
 NAME (NATIVE) Samopal 62 "Skorpion"  
 TYPE Czechoslovakian machinepistol  
 DATE ADOPTED 1961  
 CAL 7.63x17mm  
 LENGTH 26.8/51cm (w/suppressor, 47.2/71.6cm)  
 E-FACTOR 7  
 MUZZLE VEL 1040 fps  
 WT (EMPTY) 1.29kg  
 WT (LOADED) 1.55kg (w/20 rd. mag.)  
 EFF RNG 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 rd.) .16kg (20 rd.) .41kg  
 BASIC LOAD 1-10 rd., 4-20 rd. 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

E-FACTOR 9

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

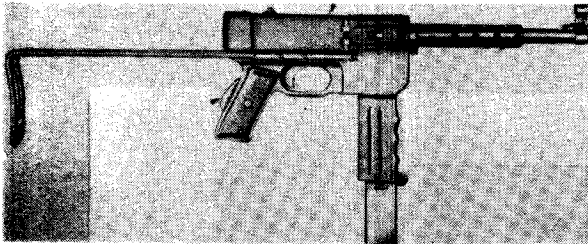
FEED DEVICE 32 round magazine

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

E-FACTOR 9

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

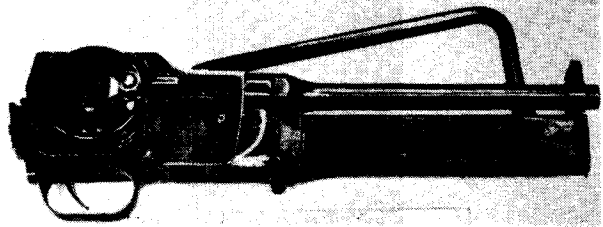
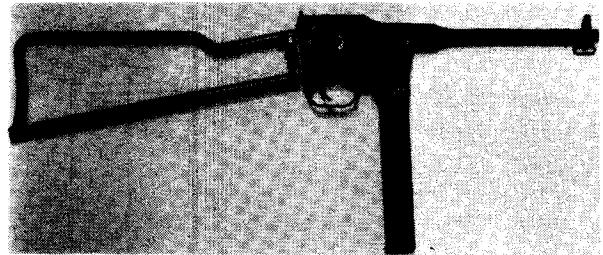
FEED DEVICE 32 round box magazine

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

E-FACTOR 9

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

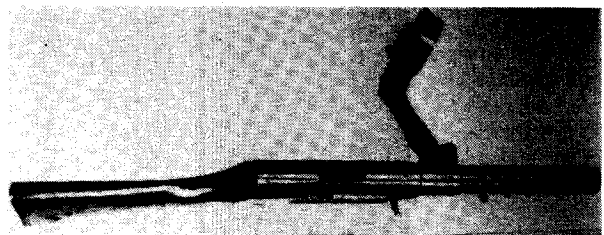
FEED DEVICE 32 rd. box magazine

FEED DEVICE WT .62kg

BASIC LOAD 6 magazines (192 rounds)

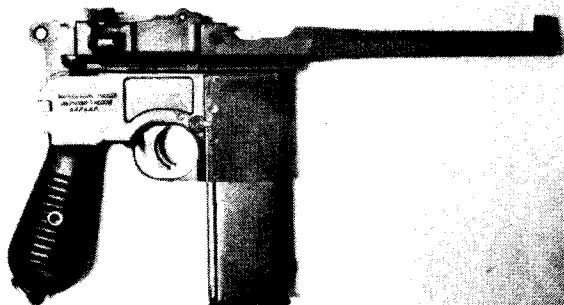
LOAD WT 3,72kg

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.



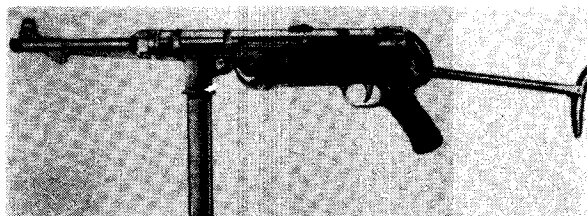
02-040-916  
 NAME MP18-1  
 NAME (NATIVE) Machinenpistole 18/1  
 TYPE German submachinegun  
 DATE ADOPTED 1916  
 CAL 9x19mm  
 LENGTH 81.2  
 E-FACTOR 9  
 MUZZLE VEL 1250 fps  
 WT (EMPTY) 4.26kg  
 WT (LOADED) 5.327kg  
 EFF RNG 200m  
 MAX RNG 2166m  
 TYPE OF FIRE Full automatic  
 RATE OF FIRE (A) 120 rpm (CYCLIC) 400 rpm  
 FEED DEVICE 32 rd. 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.



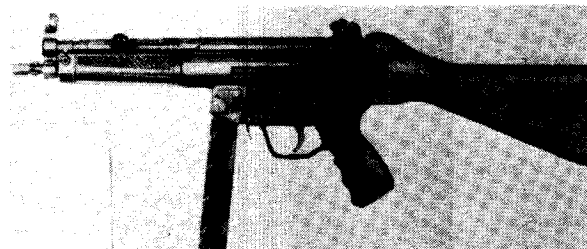
02-040-932  
 NAME Mauser M32 or M712  
 NAME (NATIVE) Schnellfeuer-Selbstladepistole M32  
 TYPE German machinepistol  
 DATE ADOPTED 1932  
 CAL 7.62x25mm  
 LENGTH 29.9/64.7cm  
 E-FACTOR 9  
 MUZZLE VEL 1400 fps  
 WT (EMPTY) 1.13kg  
 WT (LOADED) 1.75kg (w/20 rd. mag.)  
 EFF RNG 50m (w/stock 300 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 rd.) .55kg, (20 rd.) .62kg  
 BASIC LOAD 1-10 rd. & 4-20 rd. 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).



02-040-940  
 NAME MP40  
 NAME (NATIVE) Maschinenpistole 40  
 TYPE German submachinegun  
 DATE ADOPTED 1940  
 CAL 9x19mm  
 LENGTH 63/83.3cm  
 E-FACTOR 9  
 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.



01-041-965  
 NAME MP5A2  
 NAME (NATIVE) Maschinenpistole 5A2  
 TYPE German submachinegun  
 DATE ADOPTED 1965  
 CAL 9x19mm  
 LENGTH 68cm  
 E-FACTOR 10  
 MUZZLE VEL 1312 fps  
 WT (EMPTY) 2.44kg  
 WT (LOADED) 2.96kg  
 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 rd.) .28kg, (30 rd.) .52kg  
 BASIC LOAD 8-30 round magazines (240 rounds)  
 LOAD WT 4.16kg

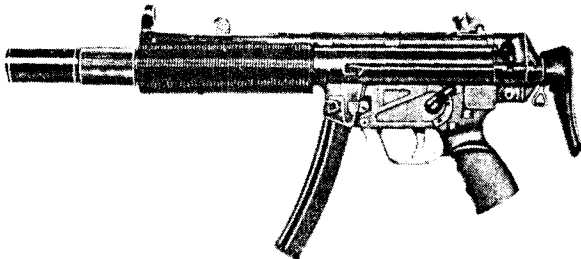
This is a submachinegun version of the German G-3 rifle.

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  
 E-FACTOR 9  
 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

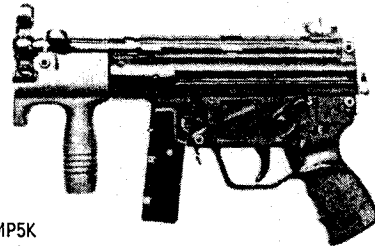
This machine pistol is also a large, double-action handgun with its light weight due to the VP-70 being primarily made of alloys and plastic. Though the VP-70 can fire full automatic, the pistol can only do this when it is fitted with its holster/stock (see Mauser M1896, 01-041-896, stock wt. .45kg). 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  
 E-FACTOR 7  
 MUZZLE VEL 935 fps

WT (EMPTY) 2.0kg  
 WT (LOADED) 2.52kg  
 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 rd.) .28kg, (30 rd.) .52kg  
 BASIC LOAD 5-30 rd. 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 GS-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  
 E-FACTOR 9  
 MUZZLE VEL 1230 fps  
 WT (EMPTY) 2kg  
 WT (LOADED) 2.28kg (15 rd. 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 rd. box magazine  
 FEED DEVICE WT (15 rd.) .28kg (30 rd.) .52kg  
 BASIC LOAD 5 magazines (150 rounds)  
 LOAD WT (2.6kg)

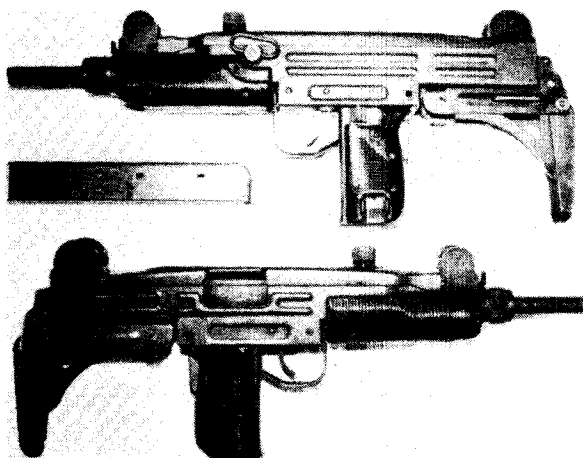
This is an extremely shortened version of the MP5 submachinegun. The weapon was designed for use by antiterrorist teams in small areas. The MP5K has no stock and a vertical front grip for easier control when firing. The weapon works in the same manner as the MP5, firing from a closed bolt, and, combined 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  
 E-FACTOR 15  
 MUZZLE VEL 2295 fps

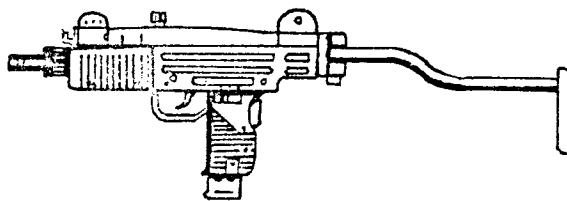
WT (EMPTY) 3.27kg  
 WT (LOADED) 4.097kg  
 EFF RNG 300m  
 MAX RNG 1994m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 600 rpm  
 FEED DEVICE 30 rd. box magazine  
 FEED DEVICE WT .827kg  
 BASIC LOAD 5 magazines (150 rounds)  
 LOAD WT 4.135kg

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.



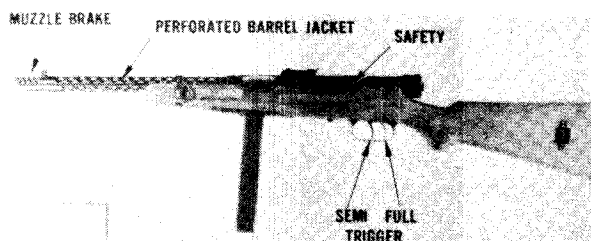
02-058-951  
 NAME UZI  
 TYPE Israeli submachinegun  
 DATE ADOPTED 1951  
 CAL 9x19mm  
 LENGTH 47/64cm  
 E-FACTOR 9  
 MUZZLE VEL 1312 fps  
 WT (EMPTY) 3.6kg  
 WT (LOADED) 4.22kg (32 rd. mag)  
 EFF RNG 200m  
 MAX RNG 2012m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 64 rpm (A) 128 rpm (CYCLIC) 600 rpm  
 FEED DEVICE 25 or 32 rd. box magazine  
 FEED DEVICE WT (25 rd.) .5kg, (32 rd.) .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 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.



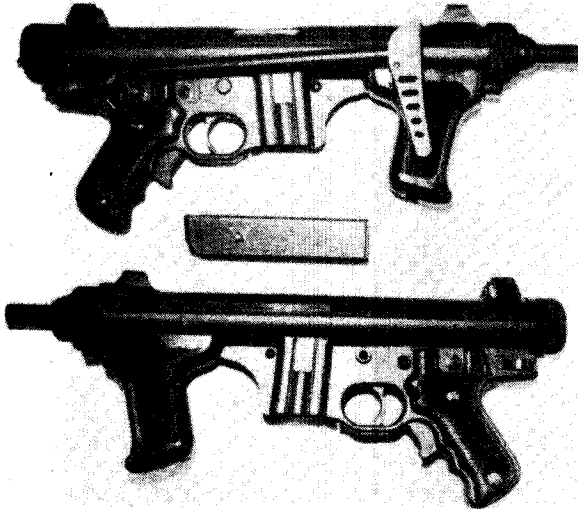
02-058-982  
 NAME MINI-UZI  
 TYPE Israeli submachinegun  
 DATE ADOPTED 1982  
 CAL 9x19mm  
 LENGTH 36/60cm  
 E-FACTOR 9  
 MUZZLE VEL 1148 fps  
 WT (EMPTY) 2.65kg  
 WT (LOADED) 3.1kg  
 EFF RNG 150m  
 MAX RNG 1005m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 64 rpm (A) 128 rpm (CYCLIC) 1200 rpm  
 FEED DEVICE 20, 25, or 32 round box magazine  
 FEED DEVICE WT (20 rd) .45kg, (25 rd) .5kg, (32 rd) .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  
 E-FACTOR 10  
 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 rd. 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.

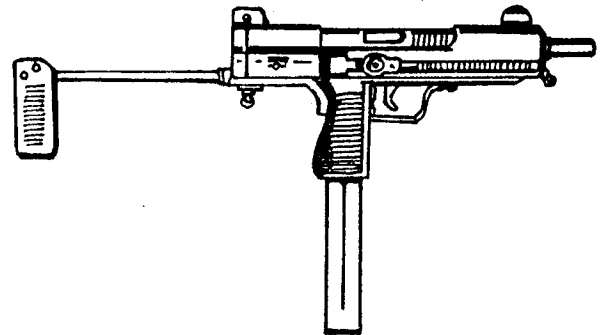


02-059-980  
 NAME Beretta M93R  
 TYPE Italian machine pistol  
 DATE ADOPTED 1980  
 CAL 9x19mm  
 LENGTH 24cm (w/stock) 43.5/60.8cm  
 E-FACTOR 9  
 MUZZLE VEL 1230 fps  
 WT (EMPTY) 1.16kg (w/stock 1.43kg)  
 WT (LOADED) 1.453kg  
 EFF RNG 50m (100m w/stock)  
 MAX RNG 2131m  
 TYPE OF FIRE Selective, Double action, burst control  
 RATE OF FIRE (SS) 35 rpm (A) 110 rpm (Cyclic)  
 FEED DEVICE 20 rd. 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.

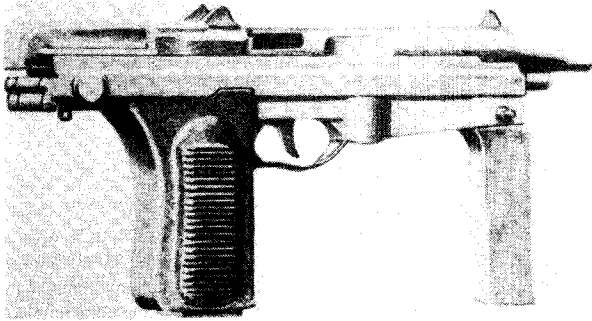
02-059-959  
 NAME Beretta M12  
 NAME (NATIVE) Pistola Mitragliatrice Beretta Modello 12  
 TYPE Italian submachinegun  
 DATE ADOPTED 1959  
 CAL 9x19mm  
 LENGTH 41.8/64.5cm  
 E-FACTOR 9  
 MUZZLE VEL 1250 fps  
 WT (EMPTY) 3kg  
 WT (LOADED) 3.73kg (w/40 rd. mag.)  
 EFF RNG 200m  
 MAX RNG 1280m  
 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 rd.) .43kg, (32 rd.) .61kg, (40 rd.) .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.



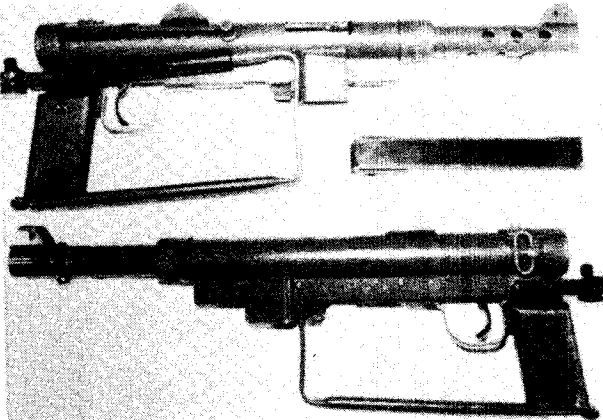
02-079-973  
 NAME HM-3  
 NAME (NATIVE) Pistola Ametrallador HM-3  
 TYPE Mexican submachinegun  
 DATE ADOPTED 1973  
 CAL 9x19mm  
 LENGTH 39.5/63.5cm  
 E-FACTOR 9  
 MUZZLE VEL 1280 fps  
 WT (EMPTY) 2.98kg  
 WT (LOADED) 3.635kg  
 EFF RNG 200m  
 MAX RNG 2200m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC) 600 rpm  
 FEED DEVICE 32 rd. 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.



02-097-963  
 NAME PM-63  
 NAME (NATIVE) Pistolet Maszynowy wz 63 RAK  
 TYPE Polish machinepistol  
 DATE ADOPTED 1963  
 CAL 9x19mm  
 LENGTH 33.3/58.3cm  
 E-FACTOR 8  
 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 rd.) .25kg  
 BASIC LOAD 4-25 rd. magazines (100 rounds)  
 LOAD WT 1.0kg

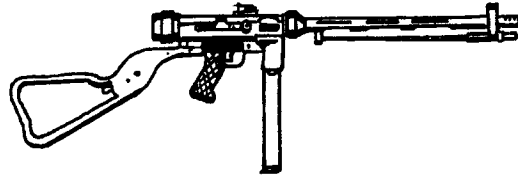
This Polish submachinegun, also known as the Wz-63, is easily small enough to be classified as a machine pistol. The PM-63 has a progressive trigger (see Sidewinder SS-1, 02-132-978) that simplifies firing. There is a handgrip at the front of the weapon that folds down, allowing a secure grip for both 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  
 E-FACTOR 9  
 MUZZLE VEL 1198 fps  
 WT (EMPTY) 3.43kg

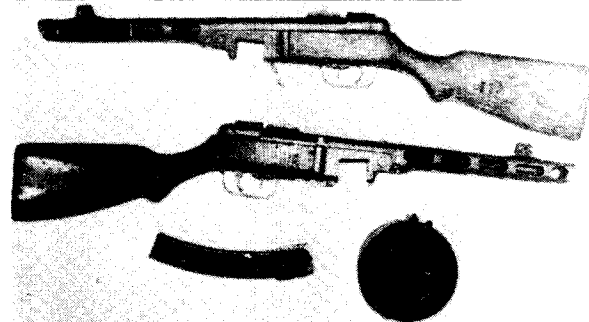
WT (LOADED) 4.2kg (w/32 rd. mag.)  
 EFF RNG 200m  
 MAX RNG 1230m  
 TYPE OF FIRE Full automatic  
 RATE OF FIRE (A) 144 rpm (CYCLIC) 600 rpm  
 FEED DEVICE 36 or 50 round box magazine  
 FEED DEVICE WT (36 rd.) .77kg, (50 rd.) 1.019kg  
 BASIC LOAD 8-36 round magazines (288 rounds)  
 LOAD WT 6.16kg

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  
 E-FACTOR 10  
 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 (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-Pulenyot Shpagina obr 1941 G  
 TYPE Russian submachinegun  
 DATE ADOPTED 1941  
 CAL 7.62x25mm

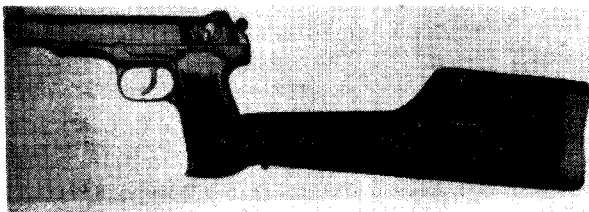
LENGTH 84.2cm  
 E-FACTOR 10  
 MUZZLE VEL 1600 fps  
 WT (EMPTY) 3.5kg  
 WT (LOADED) 5.3kg (w/71 rd. drum)  
 EFF RNG 200m  
 MAX RNG 1645m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 40 rpm (A) 105 rpm (CYCLIC) 900 rpm  
 FEED DEVICE 35 round box or 71 round drum magazine  
 FEED DEVICE WT (35 rd.) .6kg, (71 rd.) 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 1943G  
 TYPE Russian submachinegun  
 DATE ADOPTED 1943  
 CAL 7.62x25mm  
 LENGTH 61.5/82cm  
 E-FACTOR 10  
 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 rd. 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  
 E-FACTOR 8  
 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

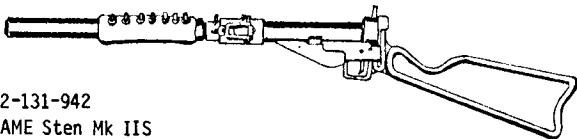
A true "machine pistol," this weapon outwardly resembles the Colt M1911A1. At one time very popular among KGB agents, the Stechkin is capable of full automatic fire. Due to its high cyclic rate of fire and because its recoil makes the Stechkin very difficult to control on full automatic fire, there is 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  
 E-FACTOR 9  
 MUZZLE VEL 1200 fps  
 WT (EMPTY) 2.8kg  
 WT (LOADED) 3.44kg  
 EFF RNG 200m  
 MAX RNG 1230m  
 TYPE OF FIRE Selective

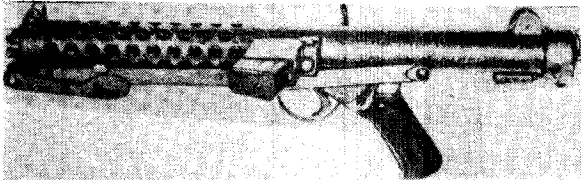
RATE OF FIRE (SS) 40 rpm (A) 128 rpm (CYCLIC) 540 rpm  
 FEED DEVICE 32 round box magazine  
 FEED DEVICE WT .64kg  
 BASIC LOAD 8 magazines (256 rounds)  
 LOAD WT 5.12kg

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  
 E-FACTOR 8  
 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

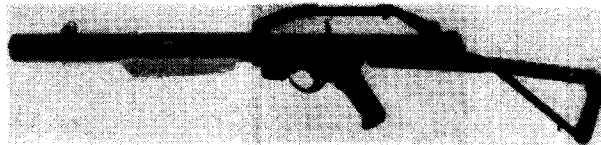
This silenced version of the Sten MkII is considered one of the best suppressed weapons of WWII. As the silencer gets very hot when used, there is an insulating jacket around the barrel to prevent burns to the operator. The Sten MkIIS is best fired on single shot for maximum noise suppression as well 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  
 E-FACTOR 9  
 MUZZLE VEL 1280 fps  
 WT (EMPTY) 2.72kg  
 WT (LOADED) 3.47kg  
 EFF RNG 200m

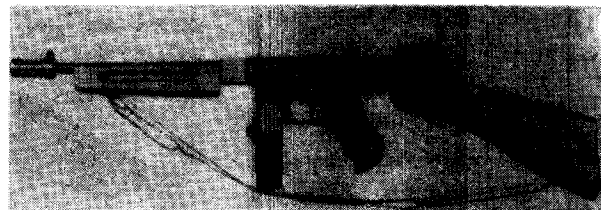
MAX RNG 1315m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 40 rpm (A) 102 rpm (CYCLIC) 550 rpm  
 FEED DEVICE 34 round box magazine  
 FEED DEVICE WT .75kg  
 BASIC LOAD 8 magazines (272 rounds)  
 LOAD WT 6kg

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  
 E-FACTOR 8  
 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 magazines  
 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.

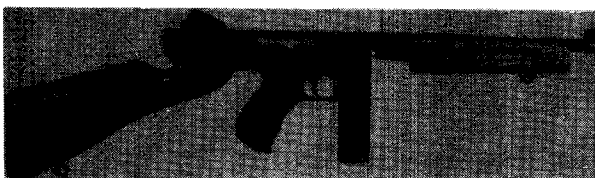


02-132-938  
 NAME Thompson M1928A1  
 TYPE American submachinegun  
 DATE ADOPTED 1938  
 CAL 11.43x23mm  
 LENGTH 85.2cm  
 E-FACTOR 8  
 MUZZLE VEL 920 fps  
 WT (EMPTY) 4.9kg



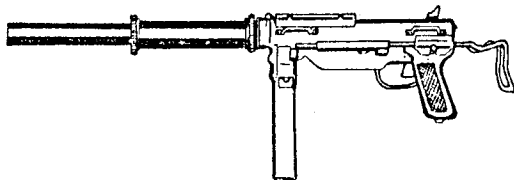
WT (LOADED) 7.13kg (w/50 rd drum)  
 EFF RNG 200m  
 MAX RNG 1600m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 40rpm (A) 120 rpm (CYCLIC) 700 rpm  
 FEED DEVICE 20 or 30 round box, 50 or 100 round drum magazines  
 FEED DEVICE WT (20 rd.) .57kg, (30 rd.) .73kg, (50 rd.) 2.23kg, (100 rd) 3.86kg  
 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  
 E-FACTOR 9  
 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 rd.) .57kg, (30 rd.) .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  
 E-FACTOR 7  
 MUZZLE VEL 768 fps

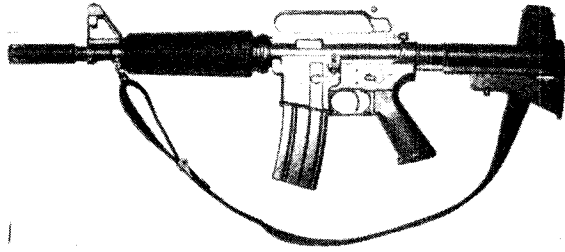
WT (EMPTY) 4.3kg  
 WT (LOADED) 5.28kg  
 EFF RNG 150m  
 MAX RNG 1296m  
 TYPE OF FIRE Full automatic  
 RATE OF FIRE (A) 120 rpm (CYCLIC) 450 rpm  
 FEED DEVICE 30 round box magazine  
 FEED DEVICE WT .98kg  
 BASIC LOAD 8 magazines (240 rounds)  
 LOAD WT 7.84kg

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.



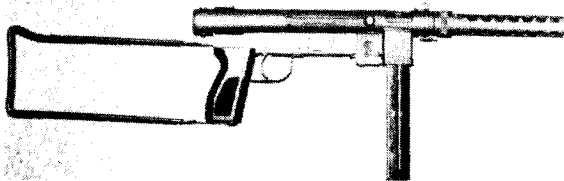
02-132-944  
 NAME M3A1  
 TYPE American submachinegun  
 DATE ADOPTED 1944  
 CAL 11.43x23mm  
 LENGTH 57.9/75.7cm  
 E-FACTOR 8  
 MUZZLE VEL 918 fps  
 WT (EMPTY) 3.47kg  
 WT (LOADED) 4.45kg  
 EFF RNG 200m  
 MAX RNG 1550m  
 TYPE OF FIRE Full automatic  
 RATE OF FIRE (A) 120 rpm (CYCLIC) 450 rpm  
 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  
 E-FACTOR 12  
 MUZZLE VEL 2700 fps  
 WT (EMPTY) 2.78kg  
 WT (LOADED) 3.23kg (w/30 rd 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 rd.) .318kg, (30 rd) .45kg, (40 rd) .74kg  
 BASIC LOAD 12 - 30 round magazines (360 rounds)  
 LOAD WT 5.4kg

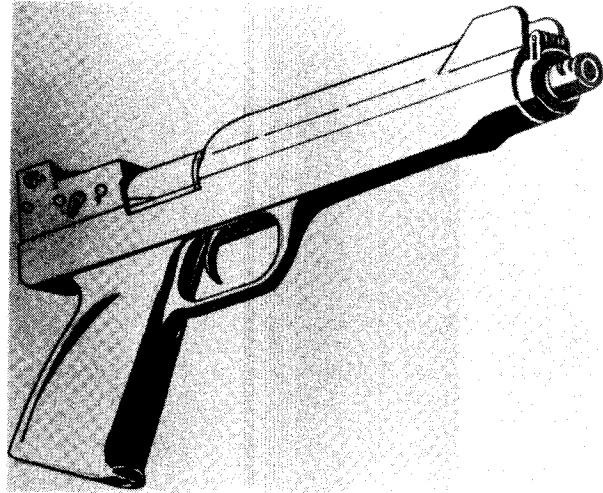
The XM177E2, also called the "Shorty 16," is a shortened version of the standard M16A1 rifle. Due to the weapon having a very short (27.9cm) barrel and yet still firing the full sized rifle cartridge, the XM177E2 has a very loud and bright muzzle blast. To alleviate this problem the barrel is fitted 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  
 E-FACTOR 9  
 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

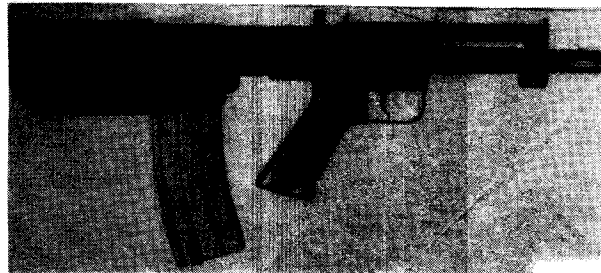
Manufactured in the mid-1960's as a possible military issue weapon, the M76 follows very closely the design of the Swedish M45. The weapon is simply made and is light and easy to carry. The M76 was featured in the movie "The Omega Man" starring Charlton Heston. In the movie the weapon had a flashlight 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  
 E-FACTOR 9  
 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  
 E-FACTOR 13  
 MUZZLE VEL 2915 fps  
 WT (EMPTY) 2.38kg  
 WT (LOADED) 2.83kg (w/30 rd 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 rd.) .318kg, (30 rd.) .45kg, (40 rd.)  
 74kg  
 BASIC LOAD 6-30 rd. 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, 01-132-978). 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.



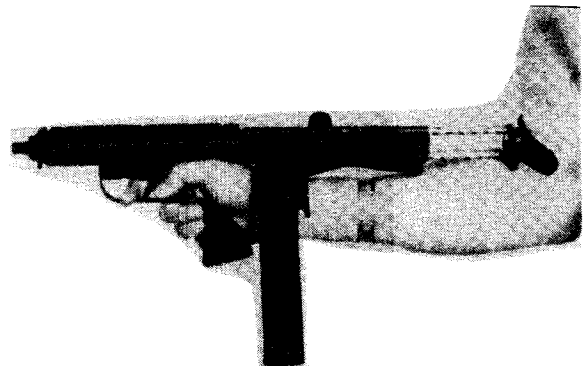
02-132-971  
 NAME Ingram M10  
 TYPE American submachinegun  
 DATE ADOPTED 1971  
 CAL 9x19 (11.43x23mm)  
 LENGTH 26.9/54.8cm (w/suppressor 54.5/79.8cm)  
 E-FACTOR 9  
 MUZZLE VEL 1200 fps (918 fps)  
 WT (EMPTY) 2.84kg  
 WT (LOADED) 3.46kg (3.818kg)  
 EFF RNG 100m  
 MAX RNG 2012m (1922m)  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS)40 (40) (A)96 (90) (CYCLIC)1090 (1145)  
 FEED DEVICE 32 rd. box magazine (30 rd. box magazine)  
 FEED DEVICE WT .62kg (978kg)  
 BASIC LOAD 12 magazines (384 rds.) (8 mags. 240 rds.)  
 LOAD WT 7.44kg (7.824kg)

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

02-132-971a  
 NAME Ingram M11  
 TYPE American submachinegun  
 DATE ADOPTED 1971  
 CAL 9x17mm  
 LENGTH 22.2/46cm (44/65cm w/suppressor)  
 E-FACTOR 7  
 MUZZLE VEL 960 fps  
 WT (EMPTY) 1.59kg  
 WT (LOADED) 2.1kg (w/32 rd 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 rd.) .282kg, (32 rd.) 51kg  
 BASIC LOAD 8-32 round magazines (256 rounds)  
 LOAD WT 4.08kg

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.



02-132-978

NAME Sidewinder SS-1

TYPE American submachinegun

DATE ADOPTED 1978

CAL 9x19mm

LENGTH 45.7/61cm

E-FACTOR 9

MUZZLE VEL 1200 fps

WT (EMPTY) 2.495kg

WT (LOADED) (32 rd mag) 3.175kg

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 rd.) .68kg, (45 rd.) .907kg

BASIC LOAD 8-32 rd. 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-10

TYPE Vietnamese submachinegun

DATE ADOPTED c. 1960

CAL 7.62x25mm

LENGTH 57.1/75.6cm

E-FACTOR 10

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 rd. 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

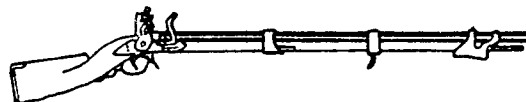
The first shoulder weapons were little more than iron pipes mounted on wood stocks. The early matchlocks were so heavy that they needed a forked stick to aim them. With the invention of the flintlock, military longarms became considerably more efficient.

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 firing 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

E-FACTOR 8

MUZZLE VEL 580 fps

WT (EMPTY) 5.03kg

WT (LOADED) 5.067kg

EFF RNG 50m

MAX RNG 300m

TYPE OF FIRE Flintlock muzzle loader

RATE OF FIRE (SS) 12 rpm

FEED DEVICE ball and loose powder

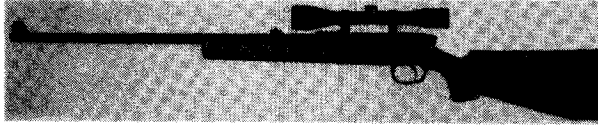
FEED DEVICE WT .037kg per round (31g ball, 6g powder)

BASIC LOAD 50 rounds (paper cartridges)

LOAD WT 1.85kg

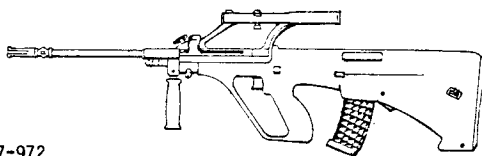
A musket is a smoothbore shoulder arm and this model is representative of the type. A single shot weapon, the musket was fitted with a long bayonet for close in work. The musket

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) Scharfschutzen Gewehr 69  
 TYPE Austrian rifle  
 DATE ADOPTED 1969  
 CAL 7.62x51mm  
 LENGTH 113cm  
 E-FACTOR 17  
 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 rd) .19kg, (10 rd) .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  
 E-FACTOR 14  
 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

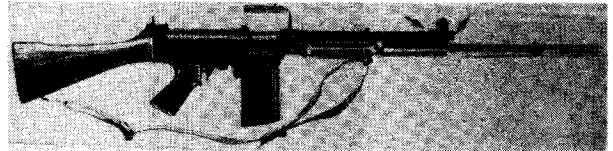
The Styer is a new development in a weapon where the same action may serve as a carbine, rifle, or light machinegun by simply changing their barrels. A very futuristic appearing weapon, the AUG is built in a "bull pup" configuration with

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  
 MUZZLE VEL 3085 fps  
 E-FACTOR 14  
 EFF RNG 300m  
 MAX RNG 2495

AUG RIFLE (see above)

AUG Light Machinegun  
 LENGTH 89 cm  
 WT (EMPTY) 3.43kg (w/bipod)  
 MUZZLE VEL 3208 fps  
 E-FACTOR 15  
 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  
 E-FACTOR 17  
 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  
 E-FACTOR 15  
 MUZZLE VEL 3200 fps  
 WT (EMPTY) 3kg  
 WT (LOADED) 3.55kg (w/30 rd. 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 rd.) .39kg, (30 rd.) .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  
 E-FACTOR 15  
 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

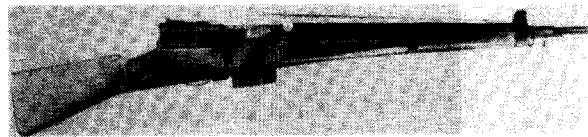
Presently the standard issue weapon of the Czechoslovakian military, the Vz-58 bears an outside resemblance to the AK-47. Though resembling an AK-47 externally, the Vz-58 is internally very different using another locking, trigger, and control system. The Vz-58 is available in two models, the Vz-58P 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

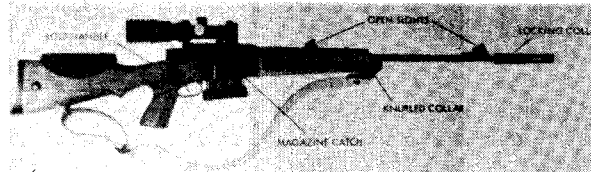
TYPE Finnish rifle  
 DATE ADOPTED 1982  
 CAL 5.56x45mm  
 LENGTH 71cm  
 E-FACTOR 13  
 MUZZLE VEL 2900 fps  
 WT (EMPTY) 3.3kg  
 WT (LOADED) 3.92kg (w/30 rd. mag.)  
 EFF RNG 300m  
 MAX RNG 2345m  
 TYPE OF FIRE Semiautomatic  
 RATE OF FIRE (SS) 40 rpm  
 FEED DEVICE 15 or 30 round box magazine  
 FEED DEVICE WT (15 rd.) .32kg, (30 rd.) .62kg  
 BASIC LOAD 6-30 rd. 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  
 E-FACTOR 17  
 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

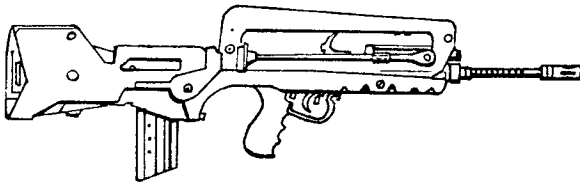
This is presently the standard rifle of the French Army. Modified from the earlier post-WWII M49, the M49/56 uses a gas system which conducts gas into the receiver to operate the action. This type of gas system adds greatly to the fouling of the weapon. However, the M49/56 operates reliably. The M49 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

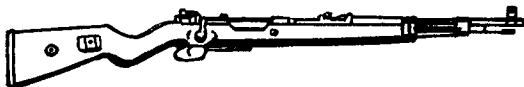
DATE ADOPTED c.1965  
 CAL 7.5x54mm  
 LENGTH 113.8cm  
 E-FACTOR 18  
 MUZZLE VEL 2795 fps  
 WT (EMPTY) 5.2kg  
 WT (LOADED) 5.656kg  
 EFF RNG 800m  
 MAX RNG 3718m  
 TYPE OF FIRE Bolt action repeater  
 RATE OF FIRE (SS) 15 rpm  
 FEED DEVICE 10 round box magazine  
 FEED DEVICE WT .456kg  
 BASIC 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, 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.



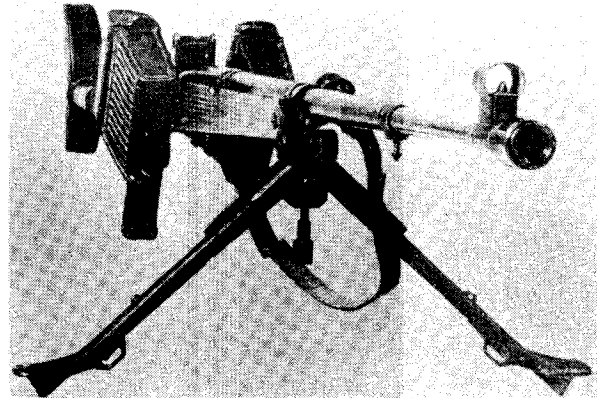
03-037-974  
 NAME 5.56mm FA-MAS  
 NAME (NATIVE) Fusil Automatique MAS 5.56  
 TYPE French rifle  
 DATE ADOPTED 1974  
 CAL 5.56x45mm  
 LENGTH 75.7cm  
 E-FACTOR 14  
 MUZZLE VEL 3150 fps  
 WT (EMPTY) 3.55kg  
 WT (LOADED) 4.025kg  
 EFF RNG 300m  
 MAX RNG 2549m  
 TYPE OF FIRE Selective, burst 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  
 E-FACTOR 16  
 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 rd. clip) .132kg  
 BASIC LOAD 18 clips (90 rounds)  
 LOAD WT 2.376kg

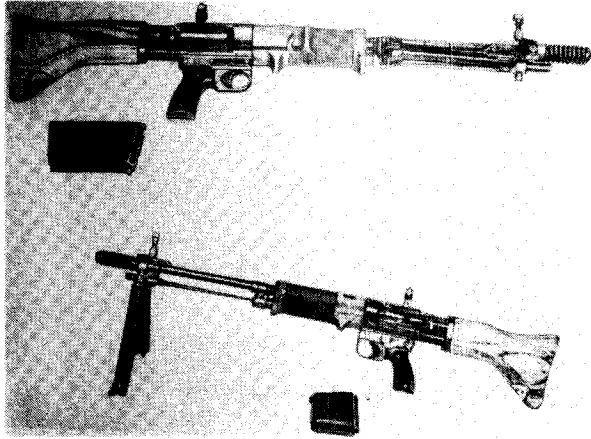
This weapon was the standard issue rifle of the German army during WWII. The Kar 98k is a shortened, modified version of the original Gewehr 98 developed in 1898. The Kar 98k is made around the basic Mauser bolt action which is a very strong, safe design. The name Kar 98k is taken from the German name 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  
 E-FACTOR 24  
 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 Fallschirmjagergewehr 42  
 TYPE German rifle  
 DATE ADOPTED 1942  
 CAL 7.92x57mm  
 LENGTH 94cm  
 E-FACTOR 16  
 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

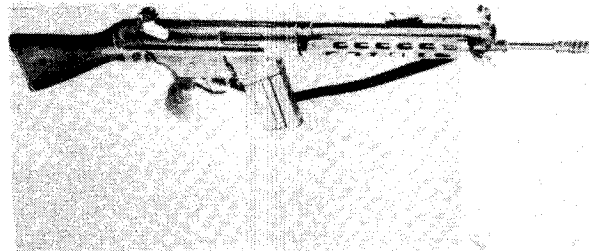
Developed for use by German paratroops in WWII, the FG-42 used a number of new designs. Intended for use primarily as a rifle, the FG-42 would fire semiautomatically with a closed bolt for accuracy and with an open bolt on full automatic for cooling. The operating rod/bolt system was directly copied 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  
 E-FACTOR 16  
 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  
 E-FACTOR 17  
 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

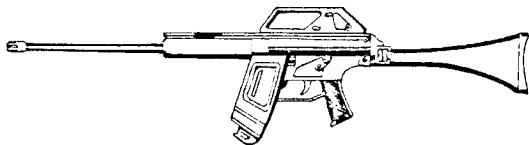
This rifle was developed from a late war (1945) german design. The G3 rifle is the first of a family of weapons based on the same action. In the family of weapons produced by Heckler and Koch the G3 is the 7.62mm NATO class, the HK33A2 is representative of the 5.56x45mm series, the MP5A2 represents the 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.





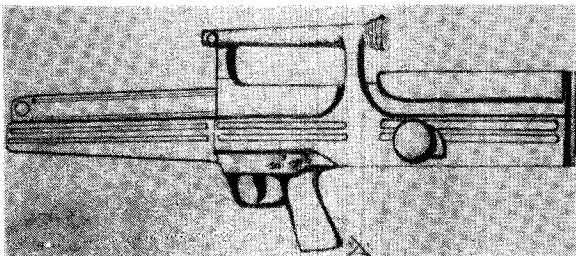
03-041-968  
 NAME Heckler & Koch 33A2  
 NAME (NATIVE) Hk33A2  
 TYPE German rifle  
 DATE ADOPTED 1968  
 CAL 5.56x45mm  
 LENGTH 92cm  
 E-FACTOR 14  
 MUZZLE VEL 3150 fps  
 WT (EMPTY) 3.65kg  
 WT (LOADED) 4.25kg (w/40 rd. mag.)  
 EFF RNG 500m  
 MAX RNG 2575m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 40 rpm (A) 160 rpm (CYCLIC) 700 rpm  
 FEED DEVICE 20 or 40 round box magazine  
 FEED DEVICE WT (20 rd.) .34kg, (40 rd.) .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.



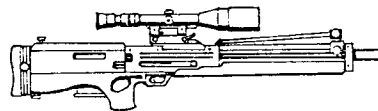
03-041-972  
 NAME 4.6mm HK-36  
 TYPE German rifle  
 DATE ADOPTED 1972  
 CAL 4.6x36mm  
 LENGTH 79.6/88.9kg  
 E-FACTOR 11  
 MUZZLE VEL 2800 fps  
 WT (EMPTY) 2.85kg  
 WT (LOADED) 3.696kg (w/3 clips, 90 rds.)  
 EFF RNG 300m  
 MAX RNG 3000m  
 TYPE OF FIRE Selective, adjustable controlled burst  
 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 rd. 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 of 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.



03-041-980  
 NAME H & K G-11  
 TYPE German rifle  
 DATE ADOPTED c. 1980  
 CAL 4.7x21mm Caseless  
 LENGTH 75cm  
 E-FACTOR 12  
 MUZZLE VEL 3051 fps  
 WT (EMPTY) 3.6kg  
 WT (LOADED) 4.5kg (w/100 rds.)  
 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 rd. burst)  
 FEED DEVICE 100 rd. magazine box  
 FEED DEVICE WT (50 rds.) .45kg  
 BASIC LOAD 6 magazines (300 rounds.)  
 LOAD WT 2.7kg

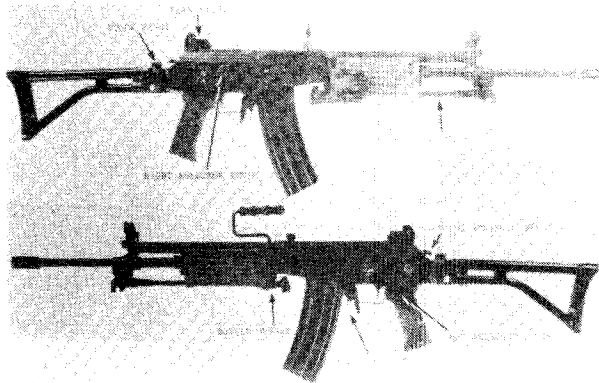
This unique bull pup rifle has been under development by Heckler & Koch for over 13 years. The G-11 fires a special "caseless" round which has no standard metal cartridge case but a solid rectangular block of propellant instead. The fact that there is no case to be extracted allows for an extremely high 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  
 E-FACTOR 19  
 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

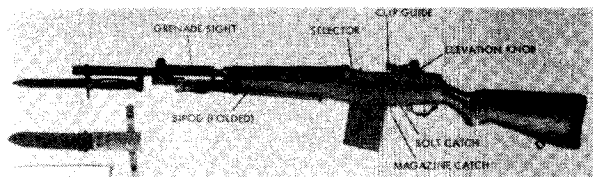
This weapon was designed by Otto Ropa for Walther specifically as a long range, precision sniper rifle. The fact that it was not based on any other rifle allowed the WA-2000 to be specific for its job. The WA-2000 is chambered for the .300 Winchester Magnum cartridge as recommended by

the GS9 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  
 E-FACTOR 14  
 MUZZLE VEL 3117 fps  
 WT (EMPTY) 3.9kg  
 WT (LOADED) 4.61kg (w/35 rd. 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 rd.) .71kg, (50 rd.) 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  
 E-FACTOR 17  
 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  
 E-FACTOR 14  
 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

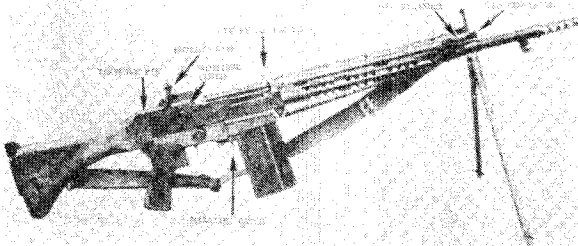
This lightweight assault rifle is gradually replacing the BM-59 in the Italian military. The AR-70 was designed for easy mass production and has a minimum of machined parts. The weapon has a built-in rifle grenade launcher and sights that allow standard 22mm tail rifle grenades to be fired.



03-062-939  
 NAME Arisaka Mod.99  
 NAME (NATIVE) 7.7mm rifle, Type 99  
 TYPE Japanese rifle  
 DATE ADOPTED 1939  
 CAL 7.7x56mmR

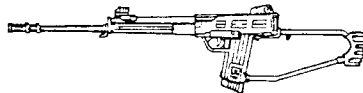
LENGTH 111.7cm  
 E-FACTOR 14  
 MUZZLE VEL 2239 fps  
 WT (EMPTY) 3.99kg  
 WT (LOADED) 4.115kg  
 EFF RNG 550m  
 MAX RNG 2743m  
 TYPE OF FIRE Bolt action repeater  
 RATE OF FIRE (SS) 25 rpm  
 FEED DEVICE 5 round internal magazine, clip loaded  
 FEED DEVICE WT (5 rd. clip) .125kg  
 BASIC LOAD 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 with 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.



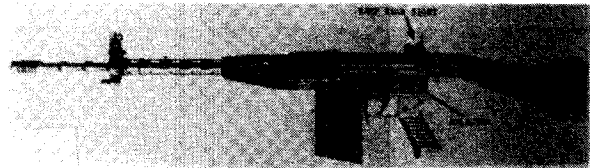
03-062-964  
 NAME Type 64  
 NAME (NATIVE) 64 Shiki Jidoju  
 TYPE Japanese rifle  
 DATE ADOPTED 1964  
 CAL 7.62x51mm  
 LENGTH 99cm  
 E-FACTOR 17 (Reduced 15)  
 MUZZLE VEL 2625 (Reduced 2297)  
 WT (EMPTY) 4.4kg  
 WT (LOADED) 5.12kg  
 EFF RNG 400m  
 MAX RNG 3492m (Reduced load 3055m)  
 TYPE 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 NATO 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  
 E-FACTOR 15  
 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  
 E-FACTOR 16  
 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

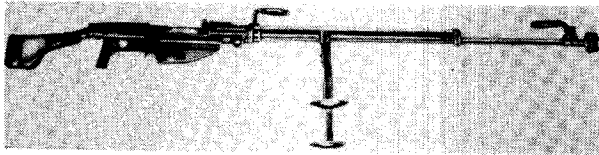
This weapon is an improved version of the Swiss StG 57 assault rifle. The SIG is a very finely built and reliable weapon. There is a built-in winter trigger on the weapon that, when unfolded, allows easy firing when wearing mittens. The weapon is capable of firing standard 22mm tail rifle grenades. The 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  
 E-FACTOR 16  
 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 rd. 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  
 E-FACTOR 42  
 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 rd. 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 War II, 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  
 E-FACTOR 15

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 rd. 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  
 E-FACTOR 15  
 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 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  
E-FACTOR 17  
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 AKS-74  
NAME (NATIVE) 5.45mm Avtomat Kalashnikova Skladyvayushchims-ya obr 1974  
TYPE Russian rifle  
DATE ADOPTED 1974  
CAL 5.45x39mm  
LENGTH 69/93cm  
E-FACTOR 13  
MUZZLE VEL 2952 fps  
WT (EMPTY) 3.6kg  
WT (LOADED) 4.1kg  
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 .5kg  
BASIC LOAD 6 magazines (180 rounds)  
LOAD WT 3kg

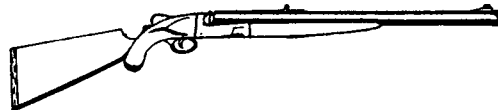
The AKS-74 is an updated version of the AK/AKM-47 with little change incorporated into the basic action. The weapon is chambered for a small-caliber, high velocity round which allows for a much lighter rifle. The AKS-74 uses a dark orange plastic magazine with the color helping prevent the magazine from 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 AKS-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  
E-FACTOR 13  
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

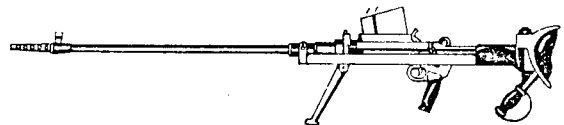
This was the first breechloader adopted by the British government as standard issue. Used for over 31 years, the Martini saw action in the Colonial wars in Asia, Africa, China, and last saw action in the Boer War. The Martini uses an unusual dropping block action which is still used in precision target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



03-131-903

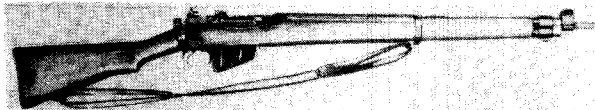
NAME Holland & Holland .600 Nitro Double rifle  
TYPE British rifle  
DATE ADOPTED 1903  
CAL 15.7x76mmR  
LENGTH 105.4cm  
E-FACTOR 25  
MUZZLE VEL 2050 fps  
WT (EMPTY) 7.71kg  
WT (LOADED) 7.9kg  
EFF RNG 150m  
MAX RNG 4375m  
TYPE OF FIRE Break open single shot, double barrel  
RATE OF FIRE (SS) 10 rpm  
FEED DEVICE 2 barrels, one round per barrel  
FEED DEVICE WT (2 rds.) .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  
 E-FACTOR 36  
 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 re-named 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.



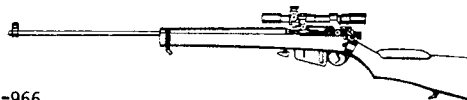
03-131-941  
 NAME Enfield No. 4, Mk I  
 NAME (NATIVE) Rifle No. 4, Mk I  
 TYPE British rifle  
 DATE ADOPTED 1941  
 CAL 7.7x56mmR  
 LENGTH 112.7cm  
 E-FACTOR 15  
 MUZZLE VEL 2444 fps  
 WT (EMPTY) 4.1kg  
 WT (LOADED) 4.559kg  
 EFF RNG 500m  
 MAX RNG 3255m  
 TYPE OF FIRE Bolt action repeater  
 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.



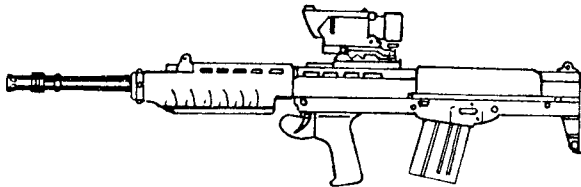
03-131-942  
 NAME De Lisle Carbine  
 NAME (NATIVE) De Lisle System  
 TYPE British silenced rifle  
 DATE ADOPTED 1942  
 CAL 11.43x23mm  
 LENGTH 88.9cm  
 E-FACTOR 11  
 MUZZLE VEL 1200 fps  
 WT (EMPTY) 3.18kg  
 WT (LOADED) 3.5kg  
 EFF RNG 300m  
 MAX RNG 2045m  
 TYPE OF FIRE Bolt action  
 RATE 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  
 E-FACTOR 17  
 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

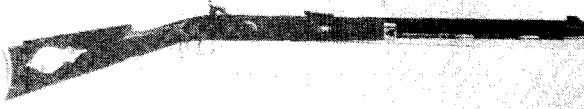
The L42A1 is a 7.62x51mm version of the .303 No. 4 Lee - Enfield and is designed especially for use as a sniper weapon. The action of the weapon was modified to take the 7.62x51mm round and the trigger reworked for a smooth, steady pull. The L42A1 is normally used with a 4 power L1A1 telescopic sight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



03-131-976  
 NAME XL-64 4.85mm Individual Weapon  
 TYPE British rifle

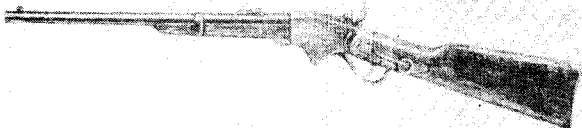
DATE ADOPTED 1976  
 CAL 4.85x49  
 LENGTH 77cm  
 E-FACTOR 12  
 MUZZLE VEL 2952 fps  
 WT (EMPTY) 3.82kg w/sight  
 WT (LOADED) 4.218kg  
 EFF RNG 300m  
 MAX RNG 3160m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 40 rpm (A) 120 rpm (CYCLIC)  
 FEED DEVICE 20 round box magazine  
 FEED DEVICE WT .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 Hawkins  
 TYPE American percussion rifle  
 DATE ADOPTED 1840  
 CAL .50  
 LENGTH 114.3cm  
 E-FACTOR 18  
 MUZZLE VEL 1800 fps  
 WT (EMPTY) 4.07kg  
 WT (LOADED) 4.088kg  
 EFF RNG 70m  
 MAX RNG 1200m  
 TYPE OF FIRE percussion 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 Hawkins was a sturdy and simple design. With its rifled barrel, the Hawkins 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 Hawkins 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  
 E-FACTOR 14  
 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 rds) .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 triggerguard/lever feeds a fresh round into the chambers extracting and ejecting any spent cartridge case. 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  
 E-FACTOR 12  
 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.



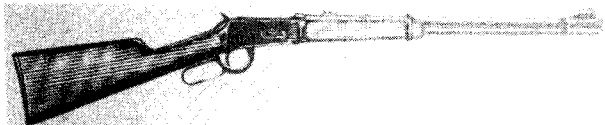
03-132-873a  
 NAME Winchester Model 1873 Rifle  
 TYPE American rifle  
 DATE ADOPTED 1873  
 CAL 10.8x33mmR  
 LENGTH 109.2cm  
 E-FACTOR 12  
 MUZZLE VEL 1325 fps  
 WT (EMPTY) 4.08kg  
 WT (LOADED) 4.392kg  
 EFF RNG 350m  
 MAX RNG 915m  
 TYPE OF FIRE Lever action repeater  
 RATE OF FIRE (SS) 25 rpm  
 FEED DEVICE 15 round internal magazine  
 FEED DEVICE WT (15 rds) .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  
 E-FACTOR 18  
 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  
 E-FACTOR 15  
 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 rds) .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  
 E-FACTOR 17  
 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 rd 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 licence 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  
 E-FACTOR 18  
 MUZZLE VEL 2805 fps



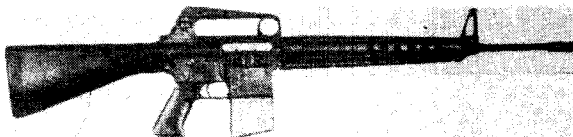
WT (EMPTY) 4.3kg  
 WT (LOADED) 4.507kg  
 EFF RNG 600m  
 MAX RNG 3155m  
 TYPE OF FIRE Semiautomatic  
 RATE OF FIRE 30 rpm  
 FEED DEVICE 8 round internal magazine, clip loaded  
 FEED DEVICE WT (8 rd clip) .207kg  
 BASIC LOAD 20 clips (160 rounds)  
 LOAD WT 4.14kg

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 the empty clip would also be ejected with the action remaining open to load the next clip. 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  
 E-FACTOR 12  
 MUZZLE VEL 1969 fps  
 WT (EMPTY) 2.286kg  
 WT (LOADED) 2.482kg (w/15 rd 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 rd) .196kg, (30 rd) .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  
 E-FACTOR 17  
 MUZZLE VEL 2772 fps  
 WT (EMPTY) 4.1kg  
 WT (LOADED) 4.82kg

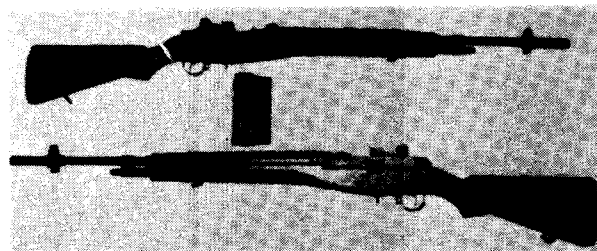
EFF RNG 500m  
 MAX RNG 3690m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 40 rpm (A) 80 rpm (CYCLIC) 700 rpm  
 FEED DEVICE 20 round box magazine  
 FEED DEVICE WT .72kg  
 BASIC LOAD 8 magazines (160 rounds)  
 LOAD WT 5.76kg

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.



03-132-956  
 NAME Winchester M70 African  
 TYPE American rifle  
 DATE ADOPTED 1956  
 CAL 11.6x63.5mmB  
 LENGTH 107.9cm  
 E-FACTOR 20  
 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 rds.) .165kg  
 BASIC LOAD 20 rounds  
 LOAD WT 1.1kg

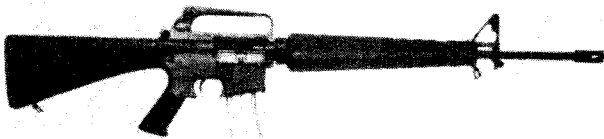
This rifle was the first weapon chambered for the .458 Winchester Magnum cartridge. The stock of the rifle is especially reinforced to withstand the recoil of the powerful magnum round. Though a telescopic sight can be fitted, the African is normally used with the simple iron sights that come with the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



03-132-956a  
 NAME M14, M14NM (M21)  
 TYPE American rifle  
 DATE ADOPTED 1956  
 CAL 7.62x51mm  
 LENGTH 112cm  
 E-FACTOR 18  
 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.



03-132-957  
 NAME M16A1  
 TYPE American rifle  
 DATE ADOPTED 1957  
 CAL 5.56x45mm  
 LENGTH 99cm  
 E-FACTOR 15  
 MUZZLE VEL 3280 fps  
 WT (EMPTY) 3.18kg  
 WT (LOADED) 3.635kg (w/30 rd. 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 rd.) .318kg, (30 rd.) .455kg, (40 rd.) .74kg  
 BASIC LOAD 6-30 round magazines (180 rounds)  
 LOAD WT 2.73kg

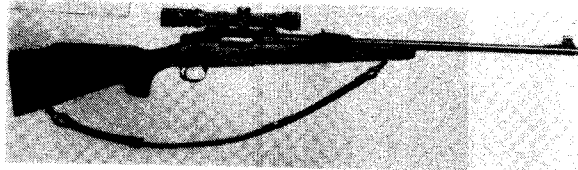
Developed from the earlier AR-10, the M16A1 is now the standard rifle for the U.S. military. The design of the M16A1 is such that gas from the fired round is allowed into the receiver to operate the action. Due to this type of operation, the M16A1 must be cleaned on a regular basis. The manufacturing 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.



03-132-958  
 NAME .460 Weatherby Mk V  
 TYPE American rifle  
 DATE ADOPTED 1958  
 CAL 11.6x74mmB  
 LENGTH 118.1cm

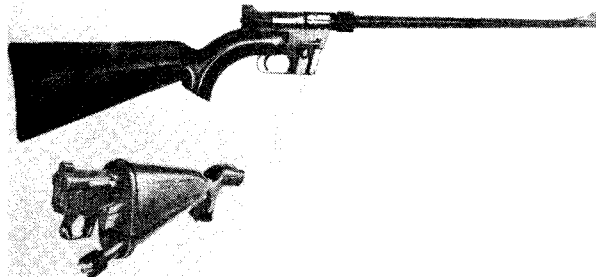
E-FACTOR 25  
 MUZZLE VEL 2750 fps  
 WT (EMPTY) 4.76kg  
 WT (LOADED) 4.955kg  
 EFF RNG 1000m  
 MAX RNG 6692m  
 TYPE OF FIRE Bolt action repeater  
 RATE OF FIRE (SS) 8 rpm  
 FEED DEVICE 3 round internal magazine  
 FEED DEVICE WT (3 rds) .195kg  
 BASIC LOAD 24 rounds  
 LOAD WT 1.56kg

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 cartridge ever produced. The power of this rifle makes 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  
 E-FACTOR 18  
 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 rds.) .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.



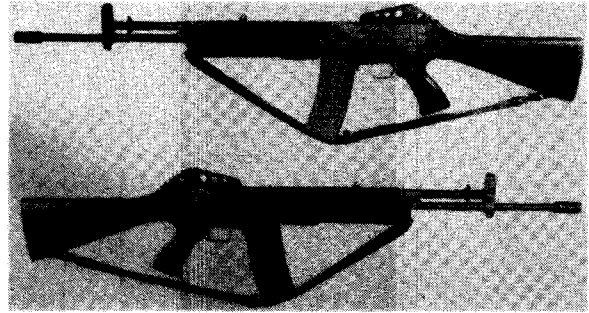
03-132-960a  
 NAME AR-7 Explorer  
 TYPE American rifle  
 DATE ADOPTED 1960  
 CAL 5.7x17.5mmR  
 LENGTH 87.6cm  
 E-FACTOR 6  
 MUZZLE VEL 1285 fps  
 WT (EMPTY) 1.13kg  
 WT (LOADED) 1.19kg  
 EFF RNG 75m  
 MAX RNG 1375m  
 TYPE OF FIRE Semiautomatic  
 RATE OF FIRE (SS) 48 rpm  
 FEED DEVICE 8 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) Stone M63A Carbine  
 TYPE American rifle  
 DATE ADOPTED 1965  
 CAL 5.56x45mm  
 LENGTH 68/90cm  
 E-FACTOR 14  
 MUZZLE VEL 3002kg  
 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.



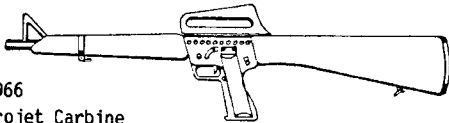
03-132-965a  
 NAME Stoner M22 Rifle  
 NAME (NATIVE) Stoner M63A Rifle  
 TYPE American rifle  
 DATE ADOPTED 1965  
 CAL 5.56x45mm  
 LENGTH 102.2cm  
 E-FACTOR 15  
 MUZZLE VEL 3248 fps  
 WT (EMPTY) 3.7kg  
 WT (LOADED) 4.24kg  
 EFF RNG 400m  
 MAX RNG 2627m  
 TYPE OF FIRE Selective  
 RATE OF 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 gas the 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  
 E-FACTOR 15  
 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 rd.) .312kg, (30 rd.) .45kg, (40 rd.)  
 .74kg  
 BASIC LOAD 8-30 round magazines (240 rounds)  
 LOAD WT 3.6kg

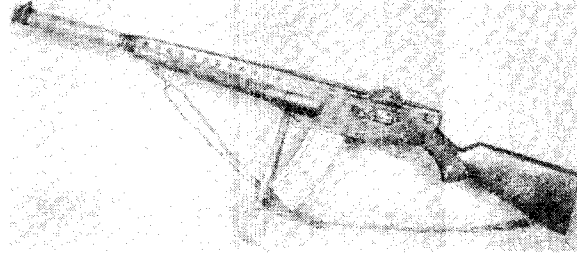
The AR-18 was originally developed by Armalite as a replacement for the M16A1 (or AR-15 as it was first known). Due to the large amounts of M16A1s already available, the U.S. Army did not adopt the AR-18 and it is now being sold by Armalite on the world's arms market. The weapon has a simpler and more 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  
 E-FACTOR 17  
 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  
 E-FACTOR 13  
 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  
 E-FACTOR 7  
 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.

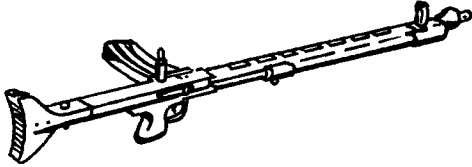
To achieve the low recoil, the M19 fires fin stabilized steel "needles" or flechettes. The flechettes are carried in a fiberglass sabot that peels away when the "bullet" leaves the muzzle. Since the round is fin stabilized the weapon has no rifling and a smooth bore barrel. The very high velocity flechettes 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  
 E-FACTOR 15  
 MUZZLE VEL 3297 fps  
 WT (EMPTY) 2.9kg  
 WT (LOADED) 3.35kg (w/30 rd. 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 rd.) .2kg, (30 rd.) .45kg  
 BASIC LOAD 8-30 round magazines (240 rounds)

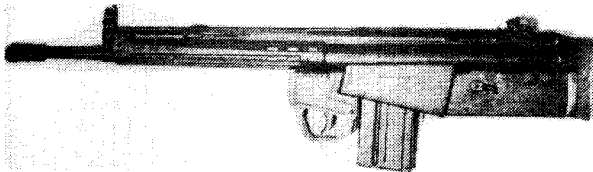
LOAD WT 3.6kg

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  
E-FACTOR 15  
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  
E-FACTOR 17  
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

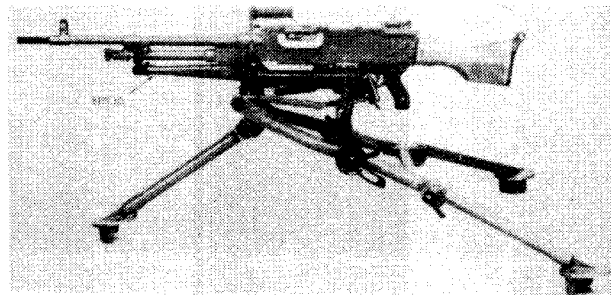
This weapon is a modified G3 rifle. The modification is done with a conversion kit which replaces the buttstock and portions of the trigger mechanism to convert the G3 to a bullpup configuration (see also XL-64 Individual Weapon, 03-131-976). This bullpup layout uses the magazine as the pistol grip but 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.

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.

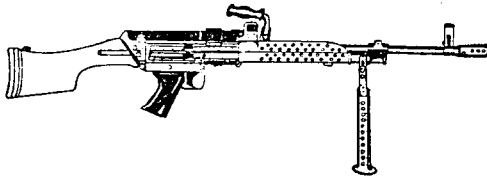
During WWI, the invention of the Lewis gun and BAR introduced the concept of the light machinegun. A light machinegun is one that can be carried and operated by one man, as compared to the heavy weapons which require a crew. During the 1930's and in WWII, the Germans introduced the concept of the general 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) Mitrailleuse a Gaz  
TYPE Belgian machinegun  
DATE ADOPTED 1958  
CAL 7.62x51mm  
LENGTH 125.5cm  
E-FACTOR 17  
MUZZLE VEL 2756  
WT (EMPTY) 10.85kg  
WT (LOADED) 12.32kg

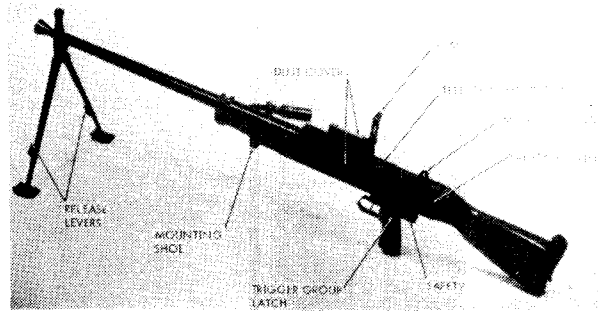
WT (MOUNTED) 22.82kg  
 EFF RNG 1200m  
 MAX RNG 3100m  
 TYPE OF FIRE Full automatic  
 RATE OF FIRE (A) 250 rpm (CYCLIC) 800 rpm  
 FEED DEVICE 50 round belt  
 FEED DEVICE WT 1.47kg  
 BASIC LOAD 6 belts (300 rounds)  
 LOAD WT 8.82kg

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.



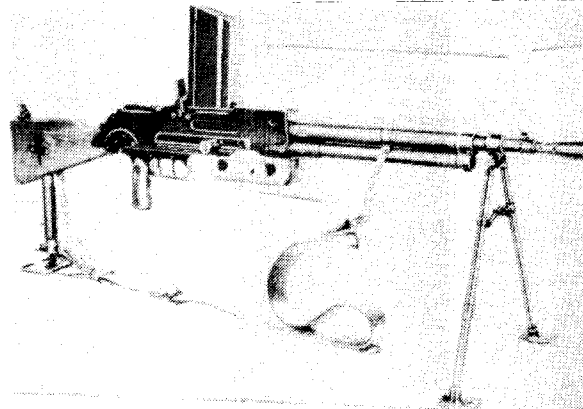
04-011-974  
 NAME Minimi (M249 Squad Automatic Weapon)  
 NAME (NATIVE) Mitrailleur FN Calibre 5.56mm (Minimi)  
 TYPE Belgian machinegun  
 DATE ADOPTED 1974  
 CAL 5.56x45mm  
 LENGTH 105.2cm  
 E-FACTOR 14  
 MUZZLE VEL 2940 fps  
 WT (EMPTY) 7.031kg  
 WT (LOADED) 9.933  
 EFF RNG 500m  
 MAX RNG 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 rd) .455kg, (200 rd) 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  
 E-FACTOR 17  
 MUZZLE VEL 2723 fps  
 WT (EMPTY) 8.67kg  
 WT (LOADED) 10.05kg  
 WT (MOUNTED) 20.01kg  
 EFF RNG 1000m (1370m mounted)  
 MAX RNG 4800mm  
 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

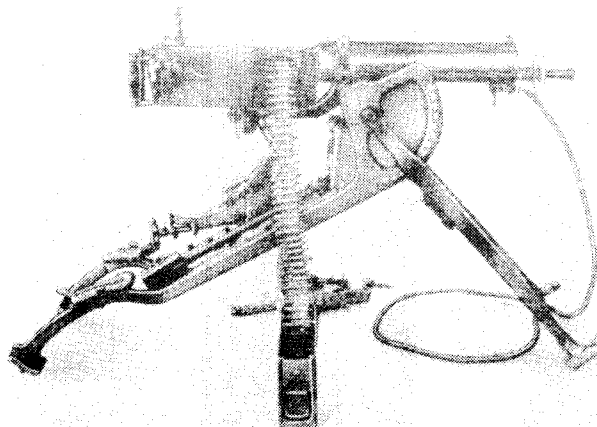
This is the standard machinegun in the Czech military. The Vz-59 is an upgraded version of earlier Czech machineguns and is chambered for the long range 7.62x54mmR round. There is a version of the Vz-59, the Vz-59N, which is chambered for the 7.62x51mm NATO round. The Vz-59N is designed for sales to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



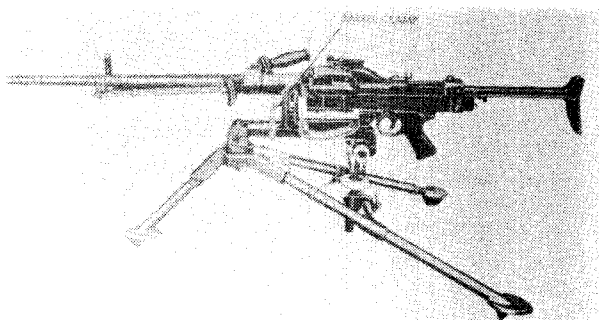
04-037-929  
 NAME Model 24/29  
 NAME (NATIVE) Fusil Mitrailleur Modele 1924/29  
 TYPE French machinegun  
 DATE ADOPTED 1929  
 CAL 7.5x54mm  
 LENGTH 108.2cm  
 E-FACTOR 18  
 MUZZLE VEL 2789 fps  
 WT (EMPTY) 9.24kg  
 WT (LOADED) 10.88kg  
 EFF RNG 800m  
 MAX RNG 3000m  
 TYPE OF FIRE Selective

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.

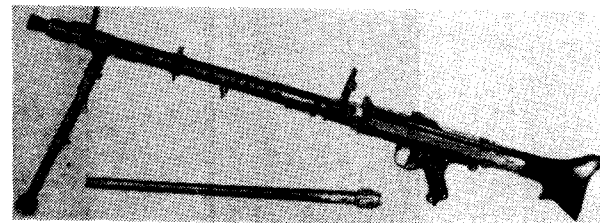


04-040-908  
 NAME MG-08  
 NAME (NATIVE) Maschinengewehr 08  
 TYPE German machinegun  
 DATE ADOPTED 1908  
 CAL 7.92x57mm  
 LENGTH 117cm  
 E-FACTOR 19  
 MUZZLE VEL 2925 fps  
 WT (EMPTY) 18.4kg (w/water 26.54kg)  
 WT (LOADED) (w/water) 33.08kg  
 WT (MOUNTED) 66.08kg  
 EFF RNG 1100m (3000m indirect)  
 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



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  
 E-FACTOR 17  
 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

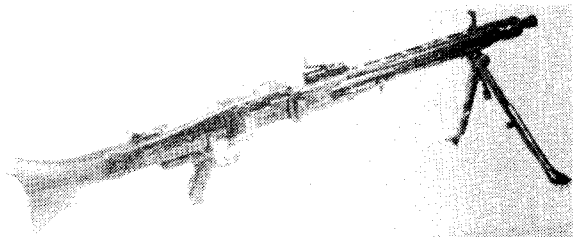
The AAT-52 is presently the standard machinegun of the French military. Using the blowback system of operation, the AAT-52 is very rough on the ammunition it fires. Cartridges have a tendency to be ripped in half when fired, leaving the neck portion in the chamber, jamming the gun. It is interesting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



04-040-934  
 NAME MG-34  
 NAME (NATIVE) Maschinengewehr Modell 34  
 TYPE German machinegun  
 DATE ADOPTED 1934  
 CAL 7.92x57mm  
 LENGTH 122cm  
 E-FACTOR 16  
 MUZZLE VEL 2475 fps  
 WT (EMPTY) 12kg  
 WT (LOADED) 12.299kg  
 WT (MOUNTED) 31.489kg  
 EFF RNG 800m (mounted 2000m)  
 MAX RNG 2515m  
 TYPE OF FIRE Selective

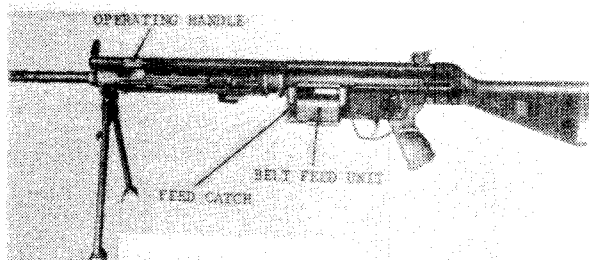
RATE OF FIRE (SS) 60 rpm (A) 200 rpm (CYCLIC) 900 rpm  
 FEED DEVICE 50 round metallic belt  
 FEED DEVICE WT .299kg  
 BASIC LOAD 8 belts (400 rounds)  
 LOAD WT 2.392kg

The MG-34 was the first of the general purpose machine-guns. 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  
 E-FACTOR 17  
 MUZZLE VEL 2625 fps  
 WT (EMPTY) 11.6kg  
 WT (LOADED) 11.899kg (w/50 rds.)  
 WT (MOUNTED) 31.089kg  
 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 .299kg  
 BASIC LOAD 8 belts (400 rounds)  
 LOAD WT 2.392kg

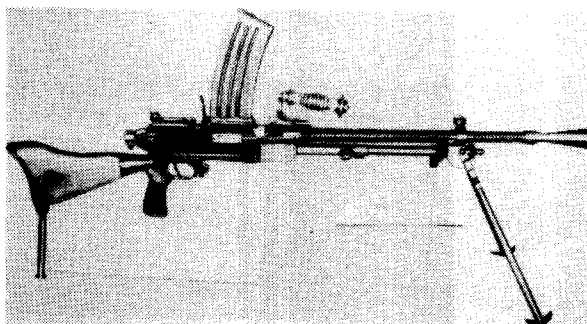
Developed as a replacement for the MG-34, the MG-42 was designed with mass production in mind. The MG-42 is considered by many to be the best machinegun design to come out of WWII. Built mostly of stampings, the MG-42 has since been adopted by the modern German army as the MG-3 chambered in 7.62x51mm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

E-FACTOR 17  
 MUZZLE VEL 2625 fps  
 WT (EMPTY) 7.92kg  
 WT (LOADED) 8.67kg (7.62x51mm w/20 rd. 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 rd. box magazine (7.62x51mm only), or 870 rd. drum  
 FEED DEVICE WT varies for belts, 20 rd. mag.

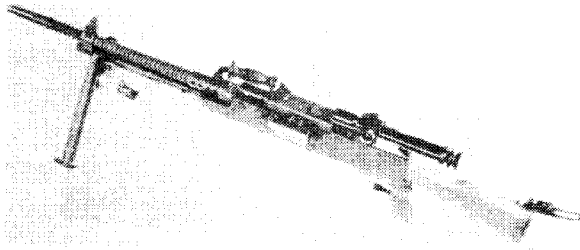
This is the light machinegun member of the Heckler and Koch weapons family. By changing the barrel, bolt, and bolt feed plate, the HK-21 can fire either 7.62x51mm NATO, 5.56x45mm or 7.62x39mm ammunition. With the belt feed mechanism replaced with a magazine feed, the HK-21 can use the same magazine as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



04-062-939  
 NAME Type 99  
 TYPE Japanese machinegun  
 DATE ADOPTED 1939  
 CAL 7.7x56mmR  
 LENGTH 118.7cm  
 E-FACTOR 14  
 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

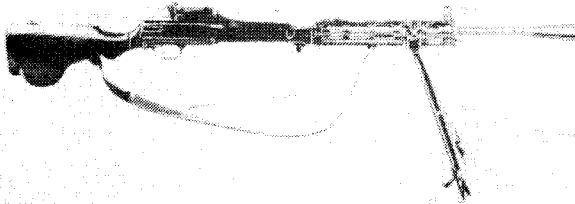
With the adoption of the Arisaka M99 rifle and the 7.7x58mm round, the Japanese military developed the Type 99 machinegun to fire the same round. Developed from an earlier design, the Type 99 was the most efficient native machinegun used by Japan during WWII. One very unusual feature of the Type 99 is 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.





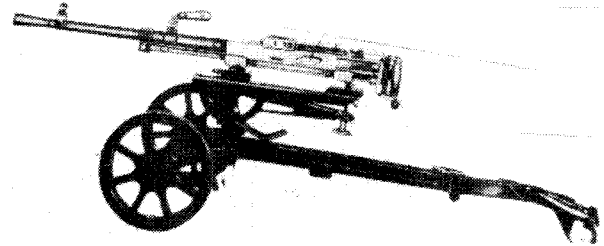
04-062-962  
 NAME Type 62  
 NAME (NATIVE) 62 Shiki Kikanju  
 TYPE Japanese machinegun  
 DATE ADOPTED 1962  
 CAL 7.62x51mm  
 LENGTH 120.5cm  
 E-FACTOR 18  
 MUZZLE VEL 2800 fps  
 WT (EMPTY) 10.68kg  
 WT (LOADED) 13.62kg  
 WT (MOUNTED) 20.42kg  
 EFF RNG 800m  
 MAX RNG 3100m  
 TYPE OF FIRE 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.



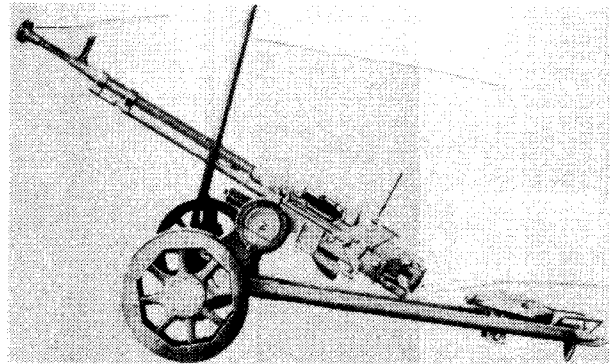
04-125-928  
 NAME DP  
 NAME (NATIVE) Degtyaryev Pakhotny  
 TYPE Russian machinegun  
 DATE ADOPTED 1928  
 CAL 7.62x54mmR  
 LENGTH 129cm  
 E-FACTOR 17  
 MUZZLE VEL 2760 fps  
 WT (EMPTY) 9.12kg  
 WT (LOADED) 11.92kg  
 EFF RNG 800m  
 MAX RNG 4800m  
 TYPE OF FIRE Full automatic  
 RATE OF FIRE (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 Pulemkyot obr 1943g  
 TYPE Russian machinegun  
 DATE ADOPTED 1943  
 CAL 7.62x54mmR  
 LENGTH 112cm  
 E-FACTOR 17  
 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

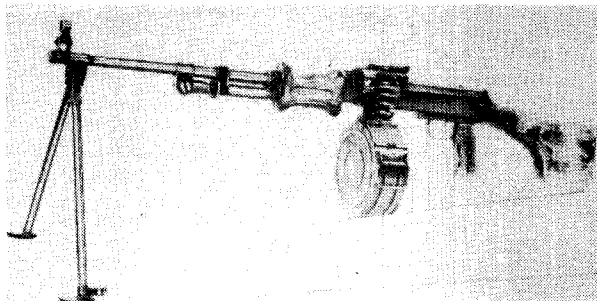
Developed as a replacement for watercooled heavy machineguns in the Russian military, the SG-43 has a very heavy barrel. With a very rugged and simple design, the SG-43 is still found today in a modified form as the SGM. Though an excellent design, the Russian military continued to use watercooled Maxim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



04-125-946  
 NAME Dsh KM Model 38/46  
 NAME (NATIVE) 12.7mm Stankovyi Pulemyot Dsh KM (Degtyaryova, Shpagina Krapnokalibernyi Modernizirovannyi) obr 1938/46g  
 TYPE Russian machinegun  
 DATE ADOPTED 1946  
 CAL 12.7x108mm  
 LENGTH 158.8cm  
 E-FACTOR 29  
 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

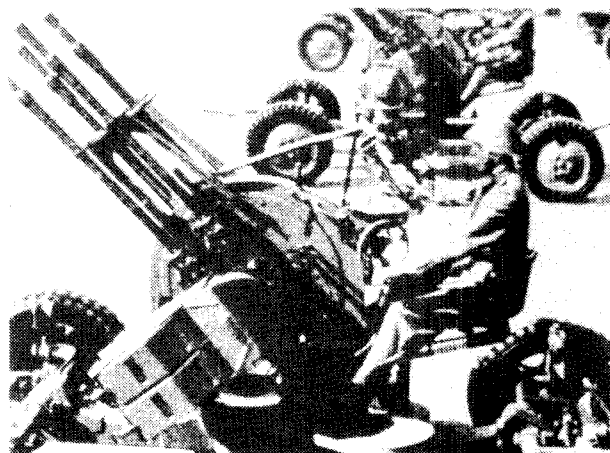
FEED DEVICE WT 11kg  
 BASIC LOAD 6 belts (300 rounds)  
 LOAD WT 66kg

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) Ruchnoy Pulemyot Degtyaryov  
 TYPE Russian machinegun  
 DATE ADOPTED 1953  
 CAL 7.62x39mm  
 LENGTH 104.1cm  
 E-FACTOR 15  
 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 contained 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.



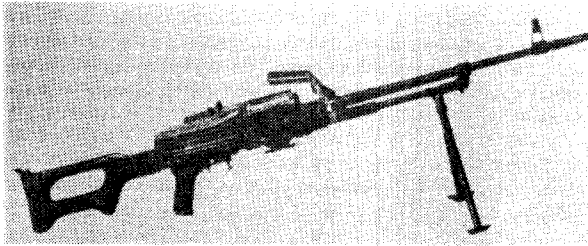
04-125-954  
 NAME 14.5mm KPV  
 NAME (NATIVE) Krupnokalibernyi Pulemyot Vladimirova  
 TYPE Russian machinegun  
 DATE ADOPTED 1954  
 CAL 14.5x114mm  
 LENGTH 200.6cm  
 E-FACTOR 38  
 MUZZLE VEL 3280 fps  
 WT (EMPTY) 49.1kg  
 WT (LOADED) 75.5kg  
 WT (MOUNTED) variable  
 EFF RNG 1100m  
 MAX RNG 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.



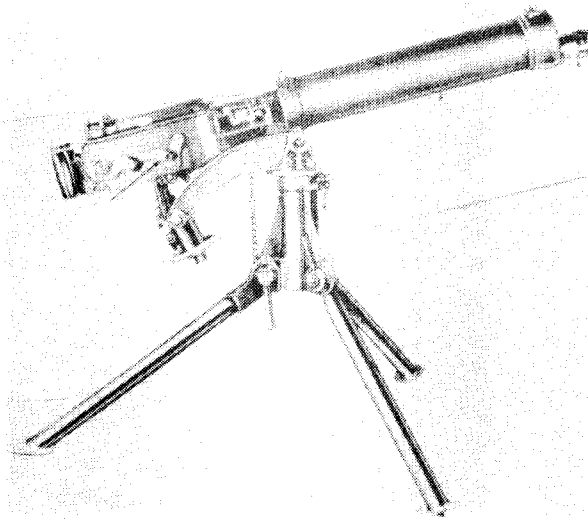
04-125-964  
 NAME RPK  
 NAME (NATIVE) Ruchnoi Pulemet Kalashnikov  
 TYPE Russian machinegun  
 DATE ADOPTED 1964  
 CAL 7.62x39mm  
 LENGTH 103.5cm  
 E-FACTOR 15  
 MUZZLE VEL 2400 fps  
 WT (EMPTY) 5kg  
 WT (LOADED) 6.13kg (w/40 rd. mag.)  
 EFF RNG 800m  
 MAX RNG 2085m  
 TYPE OF FIRE Selective  
 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 rd.) .85kg, (40 rd.) 1.13kg, (75 rd.) 2.1kg  
 BASIC LOAD 1-drum, 4-40 rd. 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) Pulenyot Kalashnikova  
 TYPE Russian machinegun  
 DATE ADOPTED 1964  
 CAL 7.62x54mmR  
 LENGTH 116cm  
 E-FACTOR 17  
 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

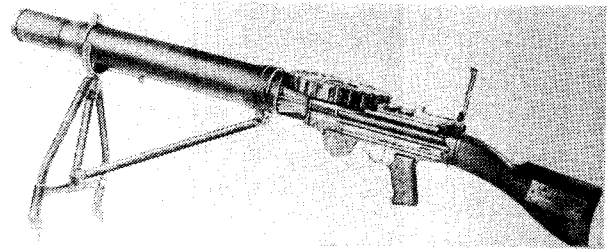
This is the standard machinegun of the Russian military. The PKM uses the 7.62x54mmR round and so has a more complicated feed mechanism due to the rimmed round. The design of the PKM is such that there is relatively little recoil and muzzle climb making the PKM very easy to shoot. The PKM and its variants 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  
 E-FACTOR 16  
 MUZZLE VEL 2440 fps  
 WT (EMPTY) 15kg (18.2kg w/water)  
 WT (LOADED) 24.3kg w/water  
 WT (MOUNTED) 47kg

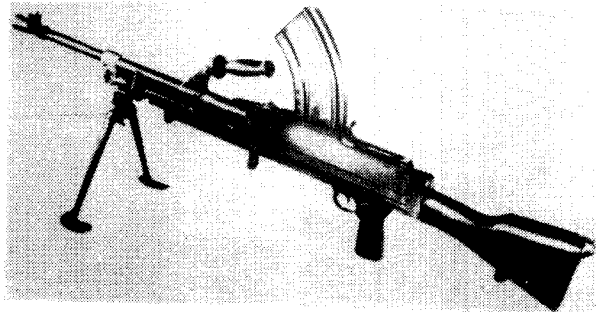
EFF RNG 3658m  
 MAX RNG 4195m  
 TYPE OF FIRE Full automatic  
 RATE OF FIRE (A) 200 (CYCLIC) 500 rpm  
 FEED DEVICE 250 round fabric belt  
 FEED DEVICE WT 6.1kg  
 BASIC LOAD 5 belts (1250 rounds)  
 LOAD WT 30.5kg

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 331 liters of water, allowed the Mk I to be fired for extended lengths of time. On August 24, 1916, ten Vickers Mk I's 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.



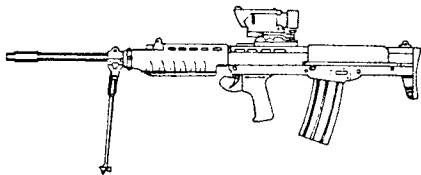
04-131-914  
 NAME Lewis Mk I  
 TYPE British machinegun  
 DATE ADOPTED 1914  
 CAL 7.7x56mmR  
 LENGTH 128.2cm  
 E-FACTOR 16  
 MUZZLE VEL 2440 fps  
 WT (EMPTY) 12.25kg  
 WT (LOADED) 14.12kg  
 EFF RNG 600m  
 MAX RNG 4195m  
 TYPE OF FIRE Full automatic  
 RATE OF FIRE (A) 141 rpm (CYCLIC) 550 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  
 E-FACTOR 16  
 MUZZLE VEL 2440 fps  
 WT (EMPTY) 10.52kg  
 WT (LOADED) 11.77kg (w/30 rd.)  
 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 rd.) 1.25kg, (100 rd.) 5.41kg  
 BASIC LOAD 6-30 rd. magazines (180 rounds)  
 LOAD WT 7.5kg

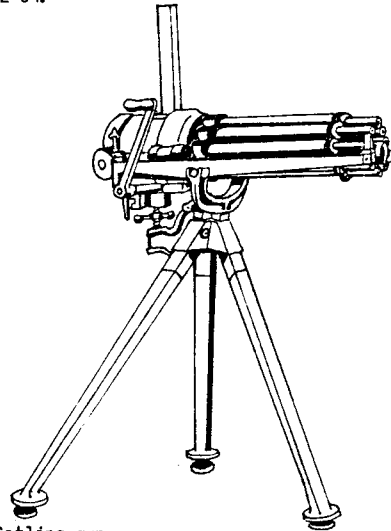
This light machinegun was developed from a Czech design, the Zb30. The Bren replaced the Lewis gun as the British LMG and remains in use to the present day with the British military as the L2A4 chambered for the 7.62x5mm NATO round. The name Bren gun comes from the first two letters of the Czech arsenal 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  
 E-FACTOR 12  
 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

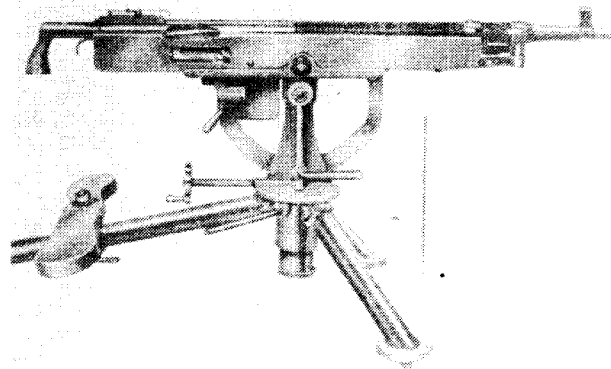
This weapon is the companion to the 4.85mm Individual Weapon XL-64 (03-131-976). Developed as a possible replacement for both the Bren and MAG-58 as military section weapons, the LSW has since been rechambered experimentally in 5.56x45mm. The "bull-pup" design of the LSW (see 03-131-976)

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  
 E-FACTOR 12  
 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

E-FACTOR 18

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

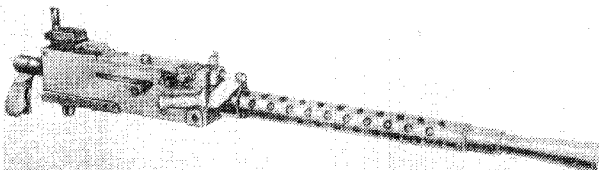
FEED DEVICE 250 round fabric belt

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

E-FACTOR 18

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

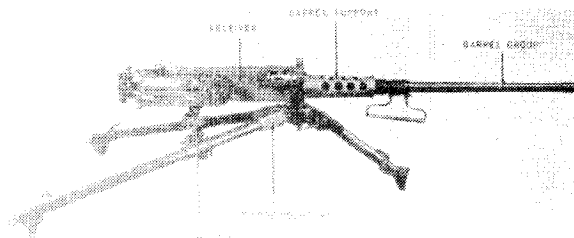
FEED DEVICE 250 round metallic or fabric belt

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

E-FACTOR 30

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

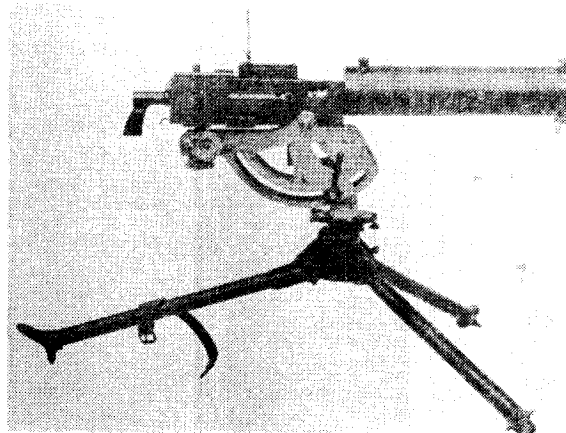
FEED DEVICE 105 round belt

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

E-FACTOR 18

MUZZLE VEL 2800 fps

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

WT (LOADED) 24.495kg

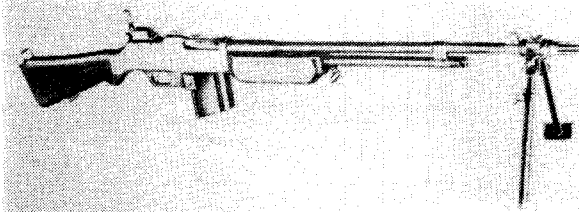
WT (MOUNTED) 49.495kg

EFF RNG 2286m

MAX RNG 3155m

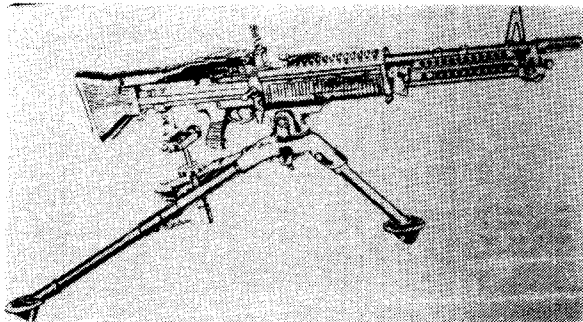
TYPE OF FIRE Full automatic  
 RATE OF FIRE (A) 250 rpm (CYCLIC) 600 rpm  
 FEED DEVICE 250 round fabric belt  
 FEED DEVICE WT 6.895kg  
 BASIC LOAD 4 belts (1000 rounds)  
 LOAD WT 27.58kg

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  
 E-FACTOR 17  
 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

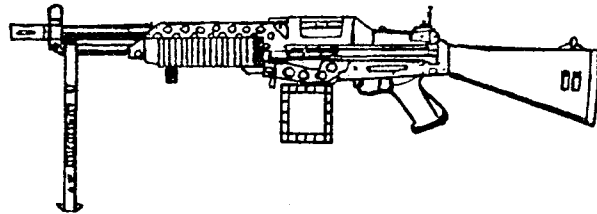
This heavy rifle was designed by John Browning for use by troops attacking trenches in WWI. Though it saw limited action in WWI, the BAR was used as a squad level automatic weapon in the U.S. military until the adoption of the M14 in the 1950's. The BAR is an odd weapon in that it is too heavy to be 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

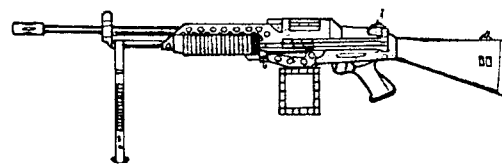
CAL 7.62x51mm  
 LENGTH 110.5cm  
 E-FACTOR 18  
 MUZZLE VEL 2800 fps  
 WT (EMPTY) 10.51kg  
 WT (LOADED) 13.45kg  
 WT (MOUNTED) 20.25kg  
 EFF RNG 1000m  
 MAX RNG 3100m  
 TYPE OF FIRE Full automatic  
 RATE OF FIRE (A) 200 rpm (CYCLIC) 550 rpm  
 FEED DEVICE 100 round belt  
 FEED DEVICE WT 2.94kg  
 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).



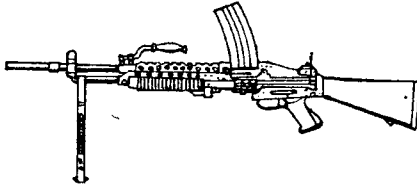
04-132-965  
 NAME Stoner Mk 23 Commando  
 TYPE American machinegun  
 DATE ADOPTED 1965  
 CAL 5.56x45mm  
 LENGTH 90.3cm  
 E-FACTOR 14  
 MUZZLE VEL 3000 fps  
 WT (EMPTY) 4.5kg  
 WT (LOADED) 6.45kg  
 WT (MOUNTED) 13.25kg  
 EFF RNG 700m  
 MAX RNG 2424m  
 TYPE OF FIRE Full automatic  
 RATE OF 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  
 E-FACTOR 15  
 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 as well as adding the tripod adapter. The M207 was also able to be tripod mounted by adding the tripod adapter (wt. .9kg) to the weapon.

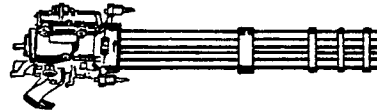


04-132-965b  
 NAME Stoner LMG  
 TYPE American machinegun  
 DATE ADOPTED 1965  
 CAL 5.56x45mm  
 LENGTH 102.2cm  
 E-FACTOR 15  
 MUZZLE VEL 3280 fps  
 WT (EMPTY) 5kg  
 WT (LOADED) 5.54kg  
 WT (MOUNTED) 12.34kg  
 EFF RNG 800m  
 MAX RNG 2650m  
 TYPE OF FIRE Full automatic  
 RATE OF FIRE (A) 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.

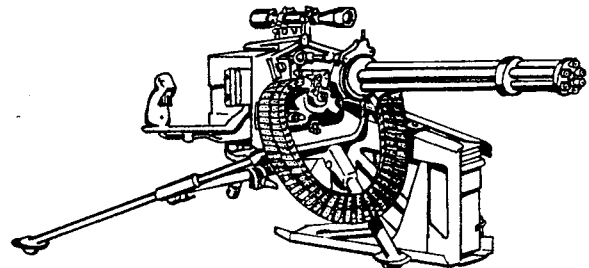
04-132-965c  
 NAME Stoner fixed MG  
 TYPE American Machinegun  
 DATE ADOPTED 1965  
 CAL 5.56x45mm  
 LENGTH 77.5cm  
 E-FACTOR 15  
 MUZZLE VEL 3280 fps  
 WT (EMPTY) 4.62kg  
 WT (LOADED) 20.52kg  
 WT (MOUNTED) variable  
 EFF RNG 800m  
 MAX RNG 2650m  
 TYPE OF FIRE Full automatic  
 RATE OF 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  
 E-FACTOR 18  
 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.



04-132-974

NAME XM-214 6-Pac  
TYPE American machinegun

DATE ADOPTED 1974

CAL 5.56x45mm

LENGTH 68.6cm

E-FACTOR 15

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 rds.) belt "cassettes"

FEED DEVICE WT (1000 rds.) 13.4kg

BASIC LOAD 4 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.

#### 06A Shotguns :

A shotgun is a smoothbore weapon that shoots a group of projectiles for each round fired. The family includes multi-barrel 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 in a short time.

#### 06B 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 allows it to be destroyed before it can become effective.

#### 06C 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. 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

E-FACTOR 9

MUZZLE VEL 1330 fps

EFF RNG 90m

MAX RNG 510m

TYPE OF FIRE Semiautomatic

RATE OF FIRE 15 rpm

FEED DEVICE 5 round tubular magazine

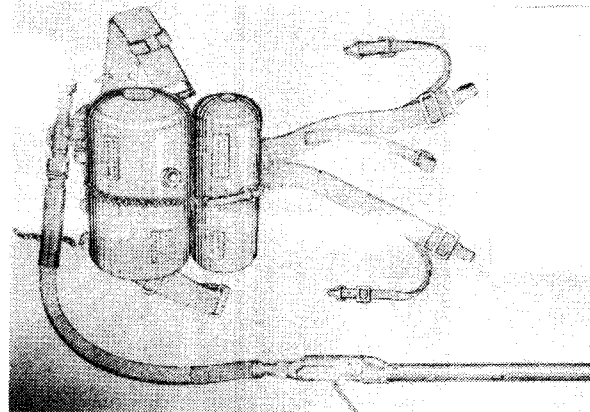
FEED DEVICE WT (5 rds.) .4kg

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 Malaysia. 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

ANTI-ARMOR CLASS F1

EFF RNG 25m

MAX RNG 35m



TYPE OF FIRE Semiautomatic

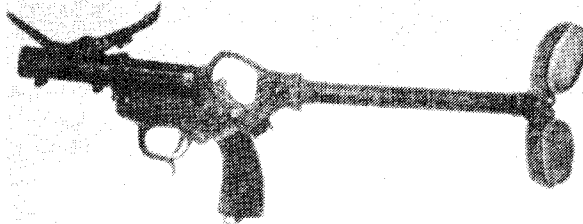
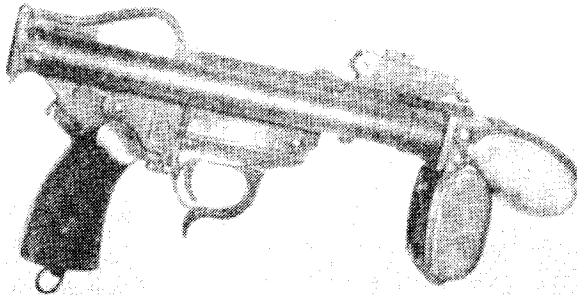
FEED DEVICE 5.7 liters fuel, 10 rounds igniter cartridges

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 operate the flamethrower, the weapon can only launch 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

Dpw 28

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

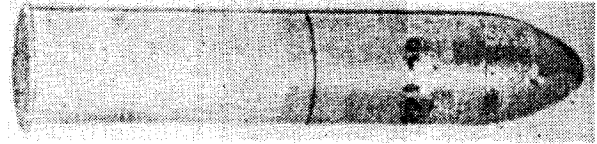
BASIC LOAD 6 rounds

LOAD WT .714kg

Data is for weapon loaded with 26mm Wurfgranate Patrone 326

This is a very modified flare pistol fitted with a removable rifled bore sleeve, a folding buttstock, and adjustable sight. The Sturmpistole 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 Sturmpistole made a useful, close-in, antitank weapon.



05C-040-944-1

NAME Wurfgranatpatrone 326

TYPE High explosive

WEAPON USED IN Sturmpistole, 05C-040-944

SIZE 2.5x11.4cm

WT .119kg

CAL 26mm

BURST RADIUS 2m

FILLER TNT

FILLER WT .007kg

Dpw 28

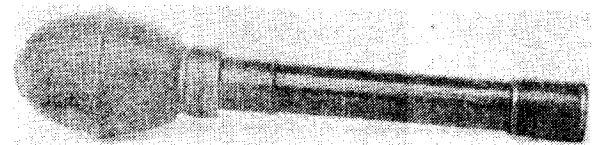
EQUIVALENT TO C4 (R.E.) 0.75

MIN RNG 10m

EFF RNG 90m

MAX RNG 100m

This is a small grenade that chambers in the Sturmpistole. 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-040-944-2

NAME Wurfkorper 361

TYPE High explosive

WEAPON USED IN Sturmpistole, 05C-040-944

SIZE 5.1x17.5cm

WT .397kg

CAL 26mm

BURST RADIUS 5m

ANTI-ARMOR CLASS G

FUSE DELAY 4 seconds

FILLER TNT

FILLER WT .109kg

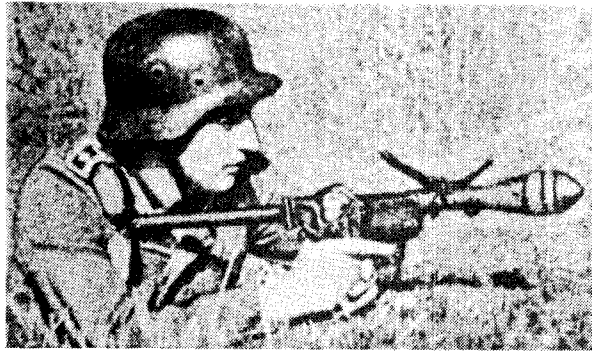
Dpw 189

EQUIVALENT TO C4 (R.E.) 0.75

EFF RNG 75m

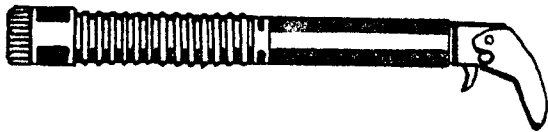
MAX RNG 75m

This shell consists of the Eihandgranate 39 (Egg grenade) mounted on a plastic tube containing the propellant charge. The grenade is loaded into the Sturmpistole 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.



05C-040-944-3  
 NAME Panzerwurffkörper 42  
 TYPE High explosive antitank  
 WEAPON USED IN Sturmpistol, 05C-040-944  
 SIZE 6.1x18cm  
 WT .602kg  
 CAL 26mm  
 E-FACTOR 400  
 BURST RADIUS 10m  
 PENETRATION IN STEEL 12.6cm  
 ANTI-ARMOR CLASS D  
 FILLER RDX/TNT  
 FILLER WT .153kg  
 Dpw 265  
 EQUIVALENT TO C4 (R.E.) 0.75  
 EFF RNG 100m  
 MAX RNG 135m

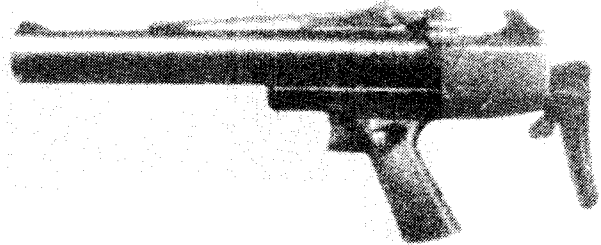
This is the German antitank rifle grenade Number 61 modified for use in the Sturmpistol. The grenade will penetrate a fair amount of armor and is one of the more useful grenades made for the Sturmpistol. The Number 61 grenade is fitted with a new bail assembly containing a propellant cartridge and is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



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  
 ANTI-ARMOR CLASS F1  
 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

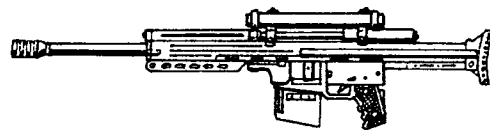
This is a disposable, single shot "flamethrower" used by the modern West German Army. The name HAFLA is abbreviated from the German words HAnd FLAmmpatrone, literally "hand flame cartridge." With the rear handle unfolded, the weapon is cocked and the trigger exposed. When fired, the HAFLA

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  
 Dpw 81  
 MUZZLE VEL 246 fps  
 BURST RADIUS 5m  
 ANTI-ARMOR CLASS G  
 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 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.

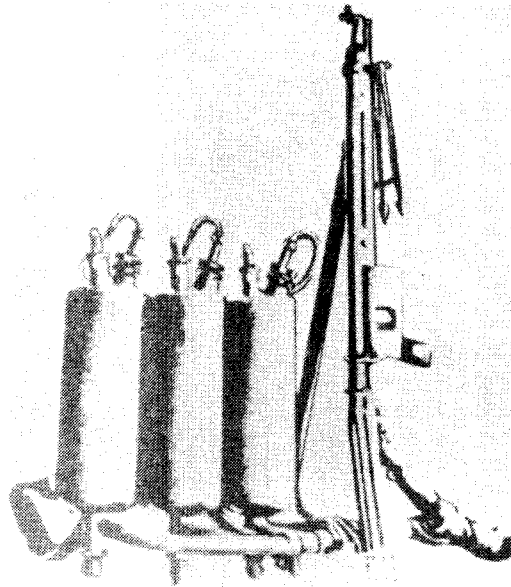


05C-113-972  
 NAME Falconet  
 TYPE Swiss grenade launcher  
 DATE ADOPTED c. 1972  
 LENGTH 90/110cm  
 WT (EMPTY) 6kg  
 WT (LOADED) 6.6kg w/HE  
 CAL 24mm  
 Dpw 55  
 MUZZLE VEL 1312 fps  
 BURST RADIUS 5m

MIN RNG 3m  
 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  
 ANTI-ARMOR CLASS G  
 FILLER Composition B  
 FILLER WT .024kg  
 Dpw 55  
 EQUIVALENT TO C4 (R.E.) 1.0  
 MIN RNG 3m  
 EFF RNG 600m  
 MAX RNG 700m

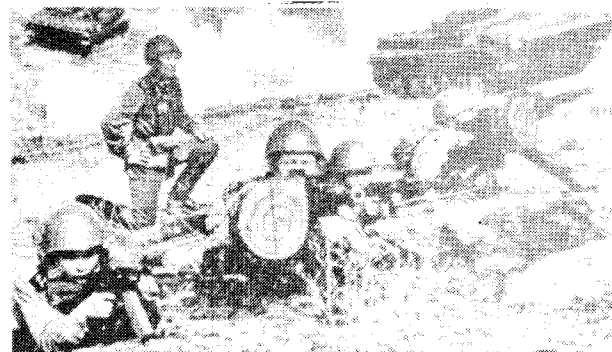
This is the high explosive round for the Falconet. The round has a belted rim around the case for added strength. Little data is known about the round since it is still experimental. The round is known to incorporate a tracer element and has a point detonating fuse that arms after travelling 3 meters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

05C-113-972-2  
 NAME Defensive grenade  
 TYPE Antipersonnel  
 WEAPON USED IN Falconet, 05C-113-972-2  
 SIZE 2.4x10.6cm  
 WT .070kg  
 CAL 24mm  
 MUZZLE VEL 1969 fps  
 E-FACTOR 9  
 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 LPO-50  
 TYPE Russian flamethrower  
 DATE ADOPTED c. 1965  
 WT (EMPTY) 15kg  
 WT (LOADED) 23kg  
 ANTI-ARMOR CLASS F1  
 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 LPO-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 (Plamya)  
 TYPE Russian grenade launcher  
 DATE ADOPTED c. 1974  
 LENGTH 84cm  
 WT (EMPTY) 18kg  
 WT (LOADED) 28.8kg  
 CAL 30mm  
 Dpw 93  
 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 have yet, as 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  
 Dpw 93  
 EQUIVALENT TO C4 (R.E.) 1.0  
 MIN RNG 10m  
 EFF RNG 1200m  
 MAX RNG 1750m

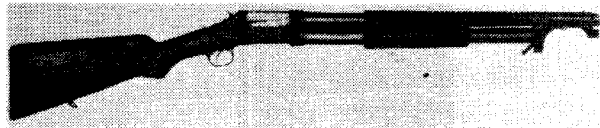
This is the high explosive fragmentation round for the AGS-17. The casing of the round has a pronounced raised belt just ahead of the rim. The explosive used in the round is a mixture of 95 percent RDX and 5 percent Wax. The body of the projectile is wire wrapped to aid in fragmentation.



05A-132-880  
 NAME 10 gauge sawed-off  
 TYPE American shotgun  
 DATE ADOPTED c. 1880  
 LENGTH 45.7cm  
 WT (EMPTY) 3.2kg  
 WT (LOADED) 3.34kg

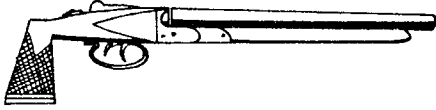
CAL 10 gauge  
 E-FACTOR 7  
 MUZZLE VEL 1100 fps  
 EFF RNG 20m  
 MAX RNG 150m  
 TYPE OF FIRE Break open, single shot, double barreled  
 RATE OF FIRE 20 rpm  
 FEED DEVICE 2 rounds  
 FEED DEVICE WT (2 rds) .14kg  
 BASIC LOAD 50 rounds  
 LOAD WT 3.5kg  
 Data is for weapon loaded with 2 7/8 inch 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 QK. 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  
 E-FACTOR 7  
 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 rds.) .26kg  
 BASIC LOAD 50 rounds  
 LOAD WT 2.6kg  
 Data is for weapon loaded with standard 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 rule 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) 2.29kg  
 CAL 20 gauge  
 E-FACTOR 6  
 MUZZLE VEL 1165 fps  
 EFF RNG 20m  
 MAX RNG 125m  
 TYPE OF FIRE Break open, single shot, double barrel  
 RATE OF FIRE 20 rpm  
 FEED DEVICE 2 rounds  
 FEED DEVICE WT (2 rds.) .074kg  
 BASIC LOAD 50 rounds  
 LOAD WT 1.85kg

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  
 E-FACTOR 9  
 MUZZLE VEL 1330 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 rds.) .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  
 E-FACTOR 9  
 MUZZLE VEL 1330 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 rds.) .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 rotation yoke allows the M10B to be fired from the shoulder or, with the yoke rotated 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.

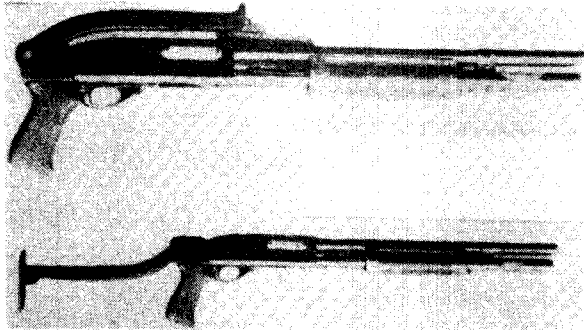


05A-132-972  
 NAME Atchisson Assault Gun  
 TYPE American shotgun  
 DATE ADOPTED 1972  
 LENGTH 99cm  
 WT (EMPTY) 5.2kg  
 WT (LOADED) 7.3kg (w/20 rd. drum)  
 CAL 12 gauge  
 E-FACTOR 9  
 MUZZLE VEL 1330 fps  
 EFF RNG 90m  
 MAX RNG 510m  
 TYPE OF FIRE Selective  
 RATE OF FIRE (SS) 45 rpm (A)90 rpm (CYCLIC) 360 rpm

FEED DEVICE 5 round box or 20 round drum magazine  
 FEED DEVICE WT (5 rd.) .6kg, (20 rd.) 2.1kg  
 BASIC LOAD 3-20 rd. drums (60 rounds)  
 LOAD WT 6.3kg

Data is for weapon loaded with Magnum 00 Buckshot

This is probably the most devastating 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-132-974  
 NAME Mossberg M500 ATP8S  
 TYPE American shotgun  
 DATE ADOPTED 1974  
 LENGTH 99.7cm  
 WT (EMPTY) 3.2kg  
 WT (LOADED) 4.02kg  
 CAL 12 gauge  
 E-FACTOR 9  
 MUZZLE VEL 1330 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 rds.) .64kg  
 BASIC LOAD 50 rounds  
 LOAD WT 4kg

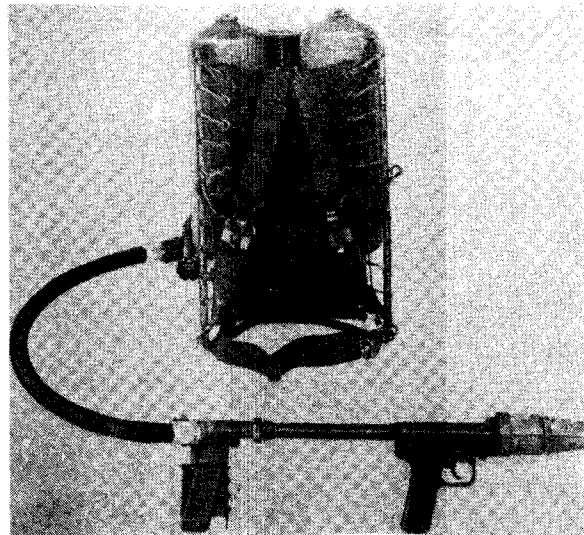
Data is for weapon loaded with Magnum 00 Buckshot

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 topped to accept optical sights.

05A-132-972a  
 NAME Remington 870P  
 TYPE American shotgun  
 DATE ADOPTED 1972  
 LENGTH 77/102cm  
 WT (EMPTY) 3.4kg  
 WT (LOADED) 4.04kg  
 CAL 12 gauge  
 E-FACTOR 9  
 MUZZLE VEL 1330 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 rds.) .64kg  
 BASIC LOAD 50 rounds  
 LOAD WT 4kg

Data is for weapon loaded with Magnum 00 Buckshot

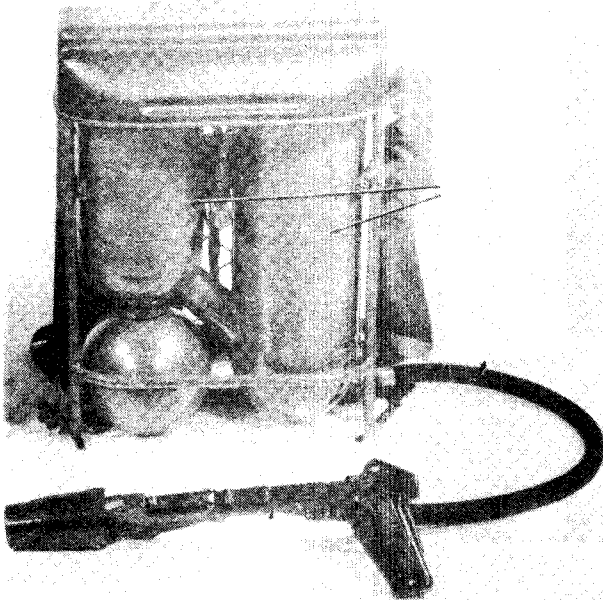
This is a standard slide action shotgun that has been used in police work since the original model became available in 1951. In 1967, an extended magazine was developed by Remington, increasing the rounds available to 8. In 1972 a folding stock was designed for the 870P and the model illustrated above 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 into the magazine from below the receiver is also considered a drawback in a fighting shotgun. This drawback is partially nullified by experienced shotgunsners 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.



05B-132-945  
 NAME M2A1 Flamethrower  
 TYPE American flamethrower  
 DATE ADOPTED c.1945  
 WT (EMPTY) 19.5kg  
 WT (LOADED) 31.75kg  
 ANTI-ARMOR CLASS F1  
 EFF RNG 55m  
 MAX RNG 55m  
 TYPE OF FIRE Semiautomatic  
 RATE OF FIRE 5 rpm  
 FEED DEVICE 17.98 liters gasoline w/5 rd. 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 US. military until

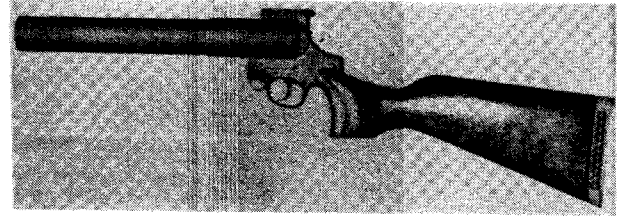
replaced by the M2A1-7, which used the M2A1 tanks and M7 flame gun. The two large tanks on the backpack hold gasoline with the center small tank filled with compressed air or nitrogen. The fuel follows the flexible metal hose to the flame gun. The rear trigger lever of the flame gun controls the flow 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 French 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  
 ANTI-ARMOR CLASS F1  
 EFF RNG 55m  
 MAX RNG 55m  
 TYPE OF FIRE Semiautomatic  
 RATE OF FIRE 5 rpm  
 FEED DEVICE 16 liters fuel w/1-5 rd. ignition cylinder  
 FEED DEVICE WT 10.9kg  
 BASIC LOAD 1 fuel fill, 2 ignition cylinders  
 LOAD WT 10.9kg

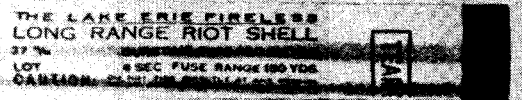
This is an improved weapon similar to the M2A1 flamethrower. The backpack has two tanks with compressed air or nitro-

gen 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.



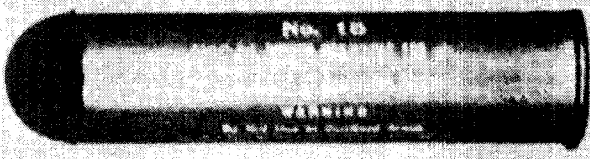
05C-132-966  
 NAME Smith and Wesson Tear Gas Gun  
 TYPE American grenade launcher  
 DATE ADOPTED c. 1966  
 LENGTH 73.7cm  
 WT (EMPTY) 2.7kg  
 WT (LOADED) 3.182kg  
 CAL 37mm  
 MUZZLE VEL 328 fps  
 BURST RADIUS 10m  
 EFF RNG 137m  
 MAX RNG 150m  
 TYPE OF FIRE Single shot, break open, double 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 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 some one. 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  
 FILLER WT  
 MIN RNG 0M  
 EFF RNG 11m  
 MAX RNG 11m  
 PACKAGING 12 rds./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.



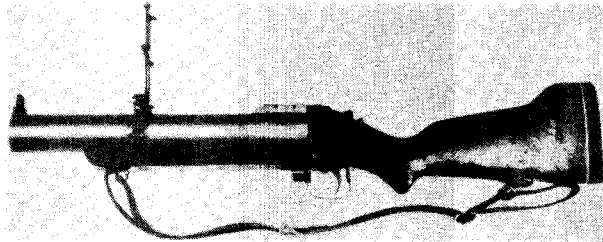
05C-132-966-4  
 NAME 37mm Baton  
 TYPE Rubber bullet  
 WEAPON USED IN S & W Tear Gas Gun 05C-132-966,  
 SIZE 3.8x12cm  
 WT .17kg  
 CAL 37mm  
 MUZZLE VEL 328 fps  
 E-FACTOR 10 (no penetration)  
 EFF RNG 60m  
 PACKAGING 25 rounds/Case  
 PACKAGE WT 9kg

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 function, 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.

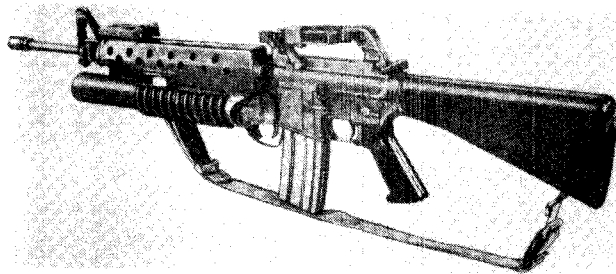


05C-132-958  
 NAME M79  
 TYPE American grenade launcher  
 DATE ADOPTED 1958  
 LENGTH 73.1cm  
 WT (EMPTY) 2.699kg  
 WT (LOADED) 2.926kg  
 CAL 40mm  
 Dpw 81  
 MUZZLE VEL 250 fps  
 BURST RADIUS 5m  
 ANTI-ARMOR CLASS G  
 MIN RNG 14m  
 EFF RNG 350m  
 MAX RNG 400m  
 TYPE OF FIRE Single shot, 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 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. The 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.

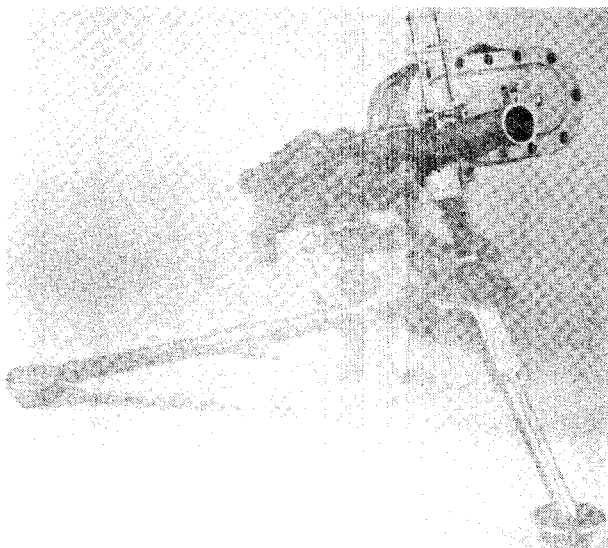




05C-132-969  
 NAME M203  
 TYPE American grenade launcher  
 DATE ADOPTED 1969  
 LENGTH 38.9cm (99cm w/M16A1)  
 WT (EMPTY) 1.36kg (4.54kg w/M16A1)  
 WT (LOADED) 1.587kg (5.222 w/M16A1+30 rds.)  
 CAL 40mm  
 Dpw 81  
 MUZZLE VEL 235 fps  
 BURST RADIUS 5m  
 ANTI-ARMOR CLASS G  
 MIN RNG 14m  
 EFF 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 M406 HE round

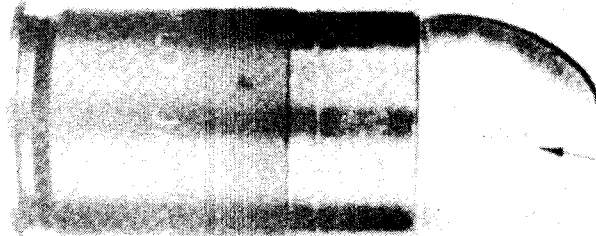
The M203 is a 40mm grenade launcher designed to mount on the M16A1 rifle. The weapon combination, referred to as an M203, gives the firer a choice of using either 40mm grenades or the 5.56mm rifle. One of the drawbacks of the M79 was that when the 40mm grenade was fired the gunner would normally only 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  
 Dpw 81  
 MUZZLE VEL 250 fps  
 BURST RADIUS 5m  
 ANTI-ARMOR CLASS G  
 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 M406 HE round

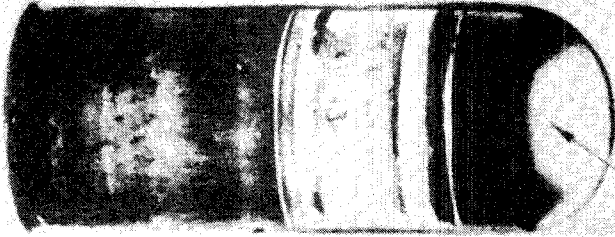
This is a magazine fed, selective fire 40mm grenade launcher capable of firing most of the 40mm grenade family. The weapon cannot feed the M576E1 Multiple projectile rounds and the M651E1CS and flare rounds must be loaded singly through the receiver as they are too long to fit in the magazine. The M174E3 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  
 ANTI-ARMOR CLASS G  
 FILLER Composition B  
 FILLER WT .035kg  
 Dpw 81  
 EQUIVALENT TO C4 (R.E.) 1.0  
 MIN RNG (381) 3m, (M406) 14m  
 EFF RNG 350m  
 MAX RNG 400m  
 PACKAGING 6 rounds/Bandoleer, 12 Bandoleers/Case (72 rounds)  
 PACKAGE WT 26.3kg

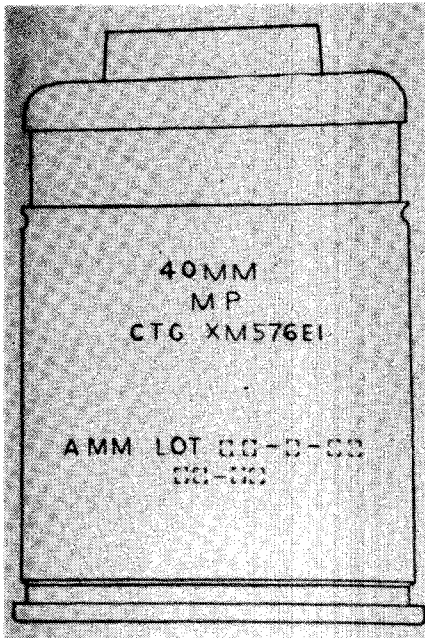
These rounds are both equal except for their fuses. The M381 arms after travelling three meters and is of especial use in house-to-house fighting where it can be fired, from cover, into a room and detonated when it strikes the far wall. The M406 round arms after travelling at least fourteen meters and 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.



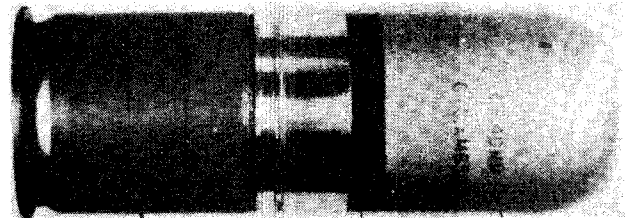
05C-132-972-2  
 NAME 40mm M433 HEDP  
 TYPE High explosive/fragmentation and Armor piercing  
 WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, M174E3, 05C-132-972, H & K 69A1, 05C-041-972  
 SIZE 4.4x9.9cm  
 WT .226kg  
 CAL 40mm  
 MUZZLE VEL 250 fps  
 E-FACTOR 120  
 BURST RADIUS 5m  
 PENETRATION IN STEEL 5cm  
 ANTI-ARMOR CLASS E  
 FILLER RDX  
 FILLER WT .028kg  
 Dpw 65  
 EQUIVALENT TO C4 (R.E.) 1.0  
 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.



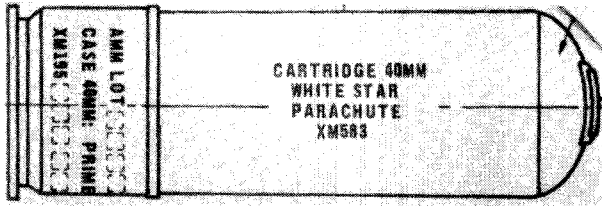
05C-132-972-3  
 NAME 40mm M576E1 Multiple Projectile  
 TYPE Antipersonnel  
 WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, H & K 69A1, 05C-041-972  
 SIZE 4.4x6.4cm  
 WT .122kg  
 CAL 40mm  
 MUZZLE VEL 250 fps  
 E-FACTOR 2  
 FILLER 20 No. 4 Buckshot (.24 Cal.)  
 FILLER WT .027kg  
 EFF RNG 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 27 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.



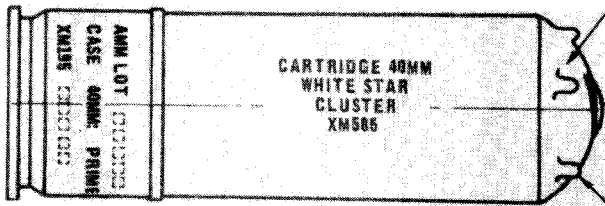
05C-132-972-4  
 NAME 40mm M651E1 CS  
 TYPE Tear gas round  
 WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, M174E3 05C-132-972, H & K 69A1, 05C-041-972  
 SIZE 4.4x11.4cm  
 WT .308kg  
 CAL 40mm  
 MUZZLE VEL 250 fps  
 E-FACTOR 2  
 BURST RADIUS 2.5x4.5.2m  
 BURN TIME 25 seconds  
 FILLER CS  
 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.



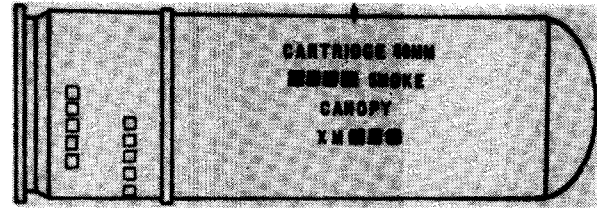
05C-132-972-5  
 NAME 40mm M583 (White), M661 (Green), M662 (Red), M695 (Orange) Parachute flares  
 TYPE Illuminating and signalling flares  
 WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, M174E3, 05C-132-972, H & K 69A1, 05C-041-972  
 SIZE 4.4x13.4cm  
 WT .213kg  
 CAL 40mm  
 MUZZLE VEL 250 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.



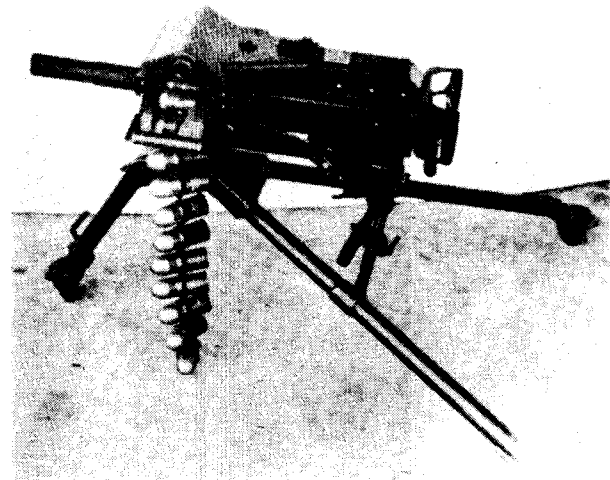
05C-132-972-6  
 NAME 40mm M585 (White), M663 (Green), M664 (Red), Star Clusters  
 TYPE Signalling flares  
 WEAPON USED IN M79, 05C-132-958, M203, 05C-132-969, M174E3, 05C-132-972, H & K 69A1, 05C-041-972  
 SIZE 4.4x13.4cm  
 WT .204kg  
 CAL 40mm  
 MUZZLE VEL 250 fps  
 FUSE DELAY 5 seconds  
 BURN 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

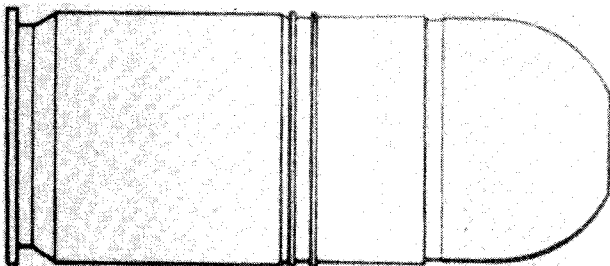
This round is especially designed for daylight signalling of aircraft through a jungle canopy. When fired, a five second delay element is ignited. The velocity of the round is enough to penetrate the overhead cover in the jungles. After the round has penetrated the trees, the delay fires an ejection 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  
 Dpw 125  
 MUZZLE VEL 787 fps  
 BURST RADIUS 10m  
 ANTI-ARMOR CLASS G  
 MIN RNG 13m  
 EFF RNG 1600m

MAX RNG 3100m  
 TYPE OF FIRE  
 RATE OF FIRE  
 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 chambered for the standard 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.

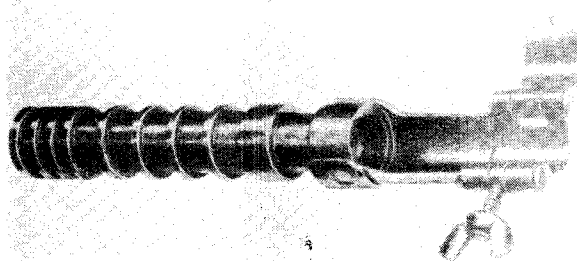


05C-132-980-1  
 NAME 40mm M384 HE  
 TYPE High Explosive/fragmentation  
 WEAPON USED IN Mk19, 05C-132-980  
 SIZE 4.4x11.4cm  
 WT .34kg  
 CAL 40mm  
 MUZZLE VEL 787 fps  
 BURST RADIUS 10m  
 ANTI-ARMOR CLASS G  
 FILLER Composition A5  
 FILLER WT .054kg  
 Dpw 125  
 EQUIVALENT TO C4 (R.E.) 1.0  
 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.

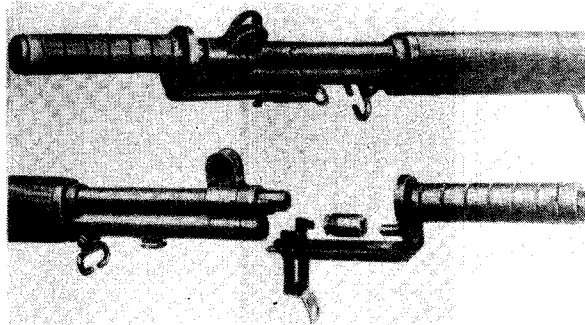
05C-132-980-2  
 NAME M574E2 WP  
 TYPE White Phosphorus  
 WEAPON USED IN Mk19, 05C-132-980  
 SIZE 4.4x11.4cm  
 WT .34kg  
 CAL 40mm  
 MUZZLE VEL 787 fps  
 BURST RADIUS 10m  
 ANTI-ARMOR CLASS G  
 FILLER White phosphorus  
 FILLER WT .054kg  
 MIN RNG 18m  
 EFF RNG 1600m  
 MAX RNG 3100m  
 PACKAGING 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, the M574E2 round can also be used for antipersonnel and incendiary work.



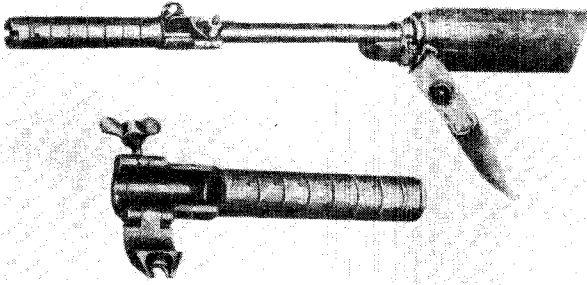
05C-132-918  
 NAME Grenade Launcher M1  
 TYPE American rifle grenade launcher  
 DATE ADOPTED c. 1918  
 LENGTH 18cm  
 WT .24kg  
 CAL 7.62x63mm  
 MUZZLE VEL c. 165 fps  
 WEAPON USED WITH M1903 Springfield

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.



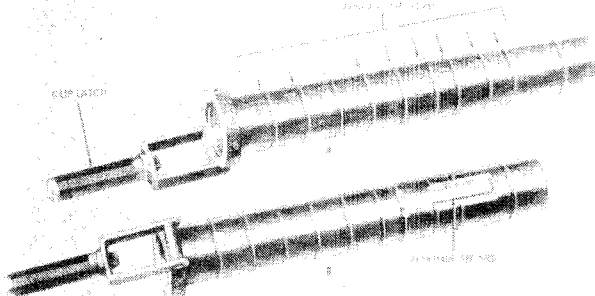
05C-132-936  
 NAME Grenade Launcher M7  
 TYPE American rifle grenade launcher  
 DATE ADOPTED 1936  
 LENGTH 19cm  
 WT .34kg  
 CAL 7.62x63mm  
 MUZZLE VEL c. 165 fps  
 WEAPON USED WITH M1 Garand

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 ball 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 be 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.

#### 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 Stokes 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.

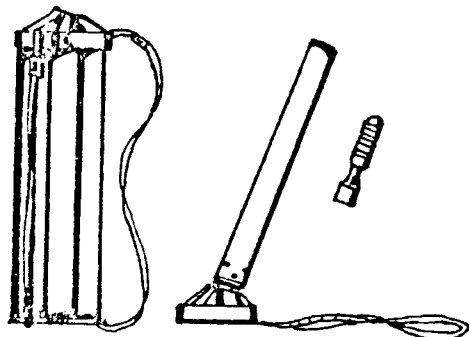
#### RECOILLESS RIFLES

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, 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.

#### 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 anti-tank rifles.



06A-011-972  
 TYPE Belgian disposable silenced mortar  
 DATE ADOPTED c.1972  
 LENGTH 70cm  
 WT (EMPTY) 6.46kg  
 WT (LOADED) 7.18kg  
 Dpw 231  
 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

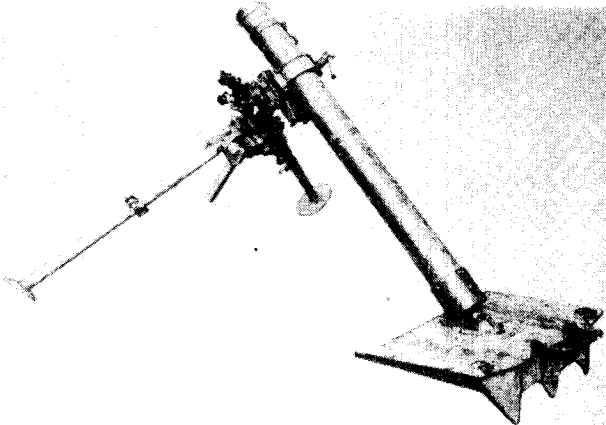
Data is for weapon loaded with PRB-404 grenade

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  
 Dpw 231  
 EQUIVALENT TO C4 (R.E.) 1.00  
 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 removed limiting the rounds effect to blast only.

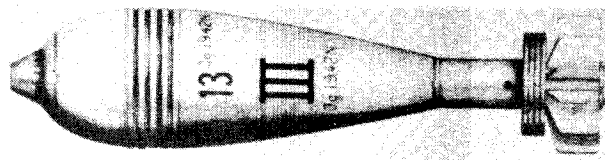


06A-040-934  
 NAME 8cm S. Gr. W. 34  
 NAME (NATIVE) 8cm Schwere Granatenwerfer 34  
 TYPE German Mortar  
 DATE ADOPTED 1934  
 LENGTH 114.3cm  
 WT (EMPTY) 62kg  
 CAL 80mm

Dpw 871  
 MUZZLE VEL 571 fps  
 BURST RADIUS 20m  
 ANTI-ARMOR CLASS D  
 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

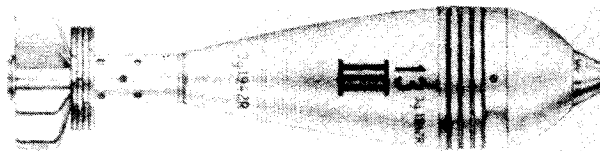
Data is for weapon loaded with Type 34 HE

This was the standard German heavy infantry mortar of WWI. 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 for 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  
 ANTI-ARMOR CLASS D  
 FILLER TNT  
 FILLER WT .503kg  
 Dpw 871  
 EQUIVALENT TO C4 (R.E.) 0.75  
 MIN RNG 60m  
 EFF RNG 2400m  
 MAX RNG 2400m  
 PACKAGING 3 rds/Case  
 PACKAGE WT 14.5kg

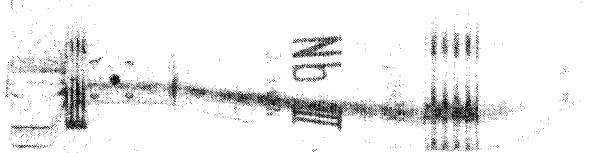
This was the standard explosive round for the S. G. W. 34. The fuse was non adjustable and detonated on impact.



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  
 Dpw 871  
 EQUIVALENT TO C4 (R.E.) 0.75  
 MIN RNG 60m

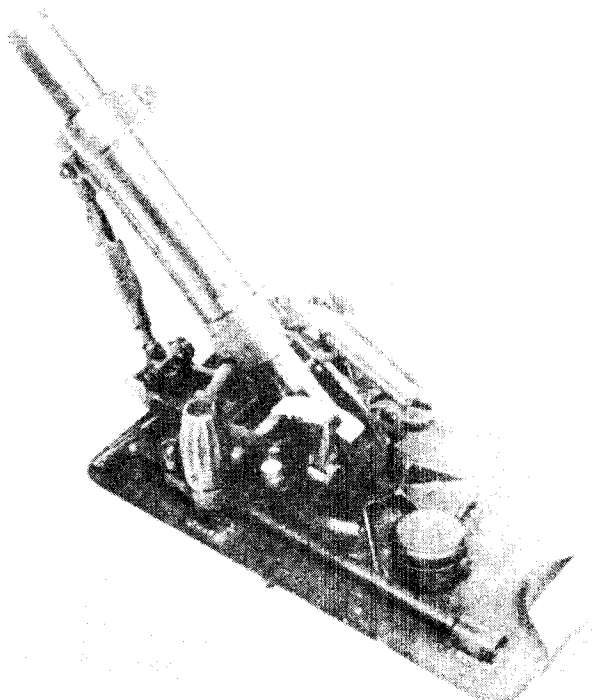
EFF RNG 2400m  
 MAX RNG 2400m  
 PACKAGING 3 rds/Case  
 PACKAGE WT 14.5kg

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 rds/Case  
 PACKAGE WT 14.5kg

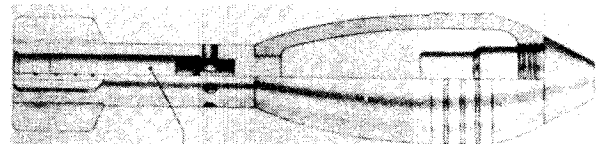
This is the standard smoke round for the 8cm mortar. The round is a bursting type munition filled with Liquid Sulfur trioxide. The Sulfur Trioxide reacts with air forming a dense cloud of smoke. The smoke is actually made up of particles of weak sulfuric acid. Due to the acid the smoke does have an irritating effect on the skin and eyes and is not to be breathed 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  
 Dpw 194  
 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 rds  
 LOAD WT 12.5kg

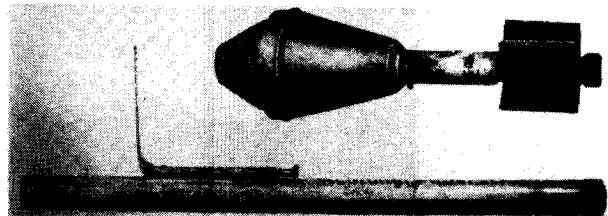
Data is for weapon loaded with HE

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  
 Dpw 194  
 EQUIVALENT TO C4 (R.E.) 0.75  
 MIN RNG 46m  
 EFF RNG 503m  
 MAX RNG 520m  
 PACKAGING 10 rds/Case  
 PACKAGE WT 12.5kg

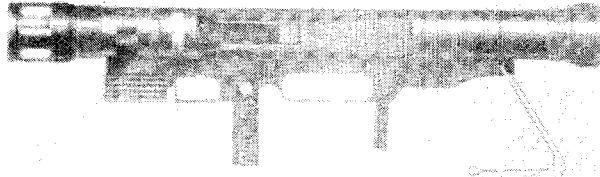
This is the only round loaded for the L. Gr. W. 36. When used in the North African campaign, the mortar and ammunition was soon found to be inadequate in terms of range and effect and was soon replaced by the S. Gr. W. 34.



06B-040-944  
 NAME Panzerfaust 100  
 TYPE German recoilless antitank weapon  
 DATE ADOPTED 1944

LENGTH 104cm  
 WT (LOADED) 6.8kg  
 CAL 15cm  
 E-FACTOR 740  
 Dpw 3668  
 MUZZLE VEL 204 fps  
 BURST RADIUS 10m  
 ANTI-ARMOR CLASS D  
 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

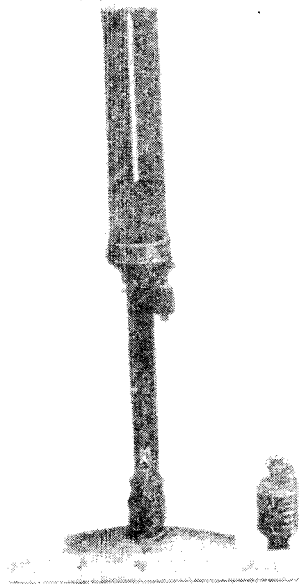
These German antitank launchers were the first of the disposable antitank weapons. Designed to be used only once, the launcher of the Panzerfaust was a simple steel tube with a firing mechanism and a simple sight system. Raising the rear sight cocks the launcher. Triggering the launcher fires a powder 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  
 E-FACTOR 1020  
 Dpw 533  
 MUZZLE VEL 722 fps  
 BURST RADIUS 5m  
 ANTI-ARMOR CLASS D  
 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 U.S. The Armbrust uses the counter-mass principle to eliminate recoil. The counter-mass 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 counter-mass 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 counter-mass 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.



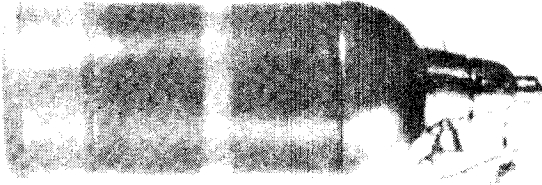
06A-062-929  
 NAME 50mm Model 89 Grenade discharger  
 NAME (NATIVE) Hachikyu Shiki Jutekidanto  
 TYPE Japanese Mortar  
 DATE ADOPTED 1929  
 LENGTH 60.9cm  
 WT (EMPTY) 4.649kg  
 WT (LOADED) 5.182  
 CAL 50mm  
 Dpw 113  
 BURST RADIUS 10m  
 MIN RNG 50m  
 EFF RNG 170m  
 MAX RNG 170m  
 AMMUNITION 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.



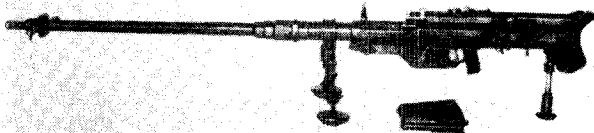
06A-062-929-1  
 NAME 50mm Mod 91 HE  
 TYPE High Explosive  
 WEAPON USED IN Model 89 Mortar  
 SIZE 12.6cm  
 WT .533kg  
 CAL 50mm  
 BURST RADIUS 10m  
 FUSE DELAY 7 seconds  
 FILLER TNT  
 FILLER WT 0.065kg  
 Dpw 113  
 EQUIVALENT TO C4 (R.E.) 0.75  
 MIN RNG 50m  
 EFF RNG 170m  
 MAX RNG 170m

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 as a hand grenade or mortar shell, cutting down on the different kinds of ammunition an infantry troop has to carry.



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  
 MIN RNG 120m  
 EFF RNG 650m  
 MAX RNG 650

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.



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  
 E-FACTOR 49

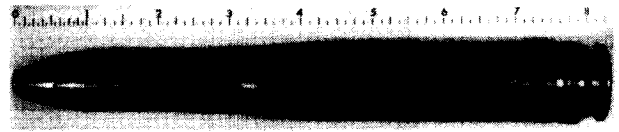
PENETRATION IN STEEL 2cm  
 MUZZLE VEL 3000 fps  
 ANTI-ARMOR CLASS E  
 EFF RNG 1500m  
 MAX RNG 7000m  
 AMMUNITION TYPES HE-T, AP-T  
 TYPE OF FIRE Semiautomatic  
 RATE OF FIRE 10 rpm  
 FEED DEVICE 10 round magazine  
 FEED DEVICE WT 7.94kg  
 BASIC LOAD 5 magazines (50 rounds)  
 LOAD WT 39.7kg  
 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  
 E-FACTOR 49  
 PENETRATION IN STEEL 2cm  
 ANTI-ARMOR CLASS E  
 EFF RNG 1500m  
 MAX RNG 7000m

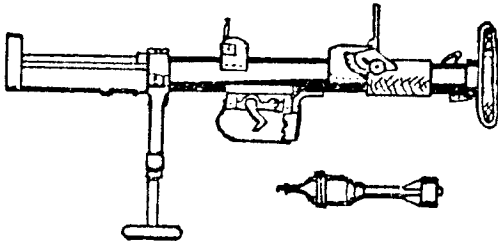
This was the standard round for the Pzb 785. The projectile was a solid slug of hardened steel with a tracer element in the base and a copper driving band to engage the barrels rifling.



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  
 E-FACTOR 44  
 BURST RADIUS .5m  
 FUSE DELAY impact  
 FILLER Penthrate  
 FILLER WT 3.7kg  
 Dpw 9  
 EQUIVALENT TO C4 (R.E.) 1.0  
 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. This is also a self destruct built into the tracer mechanism that detonates the round 1.5 seconds after firing.

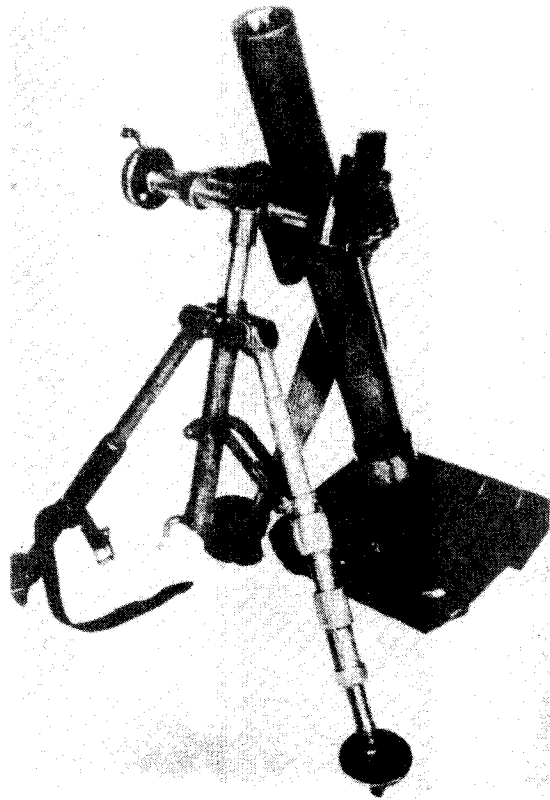


06A-131-942  
 NAME PIAT  
 NAME (NATIVE) Projector, Infantry, AntiTank  
 TYPE British antitank weapon  
 DATE ADOPTED 1942  
 LENGTH 99cm  
 WT (EMPTY) 14.4kg  
 WT (LOADED) 15.75kg  
 CAL 89mm  
 E-FACTOR 200  
 MUZZLE VEL 450 fps  
 BURST RADIUS 10m  
 PENETRATION IN STEEL 7.5cm  
 ANTI-ARMOR CLASS E  
 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 hard 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  
 WT (EMPTY) 19.1kg  
 CAL 60mm  
 Dpw 441  
 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  
 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

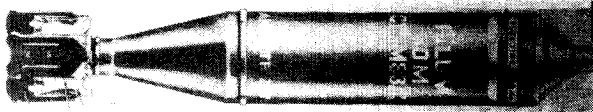
WT 1.451kg  
 CAL 60mm  
 MUZZLE VEL 520 fps  
 BURST RADIUS 20m  
 ANTI-ARMOR CLASS F  
 FILLER Comp. B  
 FILLER WT .191kg  
 Dpw 441  
 EQUIVALENT TO C4 (R.E.) 1.0  
 MIN RNG 45m  
 EFF RNG 1790m  
 MAX RNG 1814m  
 PACKAGING 12 rds/Case  
 PACKAGE WT 24.9kg

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



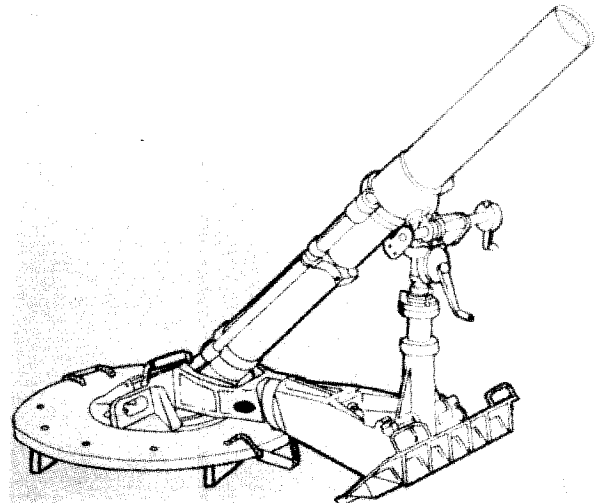
06A-132-942-2  
 NAME 60mm M302E2 WP  
 TYPE White Phosphorus  
 WEAPON USED IN M19 Mortar  
 SIZE 33.2cm  
 WT 1.86kg  
 CAL 60mm  
 BURST RADIUS 10m  
 BURN TIME 40 seconds at 2700 degrees Centigrade  
 FILLER White Phosphorus  
 FILLER WT .347 kg  
 MIN RNG 35m  
 EFF RNG 1450m  
 MAX RNG 1450m

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  
 Dpw 6131  
 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  
 ANTI-ARMOR CLASS E  
 FILLER TNT  
 FILLER WT 3.538kg  
 Dpw 6131  
 EQUIVALENT TO C4 (R.E.) 0.75  
 MIN RNG 920m  
 EFF RNG 5650m  
 MAX RNG 5650m

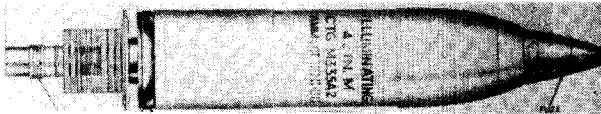
PACKAGING 2 rds/Case  
PACKAGE WT 36.7 kg

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.



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 rds/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  
FUZE 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 rds/Case  
PACKAGE WT 38.1kg

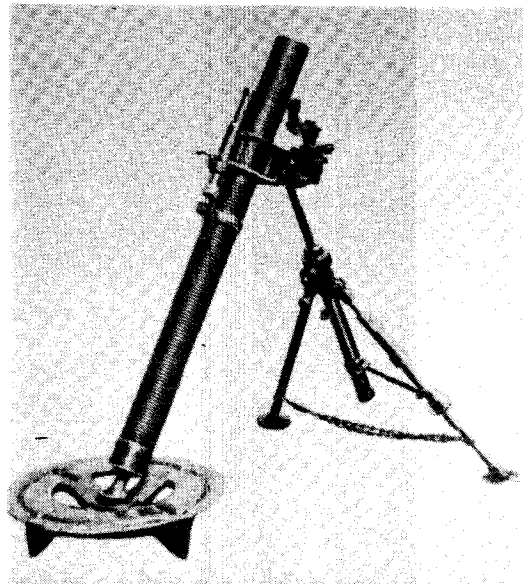
This illuminating round is also referred to as a "Star" shell. Upon functioning, the shell ejects a magnesium flare suspended from a parachute. The height of the flare is determined by adjusting the range and setting the time fuse.



06A-132-951-4  
NAME 107mm M630 CS  
TYPE Gas  
WEAPON USED IN M30 Mortar

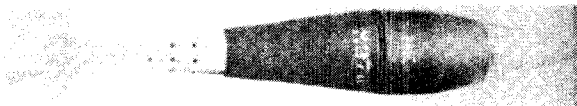
SIZE 65.3cm  
WT 12.111kg  
CAL 107mm  
MUZZLE VEL 990 fps  
BURST RADIUS 72x16x8m  
FUZE DELAY 2 to 100 seconds (variable) or impact  
BURN TIME 60 seconds  
FILLER 4 CS/Pyrotechnic cannisters  
FILLER WT .48kg per cannister, 1.92kg total  
MIN RNG 1540m  
EFF RNG 6182m  
MAX RNG 6182m

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  
Dpw 2200  
BURST RADIUS 34m  
ANTI-ARMOR CLASS D  
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.



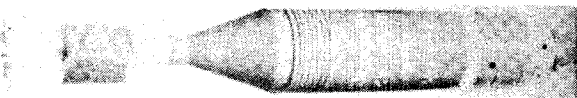
06A-132-952-1  
 NAME 81mm M374 HE  
 TYPE High Explosive  
 WEAPON USED IN M29 Mortar  
 SIZE 52.8cm  
 WT 4.237kg  
 CAL 81mm  
 BURST RADIUS 34m  
 ANTI-ARMOR CLASS D  
 FILLER Comp. B  
 FILLER WT .953kg  
 Dpw 2200  
 EQUIVALENT TO C4 (R.E.) 1.0  
 MIN RNG 50m  
 EFF RNG 4412m  
 MAX RNG 4737m  
 PACKAGING 3 rds/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 rds/Case  
 PACKAGE WT 23.1kg

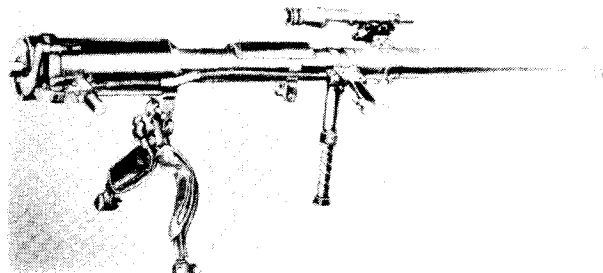
This is the standard smoke round for the M29 mortar. The basic load of a mortar is normally made up of 10% WP rounds.



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 candle power  
 FILLER magnesium flare  
 FILLER WT .621kg

MIN RNG 90m  
 EFF RNG 2100m  
 MAX RNG 3150m  
 PACKAGING 3 rds/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  
 E-FACTOR 240  
 Dpw 425  
 MUZZLE VEL 1200fps  
 BURST RADIUS 10m  
 ANTI-ARMOR CLASS E  
 MIN RNG 10m  
 EFF RNG 450m  
 MAX RNG 4338m  
 AMMUNITION TYPES M307A1 HEAT, M306A1 HE, M308A1 WP, T2SE5 Can.  
 TYPE OF FIRE Single shot  
 RATE OF FIRE 15rpm  
 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  
 ANTI-ARMOR CLASS F  
 FILLER Comp B  
 FILLER WT .277kg  
 Dpw 409  
 EQUIVALENT TO C4 (R.E.) 1.0  
 MIN RNG 10m  
 EFF RNG 450m

MAX RNG 4429m  
PACKAGING 4 rds/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 anti tank  
WEAPON USED IN M18 recoilless rifle  
SIZE 47.7cm  
WT 2.463kg  
CAL 57mm  
MUZZLE VEL 1200fps  
E-FACTOR 240  
BURST RADIUS 10m  
PENETRATION IN STEEL 8.6cm  
ANTI-ARMOR CLASS E  
FILLER Comp. B  
FILLER WT .184kg  
Dpw 425  
EQUIVALENT TO C4 (R.E.) 1.0  
MIN RNG 10m  
EFF RNG 450m  
MAX RNG 4338m  
PACKAGING 4 rds/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 1200fps  
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 rds/case  
PACKAGE WT 19.5kg

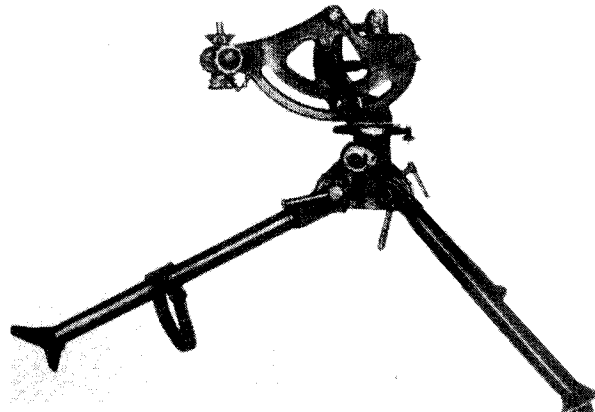
This is a smoke round for the M18. The burning temperature of the Phosphorus also gives the round excellent anti-personnel and incendiary uses.



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 1200fps  
E-FACTOR 6  
BURST RADIUS 5m x 25 meters range  
FILLER 154 cylindrical slugs  
MIN RNG 0m  
EFF RNG 175m  
MAX RNG 175m  
PACKAGING 4 rds/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  
E-FACTOR 300  
Dpw 1049  
MUZZLE VEL 990 fps  
BURST RADIUS 15m  
ANTI-ARMOR CLASS D  
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

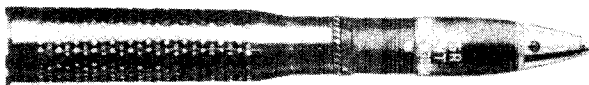
Data is for weapon loaded with M310A1 HEAT.

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  
E-FACTOR 300  
BURST RADIUS 15m  
PENETRATION IN STEEL 10.2cm  
ANTI-ARMOR CLASS D  
FILLER Comp. B  
FILLER WT .454kg  
Dpw 923  
EQUIVALENT TO C4 (R.E.) 1.0  
MIN RNG 20m  
EFF RNG 550m  
MAX RNG 6653m  
PACKAGING 2 rds/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 rotation.



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  
ANTI-ARMOR CLASS F  
FILLER TNT  
FILLER WT .676kg  
Dpw 1171  
EQUIVALENT TO C4 (R.E.) 0.75  
MIN RNG 20m  
EFF RNG 600m  
MAX RNG 6343m  
PACKAGING 2 rds/Case  
PACKAGE WT 35.38kg

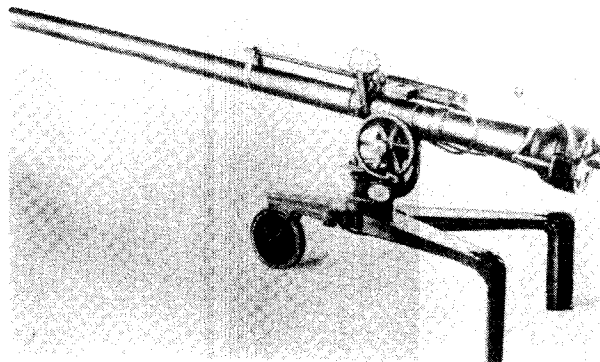
This round would be used for light-skinned targets such as trucks or buildings where the penetration of the HEAT would not be needed.



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 .612 kg  
MIN RNG 20m  
EFF RNG 550m  
MAX RNG 6398m  
PACKAGING 2 rds/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 rd magazine M8C)  
WT (MOUNTED) 228.5kg  
CAL 106mm  
E-FACTOR 1100  
Dpw 2925  
MUZZLE VEL 1650 fps  
BURST RADIUS 20m  
ANTI-ARMOR CLASS C  
MIN RNG 50m  
EFF RNG 1100m  
MAX RNG 7700mm  
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 US 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 114m  
WT (EMPTY) 11.072kg  
WT (LOADED) 13.989kg  
CAL 12.7x77mm  
E-FACTOR 18  
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. (See M40A2 Recoilless Rifle, 06B-132-953).



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  
E-FACTOR 1100  
BURST RADIUS 20m  
PENETRATION IN STEEL 45cm  
ANTI-ARMOR CLASS C  
FILLER Comp. B  
FILLER WT 1.266kg  
Dpw 2925  
EQUIVALENT TO C4 (R.E.) 1.0  
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  
ANTI-ARMOR CLASS D  
FILLER A-3  
FILLER WT 3.493kg  
Dpw 8069  
EQUIVALENT TO C4 (R.E.) 1.0  
MIN RNG 50m  
EFF RNG 1100m  
MAX RNG 7700m

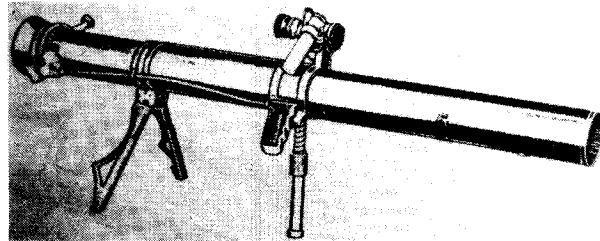
This projectile has a special "plastic" or "squash" warhead. The front of the projectile has a thin casing over a filler of plastic explosive. When the round strikes a target the warhead squashes, spreading the explosive over the target and then detonating. The detonating explosive builds up shock waves 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  
E-FACTOR 6 per flechette  
BURST RADIUS 400 x 130 cone  
FUZE DELAY adjustable  
FILLER 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  
E-FACTOR +740  
Dpw 1800  
MUZZLE VEL 700 fps  
BURST RADIUS 10m  
ANTI-ARMOR CLASS D  
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 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

E-FACTOR +740

BURST RADIUS 10m

PENETRATION IN STEEL +20m

ANTI-ARMOR CLASS D

FILLER Comp. B

FILLER WT .78kg

Dpw 1800

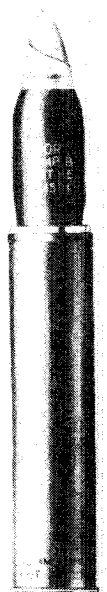
EQUIVALENT TO C4 (R.E.) 1.0

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

E-FACTOR 85

BURST RADIUS 34m

ANTI-ARMOR CLASS D

FILLER Comp. B

FILLER WT .953kg

Dpw 2200

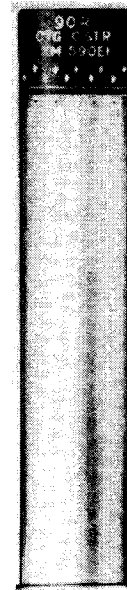
EQUIVALENT TO C4 (R.E.) 1.0

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

E-FACTOR 6

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.

## HAND 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.

**Smoke (Burning type) :** This is a canister type grenade filled with a chemical compound that gives off 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 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 small burst, 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 larger than normal fuses so it is more difficult to detect them at night until they function.

**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.

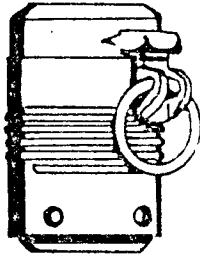
## FUSE TYPES

**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.

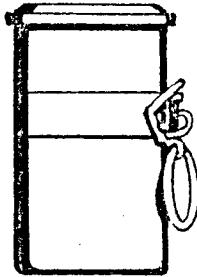
**Pull igniter :** One of the oldest fuse types, the pull ignition is also one of the simplest to make and use. To use the fuse, a pull ring or string is pulled, immediately igniting the delay train. A major drawback is that the fuse, once functioned, may not be disarmed.

**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  
 Dpw 130  
 FILLER TNT  
 FILLER WT .1kg  
 BURST RADIUS 13m  
 ANTI-ARMOR CLASS G  
 FUSE TYPE Pull ring/Tape  
 FUSE DELAY Impact  
 GRENADE CLASS B  
 EFF RNG 35m

This steel bodied grenade is made up of two parts screwed together. The fuse is of the pull pin/tape style with an impact fuse.



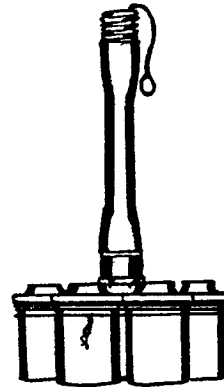
08-029-954  
 NAME RG-4  
 TYPE Czechoslovakian blast grenade  
 DATE ADOPTED c.1954  
 SIZE 8.4x5.3cm  
 WT .32kg  
 Dpw 137  
 FILLER TNT  
 FILLER WT .105kg  
 BURST RADIUS 13m  
 ANTI-ARMOR CLASS G  
 FUSE TYPE Pull ring/tape  
 FUSE DELAY Impact  
 GRENADE CLASS B  
 EFF RNG 35m

This grenade replaced the RG-34 in the Czech military. The fuse of the RG-4 is still of the pull pin/tape variety making it one of the last issue grenades still using this fuse.



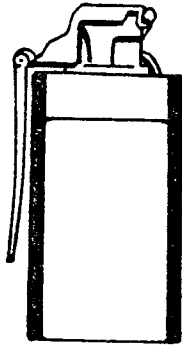
08-040-924  
 NAME Gr 24  
 NAME (NATIVE) Stielhanelgranate 24  
 TYPE German blast grenade  
 DATE ADOPTED 1924  
 SIZE 7x35.5cm  
 WT .595kg  
 Dpw 189  
 FILLER TNT  
 FILLER WT .166kg  
 BURST RADIUS 2m  
 ANTI-ARMOR CLASS G  
 FUSE TYPE Pull igniter  
 FUSE DELAY 4 seconds  
 GRENADE CLASS A  
 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.



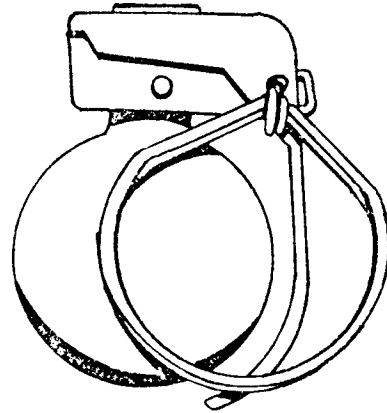
08-040-940  
 NAME Geballte Ladung  
 TYPE German improvised antitank grenade  
 DATE ADOPTED c.1940  
 WT 2.126kg  
 Dpw 2063  
 FILLER TNT  
 FILLER WT 1.191kg  
 BURST RADIUS 12m  
 ANTI-ARMOR CLASS F  
 FUSE TYPE Pull igniter  
 FUSE DELAY 4 seconds  
 EFF RNG 5m  
 BASIC LOAD 1  
 LOAD WT 2.126kg

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.



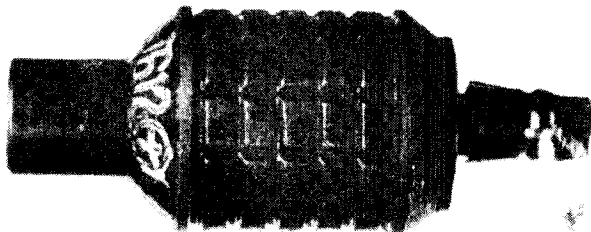
08-041-980  
 NAME NICO Sound and Flash grenade  
 TYPE German "Stun" grenade  
 DATE ADOPTED c.1980  
 SIZE 6x13.5cm  
 WT .25kg  
 FILLER 8 "Thunderflashes"  
 BURST RADIUS 10 m  
 FUSE DELAY 2.5 secondes  
 GRENADE CLASS A  
 BURN TIME Instantaneous 175 db at 2,500,000 cp  
 EFF RNG 40m  
 BASIC LOAD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



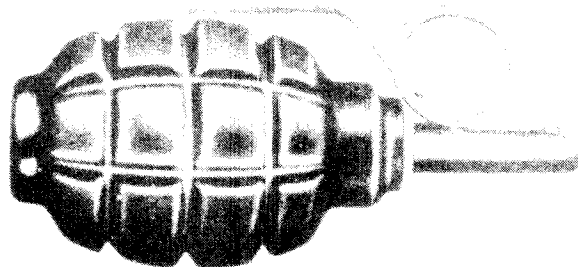
08-084-970  
 NAME V-40  
 TYPE Dutch fragmentation grenade  
 DATE ADOPTED 1970  
 SIZE 4.5cm dia.  
 WT .1kg  
 Dpw 74  
 FILLER Composition B  
 BURST RADIUS 5m  
 FUSE DELAY 4 seconds  
 GRENADE CLASS A+  
 EFF RNG 50m  
 BASIC LOAD 5  
 LOAD WT .5kg  
 PACKAGING 5 per Bandoleer, 32 Band./Case (160 rds.)  
 PACKAGE WT 32kg

This is the smallest production fragmentation grenade made today. The V-40 has excellent fragmentation within its burst radius and the light weight of the grenade allows it to be carried by the average soldier.



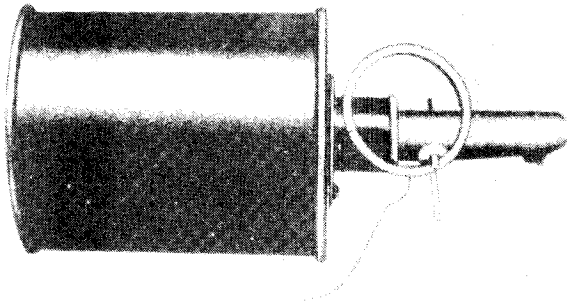
08-062-931  
 NAME Mod 91  
 TYPE Japanese fragmentation grenade/mortar shell  
 DATE ADOPTED 1931  
 SIZE 5x12.5cm  
 WT .533kg  
 Dpw 113  
 FILLER TNT  
 FILLER WT .065kg  
 BURST RADIUS 10m  
 ANTI-ARMOR CLASS G  
 FUSE TYPE Percussion ignition  
 FUSE DELAY 8 seconds  
 GRENADE CLASS A  
 EFF RNG 40m

This grenade is also used as a projectile for the Model 89 mortar. A propellant cap 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 igniting the delay train.



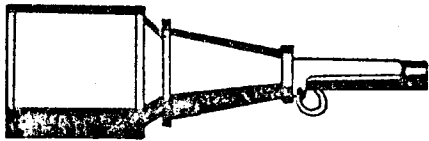
08-125-938  
 NAME F1  
 TYPE Russian fragmentation grenade  
 DATE ADOPTED 1938  
 SIZE 6.4x10.2cm  
 WT .576kg  
 Dpw 80  
 FILLER TNT  
 FILLER WT .046kg  
 BURST RADIUS 15m  
 ANTI-ARMOR CLASS G  
 FUSE DELAY 4 seconds  
 GRENADE CLASS A  
 EFF RNG 40m  
 PACKAGING 20 per Case  
 PACKAGE WT 19.5kg

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



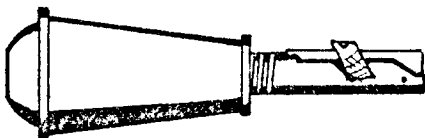
08-125-942  
 NAME RG-42  
 TYPE Russian fragmentation grenade  
 DATE ADOPTED c.1942  
 SIZE 12.1x11.8cm  
 WT .436kg  
 Dpw 153  
 FILLER TNT  
 FILLER WT .118kg  
 BURST RADIUS 25m  
 ANTI-ARMOR CLASS KG  
 FUSE DELAY 4 seconds  
 GRENADE CLASS B  
 EFF RNG 35m  
 PACKAGING 20 per Case  
 PACKAGE 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  
 Dpw 796  
 FILLER TNT  
 FILLER WT .612kg  
 BURST RADIUS 20m  
 PENETRATION IN STEEL 7.5cm  
 ANTI-ARMOR CLASS E  
 FUSE DELAY Impact  
 GRENADE CLASS D  
 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.



08-125-944  
 NAME RPG-6  
 TYPE Russian antitank grenade  
 DATE ADOPTED c.1944  
 SIZE 34.3x10.2cm  
 WT 1.1kg  
 Dpw 731  
 FILLER TNT  
 FILLER WT .562kg  
 BURST RADIUS 20m  
 PENETRATION IN STEEL 10cm  
 ANTI-ARMOR CLASS D  
 FUSE TYPE Pull ring/tape  
 FUSE DELAY Impact  
 GRENADE CLASS D  
 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.



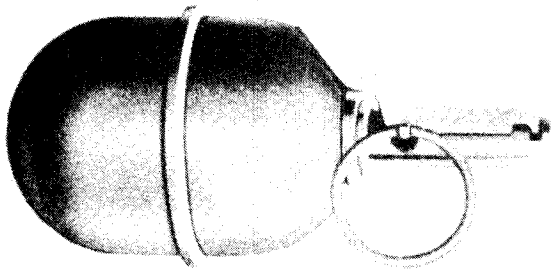
08-125-948  
 NAME RDG-1  
 TYPE Russian smoke grenade  
 DATE ADOPTED 1948  
 SIZE 22.2x5.8cm  
 WT .5kg  
 FILLER Smoke Composition  
 BURST RADIUS 460 square meters  
 FUSE TYPE Pull igniter  
 FUSE DELAY 2 seconds  
 GRENADE CLASS B  
 BURN TIME 90 seconds  
 EFF RNG 35m

This stick grenade is a burning type smoke grenade. The grenade has a cardboard body with a wooden handle. The pull igniter ignites a filling that produces either white or black smoke. The grenade will float and can be used to produce a smoke screen over water.



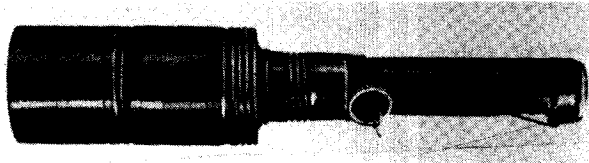
08-125-952  
 NAME RDG-2  
 TYPE Russian smoke grenade  
 DATE ADOPTED 1952  
 SIZE 4.5x25cm  
 WT .5kg  
 BURST RADIUS 20x10m  
 FUSE TYPE Pull igniter  
 FUSE DELAY 5 seconds  
 GRENADE CLASS C  
 BURN TIME 90 seconds  
 EFF RNG 30m  
 BASIC LOAD 2  
 LOAD WT 1kg

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.



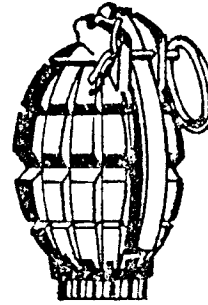
08-125-960  
 NAME RGD-5  
 TYPE Russian fragmentation grenade  
 DATE ADOPTED c.1960  
 SIZE 5.6x11.4cm  
 WT .31kg  
 Dpw 122  
 FILLER TNT  
 FILLER WT .11kg  
 BURST RADIUS 15m  
 ANTI-ARMOR CLASS G  
 FUSE DELAY 4 seconds  
 GRENADE CLASS B  
 EFF RNG 35m  
 BASIC LOAD 4  
 LOAD WT 1.24kg

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.



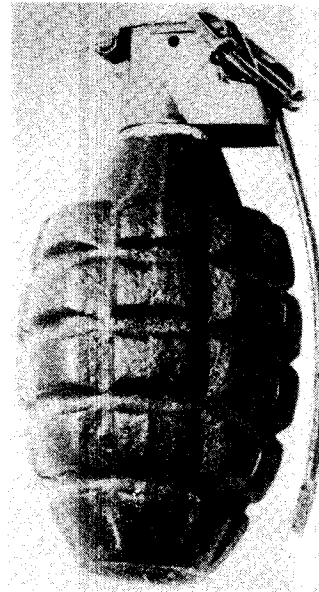
08-125-964  
 NAME RKG-3M  
 TYPE Russian antitank grenade  
 DATE ADOPTED c.1964  
 SIZE 36.2x5.6cm  
 WT 1.07kg  
 Dpw 1310  
 FILLER RDX/TNT  
 FILLER WT .567kg  
 BURST RADIUS 20m  
 PENETRATION IN STEEL 16.5cm  
 ANTI-ARMOR CLASS D  
 FUSE DELAY Impact  
 GRENADE CLASS D  
 EFF RNG 20m

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 going point first.



08-131-928  
 NAME Mk 36 Mills bomb  
 TYPE British fragmentation grenade  
 DATE ADOPTED  
 SIZE 5.7x8.9cm  
 WT .7kg  
 Dpw 63  
 FILLER 60/20 Baratol  
 FILLER WT .069kg  
 BURST RADIUS 10m  
 ANTI-ARMOR CLASS G  
 FUSE DELAY 4 or 7 seconds  
 GRENADE CLASS C  
 EFF RNG 30m  
 BASIC LOAD 4  
 LOAD WT 2.8kg  
 PACKAGING 12 per Case  
 PACKAGE WT 14 kg

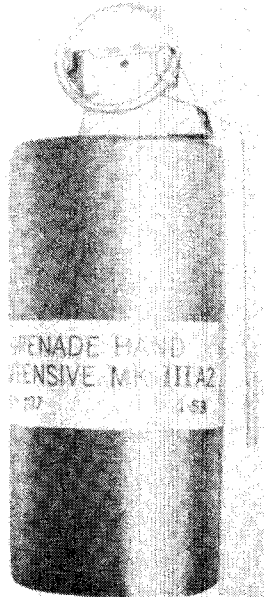
This was the standard British fragmentation grenade through WWII and Korea. The heavy serrations on the exterior of the body did little to control fragmentation. The grenade did not come fused and the detonator had to be installed before use. To install the detonator the large plug was unscrewed from 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  
 Dpw 63  
 FILLER TNT  
 FILLER WT .056kg

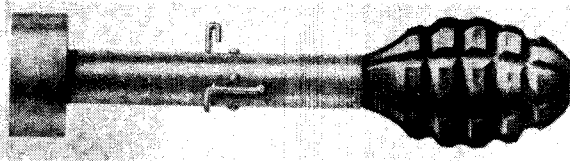
BURST RADIUS 10m  
 ANTI-ARMOR CLASS G  
 FUSE TYPE Pull ring/lever  
 FUSE DELAY 4 seconds  
 GRENADE CLASS C  
 EFF RNG 30m  
 BASIC LOAD 4  
 LOAD WT 2.384kg  
 PACKAGING 25 per Case  
 PACKAGE WT 26.1kg

This is the famous "Pineapple" of WWII. The heavy serrated case usually fragmented into a few large fragments and a good deal of iron "dust".



08-132-939  
 NAME Mk 3A2 Offensive  
 TYPE American blast grenade  
 DATE ADOPTED c.1939  
 SIZE 5.4x13.4cm  
 WT .442kg  
 Dpw 395  
 FILLER TNT  
 FILLER WT .228kg  
 BURST RADIUS 2m  
 PENETRATION IN STEEL  
 ANTI-ARMOR CLASS  
 FUSE DELAY 4 sec  
 GRENADE CLASS A  
 EFF RNG 40m  
 BASIC LOAD 2  
 LOAD WT .884kg  
 PACKAGING 20 per Case  
 PACKAGE WT 20.5kg

A packaged block of TNT, the Mk3A2 has a cardboard body for minimum fragmentation.



08-132-940  
 NAME M17  
 TYPE American fragmentation rifle grenade  
 DATE ADOPTED c.1940  
 SIZE 5.7x22.4cm  
 WT .717kg  
 Dpw 63  
 FILLER TNT  
 FILLER WT .056k  
 BURST RADIUS 25m  
 ANTI-ARMOR CLASS G  
 FUSE DELAY Impact  
 GRENADE CLASS 22mm Rifle  
 EFF RNG 180 m  
 BASIC LOAD 2  
 LOAD WT 1.434kg

This is a modified MkII 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  
 Dpw 196  
 FILLER TNT  
 FILLER WT .113kg  
 BURST RADIUS 5m  
 PENETRATION IN STEEL 10.1cm  
 ANTI-ARMOR CLASS D  
 FUSE DELAY Impact  
 GRENADE CLASS 22mm Rifle  
 EFF RNG 235m  
 BASIC LOAD 3  
 LOAD WT 1.77kg

This is a shaped charge rifle grenade for use with any standard 22mm launcher.

08-132-940  
 NAME Ground Illumination Signal M191 Yellow, M192 Green, and M193 Red  
 TYPE American flare grenade  
 DATE ADOPTED 1940  
 SIZE 3.3x4.6cm  
 WT .057kg  
 FUSE DELAY 4 seconds  
 GRENADE CLASS A+  
 BURN TIME 55 seconds  
 EFF RNG 50m  
 BASIC LOAD 6  
 LOAD WT .342kg  
 PACKAGING 6 per pack, 40 packs per Case (240)  
 PACKAGE WT 29.5kg

This is a standard illuminating type grenade. See introduction.



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

FILLER WT .336kg

BURST RADIUS 80 cubic meters

FUSE DELAY Impact

GRENADE CLASS 22mm Rifle

BURN TIME 60 seconds

EFF RNG 200m

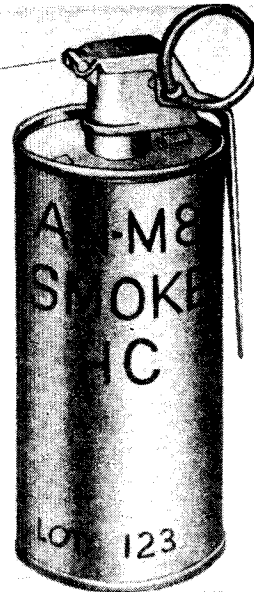
BASIC LOAD 1

LOAD WT .572kg

PACKAGING 10 per Case

PACKAGE WT 14.3kg

This is a standard burning type smoke grenade. See in-  
roduction.



08-132-940

NAME AN-M8, HC Smoke

TYPE American smoke grenade

DATE ADOPTED c.1940

SIZE 6.4x14.5cm

WT .68kg

FILLER HC

FILLER WT .539kg

BURST RADIUS 18x4x2m

FUSE DELAY 2 seconds

GRENADE CLASS C

BURN TIME 125 seconds

EFF RNG 30m

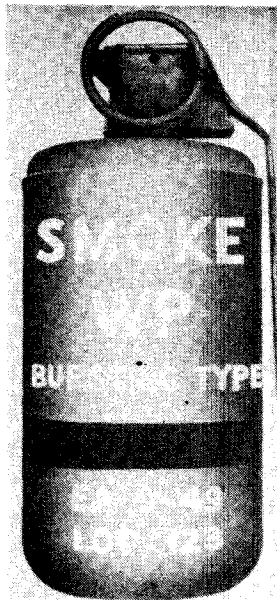
BASIC LOAD 2

LOAD WT 2.04kg

PACKAGING 16 per case

PACKAGE WT 18.6kg

This is a burning type standard issue smoke grenade for  
the U.S. Army.



08-132-940

NAME M15 WP

TYPE American White phosphorous grenade

DATE ADOPTED c.1940

SIZE 6x14.5cm

WT .879kg

FILLER WP

FILLER WT .425kg

BURST RADIUS 15m

FUSE DELAY 4 seconds

GRENADE CLASS D

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. This was the  
first grenade of this type used by the U.S. Army.



08-132-942

NAME M1A1 Rifle Grenade Adaptor

TYPE American Fragmentation grenade rifle adaptor

DATE ADOPTED 1942

SIZE 17.9cm

WT .17kg

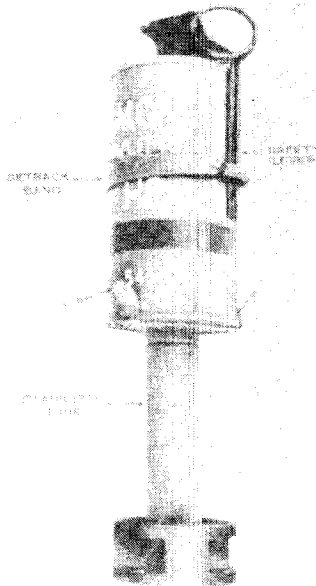
GRENADE CLASS 22mm Rifle

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

PACKAGE WT 22.2kg

This adapter allows hand grenades to be fired from a 22mm  
rifle grenade launcher. The adapter fits the following  
grenades: the MkII, M26A1, M34, and MkI illum. The grenade  
is fitted into the adaptor with the lever held by the large  
claw. With the pin pulled the lever is automatically re-  
leased when the grenade is fired. The maximum range of the  
M1A1 with a fragmentation grenade is 160 meters.





08-132-942  
 NAME M2A1 Rifle Grenade Adaptor  
 TYPE American chemical grenade rifle adaptor  
 DATE ADOPTED 1942  
 SIZE 12.7cm  
 WT .16kg  
 GRENADE CLASS 22mm Rifle  
 PACKAGING 50 per Case  
 PACKAGE WT 22.2kg

This adaptor allows 6.4cm diameter chemical grenades to be fired from a 22mm rifle grenade launcher. This adaptor will launch a chemical grenade to an average maximum range of 120 meters.



08-132-944  
 NAME M19A1 WP  
 TYPE American white phosphorous smoke rifle grenade  
 DATE ADOPTED c.1944  
 SIZE 5.1x28.7cm  
 WT .68kg  
 FILLER WP  
 FILLER WT .241kg  
 BURST RADIUS 10m  
 FUSE DELAY Impact  
 GRENADE CLASS 22mm Rifle  
 BURN TIME 60 seconds  
 EFF RNG 195m  
 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 M18 Red, Green, Yellow, or Violet smoke  
 TYPE American colored smoke grenade  
 DATE ADOPTED c.1950  
 SIZE 5.6x14.6cm  
 WT .539kg  
 FILLER Smoke Composition  
 FILLER WT .326kg  
 BURST RADIUS 18x4x2m  
 FUSE DELAY 2 seconds  
 GRENADE CLASS B  
 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 standard burning type colored Smoke grenade.  
 See introduction.



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  
 GRENADE CLASS C  
 BURN TIME 60 seconds  
 EFF RNG 30m  
 BASIC LOAD 2  
 LOAD WT 2.04kg  
 PACKAGING 16 per Case  
 PACKAGE WT 19.1kg

The segmentation of the sheet metal casing on this bursting type grenade assists in releasing the phosphorus on detonation.



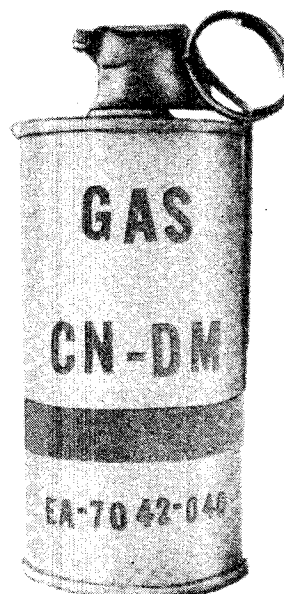
08-132-952  
 NAME M7A1 CN  
 TYPE American gas grenade  
 DATE ADOPTED c.1952  
 SIZE 6.4x14.5cm  
 WT .524kg  
 FILLER CN/Smoke  
 FILLER WT .355kg  
 BURST RADIUS 18x4x2m  
 FUSE DELAY 2 seconds  
 GRENADE CLASS B  
 BURN TIME 60 seconds  
 EFF RNG 35m  
 BASIC LOAD 2  
 LOAD WT 1.048kg  
 PACKAGING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

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 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  
 ANTI-ARMOR CLASS  
 FUSE DELAY 2 seconds  
 GRENADE CLASS D  
 BURN TIME 40 seconds at 2200 degrees Celsius  
 EFF RNG 25m  
 BASIC LOAD 2  
 LOAD WT 1.814kg  
 PACKAGING 16 per Case  
 PACKAGE WT 21.3kg

This is a standard incendiary type grenade. See introduction.



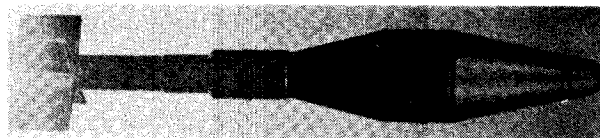
08-132-952  
 NAME M6A1 CN/DM  
 TYPE American gas grenade  
 DATE ADOPTED c.1952  
 SIZE 6.4x14.5cm  
 WT .567kg  
 FILLER CN/DM smoke  
 FILLER WT .268kg  
 BURST RADIUS 18x4x2m  
 FUSE DELAY 2 seconds  
 GRENADE CLASS B  
 BURN TIME 40 seconds  
 EFF RNG 35m  
 BASIC LOAD 2  
 LOAD WT 1.134kg  
 PACKAGING 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 results, watering eyes and difficulty in breathing, last for about 15 minutes after exposure. The DM (Adamsite) takes effect after about one minute and causes severe 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  
 SIZE 5.6x11cm  
 WT .283kg  
 FILLER flare  
 FILLER WT .099kg  
 BURST RADIUS 200m  
 FUSE DELAY 7 seconds  
 GRENADE CLASS A  
 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 is a standard illuminating type grenade. See introduction.



08-132-956  
 NAME M31 HEAT  
 TYPE American antitank rifle grenade  
 DATE ADOPTED c.1956  
 SIZE 6.6x43.1cm  
 WT .707kg  
 Dpw 650  
 FILLER Comp B  
 FILLER WT .28kg  
 BURST RADIUS 15m  
 PENETRATION IN STEEL 25cm  
 ANTI-ARMOR CLASS D  
 FUSE DELAY Impact  
 GRENADE CLASS 22mm Rifle  
 MIN RNG 10m  
 EFF RNG 115m  
 BASIC LOAD 3  
 LOAD WT 2.121kg  
 PACKAGING 10 per Case w/20 M3 Cart.  
 PACKAGE WT 34kg

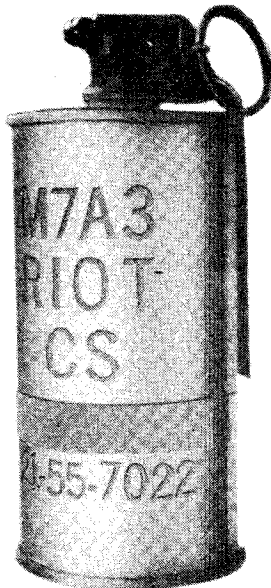
This shaped charge grenade has a much better penetration than the earlier M9A1 grenade which it replaced. The M31 can be fired from any 22mm grenade launcher.



08-132-958  
 NAME M26A1  
 TYPE American fragmentation grenade  
 DATE ADOPTED c.1958  
 SIZE 5.7x9.9cm  
 WT .454kg  
 Dpw 379kg  
 FILLER Tetryl, Comp B  
 FILLER WT .008kg, .156kg  
 BURST RADIUS 15m  
 ANTI-ARMOR CLASS G  
 FUSE DELAY 4 seconds  
 GRENADE CLASS A  
 EFF RNG 40m  
 BASIC LOAD 4  
 LOAD WT 1.816kg  
 PACKAGING 30 per Case

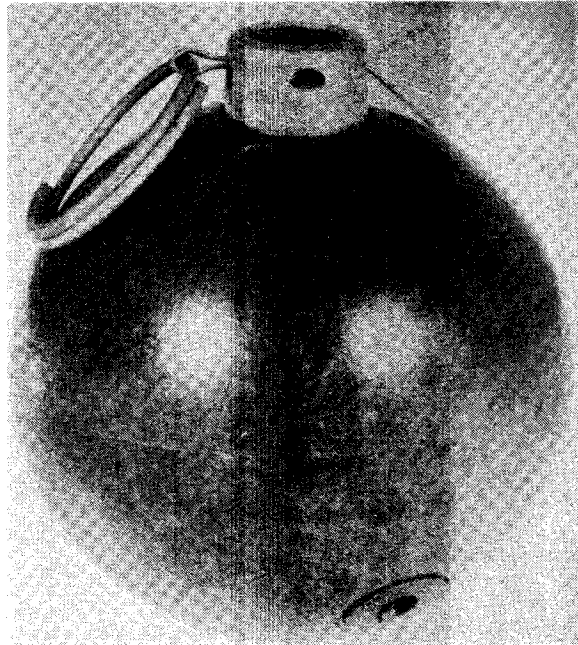
PACKAGE WT 23.6kg

Designed as a replacement for the MKII in the U.S. Military, the M26A1 uses a coil of prenotched steel wire for fragmentation.



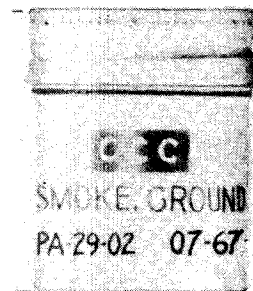
08-132-964  
NAME M7A3 CS  
TYPE American gas grenade  
DATE ADOPTED c.1964  
SIZE 6.4x14.5cm  
WT .439kg  
FILLER Smoke, CS  
FILLER WT .208kg, .127kg CS  
BURST RADIUS 18x4x2m  
FUZE DELAY 2 seconds  
GRENADE CLASS A  
BURN TIME 25 seconds  
EFF RNG 40m  
BASIC LOAD 2  
LOAD WT .878kg  
PACKAGING 16 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  
FILLER WT .202kg  
BURST RADIUS 5m  
FUZE DELAY 2 seconds  
GRENADE CLASS A+  
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  
FILLER smoke Composition  
FILLER WT .018kg

BURST RADIUS 5 cubic meters  
 FUSE TYPE Pull igniter  
 FUSE DELAY 5 seconds  
 GRENADE CLASS A+  
 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 standard smoke type grenade. See introduction.

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 .02kg  
 BURST RADIUS 5 cubic meters  
 FUSE TYPE Pull igniter  
 FUSE DELAY 5 seconds  
 GRENADE CLASS A+  
 BURN TIME 20 seconds  
 EFF RNG 50m  
 BASIC LOAD 4  
 LOAD WT .14kg  
 PACKAGING 6 per pack, 40 packs per Case (240 rds.)  
 PACKAGE WT 24.2kg

This very small CS grenade is a burning type grenade built into an aluminum 35mm film cannister. The pull fuse igniter is found underneath the screw cap.



08-132-968  
 NAME M33  
 TYPE American fragmentation grenade  
 DATE ADOPTED c.1968  
 SIZE 6.4x9cm  
 WT .390kg  
 Dpw 275  
 FILLER Comp B  
 FILLER WT .18kg  
 BURST RADIUS 15m  
 ANTI-ARMOR CLASS G  
 FUSE DELAY 4 sec

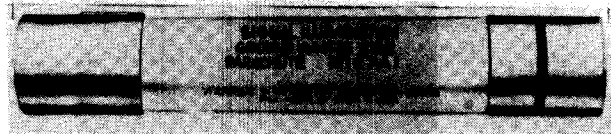
GRENADE CLASS A  
 EFF RNG 40m  
 BASIC LOAD 4  
 LOAD WT 1.56kg  
 PACKAGING 30 per Case  
 PACKAGE WT 23.6kg

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  
 FILLER WT .039kg  
 BURST RADIUS 4x2x1m  
 FUSE DELAY 2 seconds  
 GRENADE CLASS A+  
 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

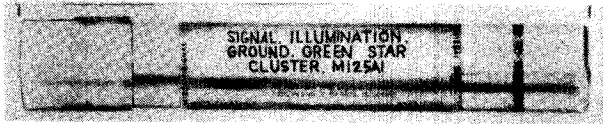
This is a small pocket sized burning type CS grenade.



08-132-960a  
 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 in 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 when it ejects a burning flare on a parachute.



08-132-960b  
 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.



08-132-960c  
 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 in 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.

#### AMMUNITION, SMALL ARMS

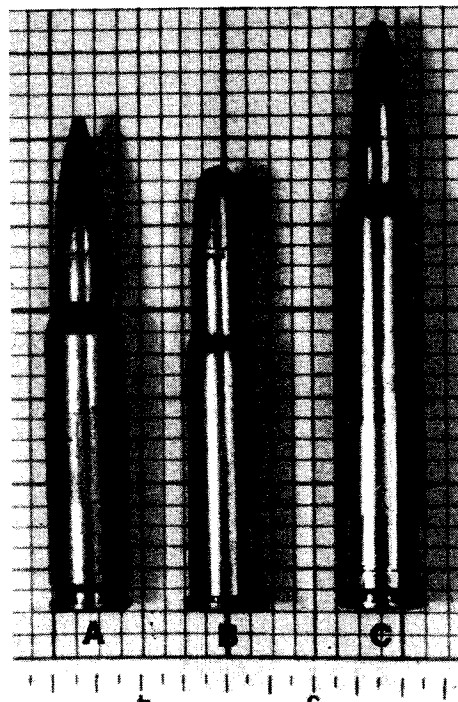
Small arms ammunition began in the last quarter of the sixteenth century with the development of the paper cartridge. Prior to paper cartridges, ammunition for small arms consisted of loose powder in flasks and a bag of lead shot. The paper cartridge combined the proper powder charge with a lead ball 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 mechanism to be developed as well as simpler 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 (round B) 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 (round A) 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 (round C) 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.

## 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 gilding 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, and has 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  
E-FACTOR 10

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  
E-FACTOR 12  
PACKAGING 50 rds./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  
E-FACTOR 6  
PACKAGING 50 rds./Box, 10 Bxs/Case (500 rds.), 10 Carton s/Can (5000 rds.), 2 Cans/Case (10000 rds.)  
PACKAGE WT 20.9kg

OTHER LOADINGS;  
TYPE Bul. Wt. Rnd. Wt. Mv E  
22 High Velocity 2.6g - 1350 fps 6  
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  
E-FACTOR 7  
PACKAGING 50 rds./Box  
The .22 Magnum round is a larger version of the popular 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  
E-FACTOR 5  
PACKAGING 50 rds./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 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  
E-FACTOR 8

Identical to the 7.62x25mm Mauser round, the Borchardt cartridge is loaded to a lower velocity.

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  
E-FACTOR 10

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 7.62x25mm  
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  
E-FACTOR 9  
PACKAGING (Russian) 70 rds./Box, 18 Boxes/Can (1260 rds.), 2 Cans/Case (2520 rds.)

OTHER LOADINGS;  
TYPE Bul. Wt. Rnd. Wt. Mv E  
API (Type P41, Russian) 4.82g 10.18g 1600 fps 11  
Tracer (Type PT, Russian) 5.51g 10.87g 1500 fps 10  
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 highest velocity of any commercial pistol ammunition.

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  
E-FACTOR 6  
PACKAGING 50 rds./Box, 50 Boxes/Case (2500 rds.)  
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 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  
E-FACTOR 7

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 9x18mm  
COMMON NAMES 9mm Makarov  
COUNTRY OF ORIGIN Russia  
WEAPONS USED IN P64, (01-097-963), Makarov, (01-125-952), Stechkin, (02-125-951)  
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  
E-FACTOR 8

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.

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  
E-FACTOR 7  
PACKAGING 50 rds./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 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 GB80, (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), FIA1, (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), MP K, (02-041-963), MP5A2, (02-041-965), MP5SD3, (02-041-975), MP5K, (02-041-976), VP 70, (02-041-972), UZI, (02-058-951), 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  
E-FACTOR 9  
PACKAGING 50 rds./Box, 40 Boxes/Case (2000 rds.)  
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Ball Semi AP (Pist: Patr: 08				
m. E, Germany)	6.35g	9.5g	1475 fps	11
Tracer (Baile, T, France)	8.04g	11.26g	1300 fps	10

This is the world's most popular submachinegun and military pistol cartridge. More different military weapons are chambered for this cartridge than any other round. A long debate has been going on in the United States military about replacing the old .45 Automatic round with this gun 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 fps  
BARREL LENGTH (For Mv) 15.2cm  
E-FACTOR 7  
PACKAGING 50 rds./Box, 40 Boxes/Case (2000 rds.)  
PACKAGE WT 42.8kg  
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Tracer (American)	10.29g	15.04g	870 fps	7

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.O.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  
E-FACTOR 11  
PACKAGING 50 rds./Box, 40 Boxes/Can (2000 rds.)  
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Metal Piercing (Semi AP)	10.3g	16.04g	1410 fps	12

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  
E-FACTOR 13  
PACKAGING 50 rds./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  
E-FACTOR 13  
PACKAGING 50 rds./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 4, (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  
E-FACTOR 6  
PACKAGING 12 rds./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  
E-FACTOR 8  
PACKAGING 50 rds./Box, 20 Boxes/Can (1000 rds.), 2 Cans/Case (2000 rds.)  
PACKAGE WT 46.4kg  
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Tracer M26 (America)	13.54g	18.9g	885 fps	8

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.

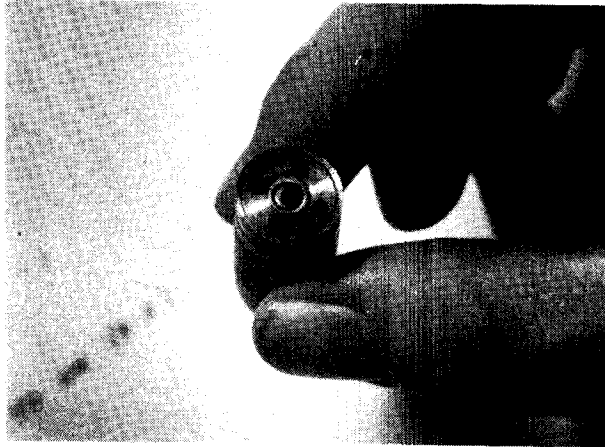
NAME 11.56x33mmR  
COMMON NAMES .45 Colt  
COUNTRY OF ORIGIN America  
WEAPONS USED IN Colt M1873, (01-132-873)  
BULLET TYPE Ball  
BULLET DIA .454 in.  
BULLET WT 16.3g  
ROUND WT 22.3g  
MUZZLE VEL 860 fps  
BARREL LENGTH (For Mv) 14cm  
E-FACTOR 8  
PACKAGING 50 rds./Box

One of the most famous American handgun cartridges, the 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  
E-FACTOR 13

PACKAGING 25 rds./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 Fletchette  
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  
E-FACTOR 7/22

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  
E-FACTOR 11  
PACKAGING 30 rds./Ammunition Box (clip)  
PACKAGE WT .281kg  
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	-Mv	E
Armor Piercing	3.5g	8.5g	2559 fps	11

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  
E-FACTOR 12  
PACKAGING 10 rds./Box or 50 rds./Magazine box  
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
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 4.85 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 11.6g  
CHARGE WT 2950 fps  
ROUND WT 11.6g  
MUZZLE VEL 2950 fps  
BARREL LENGTH (For Mv) 51.8cm  
E-FACTOR 12  
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
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), RPK-74, (04-125-97-)  
BULLET TYPE Ball  
BULLET DIA .21 in.  
BULLET WT 3.44g  
CHARGE WT 1.39g  
ROUND WT  
MUZZLE VEL 2950 fps  
BARREL LENGTH (For Mv) 40cm  
E-FACTOR 13  
OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
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), M16A, (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, G-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

E-FACTOR 15

PACKAGING 20 rds./Box, 41 Boxes/Can (820 rds.), 2 Cans/Case (1640 rds.) PACKAGE WT 25.9kg

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Tracer M196 (America)	3.52g	11.52g	3200 fps	15
Rifle Grenade Blank M195 (America)	-	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) Mle 1929 "0"

COUNTRY OF ORIGIN France

WEAPONS USED IN MAS 49/56, (03-037-956), Fusil FR-F1, (03-037-965)

BULLET TYPE Ball

BULLET DIA .307 in.

BULLET WT 9.05g

CHARGE WT 2.86g

ROUND WT 23.6g

MUZZLE VEL 2600 fps

E-FACTOR 16

PACKAGING 15 rds./Box

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Tracer Mle 1958A "T0"	9.11g	24g	-	-
Armor Piercing	9.44g	-	-	-
Armor Piercing Tracer	-	-	-	-

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

E-FACTOR 12

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Tracer M27 (America)	6.7g	12.43g	1800 fps	12
Rifle Grenade Blank M6 (America)	-	6.7g	-	-

This round was developed for the M1 Carbine as a light-weight 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

E-FACTOR 15

PACKAGING 20 rds./Box, 33 Boxes/Can (660 rds.), 2 Cans/Case (1320 rds.) or 10 rds./Clip, 55 Clips/Can (550 rds.), 2 Cans/Case (1100 rds.)

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
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

E-FACTOR 15

PACKAGING 20 rds./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 7.62.51mm

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-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  
E-FACTOR 17

PACKAGING 20 rds./Box, 12 Boxes/Can, 4 Cans/Case (960 rds.)

PACKAGE WT 34.7kg

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Armor Piercing M61	9.8g	25.6g	2750 fps	19
Tracer M62	9.2g	24.9g	2750 fps	17
Duplex M198	5.47g	26.8g	2750/	17/
	5.53g		2200 fps	14
Frangible M160	7.1g	20.5g	1320 fps	6
Rifle Grenade Blank M64	-	19.2g	-	-
Ball, Reduced load (Japan)	9.8g	25.3g	2470 fps	16

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)

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

E-FACTOR 16

PACKAGING 20 rds./Pack, 22 Packs/Can (440 rds.), 2 Cans/Case (880 rds.)

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
API, Type BS-40 (Russian)	12.11g	-	2641 fps	-
Tracer, Type T46 (Russian)	9.65g	-	-	-
API-T, Type BZT (Russian)	9.2g	-	-	-
INCN/ob, Type ZP (Russian)	10.36g	-	-	-

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

E-FACTOR 17

PACKAGING 20 rds./Box, 20 Boxes/Can (400 rds.), 2 Cans/Case (800 rds.)

PACKAGE WT 30.2kg

OTHER LOADINGS;

TYPE

	Bul. Wt.	Rnd. Wt.	Mv	E
Armor Piercing M2	10.8g	27.6g	2715 fps	19
Tracer M25	9.47g	26.1g	2665 fps	17
Incendiary	9.11g	26.7g	2950 fps	19
Armor Piercing Incendiary M14	9.83g	26.3g	2780 fps	20
Frangible M22	7.05g	20.8g	1320 fps	6
Rifle Grenade M3	-	16g	-	-

Frangible M22

Rifle Grenade M3

Armor Piercing Incendiary M14

Frangible M22

Rifle Grenade M3

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

E-FACTOR 19

PACKAGING 20 rds./Box

OTHER LOADINGS;

TYPE

	Bul. Wt.	Rnd. Wt.	Mv	E
Ball (Light)	9.76g	29.86g	3400 fps	21

Ball (Light)

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

E-FACTOR 16

OTHER LOADINGS;

TYPE

	Bul. Wt.	Rnd. Wt.	Mv	E
Tracer G Mk 8	10.95g	24.57g	2370 fps	15
Incendiary B Mk 7	11.47g	-	2370 fps	15

Tracer G Mk 8

Incendiary B Mk 7

Observing O Mk 11  
 Armor Piercing W Mk 1 11.34g 25.03g 2500 fps 18

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  
 E-FACTOR 15  
 PACKAGING 5 rds./Clip, 3 Clips/Box (15 rds.)  
 OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
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  
 E-FACTOR 16  
 PACKAGING 15 rds./Box  
 OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
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  
 E-FACTOR 16  
 PACKAGING 5 rounds/Clip, 3 Clips/Box (15 rds.), 20 Boxes/Case (300 rds.), 5 Cartons/Case (1500 rds.)  
 PACKAGE WT 53.5kg  
 OTHER LOADINGS;  
 TYPE

	Bul. Wt.	Rnd. Wt.	Mv	E
Semi Armor piercing (Patr Sm E)	11.59g	25.26	2860 fps	20
Armor piercing (Patr Sm KH)	11.59g	25.26g	2860 fps	20
Armor piercing Tracer (Patr Sm KL'spur)	10.22g	22.89g	2720 fps	19
Armor piercing Incendiary (Patr Pmk)	10.16g	23.83g	2740 fps	19
Observation (B Patr.)	10.87g	24.54g	2670 fps	17
Rifle Grenade	-	-	-	-

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 64g  
 CHARGE WT 13g  
 ROUND WT 64g  
 MUZZLE VEL 3800 fps  
 E-FACTOR 26  
 PACKAGING 5 rds./Box, 50 Boxes/Case (250 rds.)  
 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  
 E-FACTOR 12

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  
E-FACTOR 13

This cartridge was developed by necking down the earlier 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  
E-FACTOR 13

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  
E-FACTOR 20  
PACKAGING 20 rds./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  
E-FACTOR 25  
PACKAGING 20 rds./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 15.7x76mmR  
COMMON NAMES .600 Nitro Express  
COUNTRY OF ORIGIN Britain  
WEAPONS USED IN .600 Nitro Holland & Holland, (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  
E-FACTOR 26  
PACKAGING 10 rds./Box, 5 Boxes/Case (50 rds.)

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 12.7x77mm  
NAME (NATIVE) Cartridge Caliber .50, Spotter-tracer, M48A1  
COUNTRY OF ORIGIN America  
WEAPONS USED IN M8C  
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  
E-FACTOR 18  
PACKAGING 10 rds./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 one-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  
E-FACTOR 14

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 12.7x108mm 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  
 E-FACTOR 31  
 PACKAGING 85 rds./Can, 2 Cans/Case (170 rds.)  
 OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Armor Piercing Incendiary- Tracer, Type BZT	44.3g			

This cartridge was developed as a heavy machinegun round prior to WWII in Russia. Ballistically in the same class as the .50 Browning, the 127x108 has not been loaded in as wide a variety of bullet types.

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  
 E-FACTOR 29  
 PACKAGING 100 rds./Belt, 1 Belt/Can, 2 Cans/Case (200 rds.)  
 PACKAGE WT 35kg  
 OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Armor Piercing M2	46.1g	118g	2810 fps	32
Tracer M1/M21	44g	116.2g	2700 fps	28
Armor Piercing Tracer Incendiary M23	-	-	-	-
Armor Piercing Incendiary M8	40.5g	114.8g	2910 fps	33
Armor Piercing Incendiary Tracer M20	40.3g	111.8g	2910 fps	33

Combat Loads  
 4-AP M2 to 1 API-T M20  
 4-Ball M2 to Tracer M1/M21

This round was originally developed as 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 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  
 E-FACTOR 17

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  
 E-FACTOR 14

This was the ammunition for the original Spencer rifle introduced in 1860. This rimfire cartridge was the first metallic cartridge used by the US 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  
 E-FACTOR 36  
 PACKAGING 5 rds./Clip, 2 Clips/Bando-leer

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  
 E-FACTOR 42

Developed as 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  
 E-FACTOR 38  
 PACKAGING 42 rds./Can, 2 Cans/Case (84 rds.)



OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Armor Piercing Incendiary-Tracer, Type BZT	59.6g	-	3200 fps	-
Incendiary-Tracer, Type ZP	60g	-	-	-

The largest machinegun round presently used, these loadings of the 14.5mm are designed for the KPV machinegun rather than the antitank rifle.

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 1.6g each (32g total)

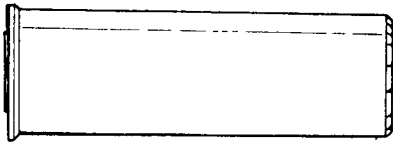
ROUND WT 37g

MUZZLE VEL 1165 fps

E-FACTOR 6

PACKAGING 5 rds./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 whipit 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

E-FACTOR 8

PACKAGING 10 rds./Box, 24 Boxes/Can (240 rds.), 2 Cans/Case (480 rds.)

PACKAGE WT 39.9kg

OTHER LOADINGS;

TYPE	Bul. Wt.	Rnd. Wt.	Mv	E
Standard 00 Buckshot (9 pellets) Paper case	36g	51.5g	1325 fps	9
Magnum 00 Buckshot, (12 pellets) Plastic case	48g	63.5g	1325 fps	9
M274 #4 Buckshot (27 pellets, Paper or Plastic)	35.1g	50.6g	1335 fps	7

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 All manual 12 gauge shotguns

BULLET TYPE #4 Buckshot (12 pellets)

BULLET DIA .24 in.

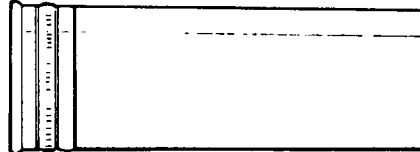
BULLET WT 1.3g ea. (15.6g total)

MUZZLE VEL 450 fps

E-FACTOR 3

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.



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 3g ea. (48g total)

ROUND WT 70g

MUZZLE VEL 1100 fps

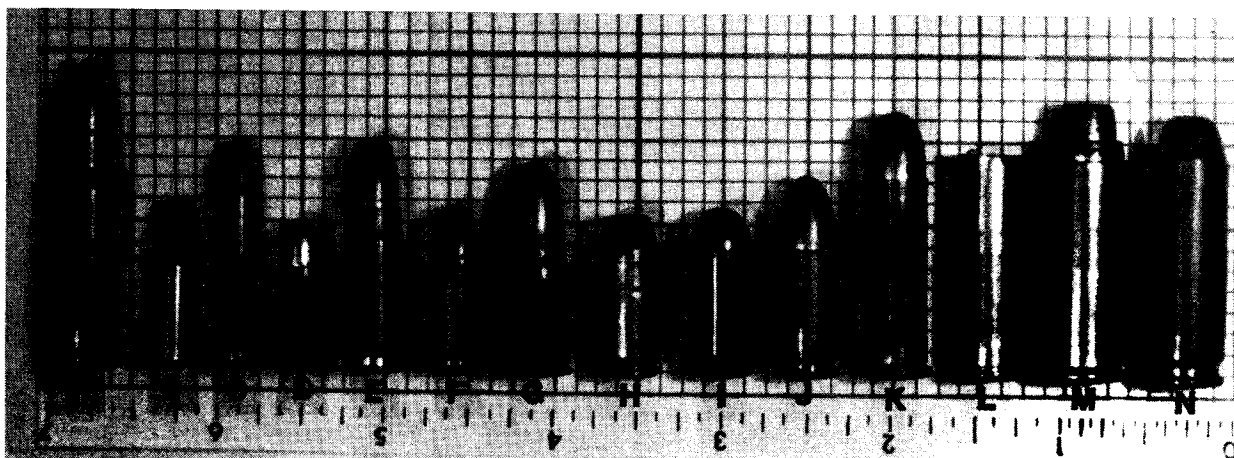
BARREL LENGTH (For Mv) 25.4cm

E-FACTOR 7

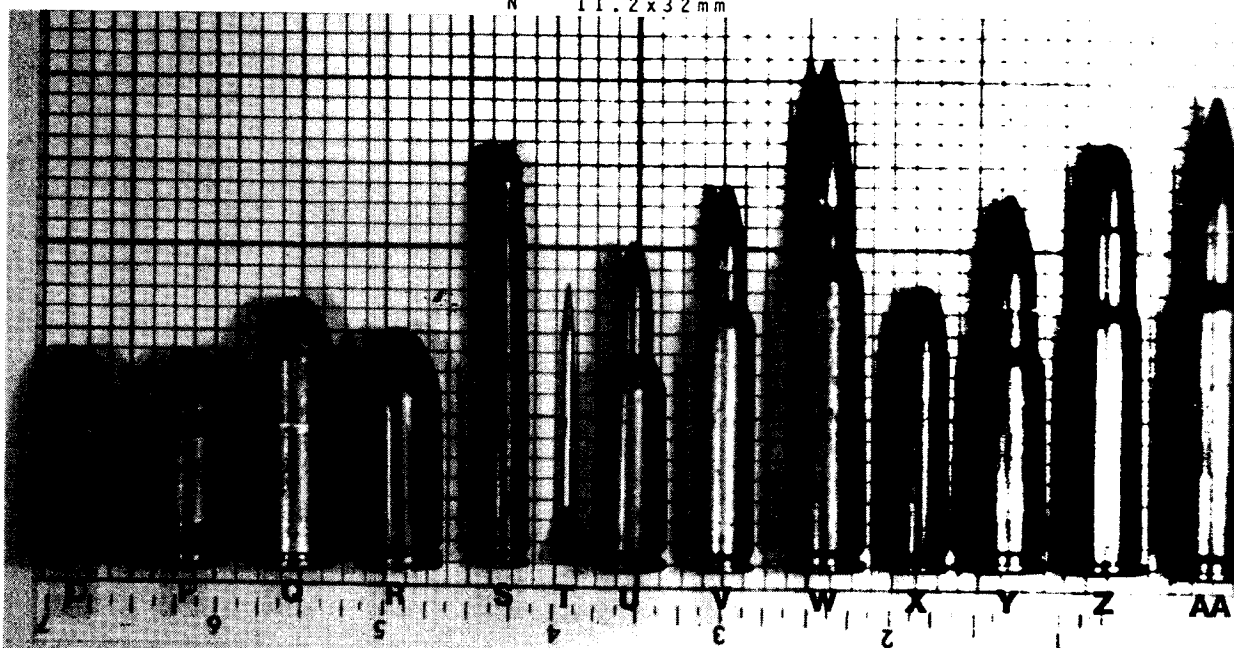
PACKAGING 10 rds./Box, 25 boxes/Can (250 rds.), 2 Cans/Case (500 rds.)

PACKAGE WT 42.6kg

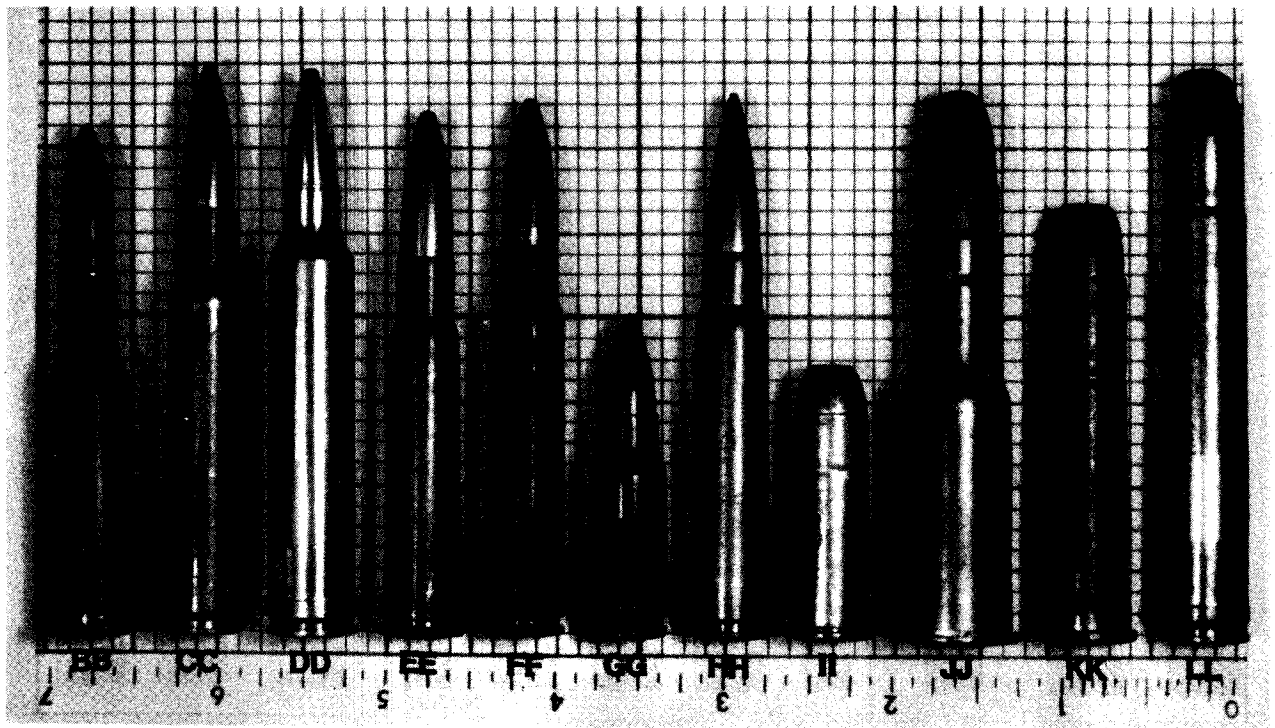
This is the largest caliber shotgun shell still manufactured in the United States. The very large size of the round allows a large amount of shot to be carried. With the heavy recoil of the 10 gauge, it is not as popular as the 12 gauge.



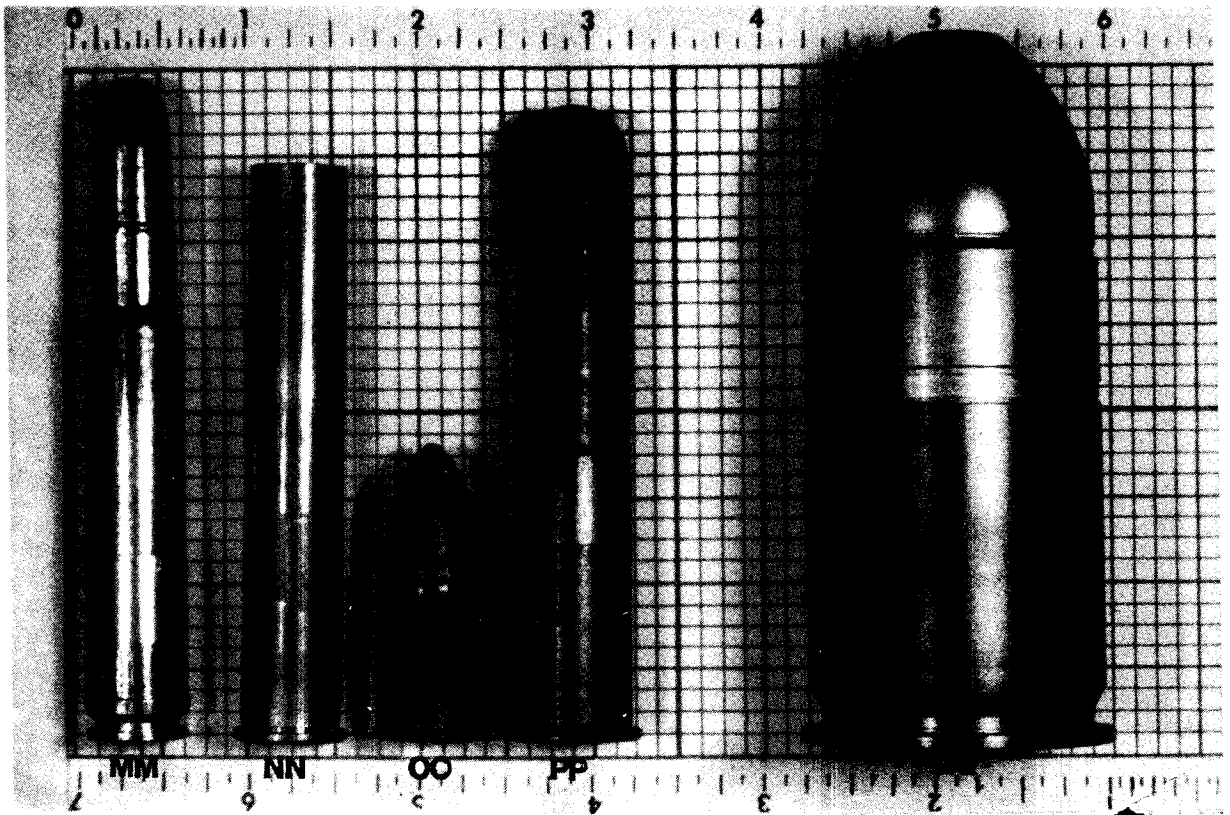
- A 5.56x36mm
- B 5.7x17.5mmR
- C 5.7x24.5mmR
- D 6.35x15.5mmSR
- E 7.62x25mm
- F 7.65x17mmSR
- G 8x21mm
- H 9x17mm
- I 9x18mm
- J 9x19mm
- K 9x29mmR
- L 9x33mmR
- M 10.97x33mmR
- N 11.2x32mm

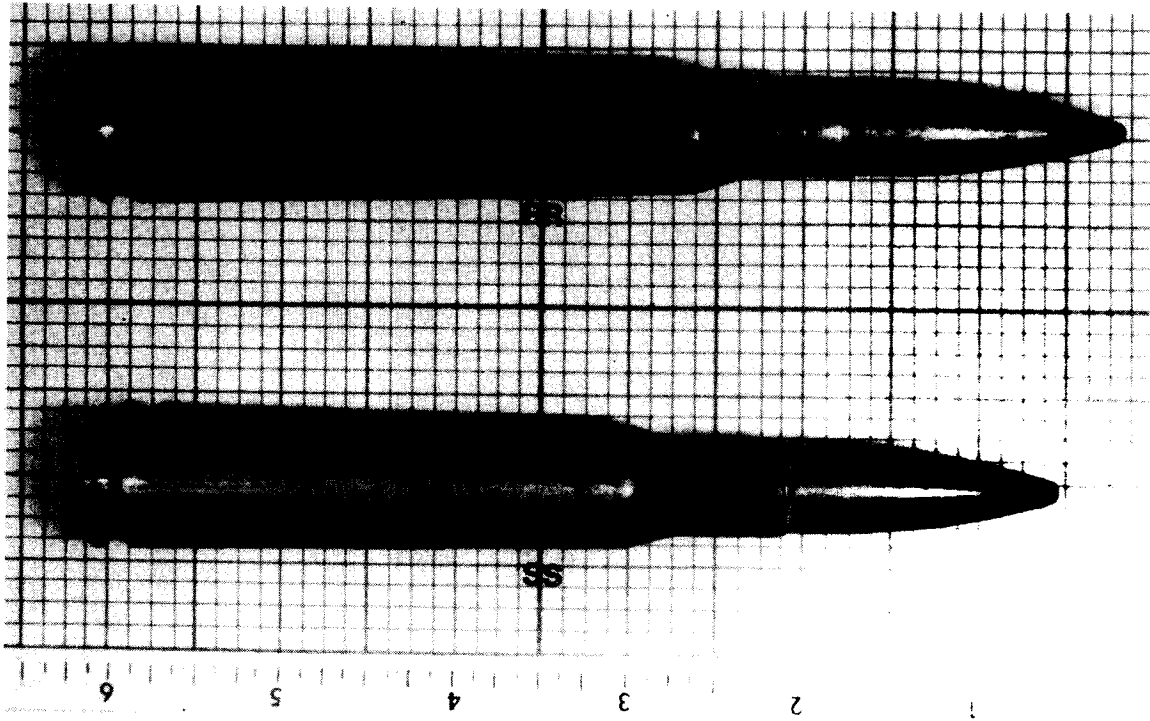


- |   |                 |    |            |
|---|-----------------|----|------------|
| O | 11.43x19mmR     | U  | 5.45x39mm  |
| P | 11.43x23mm      | V  | 5.56x45mm  |
| Q | 11.56x33mmR     | W  | 7.5x54mm   |
| R | 13x36mm Gyrojet | X  | 7.62x33mm  |
| S | XM645           | Y  | 7.62x39mm  |
| T | Fletcherette    | Z  | 7.62x51mmR |
|   |                 | AA | 7.62x51mm  |



BB	7.62x54mmR	HH	7.92x57mm	MM	11.6x74mmB
CC	7.62x63mm	II	10.8x33mmR	NN	12.7x83mmR
DD	7.62x66mmB	JJ	11.43x60mmR	OO	13.9x22mmR
EE	7.7x56mmR	KK	11.6x54mmR	PP	15.7x76mmR
FF	7.7x58mm	LL	11.6x63.5mmB	QQ	40mm Grenade (HE)
GG	7.92x33mm				





RR 12.7 x 108 mm  
SS 12.7 x 99 mm  
TT 12.7 x 77 mm  
UU 13.9 x 99 mm B  
XX 14.5 x 114 mm

