

R E S T R I C T E D

**UNITED STATES PACIFIC FLEET
AND PACIFIC OCEAN AREAS**



**JAPANESE
INFANTRY
WEAPONS**

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F O R E W O R D

Included in this pamphlet, which supersedes CINCPAC-CINCPAA BULLETIN 167-44, are all Japanese weapons reported and encountered, used in infantry regiments or equivalent units.

Additional information dealing with heavier weapons, including artillery, anti-aircraft and coast defense equipment, has been covered in another publication.

Information has been compiled from various sources and includes only pertinent data. Detailed information on specific weapons will be furnished on request. Corrections and additions will be made from time to time, and recipients are invited to forward additional data to the Joint Intelligence Center, Pacific Ocean Areas.

Illustrated methods of neutralizing Japanese weapons most frequently encountered by Allied forces also are contained in this pamphlet.

Additional copies are available on request.

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STANDARD HAND GRENADES

The Japs use hand grenades extensively, and many of the known types are designed for two or more uses. However, despite the enemy's apparent interest in grenades, he has not developed a fragmentation grenade comparable with our own.

The Type 97 fragmentation grenade has a black cylindrical body with horizontal and vertical serrations. It is four inches long, two inches in diameter and weighs one pound. A brass fuse extends from one end. The fuse end is usually painted red.

Under the fuse cap is a screw which must be tightened before the grenade can be used. To operate, hold the grenade so that the gas escape port in the fuse is turned away from the hand, remove the safety pin and strike the fuse cap against a hard object. The fuse has delay train of four to five seconds.

The Type 91 fragmentation is similar to the Type 97 in appearance except that a small cylindrical propelling charge has been added to the base so it may be fired from the Type 89 heavy grenade discharger. By removing the propelling charge and adding a tail fin assembly, it may be fired as a rifle grenade from any standard Jap rifle equipped with a spigot-type launcher. The grenade has a 6 to 7 second delay fuse. Use as a hand grenade is identical to that for the Type 97.

The Type 99 (a) grenade (called the Kiska grenade) is a newer and improved model. It is $3\frac{1}{2}$ inches long, $1\frac{3}{4}$ inches in diameter and weighs twelve ounces. The black cylindrical body is not serrated. It may be used as a hand grenade or fired from a rifle grenade launcher. It is not necessary to tighten the striker screw before firing. The delay train burns for 4 to 5 seconds.

The Jap stick grenade, or potato-masher, is a copy of the famous German model. It consists of a black cast-iron cylinder containing the explosive charge and a lacquered handle. It is $7\frac{3}{4}$ inches long, has a body diameter of $1\frac{5}{8}$ inches and weighs $1\frac{3}{4}$ lbs. At the base of the handle is a removable cap which when removed discloses a ring attached to a length of cord. To operate, pull this ring. The grenade has a delay train of $4\frac{1}{2}$ seconds.

Standard Hand Grenades (continued)

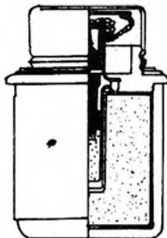
A new grenade, equipped with a pull-type igniter, has been encountered. Its design makes it readily adaptable as a booby trap. Unlike the Type 91 and 97, this grenade has five horizontal and no vertical serrations. Fitted to the top and bottom are two rings probably used for anchoring when the grenade is used as a booby trap. There is a lead cover release grooved to provide a grip for the fingers.

A frangible grenade or Molotov cocktail used by the Japs consists of a bottle filled with a gasoline-base inflammable to which a glass cup containing red phosphorous is added. The device is $9\frac{1}{2}$ inches high, $2\frac{1}{2}$ inches in diameter and weighs $1\frac{1}{2}$ lbs. To operate as a hand grenade, throw the bottle at a tank or pillbox in such manner that the cup containing the phosphorous strikes first. When the cup and the bottle break, the phosphorous ignites the gasoline.

The Japanese have designed a lightweight, offensive hand grenade; the Type 99(b). Unlike the Type 99(a) it is fitted with a friction igniter and cannot be fired from a grenade discharger.

The grenade consists of a smooth cast-iron, cylindrical casing; a bursting charge of picric acid pressed with a central recess for the powder train and booster; and a fuze.

Under the cover is a ring and pull cord attached to the igniter. When the pull cord is withdrawn from the igniter body, friction causes a flash, igniting the powder train. The delay is approximately four seconds.



TYPE 99 (B) HAND GRENADE

To use the grenade, remove cover, place ring attached to pull cord over a finger. The ring and pull cord are left on the hand after the grenade is thrown.

The grenade may be used as a booby trap by arranging the pull cord as a trip wire, or as a land mine by attaching a long cord and detonating behind cover.

STANDARD HAND GRENADES

FIG. 1



TYPE 97 GRENADE



TYPE 91 GRENADE



**TYPE 91 GRENADE
With Tail Fin Assembly**



TYPE 99(A) GRENADE



PULL TYPE GRENADE



MOLOTOV COCKTAIL



TYPE 98 STICK TYPE GRENADE

OTHER HAND GRENADES

Several other grenades not commonly encountered have been used by the Japs. These include the following:

The One Half Kilogram Incendiary grenade is 50 mm in diameter, approximately 5 1/2 inches in length and weighs about one pound. It may be thrown by hand or projected from a Type 89 50 mm grenade discharger.

The fuse is the same as those employed in the Types 91 and 97 hand grenades. The body has an unpainted brass cover and contains an explosive charge of about 1/2 ounce of picric acid and an incendiary filling of 4 ounces of white phosphorus. There is an 8 second delay fuse.

The Experimental Incendiary Hand grenade is 13.5 inches long, has a diameter of 2.2 inches, and weighs approximately 1-3/4 lbs. It consists of a body, handle, and fuse.

The grenade body is a steel cylinder which contains a bursting charge of 1 3/4 ounces of black powder and an incendiary compound composed of 13 ounces of small pieces of phosphorus impregnated rubber, carbon disulfide, and crude oil.

A wooden handle is attached to the base of the body. At the other end is a fuse of the usual 10th Year type found on other Japanese grenades. Frangible smoke grenades in spherical glass containers have been reported as have similarly shaped Hydrocyanic acid grenades.

The Type 3 Hollow Charge Conical Hand Mine is thrown by hand at a tank from a minimum safety distance of 10 yards. This leather covered weapon is shaped like a truncated cone, 3 cm in diameter at the top, and 7 cm at the bottom. The fuse is the instantaneous type which detonates regardless of the angle at which the mine strikes the tank.

Attached to the fuse is a tail composed of several pieces of hemp, which affords greater accuracy and makes the mine strike base first. At the bottom of the mine is a wooden bowl shaped base with a 50 cm hole in the middle.

The explosive is composed of 500 gms of TNT, cyclonite and tetryl.

Other Hand Grenades (continued)

The Japanese Experimental Hand Thrown Mine is spherical in shape, 4.7 inches in diameter and weighs 3½ pounds. It is encased in a black, aluminum cover.

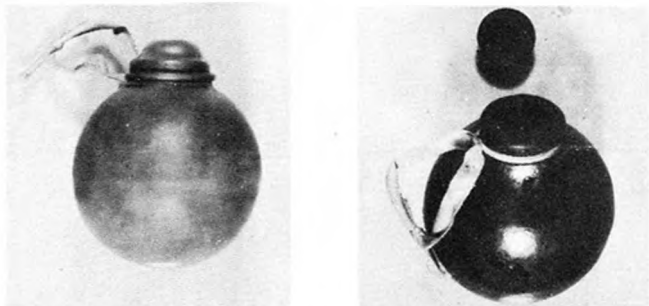
Attached to the main body of the mine are a carrying handle and fuse. The fuse is universal, instantaneous type, consisting of a striker, hammer, detonator chamber spring, detonator, and safety pin. It is filled with 3 pounds of a mixture of TNT, cyclonite and tetryl. This mine is reportedly capable of penetrating 20 mm (3/4 inches) of bullet proof steel and severely damaging lightly armored vehicles.

A new, non-metallic hand grenade has been encountered. The cover is light brown pottery like that used in the Type 3 Land Mine. The grenade weighs one pound, is three inches in diameter, and is entirely round except for the fuze protrusion at the top.

A waterproof rubber bag encases the grenade proper. A similar sack covers the scratch block at the top of the fuze and is snapped down over the lips of the fuze.

The igniter consists of a wooden collar lacquered into the top of the grenade neck. Attached to its base is a rubber tube containing the detonating elements and a 4½ second delay train. One top of the collar is a match composition.

To fire the grenade, remove the rubber sack from the top and strike the scratch block against the protruding match composition.

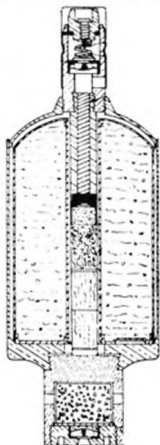


TYPE 4 CERAMIC HAND GRENADE
COMPLETE GRENADE

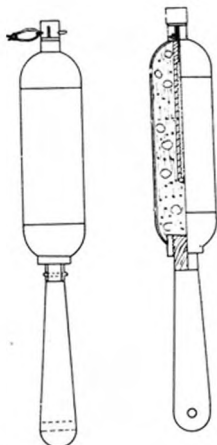
FRICTION HEAD EXPOSED

OTHER HAND GRENADES

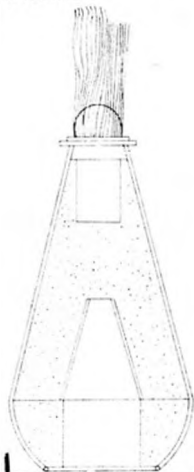
FIG. 2



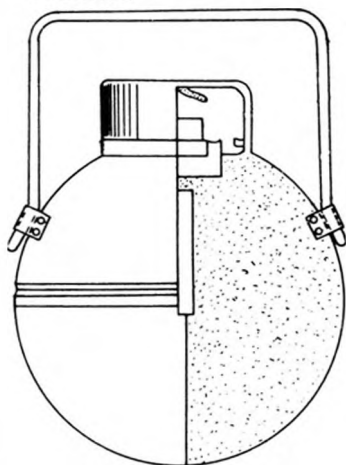
**HALF KILOGRAM INCENDIARY
GRENADE**



**EXPERIMENTAL INCENDIARY
GRENADE**



CONICAL HAND MINE



**EXPERIMENTAL HAND THROWN
MINE**

RIFLE GRENADE AND GRENADE LAUNCHERS

The Japs have used three distinct types of Grenade launchers. These are the Cup type, Spigot type, and the Kiska or Type 100.

The Type 2 launcher is fitted over the front sight of the rifle. It has a short rifled barrel and is a faithful copy of the German grenade launcher. It fires the Hollow Charge Rifle Grenade. This grenade weighs 12.5 ounces, it is 8 inches long, 1.5 inches in diameter at its greatest diameter, and contains 3.8 ounces of TNT.

The grenade is detonated upon impact with the target, a base detonating, set-back actuated fuse arming the grenade during flight. It is launched from the cup type grenade discharger on a 6.5 mm Type 38 rifle. This grenade will penetrate 3 7/8 inches of mild steel plate.

A smoke grenade fired from a spigot type grenade launcher using a wooden bullet with the Model 38 rifle has been reported.

This grenade weighs about 1.3 pounds and is painted silver. It is equipped with a finned tail which fits over the grenade launcher, and a cylindrical body. The grenade contains 0.6 pounds of an H.C. white smoke mixture. No fuse is used, the action being started from the flash of the propelling charge.

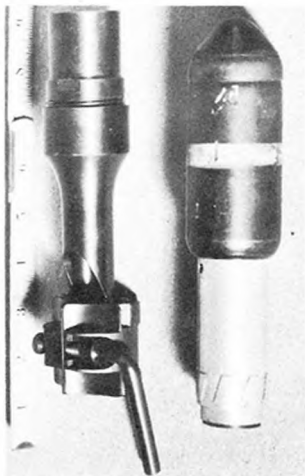
A new type rifle grenade similar to the Type 99 Kiska grenade with a tail fin assembly which is fired from the Jap spigot type grenade launcher has been recovered. Details of this grenade are not available.

Type 100 grenade launcher may be used with either the Type 38 6.5 mm or the Type 99 7.7 mm rifle. The unusual feature of this weapon is that ordinary ball ammunition is used; excess gas furnishes sufficient force of propulsion of the grenade.

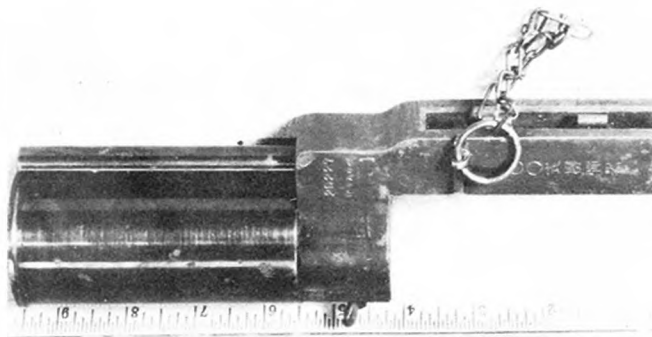
Only the Type 99 "Kiska" grenade may be fired from this launcher. Ranges up to 100 yards may be attained.

RIFLE GRENADE AND GRENADE
LAUNCHERS

FIG. 3



TYPE 2 GRENADE DISCHARGER. NEW TYPE HIGH EXPLOSIVE
AND HOLLOW CHARGE GRENADE. RIFLE GRENADE.



TYPE 100 RIFLE GRENADE LAUNCHER.

ANTI-TANK MINES

The Japanese have employed five manufactured or specific types of anti-tank mines. These are discussed below.

The Type 99 magnetic anti-tank mine is a unique weapon equipped with magnets on its perimeter and fitted with a ten-second delay element. This weapon is fired by removing the safety pin, striking the end of the fuse against some hard object and placing the mine on a tank.

The separate pieces of explosive composed of TNT and cyclonite, placed in the cloth body of this "grenade" allow sufficient flexibility so that the weapon fits an uneven surface.

These mines if used in pairs will pierce armor of a light tank; used singly the mine will pierce 1 inch armor plate.

The Type 93 Tape-Measure mine contains 2 pounds of picric acid and is equipped with a shear wire in the fuse which requires a pressure of from 250 to 300 pounds to break. An anti-personnel shear wire has been used requiring only 30 to 70 pounds pressure. A single mine has been known to break the track of a medium tank.

The Yardstick mine is so named because of its length, 35 3/4 inches. Its oval shape and dark brown color, makes it easy to conceal. The shear wire in this mine requires approximately 300 pounds to break, and the 6 pounds of picric acid it contains effectively knock out a tank when this mine is detonated. In a test, a tank which ran over a yardstick mine suffered a broken track and damaged engine.

The Dutch Anti-Tank Mines captured in Java are being utilized, and copies are being manufactured by the Japs. The Japs imitate the Dutch in using 5 1/4 pounds of TNT as a filler for this 8 inch hemispherical, mushroom top, dull brown mine, which makes it effective against light and medium tanks.

The Type 3 Terra Cotta Land Mine is manufactured in two sizes. The larger mine is 10 1/2 inches in diameter and 3 1/2 inches thick. It contains 6 1/2 pounds of explosive and is effective against personnel within a radius of 11

Anti-Tank Mines (continued)

yards. The smaller mine is $8\frac{1}{2}$ inches in diameter and $1\frac{1}{8}$ inches thick, contains about $4\frac{1}{2}$ pounds of explosive and has an effective anti-personnel radius of about 8 yards. Both mines are considered effective against a heavy tank.

This is the first non-metallic mine recovered. It has a glazed clay cover and a plastic fuse. This mine may be fired by a pressure of about 22 pounds or a pull of about 5 pounds.

Besides those mines listed above, the Japanese have employed 63 Kgm aerial bombs, anti-boat mines and pressure and traction devices (wooden boxes containing explosives) as anti-tank mines.

Hemispherical Anti-boat mines and Conical Beach mines have been extensively employed as anti-tank mines. The hemispherical mine has a black steel case and weighs over one hundred pounds. It is equipped with two lead horns in which are glass vials containing acid. When the horns are bent, the glass vials are broken, allowing the acid to run into a battery cup. This causes an electrical circuit to be formed which initiates detonation.

It is reported that a pressure of 150 pounds is necessary to bend the horns sufficiently for the vials to be broken, but a soldier in the Marianas caused detonation of a mine by merely kicking one of the horns.

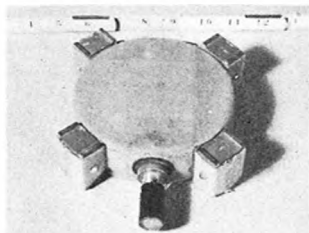
The Conical Beach mine is shaped like a truncated cone. It is black in color and weighs approximately 70 pounds. Only one horn is attached to the top of the mine. It is detonated in the same manner as the hemispherical type.



HEMISPHERICAL ANTI-BOAT AND CONICAL BEACH MINES

ANTI-TANK MINES

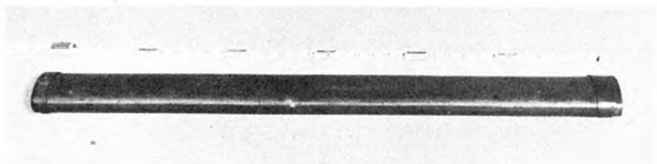
FIG. 4



**MODEL 99 MAGNETIC ANTI-TANK
MINE.**



**MODEL 93 "TAPE MEASURE
MINE.**



"YARDSTICK" ANTI-TANK MINE



**DUTCH "MUSHROOM" TYPE ANTI-
TANK MINE.**



**MODEL 3 TERRA COTTA LAND
MINE.**

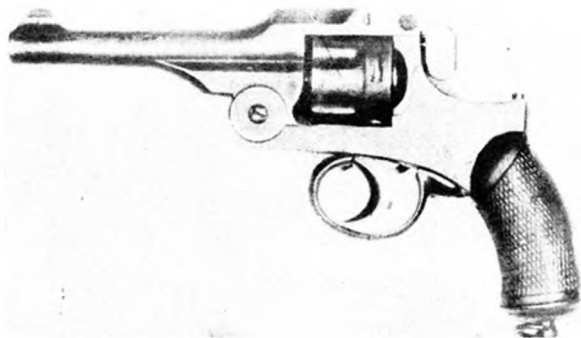
PISTOLS

Three automatic pistols and one revolver have been used extensively by the Japanese and are considered to be standard issue. These are, the Nambu Pistol, Model 14 Pistol, Model 94 pistol, and Pattern 26 Revolver (Webley).

Several other types of pistols, many of European design, have been captured, but it is believed that they are personal property of the individual officer.

Characteristics

	NAMBU	MODEL 14	MODEL 94	REVOLVER
Caliber	8 mm	8 mm	8 mm	9 mm
Operation	Recoil	Recoil	Recoil	Manually double action lock
Weight (Mag. Empty)	31 oz.	32 oz.	23 3/4 oz.	40 oz
Mag. Capacity	8 rds.	8 rds.	6 rds.	6 rds.
Length(overall)	9 in.	9 in.	7 1/2 in.	8 1/2 in.
Length(barrel)	4 1/2 in.	4 1/2 in.	3 8/10 in.	4.69 in.
Sight	Adjustable 100-500 yds.	Front V Rear open	Fixed open	Rear open V Front Blade
Range (Max.)	547 yds.	547 yds.	500 yds. (approx.)	300 yds.
Range (Eff.)	75 ft.	50 ft.	50 ft.	50 ft.
Muzzle Velocity	950 ft/sec	950 ft/sec	900 ft/sec	525 ft/sec
Rifling	6 lands 6 grooves	6 lands 6 grooves	6 lands 6 grooves	4 lands 4 grooves



WEBLEY TYPE REVOLVER.

PISTOLS

FIG. 5



MODEL 14 PISTOL



MODEL 94 PISTOL

6.5 MM RIFLES

The standard caliber for Japanese small arms was until recently 6.5 mm (.256"). The principal rifle used by Infantry troops was the Type 38 (1905) 6.5mm bolt action rifle. Although superseded by the Type 99, 7.7 mm, it has not been replaced in many units and is still used. It has been found in three different lengths. The long type is 50 $\frac{1}{2}$ inches long and weighs 9 lbs 7 ozs; the medium rifle is 44 $\frac{1}{2}$ inches long and weighs 8 lbs and 10 ozs; and the short type is 38 inches long and weighs 7 lbs 12 ozs.

Ammunition is loaded in five-round clips similar to those used in the U.S. Rifle cal. 30 Model 1903. The rifle is cocked on the forward movement of the bolt. The rear sight is of the leaf slide type with graduations up to 2400 meters.

An unusual feature incorporated in all Japanese rifles is the dust cover over the bolt. This consists of a curved strip of metal which rides in grooves on each side of the receiver and moves forward and back with movement of the bolt.

Two other 6.5 mm rifles which are modifications of the Type 38 have also been recovered. One is a sniper's rifle, comparable in size to the type 38 long rifle, with a slightly different bolt action. The other is a cavalry carbine Type 44 (1911); which is similar to the type 38 short rifle with a permanently attached folding bayonet.

Ammunition for all these rifles is semi-rimmed.

Characteristics

	Rifle 6.5mm M-38	Rifle 6.5mm M-44	Rifle 6.5mm Sniper	Carbine 6.5mm M-38
Length(overall)	50.2 in.	38 $\frac{1}{2}$ in.	50.2 in.	37 in.
Length(barrel)	31.4 in.	19.2 in.	31 in.	19.2 in.
Weight(overall)	9 $\frac{1}{2}$ lbs.	8.37 lbs.	9.8 lbs.	8.5 lbs.
Max. Range	2600 yds.	2200 yds.	2600 yds.	2200 yds.
Eff. Range	400 yds.	400 yds.	400 yds.	400 yds.
Muzzle Velocity	2400 ft./sec	2300 ft./sec	2400 ft./sec	2300 ft./sec.
Rate of Fire	10 rpm	10 rpm	10 rpm	10 rpm
Rifling	4 grooves	4 grooves	4 grooves	4 grooves
Rounds per clip	5	5	5	5
Operation	Bolt	Bolt	Bolt	Bolt
Bayonet	Attachable	Attached (folding)	Attachable	Attach- able
Type of Sight	Rear vertical leaf w/open notch. Grad. 400-2400 M no wind adj.	Rear vertical leaf grad. 400-2000 M	Telescopic 2.5 power	Front inverted blade, rear leaf grad. 400- 2400 M with open notch.

6.5 MM RIFLES

FIG.6



LEFT: SNIPERS RIFLE
RIGHT: MODEL 38 SHORT RIFLE

CENTER: MODEL 38 LONG

7.7 MM RIFLES

The 7.7 mm Rifle, Type 99 (1939) is an improved model of the 6.5 mm Type 38.

In addition to enlarging the caliber, several other modifications have been made. A folding monopod has been attached to the lower band, anti-aircraft sighting arms have been added to the rear sight leaf, the magazine floor plate is hinged to the forward part of the trigger guard, sling swivels are attached to the side instead of the bottom, and the length of the rifle is reduced from 50 $\frac{1}{2}$ to 44 inches. The operation of the piece is the same as the Type 38.

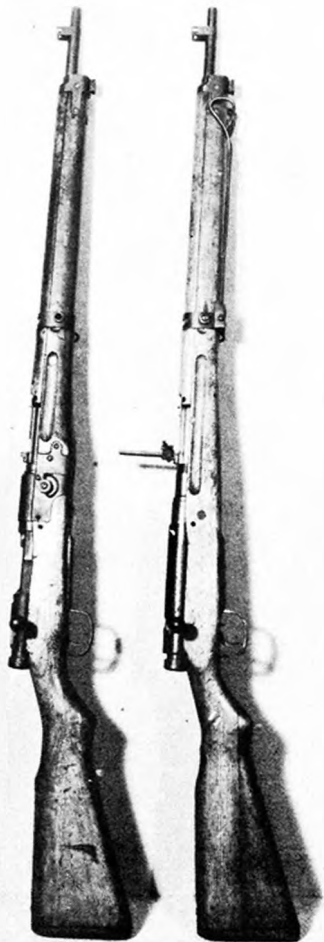
Two modifications of this rifle have been made for use by paratroops. Both are designed to break just forward of the chamber so that they may be easily handled during descent and may be easily and quickly assembled upon landing. The latest and apparently the standard design paratroop rifle is known as the Type 2 (1942). It may be disassembled by removing a coupling key, located on the right side at the balance of the rifle, and turning the stock one quarter turn. The two sections are held together by an interrupted thread. Characteristics of this rifle are the same as for the Type 99.

Characteristics

Caliber	7.7 mm (.303 in.)
Length (overall)	44 in.
Length (barrel)	25.75 in.
Weight (overall)	8.8 lbs.
Max. Range	3000 yds.
Eff. Range	600 yds.
Muzzle Velocity	2239 ft/sec.
Rate of fire	10 rds/min.
Rifling	4 grooves
Rounds per clip	5
Operation	Bolt
Bayonet	Attachable
Type of sight	Inverted V blade on T base, Rear leaf grad. from 300-1500 M with aperture sight and aperture battle sight side arms for AA.
Ammunition	Model 99 (1939) Rimless only).

7.7 MM RIFLES

FIG. 7



LEFT: PARATROOPERS RIFLE. RIGHT: MODEL 99 RIFLE

SUBMACHINE GUNS

Only one type Japanese made submachine gun has been captured thus far. It is a copy of a European Solothurn gun adapted for use by Japanese paratroops by the addition of a hinged stock which permits the weapon to be folded into a more readily portable shape. The gun fires standard Japanese 8 mm pistol ammunition and is fed from a 32-round, curved, box-type magazine. It is operated from an unlocked bolt on a simple blow back principle.

Several submachine guns of European manufacture and a Madsen gun of Japanese manufacture have also been reported but none have been recovered to date.

Characteristics

Caliber	8 mm (.315 in.)
Length (overall)	2 ft. 6 in.
Length (barrel)	10 3/8 in.
Length of Bore (incl. chamber)	9 1/2 in.
Muzzle Velocity	1508 ft/sec.
Weight (w/o magazine)	9 1/2 lbs.
Rate of Fire (cyclic)	700 rds per min.
Magazine Capacity	30 - 32 rds.
Length of Magazine	10 in.
Ammunition	8 mm Ball pistol



JAPANESE COPY OF SOLOTHURN SUBMACHINE GUN

FIG. 8

6.5 MM MACHINE GUN MODEL II (1922)

This gun, referred to as the Nambu, was at one time standard equipment in the Jap Army; it has been almost completely replaced by later models.

It is gas operated, air cooled, and is fed by a hopper which holds six rifle clips of ammunition. Reduced charge ammunition is used because standard rifle ammunition causes malfunctioning. The weapon is easily recognized by its peculiar wooden stock which is offset to the right. A safety lever is located at the left of the trigger guard, and an oil reservoir is situated over the feedway.

TO FIRE: After the hopper has been loaded pull the operating handle to the rear, cocking the piece; return the handle to its original position; lay the gun, and squeeze the trigger.

To put this weapon out of action and deny it's use by the enemy; first, pull out on the gas cylinder plug plunger and unscrew it from the gas cylinder (Figure 9), or remove the back plate by turning the back plate pin down to a vertical position and sliding it from left to right as far as it will go (Figure 10).

Characteristics

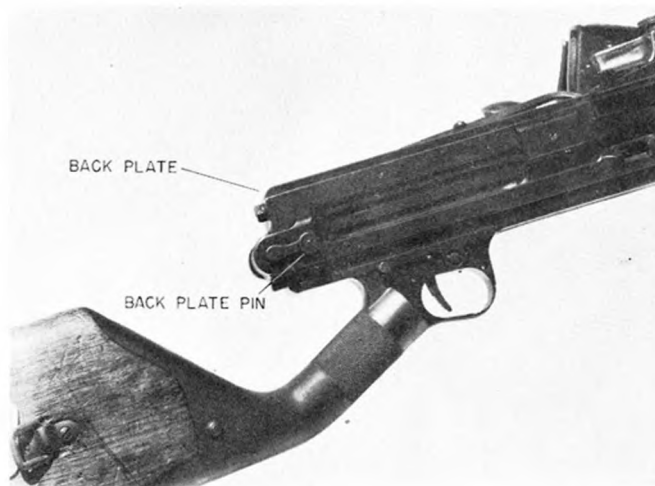
Caliber	6.5 mm (.256 in.)
Length (barrel)	19 in.
Length (overall)	43½ in.
Weight (overall)	22½ lbs.
Max. Range	4,374 yds.
Eff. Range	1,640 yds.
Muzzle Velocity	2400 ft/sec.
Rate of Fire	(cyclic) 500 rds/min. (Eff.) 120-150 rds/min
Feeding Device	Hopper
Cooling system	Air
Operation	Gas
Rifling	4 grooves
Magazine capacity	30 rds.
Ammunition	Model 38 6.5 mm reduced charge ball ammo.

6.5MM MACHINE GUN MODEL II (1922)

FIG.9



FIG.10



6.5 MM LIGHT MACHINE GUN MODEL 96 (1936)

The Japanese Light Machine Gun Type 96 is gas operated, magazine fed, air cooled and was adapted from the French Hotchkiss and the British Bren.

The operating handle is on the left side of the piece. To change magazine: With one motion, press magazine release and remove magazine; insert new magazine. Note the numbers on the magazine release; these numbers, from 0 to 4, indicate number of rounds remaining. Ammunition is the same used in the 6.5 mm rifle and is loaded into magazines with a loader similar to that used with the BAR.

The rear sight is raised by turning the large elevation knob (on the left side) clockwise. Numbers 2 to 16 at the rear of the range drum indicate range in hundreds of meters. Definite clicks are heard and felt as the elevation knob is turned. The small knob above the elevation drum is the windage knob.

In firing, the butt should be held firmly into the shoulder with the left hand. Recoil is light, but extreme vibration of the weapon makes control of the shot group difficult.

The barrel is changed easily: Disengage the barrel locking lever and turn lever forward. Push the rear of the carrying grip forward and remove barrel to the front.

Neutralize this weapon by unscrewing the gas cylinder plug from the gas cylinder (Fig. 11), or by opening the ejector housing and removing the cotter pin and ejector (Fig. 12).

Characteristics

Caliber	6.5 mm (.26 cal)
Length (overall)	42 in.
Weight (overall)	19.19 lbs.
Magazine capacity	30 rds.
Weight (barrel)	5.83 lbs.
Cyclic rate of fire	550 rds/min.
Eff. rate of fire	150 rds/min.
Max. Eff. Range	600 yds.

6.5 MM LIGHT MACHINE GUN MODEL 96 (1936) - FIG. 11

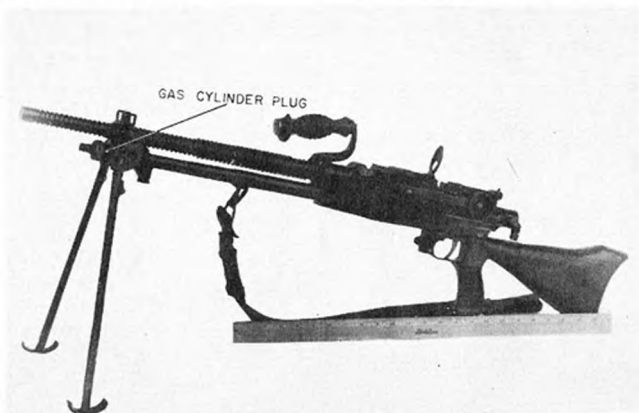
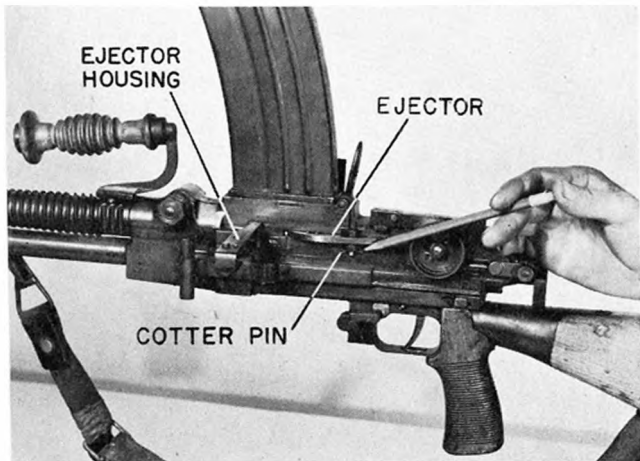


FIG. 12



7.7 MM LIGHT MACHINE GUN MODEL 99 (1939)

The Model 99, 7.7 mm Light Machine Gun is similar in appearance, construction, and operation to the Model 96, however several improvements have been made. The Model 99 has a monopod attached to the butt and a nut and wedge type barrel release. The safety is on the right side of the 99, whereas it is on the left side of the 96. The flash hider screws onto the 99 and is attached by a bayonet type locking device. The Model 99 has a higher rate of fire. Parts of the two weapons are not interchangeable.

A new type (rimless) ammunition has been designed for the Model 99 Light Machine Gun and Model 99 rifle which also can be used in the Model 92 HMG. However, neither the older 7.7 mm rounds for the Model 92, nor British and American ammunition can be used with the Model 99.

Procedure in firing the Model 99 is identical to that used with the Model 96.

This weapon can be put out of action as illustrated in Figure 14. Rotate the back plate pin knob upward one-eighth turn; holding in on the back plate, pull the back plate pin from right to left and the back plate group will come out.

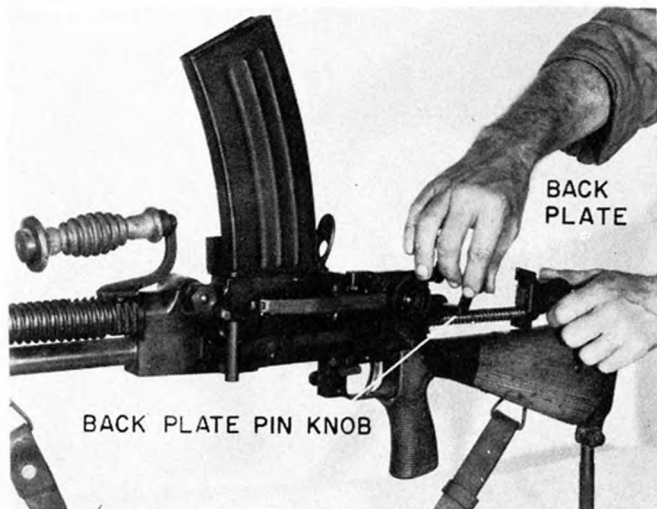
Characteristics

Caliber	7.7 mm (.303 in.)
Length (overall)	46 3/4 in.
Length (barrel)	21.65 in.
Weight (overall)	22 lbs.
Max. Range	3800 yds.
Eff. Range	1500 yds.
Muzzle velocity	2,224 ft/sec.
Rate of fire	(cyclic) 800 rds/min.
	(Eff.) 250 rds/min.
Feeding device	Removable box-type mag.
Cooling system	Air
Operation	Gas
Rifling	4 grooves
Magazine capacity	30 rds.
Ammunition	M-99 7.7 mm rimless ball

7.7 MM LIGHT MACHINE GUN MODEL 99(1939) FIG.13



FIG. 14



7.7 MM TANK MACHINE GUN MODEL 97

The Model 97 machine gun is the standard automatic weapon for all Japanese tanks. It is a gas operated, magazine fed, air cooled weapon and is a Bren type gun. It is equipped with conventional open sights and a 1.5 power telescopic sight.

Each gun mounted in a tank is equipped with a bipod which may be easily attached around the cooling fins on the barrel. The principal disadvantage for use as a ground LMG, is that the stock is too short to provide a comfortable firing position.

TO FIRE: Insert the magazine in the recess at the top of the receiver, pull the operating handle to the rear, lay the gun, and squeeze the trigger.

To neutralize this gun, push out the pin at the right rear end of the back plate and remove the back plate group (Figure 16). Further disassembly is accomplished by removing the U-shaped driving spring retaining pin shown in Figure 17.

Characteristics

Caliber	7.7 mm (.303 in.)
Length (overall)	46 in.
Length (barrel)	28 in.
Weight (overall)	24 lbs.
Max. Range	3829 yds.
Eff. Range	600 yds.
Muzzle velocity	2300 ft/sec.
Rate of fire	(cyclic) 500 rds/min. (Eff.) 250 rds/min.
Feeding device	Removable vertical box type magazine
Cooling system	Air
Operation	Gas
Rifling	4 grooves
Magazine capacity	30 rds.
Sight	Telescopic 1.5 power
Ammunition	Rimless only

7.7 MM TANK MACHINE GUN MODEL 97

FIG. 15

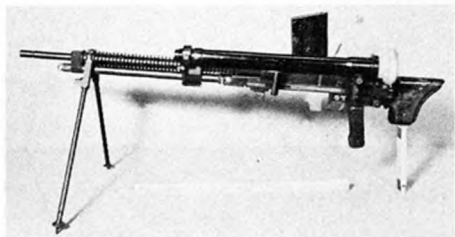


FIG. 16

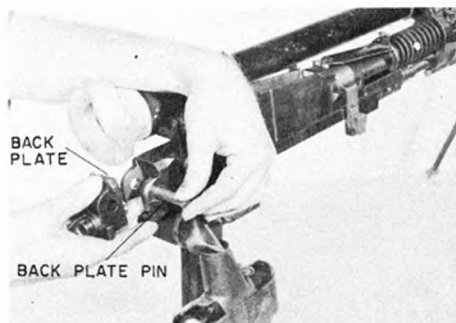
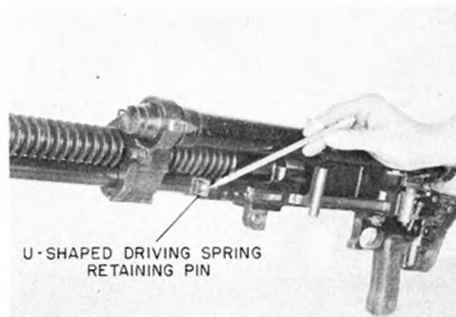


FIG. 17



7.92 MM LIGHT MACHINE GUN BREN TYPE

The weapon is gas operated, air cooled, and magazine fed. It fires automatic or semi-automatic fire. The change lever is located on the right side of the gun. For automatic fire, move the selector all the way forward. For semiautomatic fire, move the selector all the way to the rear. The selector acts as a safety if placed in a vertical position. The sight is graduated in 100 yards increments up to 1500 yards. No deflection scale is present.

The barrel may be quickly changed by disengaging the barrel nut catch and rotating the nut to the right.

TO FIRE: Pull the operating handle to the rear, insert a full magazine at the top of the receiver, lay the weapon, and squeeze the trigger.

The Bren can be silenced by pushing in on the barrel locking latch, rotating the barrel lock upward as far as possible, and removing the barrel by pulling it forward (Figure 19).

Characteristics

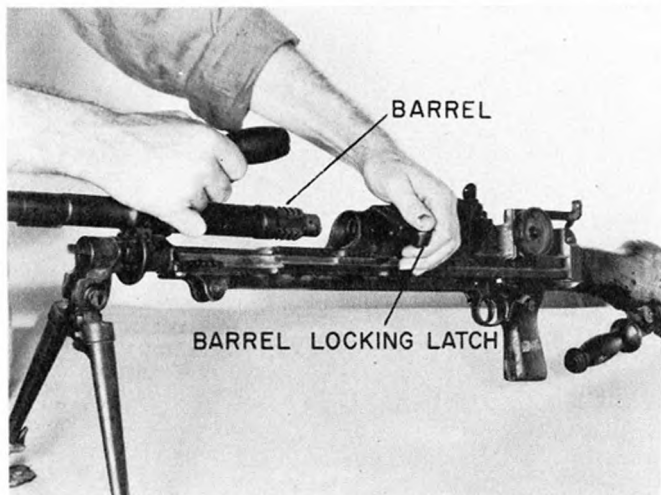
Caliber	7.92 mm (.312 in.)
Length (overall)	43.25 in.
Length of bore	23.6 in.
Weight (overall)	18.25 lbs.
Max. Range	
Eff. Range	
Muzzle velocity	2460 ft/sec.
Rate of fire	(cyclic) 600 rds/min.
	(Eff.)
Feeding device	Removable box-type mag. similar to BAR
Cooling system	Air
Operation	Gas
Rifling	4 grooves
Magazine capacity	
Ammunition	A.P., Tracer, Ball, Incendiary

7.92 MM LIGHT MACHINE GUN BREN TYPE

FIG.18



FIG.19



6.5MM MACHINE GUN MODEL 3 (1914)

This machine gun was the standard Japanese HMG until 1932 when the Type 92 7.7 mm MG was adopted. It is still used by some units and has proved to be an efficient automatic weapon. It is a gas operated, air cooled, metal-strip fed weapon. The mount is a tripod with two fore legs and one trail leg. The weapon is carried by inserting wooden handles in the fore legs and a handle bar in the trail leg. This enables two men to transport the weapon rapidly.

TO FIRE: Pull the operating handle to the rear to cock the piece; insert a strip of ammunition in the feedway at the left of the receiver, just under the oil reservoir; lay the gun; and squeeze the trigger.

An open ring type AA sight may be adapted to this gun.

Neutralize this gun by rotating the back plate pin one-quarter turn counter-clockwise, pull it from right to left as far as possible and remove the back plate group (Figure 21).

Characteristics

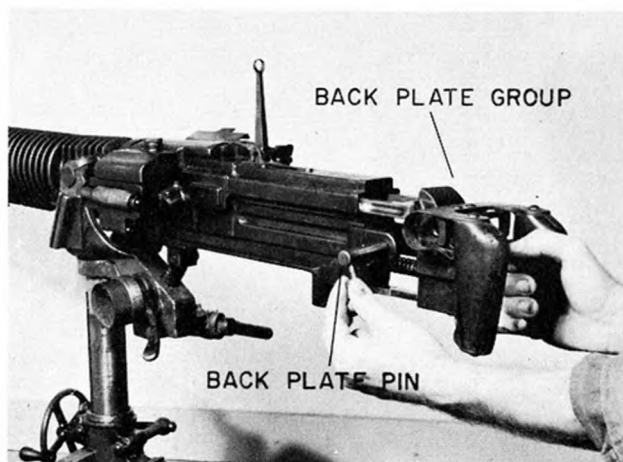
Caliber	6.5 mm (.303 in)
Length (overall)	47.6 in.
Length of barrel	26.5 in.
Weight of gun and tripod	119 lbs.
Weight of gun	58.7 lbs.
Max. Range	4374 yds.
Eff. Range	1500 yds.
Muzzle velocity	2437 ft/sec.
Rate of fire	(cyclic) 500 rds/min. (Eff.) 200 rds/min.
Elevation	11 degrees
Depression	15 degrees
Traverse	360 degrees (33.3° on an arc)
Feeding device	Metal strips
Cooling system	Air
Operation	Gas
Rifling	4 grooves
Capacity of feeding device	30 rds.
Ammunition	Rimless ball

6.5 MM MACHINE GUN MODEL 3 (1914)

FIG. 20



FIG. 21



7.7 MM MACHINE GUN MODEL 92 (1932)

The 92 Machine gun is a revision of the old Model 3, 6.5 mm MG. In addition to the change in caliber, a sight mount for telescopic or periscopic sight has been added, the grips have been placed below the backplate instead of at the rear of it, and the sight graduations have been changed to correspond with the ranges fired with the improved ammunition. The barrel locking nut on the 92 is on the left side of the gun; on Model 3 it is on the right. The tripod mount used with this gun is the same as that used with Model 3. The Model 92 fires semi-rimmed or rimless ammunition; however semi-rimmed ammunition designed for this gun will not fire in weapons designed for rimless ammunition.

To fire the weapon the procedure is identical with that given for the Model 3.

Figure 23 illustrates removal of the back plate group, which will silence this weapon. Remove the back plate pin by turning it down to a vertical position and the back plate group and operating spring can then be removed.

Characteristics

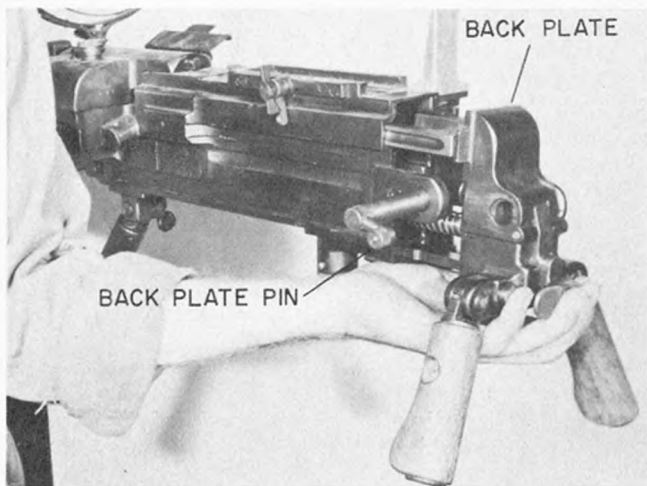
Caliber	7.7 mm (.303 in.)
Length (overall)	46 in.
Length of barrel	28.4 in.
Weight of gun and tripod	122 lbs.
Weight of gun	61 lbs.
Max. Range	4587 yds.
Eff. Range	1500 yds.
Muzzle velocity	2400 ft/sec.
Rate of fire	(cyclic) 450-500 rds/min. (Eff.) 200-250 rds/min.
Feeding device	Metal strips
Elevation	11 degrees
Depression	15 degrees
Traverse	360 degrees (33.5 on an arc)
Cooling system	Air
Operation	Gas operated full automatic
Rifling	4 grooves
Capacity of feeding device	30 rds
Ammunition	M-92 ball, AP and tracer. semi-rimless and M-99 7.7 mm ammunition

7.7 MM MACHINE GUN MODEL 92 (1932)

FIG.22



FIG.23



LEWIS MACHINE GUN 7.7 MM MODEL 92

This Japanese Gun is a direct copy of British and U.S. Lewis Machine Guns used in World War I. Although of poorer construction than our own weapon, several improvements have been made. The cyclic rate of the Jap gun is greater than its U.S. counterpart, and a new mount has been adapted which makes the gun easily adaptable to AA fire. There is only one gas port in the Jap gun. This port is large and the amount of gas escaping through it thrusts the piston to the rear with such force that a buffer had to be added at the rear of the piston.

The Lewis gun may be recognized by its large air jacket around the barrel and its drum type magazine which is attached at the top of the receiver.

TO FIRE: Attach the magazine, pull the operating handle to the rear, lay the gun, and squeeze the trigger.

Ammunition is completely interchangeable with British full rimmed .303 inch.

To silence this weapon, push the back plate latch forward (Figure 26), and remove the stock by rotating it one-eighth turn counter-clockwise and pulling it to the rear. Remove the trigger housing group by pulling the trigger to disengage the sear and slide the group to the rear.

Figure 27 illustrates removal of the driving spring housing by rotating it forward and upward one-quarter turn.

Characteristics

Caliber	7.7 mm (.303 in.)
Length (overall)	39 in.
Length of barrel	23.62 in.
Weight of gun and tripod	122 lbs.
Weight of gun	49 lbs.
Max. Range	4587 yds.
Eff. Range	1858 yds.
Feeding device	Drum
Elevation (ground use)	-15 to plus 60 degrees
Elevation (AA use)	-80 to plus 85 degrees
Depression	-80 degrees
Traverse	360 degrees
Cooling system	Air
Operation	Gas, full automatic
Rifling	4 grooves
Capacity of feeding device	47 rounds
Ammunition	Full rimmed

LEWIS MACHINE GUN 7.7 MM MODEL 92



FIG.24

**FIG.24: GUN IN POSITION
TO FIRE ANTI-AIRCRAFT
MISSIONS.**



FIG.25

**FIG.25: GUN IN POSITION
TO FIRE GROUND MISSIONS.**

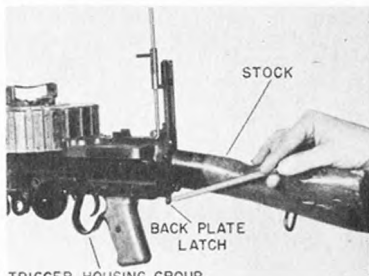


FIG.26



FIG.27

7.7 MM LEWIS AND VICKERS AIRCRAFT MACHINE GUNS ADAPTED TO GROUND USE.

Necessity has at times required the Japanese to improvise ground mounts for aircraft weapons and to use these weapons in ground defensive plans. The weapons most frequently found under these circumstances have been the Lewis Flexible machine gun Model 92, and the Vickers fixed AC machine gun Model 97.

The Lewis gun may be adapted to the mount used with the Lewis ground machine gun or any improvised mount may be used. At times a stock similar to that of the type 96 LMG is attached. The principal recognizable difference in the two Japanese Lewis guns is that the aircraft model has no air jacket.

The Vickers gun is usually fired from a small improvised tripod. It has no elevating or traversing mechanisms. A wire loop or a forked limb is used for a stock. Usually a string or wire is attached to the firing mechanism to provide a trigger.

The Vickers gun can be neutralized as shown in Figures 31, 32 and 33. First, pull the small operating handle to the rear; next, grasp the bolt, at the same time allowing the operating handle to move slowly forward. As the operating handle slides forward, the bolt will disengage and by rotating it one-quarter turn in either direction it can be removed.

Characteristics

	Lewis Flexible AC MG	Vickers fixed AC MG
Caliber	7.7 mm (.303 in.)	7.7 mm (.303 in.)
Length (overall)	39 in.	40 3/4 in.
Length (barrel)	24 in.	28 3/4 in.
Weight (overall)	21.7 lbs	27 lbs.
Max. Range	4587 yds.	
Eff. Range	1500 yds.	300 yds.
Muzzle velocity	2400 ft/sec.	2450 ft/sec.
Cyclic rate of fire		
Fire	500-600 rds/min.	700-900 rds/min.
Eff. rate of fire	250 rds/min.	
Feeding device	Drum	Disintegrating metallic link belt
Cooling system	Air	Air
Operation	Gas, full automatic	Vickers toggle joint action recoil operation
Rifling	5 grooves	4 grooves
Capacity of Mag.	47 rds.	Varies in different installations
Type of sight	Open	None
Ammunition	Full rimmed, Ball AP Tracer, incendiary	7.7 mm Full rimmed

7.7 MM LEWIS AND VICKERS AIRCRAFT MACHINE GUNS
ADAPTED TO GROUND USE.



FIG.28 VICKERS WITH WIRE HOOP STOCK



FIG.31



FIG.29 VICKERS WITH WOODEN STOCK



FIG.32

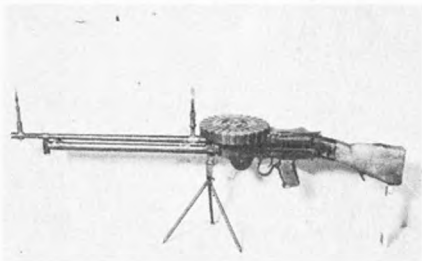


FIG.30 LEWIS WITH WOODEN STOCK



FIG.33

OTHER SMALL CALIBER AIRCRAFT MACHINE GUNS ADAPTED TO GROUND USE.

In addition to the Model 92 Lewis Aircraft Machine Gun and Model 97 Vickers several other aircraft machine guns may be adapted for ground use, by the construction of simple mounts.

The Type 98, 7.92 mm, flexible aircraft machine gun is an exact duplicate of the German MG 15. It uses the German caliber 7.92 mm ammunition. It is an exceptionally light, compact weapon with a high rate of fire, operating on the short recoil principle. It is fed by a saddle drum type magazine.

The Type 89 flexible aircraft machine gun is a variation of the 6.5 mm Eleventh Year Model (Nambu) ground type light machine gun. The gun has been mounted with the gas cylinder on the side for aircraft use. Ammunition is fed from a 70 round flat drum magazine.

A few examples of a twin mount for this gun have been recovered, but it is not common. A left and a right hand gun are mounted on a light tubular frame and fed by two quadrant shaped magazines.

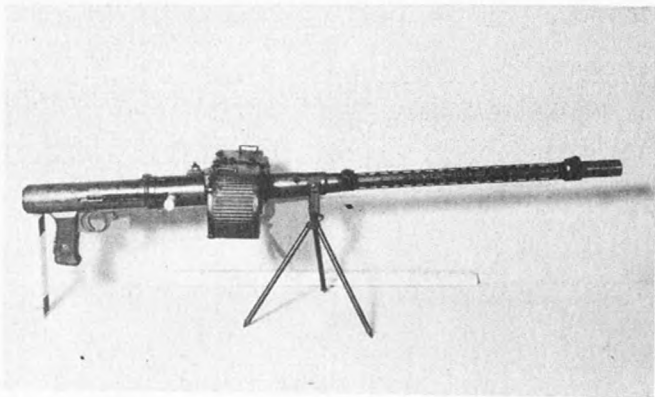
The Type 89 fixed aircraft machine gun is basically the same as the Vickers Type 97. It may be converted to a ground-mounted weapon by using the same improvisations made with the Type 97.

The Type 100, flexible aircraft machine gun, incorporates two gas operated guns in one receiver. Either unit can function independently of the other in case of a jam. The units are charged separately but fired with a single trigger. The 100-round magazine feeds each barrel independently. The caliber and magazine type indicates German origin, but this is not definite. Operation is similar to the British Bren.

Characteristics

	7.92 MM M-98	7.7 MM M-89	7.7 mm M-89	7.92 mm M-100
Length(overall)	42.5 in.	39 in.	40 3/4 in.	37.5 in.
Length (barrel)	23 3/4 in.	24.5 in.	28 3/8 in.	
Weight(overall)	15.5 lbs	25 1/2 lbs	27 lbs.	36 lbs.
Max. Range	3000 yds.			
Eff. Range	300 yds.	300 yds.	300 yds.	300 yds.
Muzzle velocity	2450 ft/sec	2450 ft/sec	2450 ft/sec	2800 f/sec
Rate of Fire	Cyclic-900 rpm Eff. 250 rpm	600 rpm	900 rpm	1200 rpm
Feeding device	Saddle drum	Flat drum	Metallic link belt	Saddle drum
Operation	Gas	Gas	Recoil	Gas
Rifling	4 grooves	4 grooves	4 grooves	
Mag. capacity	75 rds.	70 rds.	Varies	100 rds.
Ammunition	7.92 mm 7.92 mm German	Ball-AP Semi-rimmed	Ball-AP Semi-rimmed	Rimless

OTHER SMALL CALIBER AIRCRAFT MACHINE GUNS
ADAPTABLE TO GROUND USE. FIG. 34



MODEL 98 AIRCRAFT MACHINE GUN ON GROUND MOUNT.



MODEL 89 FLEXIBLE AIRCRAFT MACHINE GUN

12.7 MM FIXED AIRCRAFT MACHINE GUN (BROWNING TYPE)

The Japanese 12.7 mm gun is a close copy of our own Browning .50 caliber Aircraft Machine gun M1921, however several modifications have been made. The Japs have modified the trigger assembly so that the gun may be fired from open or closed bolt, but there is no provision for selective feeding. Each gun is manufactured to feed from one side only. The cartridge is shorter than our own and many parts of the gun are smaller than the corresponding parts in the American gun. Recoil in the Jap gun is aided by a muzzle recoil booster. When fired from a closed bolt the weapon fires semi-automatic only.

The 12.7 mm gun is recoil operated, air cooled, and link fed.

Characteristics

Caliber	12.7 mm (.50 in.)
Length (overall)	49 in.
Length of barrel	31½ in.
Weight (overall)	51½ lbs.
Muzzle velocity	2500 ft/sec.
Max. Range	2450 yds.
Eff. Range	400 yds.
Rate of fire	(cyclic) 950 rds/min. (Eff.) 40-60 rds/min.
Rifling	7 grooves
Operation	Recoil, assisted by muzzle booster
Feeding device	Disintegrated metallic link belt
Magazine capacity	Varies in diff. installations
Type of sight	None of fixed gun, ring on flex. version
Cooling system	Air
Type of mount	Fixed or flexible
Ammunition	12.7mm Jap, AP, Tracer, HE, AP



FIG.35

13MM MACHINE GUN MODEL 93

The 13 mm gun has been found on single and twin mounts, usually in positions from which it can fire both AA and AT missions. Modern armor has rendered this weapon practically useless in AT missions. It is air-cooled, gas operated, magazine fed, and of Hotchkiss design. The weapon fires ball, AP, tracer, and incendiary ammunition at a cyclic rate of 450 rounds per minute.

No data regarding penetrating power of the AP ammunition is available but it is assumed that the weapon is useless against light tanks at ranges over 100 yards unless a track or some other vital spot is hit. AP ammunition would probably penetrate the armor on an LVT at ranges up to 500 yards.

This weapon can be neutralized in the following manner: Push in on the back plate pin latch and drive out the back plate pin (Fig. 37). The back plate, bolt and piston group can then be removed to the rear (Fig. 38).

Characteristics

Caliber	13 mm (.53 in.)
Length of barrel	56½ in.
Length (overall)	89 in.
Weight of gun and mount	
Weight of gun	87 lbs.
Muzzle velocity	2280 ft/sec.
Max. Range	4000 yds.
Rate of Fire	(cyclic) 450-480 rds/min. (Eff.) 120 rds/min.
Elevation	85 degrees
Depression	0 degrees
Traverse	360 degrees
Type of feeding device	Box-type magazine
Magazine capacity	30 rds.
Type of fire	Full automatic
Operation	Gas
Cooling system	Air
Rifling	8 grooves
Ammunition	S.A. ball 2210 ft/sec. S.A. A.P 2280 ft/sec.

13 MM MACHINE GUN MODEL 93

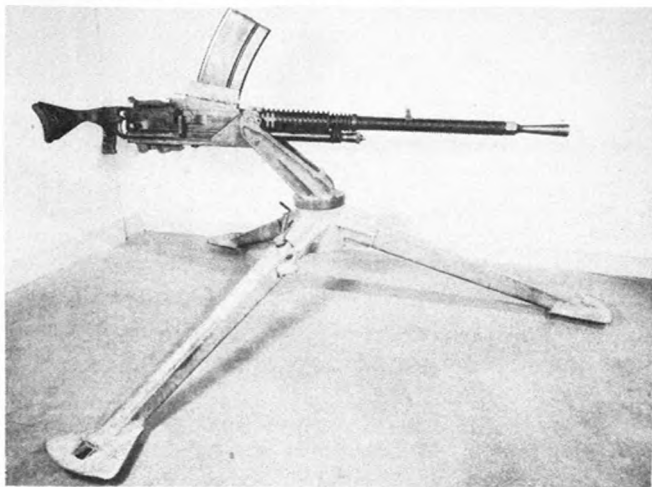


FIG.36

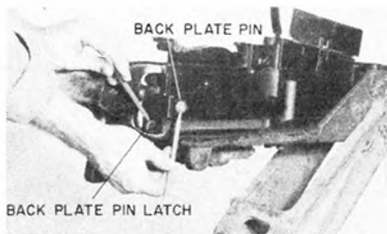


FIG.37

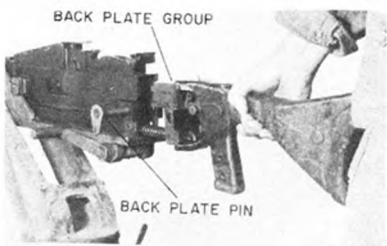


FIG.38

20 MM AUTOMATIC GUN MODEL 97

The type 97 20 mm AT gun is a single purpose, gas operated, air cooled, magazine fed, automatic weapon. It is a light anti-tank weapon, fired in the prone position from the shoulder. It can be carried into positions inaccessible to other anti-tank weapons. An excellent weapon for fixed fire, it is useless in tracking a moving target because the rear monopod must be pulled out of the ground and reset. The gun fires AP, HE, tracer and incendiary ammunition at a cyclic rate of approximately 150 rounds per minute. AP ammunition will pierce one-half inch of face-hardened steel at two hundred yards.

TO FIRE: Pull the retracting handle located on the left side of the weapon to the rear, and insert the box-type magazine in the top of the receiver. Release the bolt stop and push the retracting handle forward. Aim and pull the trigger. This weapon will fire automatic fire only

Silence this weapon by removing the back plate pin from the receiver and allowing the back plate, bolt lock, and bolt to be removed. (Figure 40).

Characteristics

Caliber	20 mm (.780 in.)
Length of barrel	41.87 in.
Length (overall)	82½ in.
Weight (overall)	150 lbs.
Muzzle velocity	2640 ft/sec.
Max. Range	5470 yds.
Rate of fire	12 rds/min.
Elevation	5 degrees
Depression	5 degrees
Traverse	90 degrees
Type of feeding device	Box-type magazine
Magazine capacity	7 rds.
Type of fire	Automatic only
Operation	Gas
Cooling system	Air
Rifling	8 grooves
Shield	(thickness) 5/16 in.
	(height) 16½ in.
Length of recoil	
Recoil system	Recoil spring
Ammunition	AP, Tracer, H.E.

20 MM AUTOMATIC GUN MODEL 97

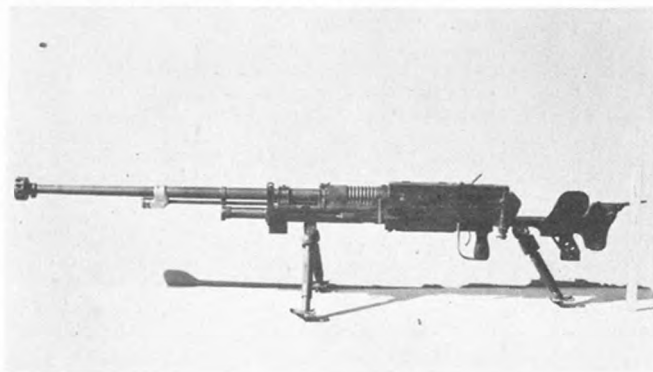


FIG. 39

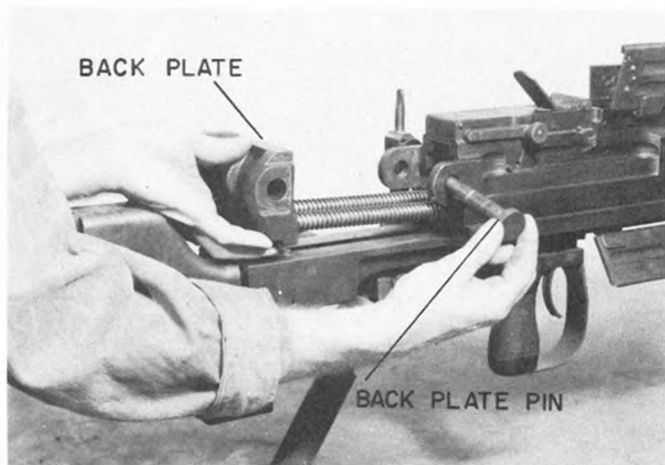


FIG. 40

20MM AA/AT AUTOMATIC CANNON MODEL 98

The 20 mm Model 98 is an all purpose, gas operated, air cooled, magazine fed, automatic or semi-automatic weapon. It is mounted on wooden wheels for mobility, but has a large tripod mount from which it is usually fired. An experienced gun crew can place the gun in battery, ready for fire, in less than three minutes.

This weapon has proved effective against low flying aircraft, but may also be used as an anti-tank or light automatic artillery weapon.

TO FIRE: Place a loaded magazine into the slot on top of the receiver, pull the operating handle to the rear, and then push it forward. Press the firing handle lock, and move the firing handle forward. Automatic or semi-automatic fire may be chosen by moving the change lever at the right rear of the sleigh.

Using a hammer and punch wrapped in cloth, this weapon can be neutralized by driving out the back plate pin and removing the back plate. (Figure 42).

Characteristics

Caliber	20 mm (.780 in.)
Weight in traveling position	836 lbs.
Weight in firing position	592 lbs.
Length in traveling position	9 ft.
Length of barrel	57 1/4 in.
Muzzle velocity	2720 ft/sec.
Max. Horizontal Range	5450 yds.
Max. Vertical Range	12,000 ft.
Rate of fire	120 rds/min.
Elevation	85 degrees
Depression	10 degrees
Traverse	360 degrees
Type of feeding device	Box-type magazine
Capacity of magazine	20 rds.
Type of fire	Automatic only
Operation	Gas
Cooling system	Air
Rifling	8 grooves
Shield	none
Recoil system	Recoil spring
Length of recoil	2 to 2.5 in.
Ammunition	HE tracer, AP tracer

**20 MM AIRCRAFT MACHINE CANNON ADAPTED TO
GROUND USE.**

FIG. 43

**A FLEXIBLE CANNON
INSTALLED FOR A
DEFENSE.**



**A FIXED CANNON ON A
HASTILY IMPROVED
GROUND MOUNT.**



25MM AUTOMATIC CANNON MODEL 96

The type 96 25 mm automatic cannon has been found on fixed and mobile single mounts and on fixed twin and triple mounts. It is essentially an anti-aircraft weapon but may fire anti-tank missions. The mobile single mount gun is comparable in mobility and in tactical use to the Type 98 20 mm gun. It fires HE, HE tracer, AP, and incendiary ammunition at an estimated rate of 250 rounds per minute; muzzle velocity is approximately 2700 feet per second. The penetrating power of the 25 mm. ammunition has not been determined, but it is assumed to be greater than that of the 20 mm ammunition. This weapon is apparently the basic automatic AA weapon of Japanese Naval Units.

Illustrated in Figures 44 and 45 on a twin mount, the weapon is silenced by removing both back plate pins, permitting the back plates to be removed.

Characteristics

Caliber	25 mm (.98 in.)
Length of barrel	58.5 in.
Length (overall)	8 ft. 5½ in.
Weight (overall)	5330 lbs. (triple mount)
Muzzle velocity	2900 ft./sec.
Max. Horizontal Range	5700 yds.
Max. Vertical Range	14,000 ft.
Type of fire	Auto.
Max. rate of fire	230 rds/min. (per barrel)
Max. Eff. rate of fire	190 rds/min. (per barrel)
Normal rate of fire	150 rds/min. (per barrel)
Elevation	80 degrees
Depression	10 degrees
Traverse	360 degrees
Type of feeding device	Box-type magazine
Capacity of magazine	15 rds.
Operation	Gas
Cooling system	Air
Recoil system	Hydro-spring
Length of recoil	38 - 48 in.
Rifling	12 grooves
Ammunition	HE, HE tracer, Incendiary tracer, AP

25 MM AUTOMATIC CANNON MODEL 96



FIG. 44

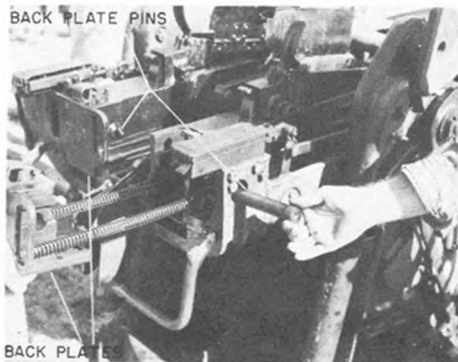


FIG. 45

50 MM GRENADE DISCHARGER MODEL 10 (1921)

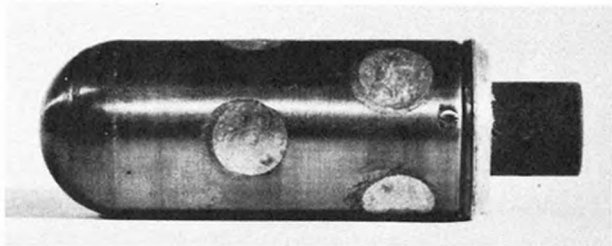
The Model 10 Grenade Discharger was a forerunner of the Model 89, commonly known as the "Knee Mortar", however, it is still in use. Although it was designed principally as a flare discharger the Model 10 will fire the Model 91 hand grenade and Model 11 Smoke shells.

The weapon may be made into a compact unit for carrying by placing the pedestal inside the tube and using the base screws as a muzzle cap. Range is controlled by regulation of the amount of gas escaping from the gas port at the bottom of the barrel. The weapon is fired at a constant angle of 45 degrees.

Like the Model 89 this weapon is trigger fired; however there is no rifling in the bore. This eliminates the use of the Model 89 Grenade shell as ammunition since the shell is armed by centrifugal force.

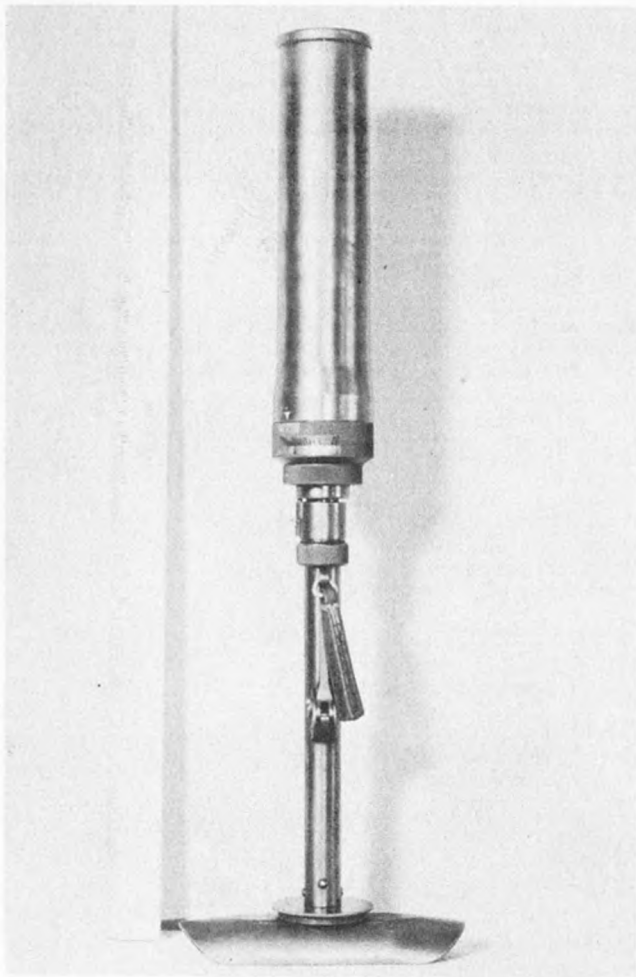
Characteristics

Caliber	50 mm (1.97 in.)
Length (overall)	20 in.
Length of tube	9½ in.
Weight (overall)	5 1/4 lbs.
Range	65 to 250 yds.
Rifling	Smooth bore
Weight of grenade used	1 lb.
Length of bore	6.5 in.
Width of bore	1.88 in.
Ammunition	Signal pyrotechnics, Fragmentation shell.



50mm. SMOKE SHELL

50 MM GRENADE DISCHARGER MODEL 10 (1921) • FIG. 46



50 MM GRENADE DISCHARGER MODEL 89

The Japs usually have a squad of four grenade dischargers in each platoon to be used in direct support of its three rifle squads. The discharger has a range control system which does not depend upon the angle of elevation. Range is set by elevating or depressing the range control shaft within the barrel. The top of the shaft serves as a base on which the grenade rests; the higher the shaft, the shorter the range.

TO FIRE: Place the base plate on the ground, (not the knee) Grasp the tube near its center with the left hand and incline the weapon toward the target so it makes an angle of 45 degrees with the horizontal. Set range by turning the elevating knob at the base of the barrel. With a Model 89 Shell, use the graduations on the left side of the pedestal; with the Type 91 grenade use the scale on the right. Graduations are in meters. Line up the target with the sighting line on the barrel. The lands in the barrel twist to the right; apply 30 mils left "windage".

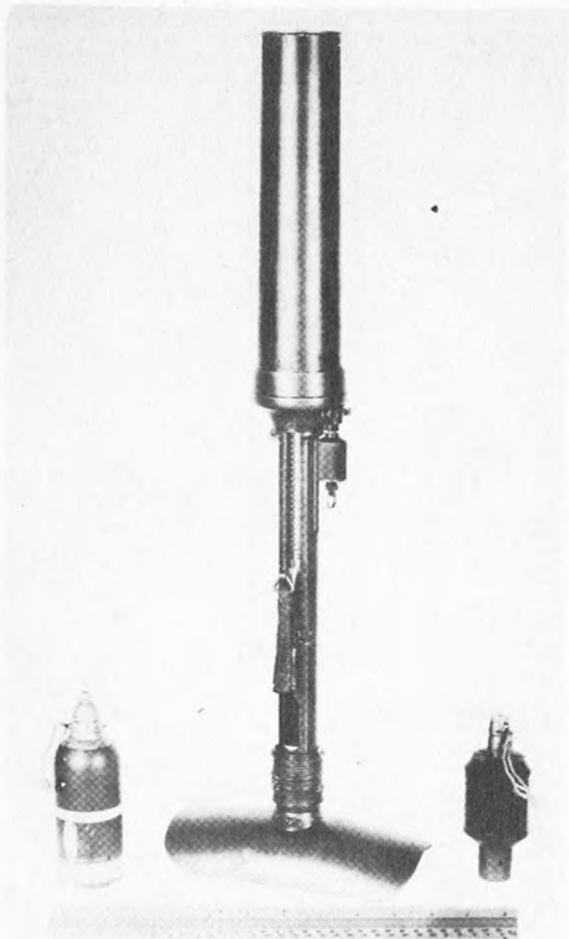
Pull the pin and lower the grenade gently into the tube. Do not let the fuse touch the barrel to avoid premature firing.

The type 89 Heavy Grenade Discharger fires two types of ammunition: the Model 89 shell and the Type 91 hand grenade. The Model 89 was designed especially for the weapon, has an instantaneous contact fuse and cannot be used as a hand grenade.

Characteristics

Caliber	50 mm (1.97 in.)
Length (overall)	26.6 in.
Length of tube	10 in.
Weight (overall)	10.5 lbs.
Max. Range	740 yds.
Min. Range	45 yds.
Rifling	8 lands
Rate of fire	(1 man) 10 rds/min. (2 men) 20 rds/min.
Firing mechanism	Trigger
Diameter of bore	50 mm
Ammunition	Model 89 Shell Type 91 Hand grenade

50 MM GRENADE DISCHARGER MODEL 89 FIG.47



**GRENADE DISCHARGER WITH MODEL 89 GRENADE SHELL (LEFT),
AND MODEL 91 HAND GRENADE (RIGHT).**

50 MM MODEL 98 MORTAR

The 50 mm mortar, Model 98, is unique. It was designed by the Japanese for use in neutralizing enemy positions immediately before an assault. It consists of a steel cylinder mounted at a fixed angle of elevation on a stationary base plate. There is an ignition aperture at the base of the cylinder.

This weapon fires a projectile made up of a cast-iron box, containing blocks of picric acid, mounted on a stick 50 mm in diameter.

TO FIRE: A propelling charge of black powder in silk bags is placed in the barrel, after which the stick of the projectile is inserted. Range is controlled by a sliding adapter which controls the depth to which the stick is inserted. A pull igniter is placed in the ignition aperture, and two pull igniters in the bursting charge container. These pull igniters are tied to metal loops on each side of the barrel collar. A lanyard is tied to the pull igniter in the ignition aperture at the base of the barrel.

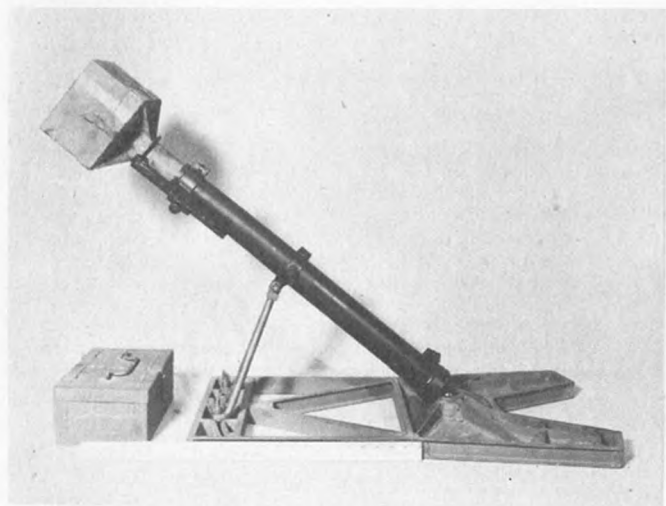
When the lanyard is pulled, the propelling charge is ignited and the projectile is thrown from the tube. The igniters in the bursting charge are pulled by the string attachments, thus starting a delay train.

Characteristics

Caliber	50 mm (1.97 in.)
Length of tube	25 in.
Weight (overall)	50 lbs.
Weight of tube	16.5 lbs.
Weight of bipod	1 lbs.
Weight of base plate	32.5 lbs.
Max. Range	732 yds.
Min. Range	
Rifling	Smooth bore
Elevation	Constant angle 45 degrees
Traverse	12 degrees
Rate of fire	1 rd/min.
Bursting radius	15 yds. (approx.)
Type of sight	none
Firing mechanism	Lanyard and pull igniter
Weight of projectile	14.5 lbs.
Ammunition	10 lb. stick bomb

50 MM MODEL 98 MORTAR

FIG.48



70 MM MORTAR MODEL II

This mortar is an old weapon of poor design and probably obsolescent. It is muzzle loaded, rifled and has a wooden base plate which mounts the entire weapon. An elevating screw attached to the plate supports the muzzle and eliminates the need for a bipod.

The mortar has a slow rate of fire because of the time necessary for the projectile to seat itself and the time spent in operating the firing mechanism.

No reports of its effectiveness in combat have been received.

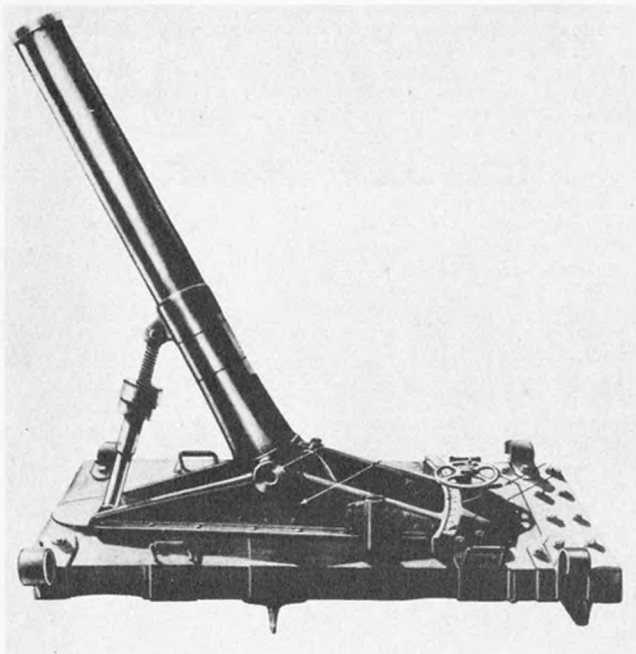
A three piece, high explosive shell similar in appearance and construction the Model 89, 50mm high-explosive shell is fired from this mortar, but unlike the 50mm mortar shell it has no safety pin. A complete round is 8.6 inches long and weighs 4.6 pounds. It consists of the fuze, the body and the propelling charge assembly. The brass fuze is a simple point-detonating type. The body is made of steel. The propelling charge assembly consists of a percussion cap, a propellant and an expanding copper rotating band. The propellant gases expand the copper band against the rifling of the bore, giving the round rotation and hence stability in flight. Because of this, the mortar is believed capable of delivering accurate aimed fire.

Characteristics

Caliber	70 mm (1.97 in.)
Length of tube	10 in.
Weight (overall)	133½ lbs.
Weight of tube	34.25 lbs.
Weight of baseplate	99.5 lbs.
Max. Range	1700 yds.
Min. Range	
Rifling	Smooth bore
Elevation	43 - 78 degrees
Traverse	23 degrees
Rate of fire	
Bursting radius	20 ft. (approx.)
Type of sight	None
Firing mechanism	Lanyard type
Weight of projectile	4.6 lbs.
Ammunition	H.E. shell

70 MM MORTAR MODEL II

FIG. 49



70 MM BARRAGE MORTAR

The barrage mortar is used for area bombardment. It is simply designed and consists of a smooth bore tube, a rectangular wooden block base plate and an iron spike which holds the mortar in an upright position. Elevation of the mortar is determined solely by the angle at which the weapon is implanted in the ground.

This weapon fires a metal cylinder 10 and three quarters inches in diameter. The shell explodes in mid-air releasing seven small explosive missiles each attached to a parachute. The missiles in turn, explode in mid-air due to the action of the igniter which is pulled by the shock of the parachute opening.

Although this weapon has been reported used for anti-aircraft missions, its effectiveness in this role would be negligible.

Characteristics

Caliber	70 mm (2.76 in.)
Length of tube	4 ft.
Weight (overall)	25 lbs.
Max. Range	1400 yds.
Min. Range	
Rifling	None
Elevation	None
Traverse	None
Rate of Fire	
Bursting radius	10 yds.
Type of sight	None
Firing mechanism	Fixed firing pin
Weight of projectile	5 lbs.
Ammunition	Parachute bombs.



FIG. 50

81 MM MODEL 3 (1928) MORTAR

The Model 3, 81 mm (1928) mortar was a forerunner of the modern Japanese mortar. It was considered obsolete but has been used in recent operations, probably because of a limited supply of better mortars.

The tube is of conventional design except for two collars machined on the forward portion to secure the bipod clamp.

Two types of base plates for the weapon have been discovered. One is of heavy ribbed construction with a single socket to secure the tube. The other is a light, flat metal plate with a similar socket.

The bipod is constructed of light weight tubing. There is no cross leveling device but rough cross leveling adjustments may be accomplished by breaking the bipod support and moving the leg on the lower side toward the center.

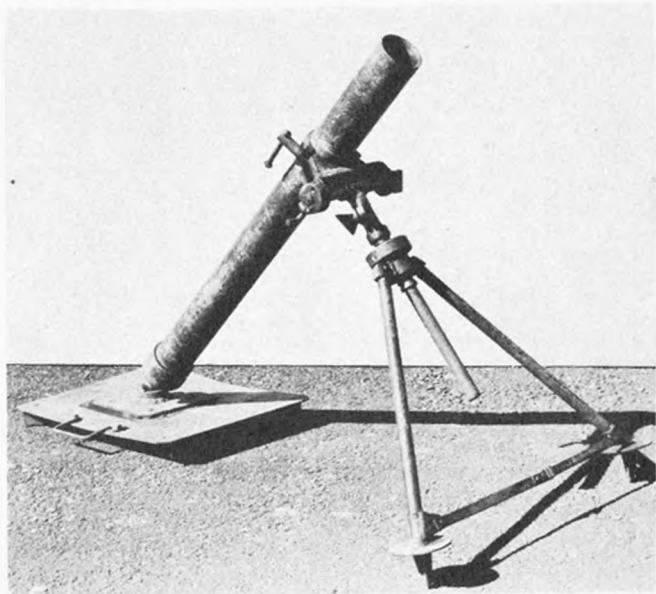
Because of the poorly constructed bipod, the weapon is unstable and cannot deliver accurate fire.

Characteristics

Caliber	81 mm (3.21 in.)
Length of tube	49½ in.
Weight (overall)	167 lbs.
Weight of tube	47 lbs.
Weight of bipod	25 lbs.
Weight of baseplate	23 lbs.
Max. Range	2500 yds.
Min. Range	100 yds.
Rifling	Smooth bore
Elevation	85 degrees
Traverse	3.65 degrees
Rate of Fire	18 - 20 rds/min.
Bursting radius	10 yds.
Type of sight	Collimator
Firing mechanism	Fixed firing pin
Weight of projectile	7.2 lbs. & 14.3 lbs.
Ammunition	H.E. shell

81 MM MODEL 3 (1928) MORTAR

FIG. 51



81 MM MODEL 97 MORTAR

The Model 97, 81 mm mortar is a smooth bore, muzzle loading, Stokes-Brandt type weapon similar to the U.S. 81 mm mortar M-1. Sights and ammunition for the two weapons are interchangeable. The tubes and base plates are practically identical but there are several differences in the bipod.

The cross leveling mechanism on the 97 is located on the right leg. On the M-1 it is on the left. The Jap mortar has buttress type threads in the elevating and traversing mechanism instead of the square type used in our mortar. The buttress type afford greater stability.

The ammunition is point detonating or short delay fused and high explosive. Its construction is somewhat inferior to U.S. ammunition. The model 97 mortar using Jap ammunition has slightly shorter range than our M-1 using our own ammunition; however, the Jap mortar using our ammunition has a greater range than the M-1.

A new type, self destroying, antiaircraft round which may be fired from this weapon has been recovered. It is similar in functioning to the 70 mm barrage mortar shell, but is otherwise different. It consists of a black steel tube with a wooden block which seals the forward end. The shell contains an H.E. cylinder and parachutes which are released twelve seconds after the projectile is fired.

Characteristics

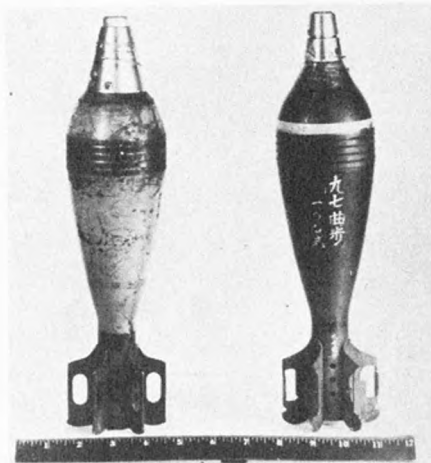
Caliber	81 mm (3.21 in.)
Length of tube	49½ in.
Weight (overall)	136 lbs.
Weight of tube	44 lbs.
Weight of bipod	46 lbs.
Weight of baseplate	45 lbs.
Max. Range	3200 yds.
Min. Range	100 yds.
Rifling	Smooth bore
Elevation	85 degrees
Traverse	3.65 degrees
Rate of fire	18 - 20 rds/min.
Bursting radius	10 yds.
Type of sight	Collimator
Firing mechanism	Fixed firing pin
Weight of projectile	7.2 lbs & 14.3 lbs.
Ammunition	H.E. shell (can fire our 81 mm)

81 MM MODEL 97 MORTAR

FIG. 52



**LEFT: U. S.
81MM MORTAR
AMMUNITION.**



**RIGHT: JAPANESE
81MM MORTAR
AMMUNITION.**

81 MM MODEL 99 MORTAR

The Model 99, 81 mm mortar incorporates a new principle which has heretofore not been utilized in the construction of mortars. The bore is machined so that the ammunition fits tightly against the sides of the tube. This makes it unnecessary to have a long tube to fire at long ranges. For this reason, the Japs have been able to perfect a mortar which weighs little more than our own 60 mm and fires ammunition similar to our 81.

The tube consists of a straight cylinder 21 and a half inches long, a base cap and firing mechanism. The base plate is of square ribbed steel with a single socket. The small bipod incorporates elevating, traversing, cross leveling and recoil mechanisms.

The weapon is muzzle loaded. It is fired by striking the head of the firing pin cam shaft with some object such as a wooden hammer.

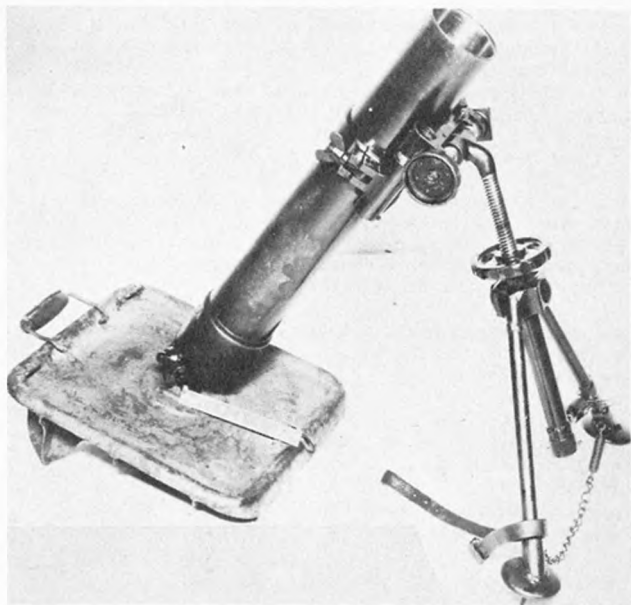
Two sizes of high explosive shells are fired from this mortar. A range of 3,280 yards may be attained using the 7.2 pound shell, and a range of 1300 yards using the 14.3 pound shell. Chemical shells as well as green signal flares and parachute smoke shells are also fired from this weapon.

Characteristics

Caliber	81 mm (3.21 in.)
Length of tube	21½ in.
Weight (overall)	52 lbs.
Weight of tube	18 lbs.
Weight of bipod	16½ lbs.
Weight of baseplate	18 lbs.
Max. Range	3280 yds.
Min. Range	207 yds.
Rifling	Smooth bore
Elevation	70 degrees
Traverse	16 degrees
Rate of Fire	15 rds/min.
Bursting radius	10 yds.
Type of sight	Collimator
Firing mechanism	Percussion
Weight of projectile	7.2 lbs. & 14.3 lbs.
Ammunition	H.E. shell

81MM MODEL 99 MORTAR

FIG. 53



90 MM MODEL 94 MORTAR

This weapon has no counterpart in U.S. ordnance. Generally it may be classed between the 81 mm mortar and the 4.2 inch Chemical Warfare mortar. It is a muzzle-loading weapon of heavy steel construction similar to the standard Stokes-Brandt design with the added feature of two large recoil cylinders mounted on each side of the tube. This facilitates firing larger projectiles at greater ranges.

The tube is reinforced at the breech end. The bipod is a larger model of the mount used with the model 97, 81 mm mortar. It is similar in every detail except that the cross leveling mechanism is on the left leg. The base is a large ribbed steel plate with one socket.

The mortar has not been found in recent operations. It is much too heavy to be carried easily and is apparently being replaced by a later model.

Characteristics

Caliber	90 mm (3.56 in.)
Length of tube	51 3/4 in.
Weight (overall)	340 lbs.
Weight of tube	160 lbs.
Weight of bipod	72 1/2 lbs.
Weight of baseplate	93 lbs.
Max. Range	4150 yds.
Min. Range	612 yds.
Rifling	Smooth bore
Elevation	80 degrees
Traverse	10 degrees
Rate of fire	15 rds/min.
Bursting radius	15 yds.
Type of sight	Collimator
Firing mechanism	Fixed firing pin
Weight of projectile	11 1/2 lbs.
Ammunition	HE shell
Type of recoil	Hydro-spring
Weight of recoil mech. empty	102 lbs.
Length of recoil cylinder	14 1/2 in.
Max. Recoil	5.46 in.
Length of Recoil mechanism	46 5/8 in.

90 MM MODEL 94 MORTAR

FIG. 54



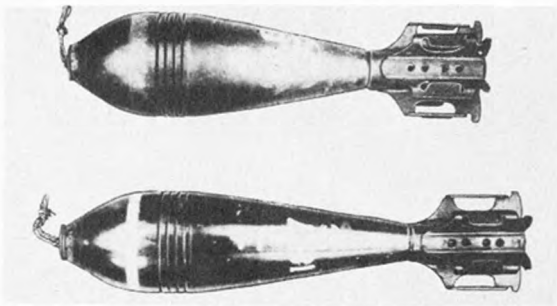
90 MM MODEL 97 MORTAR

The model 94, 90 mm mortar is apparently being replaced by the 90 mm model 97, which is lighter and more simply constructed. The model 97, 90 mm is quite similar in design to the model 97 81 mm mortar. Principal points of difference are the base plate, which is the same as that used with the model 94, and the cross leveling mechanism which is located on the left leg rather than on the right as in the 81 mm.

The ammunition used with this weapon is the standard 90 mm ammunition designed for the model 94 mortar.

Characteristics

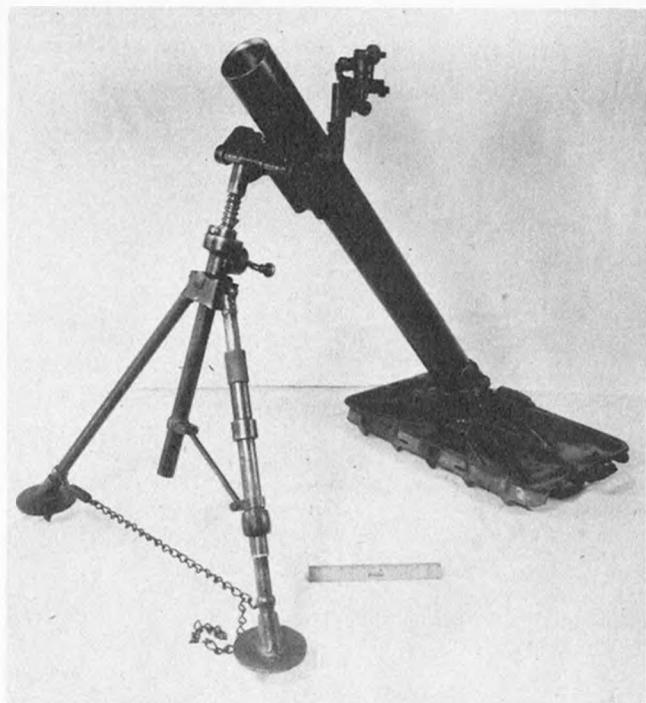
Caliber	90 mm (3.56 in.)
Length of tube	52 3/8 in.
Weight (overall)	233 lbs.
Weight of tube	80 lbs.
Weight of bipod	72 1/2 lbs.
Weight of baseplate	92 lbs.
Max. Range	4150 yds.
Min. Range	612 yds.
Rifling	Smooth bore
Elevation	85 degrees
Traverse	10 degrees
Rate of fire	10 - 15 rds/min.
Bursting radius	15 yds.
Type of sight	Collimator
Firing mechanism	Fixed firing pin
Weight of projectile	11 1/2 lbs.
Ammunition	H.E. incendiary



SHORT AND LONG TYPE 90 MM AMMUNITION

90 MM MODEL 97 MORTAR

FIG.55



37 MM ANTI-TANK GUN MODEL II (1922)

The Model 11, 37 mm Gun is an obsolete Japanese weapon which has only been encountered in Jungle Warfare. It is mounted on a tripod having a short fore leg and long trails. It has a hydro-spring type recoil mechanism, vertical sliding wedge breech block, and percussion type firing mechanism. Because of its light weight and small size, the gun may be carried in a small truck or man-handled into positions inaccessible to other weapons of the same caliber.

The gun is considered to be ineffective against tanks, however it may be used as a light artillery piece.

Characteristics

Caliber	37 mm (1.46 in.)
Length of barrel	36½ in.
Length (overall)	90 in.
Length of bore	32 in.
Weight (overall)	205 lbs.
Muzzle velocity	
Max. Range	
Rate of fire	6 - 10 rds/min
Elevation	4.8 degrees
Depression	14 degrees
Traverse	33 degrees
Type of breech block	Vertical sliding wedge
Recoil system	Hydro-spring
Length of recoil	13.8 in.
Firing mechanism	Percussion type
Rifling	16 grooves
Shield	None
Trail	Split
Weight of trail	27 lbs.
Ammunition	H.E.



FIG.56

37 MM ANTI-TANK GUN MODEL 94

The Type 94, 37 mm anti-tank gun (rapid fire gun) is a long rifle, flat trajectory weapon of the field gun type. It fires AP or HE ammunition at a sustained rate of fire of 12 rounds per minute. It is mounted on wooden wheels, has a split trail, and can be easily moved from place to place. The weapon has a low silhouette, is easily camouflaged, and may be manhandled into almost any firing emplacement. Tracking of moving targets is easily accomplished, and hits may be registered at ranges greater than 1000 yards. However, its AP ammunition is brittle and tends to shatter against face-hardened steel. In firing tests, it penetrated 46 mm of rolled armor plate at a range of 119 yards. In some instances, it has penetrated the armor on the turret of the U.S. medium tank M-4.

Neutralize this weapon in the following manner: Place both thumbs against the firing mechanism (Figure 58), rotate the mechanism one-half turn in either direction, and remove.

Another method of disabling the weapon is shown in Figure 59. Remove the coupler bolt lock screw and rotate the coupler bolt upward one-half turn. This releases the barrel from the carriage.

Characteristics

Caliber	37 mm (1.46 in.)
Length of barrel	66½ in.
Weight of barrel	148 lbs.
Length (overall)	114 in.
Width (overall)	47 in.
Length (w/trails ext.)	174 in.
Weight of gun in action	710 lbs.
Muzzle velocity	2300 ft/sec.
Max. Eff. Range	2500 yds.
Rate of fire	25 rds/min.
Elevation	29.2 degrees
Depression	7.76 degrees
Traverse	60 degrees
Type of breech block	Horizontal sliding wedge
Recoil system	Hydro-spring
Length of recoil	12 in.
Rifling	12 grooves
Shield	5 mm armor
Ammunition	AP, HE, H.E.

37 MM ANTI-TANK GUN MODEL 94

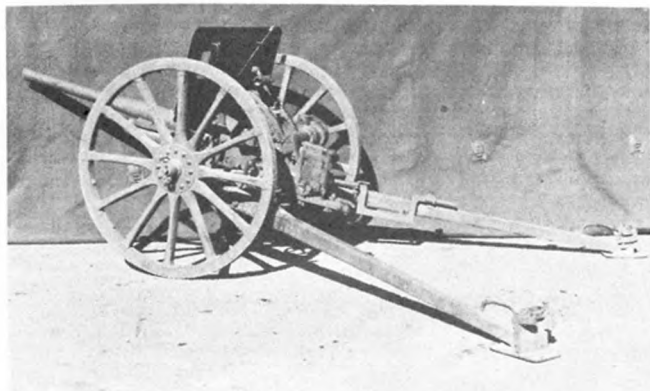


FIG. 57

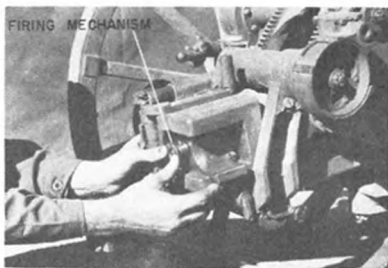


FIG. 58

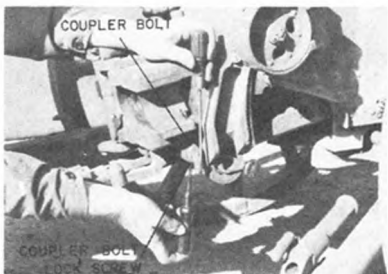


FIG. 59

37 MM ANTI-TANK GUN MODEL 97 (1937)

This gun is of German design, but has been adapted by the Japanese and designated Model 97 Anti-tank gun. It is now obsolete in the German Army. It has a semi-automatic, horizontal sliding wedge breech block, hydro-spring recoil, and all aluminum split trails. Unlike most Japanese weapons it has knee action shock absorbers and pneumatic tires for high-speed mobility.

The upper carriage is mounted on the lower carriage by means of a pintle. The lower carriage is equipped with a compensating axle which pivots horizontally to form a three point firing support for the gun.

The gun may be easily recognized by its high irregular shield which is tapered toward the rear at both sides.

Characteristics

Caliber	37 mm (1.46 in.)
Length of barrel	65 3/4 in.
Max. Range	4400 yds.
Eff. Range	500 yds.
Rate of fire	15 rds/min.
Elevation	16.03 degrees
Depression	12.02 degrees
Traverse	45 degrees R and L
Type of breech block	Horizontal sliding wedge (semi-automatic)
Recoil system	Hydro-spring
Rifling	16 grooves
Shield	Folding wing w/back apron (0.2 in.)
Trail	Split (all aluminum)
Length of trails	7 ft. 1 in.
Width of trails (open)	8 ft. 8 in.
Ammunition	AP and HE

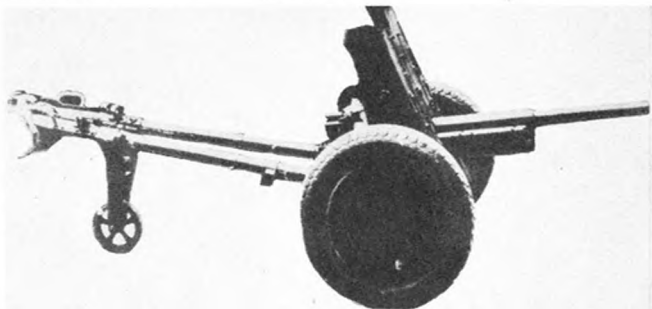


FIG.60

40 MM ANTI-AIRCRAFT GUNS

The Japanese have been reported to be using both Vickers-Armstrong and Bofors types 40 mm AA guns, however the only Japanese manufactured guns of that caliber captured to date have been the Vickers-Armstrong type. They are combined recoil-delayed blowback operated, water cooled, link fed weapons, and may be fired at an automatic or semi-automatic rate. They are mounted singly or dually on Navy type pedestals.

The guns are fired by foot pedal triggers from the left side. On dual mounts the triggers are independent of each other thus allowing the guns to be fire independently or simultaneously.

Wheeled hoppers are used to bring up ammunition. They are rolled up on ramps beside the gun and snapped in place.

On the single mount gun the fuze setting is made by the gunner; however, with the dual mount weapon, an automatic, mechanical fuze setter sets the fuze as the round is shoved into the chamber. This device is synchronized with the range drum.

It has been reported that the guns are used as anti-tank weapons as well as anti-aircraft, and 40 mm Japanese manufactured armor-piercing ammunition has been recovered; however the comparatively low muzzle velocity of this gun dictates against its use as an anti-tank weapon.

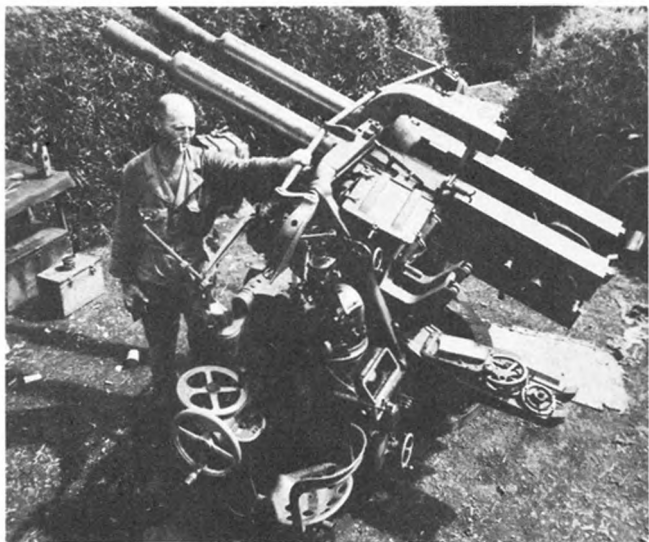
These guns were designed primarily for naval use, but have been adapted to ground mounts.

Characteristics

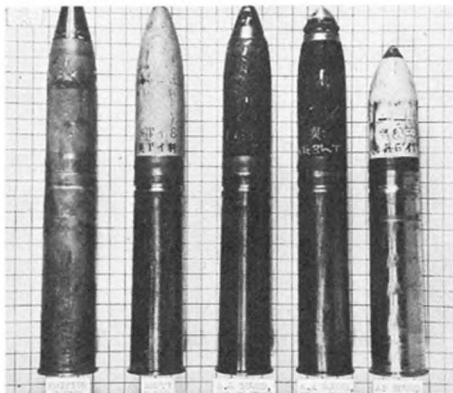
Caliber	40 mm (1.57 in.)
Length of gun and mount	9 ft. 1 in.
Weight of single gun	590 lbs.
Weight of single mount	1370 lbs.
Weight of twin mount	1950 lbs.
Elevation	85 degrees
Depression	5 degrees
Traverse	360 degrees
Max. Horizontal Range	10,000 yds.
Max. Vertical Range	15,000 ft.
Eff. Vertical Range	3,000 ft.
Muzzle velocity	2000 ft./sec.
Practical rate of fire	60 - 100 rds/min.
Ammunition	Tracer, AP, HE

40 MM ANTI-AIRCRAFT GUNS

FIG. 61



40 MM VICKERS-ARMSTRONG TYPE.



40 MM AMMUNITION

47 MM ANTI-TANK GUN MODEL I (1941)

The most effective anti-tank weapon used by the Japs thus far is the Model I, 47 mm gun. The gun has a semi-automatic, horizontal sliding wedge breechblock, and is fired by a percussion hammer mechanism.

The sight is a seven power prismatic device with cross hairs graduated in ten mils increments. Using our own rule of thumb (one lead equals five mils) we may interpret these as two lead increments. On the right side of the gun, just behind the shield is a range drum consisting of three dials. The dials on the right and left are graduated in hundreds of meters and represent the range to the target. The right dial is used with HE ammunition. The left with AP. The center dial is graduated in tens of mils and gives angle of elevation.

The piece is fired by pressing the firing plunger on the elevating knob. On recoil, the firing mechanism is recoiled, the breech is opened, and the spent shell case is ejected. The breech remains open.

AP ammunition used with the gun is not capped, has a brittle nose, and tends to break up unless it strikes at a 90 degree angle. Firing tests show it is about equal in performance to U.S. APC M51 37 mm ammunition against homogeneous steel plate, but is definitely inferior when used against face-hardened steel.

To put this gun out of action, remove the cotter pin from the coupler nut (Figure 63), remove the coupler nut with an adjustable wrench, and the gun will disengage from the recoil mechanism.

Characteristics

Caliber	47 mm
Weight	1,670 lbs.
Elevation	19 degrees
Traverse	60 degrees
Depression	-11 degrees
Rifling	16 lands and grooves
Muzzle velocity AP	2,710 ft/sec.
Muzzle velocity HE	2,735 ft/sec.
Recoil mechanism	Hydro-spring
Rate of fire	12 - 14 rds/min.
Shield	4 mm steel
Trail	Split
Carriage	Welded steel with pneumatic tires
Ammunition	HE and AP

47 MM ANTI-TANK GUN MODEL 1 (1941)

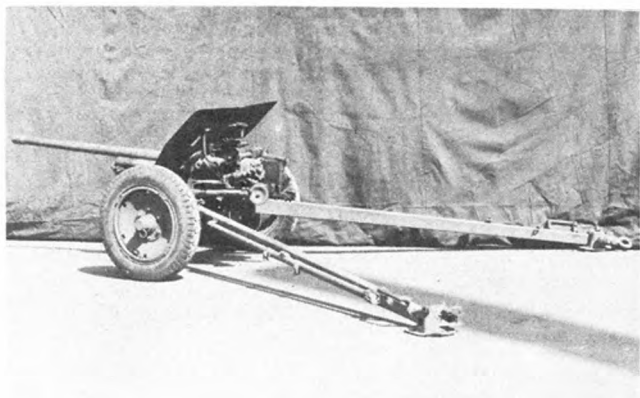


FIG. 62

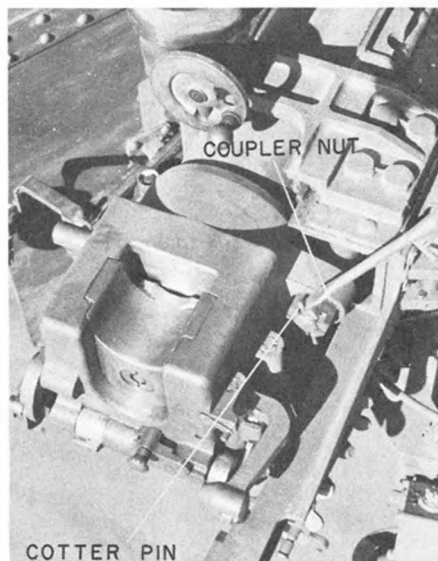


FIG. 63

5 CM (47MM) SHORT BARRELED NAVAL GUN

This Jap gun, used primarily as a mountain gun, was copied from an obsolete British Naval Gun and adapted to land warfare. It is equipped with a box-type single trail with a lunette through which it is believed a stake is driven to prevent the gun from moving to the rear when fired, there being no spades present.

The trunions are attached to the one piece, cold-worked steel tube at the center of gravity and mounted on the extension of the trail directly above the axle.

This gun has a well constructed, drop type breech block and a hydrospring recoil mechanism.

The breech cannot be opened as the maximum elevation is approached, because of the interference of the trail.

This gun is fired by means of a pistol grip, trigger device to which a lanyard is attached.

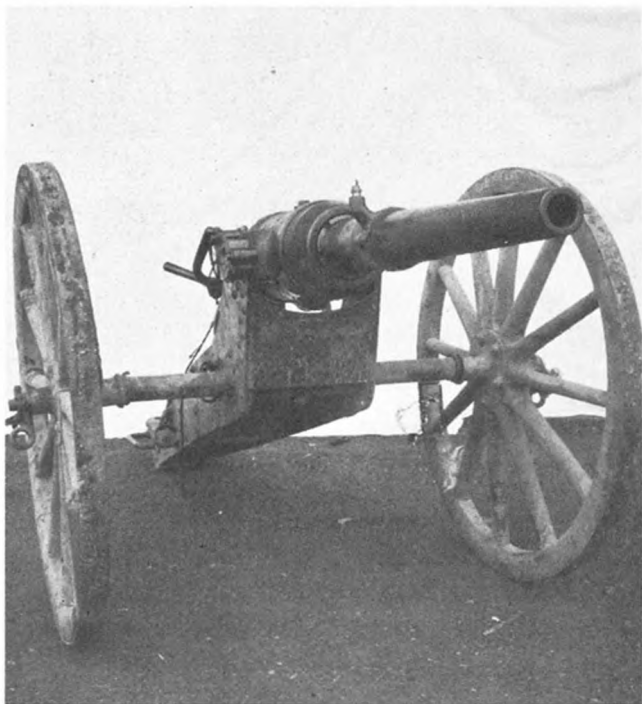
The only ammunition found for the gun thus far is an armor piercing projectile with corrugated copper rotating bands. The power charge was black powder and was contained in a brass case 50 mm in diameter and approximately 5 inches long.

Because of the weak powder charge of the ammunition, the short barrel, and the fact that the gun cannot be freely traversed, it would be of little value as an anti-tank weapon.

Characteristics

Caliber	47 mm (1.85 in.)
Length of tube	4 ft. 8 in.
Length of recoil	6 in.
Elevation	21 degrees
Depression	-11 degrees
Traverse	None
Weight (overall)	500 lbs.
Type of breech block	Drop type
Firing mechanism	Trigger
Trail	Box-type
Ammunition	A.P.

5 CM (47 MM) SHORT BARRELED NAVAL GUN-FIG.64



70 MM BATTALION HOWITZER MODEL 92

Each Jap Infantry Battalion is equipped with two 70 mm Howitzers, Type 92, for use in close support of its infantry companies. The weapon is principally a direct fire weapon, but it may be used to deliver indirect fire from defilade.

The weapon fires semi-fixed ammunition. Each shell is packed with four powder increments, up to three of which may be removed.

The sight is a panoramic three-power telescope, mounted on the left, above the breech. Directly below the telescope is a range drum with four metal strips numbered I, II, III, and IV, representing the powder charges available. Select the charge, swing back the strip which is marked with the corresponding number and set the estimated range by turning the range drum operating knob which is below the strips. Desired deflection in mils is set by using the dial on the telescope.

To lay the gun for direct fire, sight through the telescope and turn the elevating and traversing hand wheels until the cross hairs are on the target.

The gun may be laid for indirect fire in two ways: (1) in the same way as a field gun, using the panoramic sight; (2) similar to that used for the old Stokes 3-inch mortar. In the latter case, set range on the range drum and level the bubble by turning the elevating hand wheel, or set the angle of elevation with a clinometer. Lay for deflection, using the white aiming line on the barrel. Set deflection right or left using the scale (graduated to 36 degrees in either direction) on the left trail head just behind the shield.

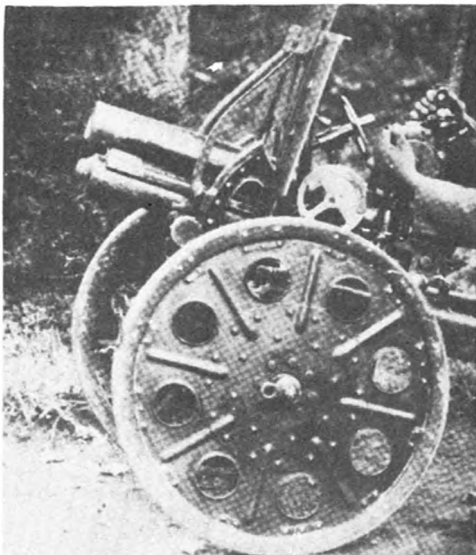
Figure 66 illustrates a method of silencing this weapon. Pull out on the coupler bolt latch and unscrew the coupler bolt to disengage the recoil mechanism from the barrel.

Another method is to pull out on the operating handle retainer (Figure 67), open the breechblock, align the assembly lines, and remove the operating handle by pulling outward (Figure 68).

70 MM Battalion Howitzer Model 92 (continued)

Characteristics

Caliber	70 mm
Length of bore	24½ in.
Length (overall)	87 in.
Weight in action	468 lbs.
Weight (overall)	420 lbs.
Width (overall)	36 in.
Elevation	-10-plus 50 degrees
Traverse	40 degrees
Max. Range	3000 yds.
Eff. Range	1500 yds.
Rate of fire	10 rds/min.
Type of Breechblock	Slotted screw type
Recoil system	Hydro-spring
Length of recoil	4 to 6 in.
Shield	0.156 in.
Trail	Split
Ammunition	HE and AP



70 MM BATTALION HOWITZER MODEL 92

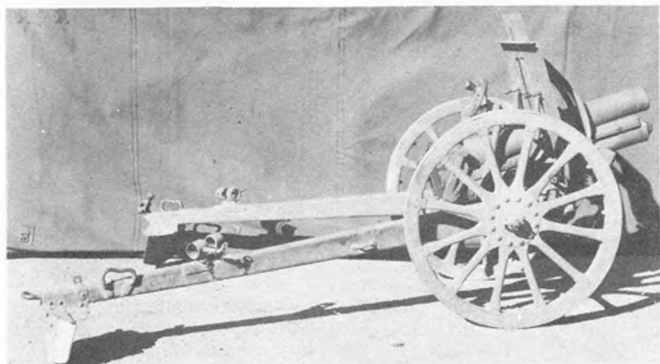


FIG. 65

COUPLER BOLT LATCH

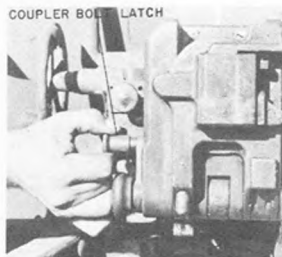


FIG. 66



FIG. 67

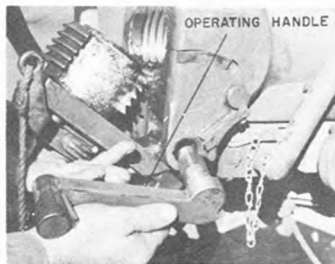


FIG. 68

75 MM MOUNTAIN GUN MODEL 41

The Model 41 Mountain Gun was originally the standard pack artillery of Japanese mountain units, but it has been superseded by the Model 94. It has now been reissued to Infantry units as a regimental gun. It has a screw type breech block, hydro-spring type recoil mechanism, and a box trail. It is mounted on a wooden wheel carriage.

The gun may be quickly broken down into loads for pack animal. Each load weighs approximately 200 pounds. The carriage is designed for one man control of aiming, elevating, and traversing.

Elevation and depression are accomplished by operating the handwheel on the left side of the carriage. To elevate, turn the handwheel counterclockwise; to depress, clockwise. The traversing handwheel is located on the right rear of the carriage. Turning it clockwise moves the gun to the right; counterclockwise to the left.

Neutralize this gun as illustrated in Figure 70. Pull down on the coupler nut latch and unscrew the coupler nut to disengage the recoil mechanism from the cradle.

Characteristics

Caliber	75 mm (2.95 in.)
Length of barrel	54.4 in.
Length (overall)	14 ft.
Length overall in trav. post.	138 in.
Weight of gun in action	1,218 lbs.
Width (overall)	48 in.
Width of trail box.	24 in.
Muzzle velocity	1250 ft/sec.
Max. Range	7,675 yds.
Rate of fire	10 rds/min.
Elevation	21 degrees
Depression	5 degrees
Traverse	5 degrees
Type of breech block	Interrupted thread swinging block
Recoil system	Hydro-spring
Length of recoil	17 in.
Rifling	28 grooves
Shield	37.5 in. x 34 in. (0.167 in)
Trail	Box type
Diameter of wheels	29.5 in.
Ammunition	AP, HE, Hollow charge, Long Pointed HE.

75 MM MOUNTAIN GUN MODEL 41

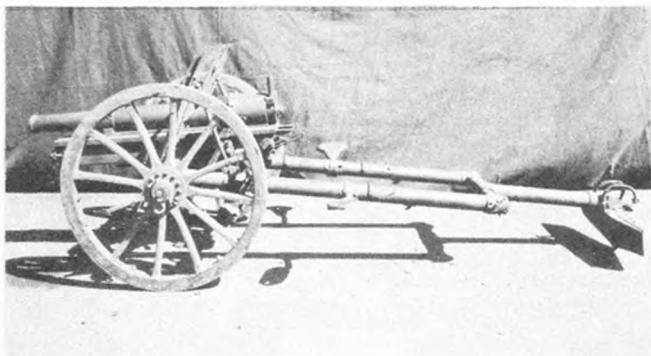


FIG. 69

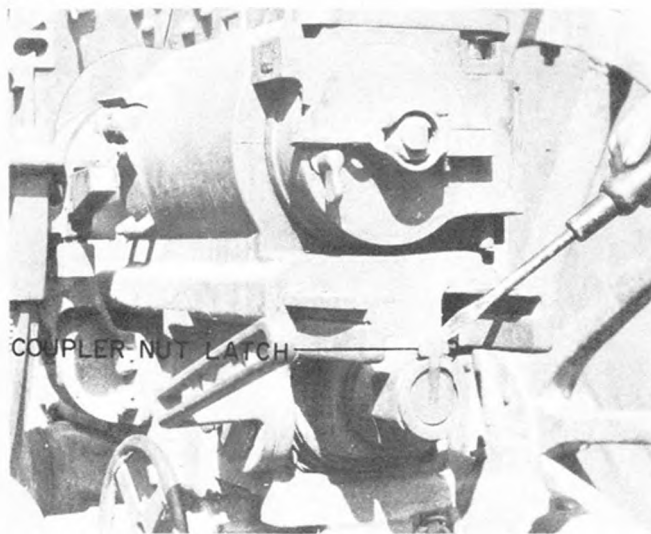


FIG. 70

75 MM MOUNTAIN GUN TYPE 94

The 75 mm Mountain Gun Type 94, which replaced the Model 41 (1908) gun when the Japanese Mountain Artillery was reorganized, is designed for rapid assembly, disassembly and carriage by pack animals. It is possible to manhandle the Type 94 gun, but some of the parts are very heavy and transport by manpower over long distances and rough terrain is an arduous and extremely slow job.

After assembly, the gun must be staked down before firing and the trails spread to the maximum limit.

It has been reported that a later model of this weapon is now being manufactured. The main difference between the two models, both of which are known as the Type 94, is that the elevating handwheel and its mechanism are operated from the right side of the new model.

This gun is put out of action by disconnecting the recoil mechanism from the cradle (Figure 72). Remove the cotter pins from the two coupler nuts and remove the coupler nuts.

Figure 73 illustrates a method of neutralizing this weapon by removing the firing mechanism.

Characteristics

Caliber	75 mm (2.95 in.)
Weight (overall)	1183 lbs.
Length (traveling position)	157 in.
Length (firing position)	149 in.
Width (overall)	4 ft. 4 in.
Length of bore	49 3/8 in.
Muzzle velocity	1165 ft/sec.
Max. Range	7650 yds.
Rate of fire	10 - 12 rds/min.
Elevation	45 degrees
Depression	9 degrees
Traverse	40 degrees
Type of breech block	Horizontal sliding type
Recoil system	Hydro-pneumatic
Length of recoil	27 1/2-36 in.
Sight	Panoramic
Rifling	28 grooves
Ammunition	H.E.

75 MM MOUNTAIN GUN TYPE 94

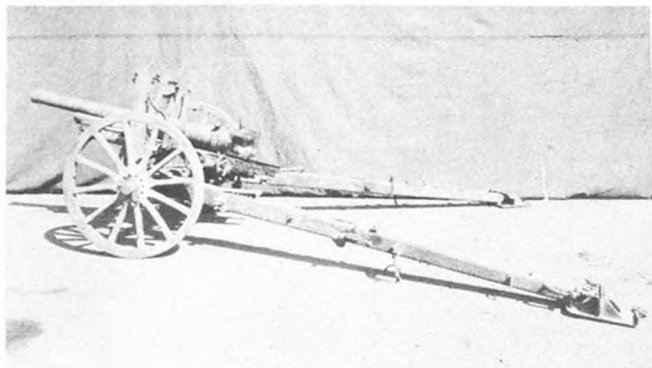


FIG. 71

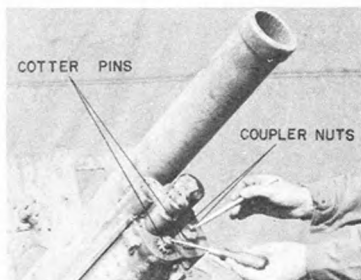


FIG. 72

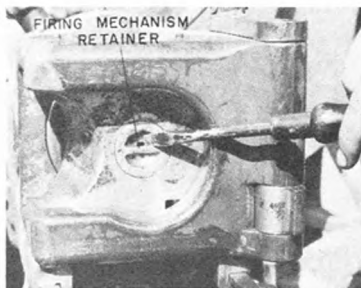


FIG. 73

