AUSTRALIAN MILITARY FORCES

SUBJECT:—

Prepared and Issued

by

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AMMUNITION WING

tion No.

Date

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RECOGNITION & SORTING OF JAPANESE AMMUNITION

The information contained in this document has been compiled after research by the E and A section MSL and Amn. Wing AAOC School.

Sources Consulted Include The Following:-

AMF Technical Intelligence Summaries
LHQ E in C B.D.T.I.
Weekly Intelligence Reviews
Report on Enemy Amn. by MSL
" " " " " US Navy Investigation Unit
" " " " " 2/1 C.W. Coy.
" " " " " 42 Chem. Lab. Coy.
US Navy Translations of Captured Documents

JAPANESE AMMUNITION

MARKINGS

ARMY AMMUNITION

Japanese Army ammunition of 20 mm. calibre and over can usually be identified by certain markings that are characteristic of Army ammunition only.

While the colour of the projectile is usually BLACK with WHITE, YELLOW and/or RED bands, there are types of Army ammunition that do not conform to this scheme of colouring. Great care should be exercised when handling any projectiles that are BLUE-GREY in colour, that have a BLUE band to the rear of the RED tip on the nose or that have a wide BLUE, GREEN, YELLOW or BROWN band around the projectile body. These are very apt to contain gas, the colours indicating type of fillings:-

LACHRIMATORS	GREEN
STERNUTATORS	RED
VESICANTS	YELLOW
DIRECT POISONS . ..	BROWN

NAVY AMMUNITION

Available information on Japanese Naval Ammunition is very incomplete, and the colour scheme used on their projectiles seems to vary with different types. The most common colour found is maroon and is generally found on a high capacity projectile. A green band on the nose generally indicates an explosive filled shell. White has been found in A.P. types, bright red in star shell and orange in H.E. tracer. However, the above colours may not hold true as to type. Sometimes a yellow band around body of projectile indicates centre of gravity.

The same precautions should be observed in handling Naval blinds and investigating Naval dumps as are observed with Army Amn.

PACKING OF JAPANESE AMMUNITION

Frequently enemy equipment is captured complete in its original packing cases. When ammunition can be identified without uncrating, it will often prove advantageous to leave the equipment in its original packing, as these boxes have been designed to resist tropical weather.

Wooden boxes are the most common packing materials equiped with liners of galvanized sheet steel or black water-proofed paper inside. It may be possible to open the box and identify the equipment by feeling the contour of the liner. Small arms ammunition, set in the packing box in cardboard containers presents a level surface beneath the plated sheet-steel liner; while 25 mm and 37 mm rounds held firmly by wooden spacers, should give a regularly wavy contour under the liner. Larger shells and grenades, may or may not be discernable by feeling the liner. Bomb fuzes are nearly always sealed in air-tight cans like tennis balls, whereas projectile fuzes are frequently found in screw-top cans.

ARMY - GUN AND MORTAR

Projectiles are painted with a basic body color and have colored bands.

Captured documents indicate that the bands should be the width of the driving band and are called "single-width" bands.

Basic body color for HE projectiles is black. Basic body color for chemical and incendiary projectiles is blue-grey.

BANDS

Red band at nose indicates explosive filled. In chemical projectiles this band refers to the exploder.

Bands to indicate type of projectile are:-

Yellow	-	HE
White	-	AP
Green	-	Tracer

Bands to indicate type of steel are:-

White	-	Steel
Green	-	Semi-steel (cast iron steel)
No band	-	Cast iron (substitute projectile)

Projectiles of early manufacture normally bear three color bands as follows:-

(a)	Red at nose	-	explosive filled
	Yellow immediately aft of front band	-	HE type
	White immediately forward of driving band	-	Steel
(b)	Red at nose	-	explosive filled
	Yellow at front band	-	HE type
	Green at driving band	-	Semi-steel
(c)	Red at nose	-	explosive filled
	White at centre of body	-	AP
	Green adjacent to white	-	Tracer

A simplified system omitting one band has more recently been introduced, as follows:-

(a)	Red at nose	-	explosive filled
	Yellow at centre of body	-	HE type - steel
(b)	Red at nose.	-	explosive filled
	Green at centre of body	-	HE type - semi-steel

On mortar bombs the yellow or green band is immediately forward of the guide band.

MARKINGS ON CARTRIDGE CASES

The loading date and symbol for the loading factory are usually stencilled on with colored dye.

The date is usually followed by a Roman letter (A, B, etc.) which is the lot number of the propellant for the particular factory. Each month a new series of lots is commenced.

The filling factory stamp is placed beneath the loading date.

Some cartridge cases have stencilled characters indicating the type of gun.

e.g. (a) 九四山 — Type 94 Mountain Gun

(b) 九二歩 Type 92 Infantry Gun

A few shell are also painted with a type number, but these are relatively uncommon. If type number characters are present they are painted vertically on the body below the ogive, 180° from the main series of markings.

Stencilled markings indicating loading date, propellant lot number, etc., on cartridge cases are not always present.

PLACE OF FILLING

A symbol is used which is the initial syllable of the name of the place. Size about ½ diameter of projectile, and placed adjacent to date. The symbol is usually enclosed in a circle.

Examples :


"to" Tokyo Ordnance Branch Depot


"na" Nagoya Ordnance Branch Depot


"hi" Hiroshima Ordnance Branch Depot


"w(o)" Okayama Ordnance Branch Depot


"o" Osaka Ordnance Branch Depot


"Ko" Kokura Ordnance Branch Depot


"he" Heijo Ordnance Branch Depot


"ka" Kwantung Army Ordnance Department


"ri" Kwantung Army Port Arthur Ordnance Branch Depot


"shi" Kwantung Army Hsinking Ordnance Branch Depot


"ka" Kwantung Ordnance Branch Depot


"Kon" Imperial Guards Division Ordnance Department


"1" First Division Ordnance Department (others correspond)


"i" Itabashi Powder Factory


"ko" Tokyo Laboratory


"e" Army Engineering School

The following have been found on projectiles, but the place they stand for is not known.

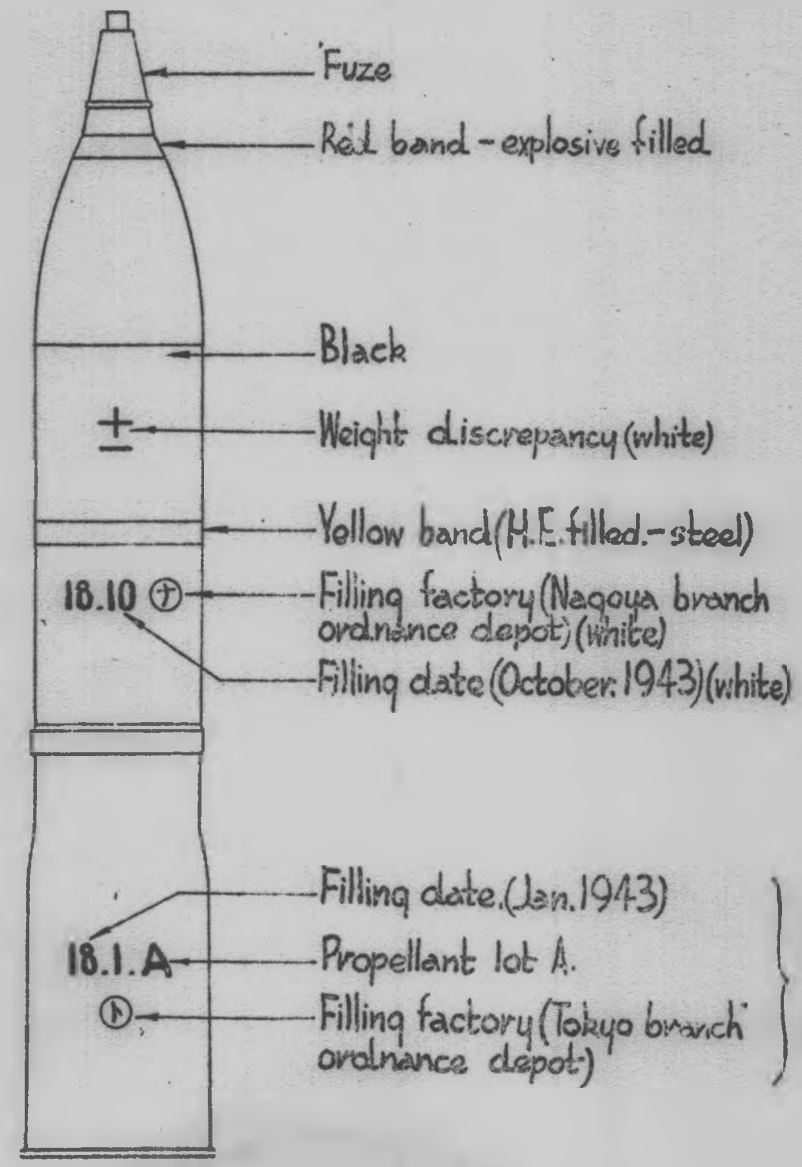
 "so" "u" "yo"

DATE OF FILLING.

Arabic numerals are employed. The year (year of present emperor's reign) is placed first. Size about ⅓ diameter of projectile.

Example : 19.6 = 19th year, 6th month
i.e. June 1944

Typical Japanese H.E. Round – Latest Type Markings.



NATURE OF HE

Shell normally filled TNT have no marking to indicate this, but if alternative fillings are used the shell is marked accordingly. This marking is just forward of the driving band 180° from the main series of markings.

e.g. 平寧 "Hei nei" filled Trinitrophenetole

安瓦 "Anga" filled Ammonium nitrate/RDX 80/20

Shell with alternative fillings (other than TNT) are marked:

無炸 "musaku" (empty)

平寧 "Heinei" (Trinitrophenetole)

安瓦 "Anga" (RDX/Ammon Nitrate; 20/80)

OTHER MARKINGS ON PROJECTILES ARE AS FOLLOWS:

Weight Discrepancy

	Symbol
Errors from — 1.5% to — 2.5%	=
— 0.5% to — 1.5%	—
— 0.5% to + 0.5%	±
+ 0.5% to + 1.5%	+
+ 1.5% to + 2.5%	++

These symbols are either white or black in color depending on the background color, and are located ½ the distance from the ogive, on the cylindrical part of the projectile. The symbol is about ½ the diameter of the projectile.

PROJECTILES OTHER THAN HE - SYMBOLS

Smoke 个 (Ko) Target indicator モ (mo)

Incendiary ヤ (Ya) Signal フ (fu)

Illuminating (Star) ア (a) Sand filled ス (Su)

This symbol is adjacent to and to the right of the weight discrepancy marking. Size is about ½ the diameter of the projectile.

ARMY SMOKE GENERATORS

Basic Body Color	One Band	Type
Olive Green	White	Hexachlorethane or CT White Smoke
Olive Green	Red	Toxic (D.C.) Sternutator
Blue Grey	Green	Toxic (C.A.P.) Lachrymator

Some other types of smoke candle are known, but these have no distinguishing color markings.

ARMY CHEMICAL SHELL

Two types are known.

(a) Sternutatory shell filled D.C.

Basic body color - blue Grey
Red band at nose - indicates exploder fitted.
Blue band immediately aft of red band - indicates chemical shell.
Yellow band immediately aft of front band - indicates an HE bursting charge.
Red band aft of centre of gravity - indicates type - sternutator.
White band forward of driving band - thought to indicate steel type.

(b) Vesicant Shell (mustard gas - Lewisite 50/50)

Basic body color - blue grey
Red Band at nose - as for (a)
Blue band aft of red band - as for (a)
No yellow band aft of front band.
Yellow band aft of centre of gravity - (where red band is on (a)) - indicates type - Vesicant
White band forward of driving band - as for (a).

The usual marks denoting date and place of filling, etc., appear on these shell.

ARMY AIRCRAFT BOMBS

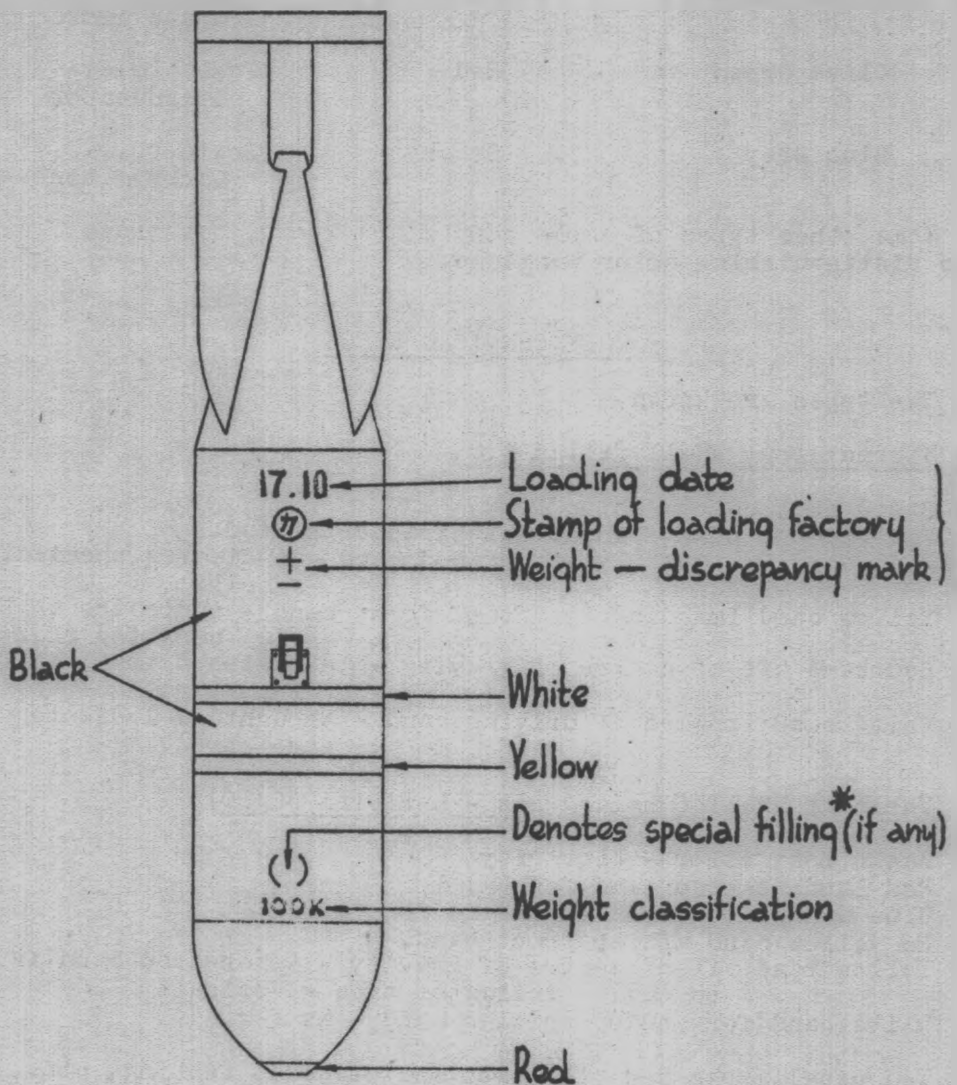
Most recovered HE bombs have markings similar to those on Gun Ammunition, as follows:-

Basic body color - black.
Red band at nose.
Yellow and white bands round body.

The yellow band is forward of the centre of gravity and the white band is at the centre of gravity.

Bombs have been recovered on which the white band has been omitted and it is thought that bombs are now being marked with a simplified marking system. The date and place of filling and the weight classification (Kgs) are present. Weight discrepancy markings are found only on 250 and 500 Kg HE bombs and Type 100 chemical bombs. The significance of the symbols is not known for bombs.

100 Kg. H.E. Bomb – Typical Markings



*such as Picric Acid – T.N.T mixture

Markings stamped into bomb cases include serial numbers. Just below the suspension lug the place and date of manufacture of the empty case is stamped into the body. The manufacturer's serial number is also present on the tail cone, body, and nose if these are separate and screw together (i.e, it is on either side of threads.)

SPECIAL ARMY BOMBS

1/3 Kg Cluster Bomb (Hollow Charge)

Black body with centre yellow band.

1/2 Kg Cluster Bomb

Black body with centre yellow band and red band round nose.

Chemical

Grey with red tipped nose and yellow and white bands (single width)
Double width coloured band appears aft of suspension lug.

According to documents the color determines the type of gas.

Yellow	-	Blister gas (only type recovered) (50 Kg filled mustard/Lewisite 50/50)
Green	-	Tear gas
Red	-	Vomiting gas
Blue	-	Choking gas
Brown	-	Blood and nerve poisons.

Smoke F.S.

Grey with red nose marked "Ke"

Incendiary

Grey with red nose and one white band marked "Ya".

NAVY - GUN AMMUNITION

The color scheme employed by the navy indicates the type of projectile by overall body color.

Maroon	-	Common (includes high capacity, nose-fuzed projectiles and solid nose, base-fuzed projectiles)
White	-	A.P.
Blue	-	Illuminating (reported)
Red	-	Illuminating (recovered in 14 cm. Ammunition)
Black	-	Practice (inert loaded)

Bands

Color Bands are used to give additional information.

Green at nose - HE filled.
Red tip on nose - Base-fuzed
Band at mid body - Centre of Gravity (red on A.P. projectiles yellow on common projectiles, etc.)

width - 50 mm. for projectiles of 200 mm. gun or larger.
20 mm. for 155 mm. gun

Service projectiles converted (inerted) for practice use have a yellow band at nose.

Naval land-use HE rockets used by the Japanese Marines have the usual HE color markings.

BOMBS AIRCRAFT, NAVY

Japanese navy bombs are divided into land use (rikuyo), ordinary (tsuyo), special (tokushu), smoke, and practise.

Land bombs are a general purpose type, but ordinary bombs do not fit any standard "Allied" term. Their smooth cases give superior penetrating qualities to land bombs, but in some instances are not thicker.

Special bombs are for specialised uses, and are designated by mark numbers, each number corresponding to a particular use.

The navy bomb colour scheme was changed in 1943 or 1944.

The basic body color of service bombs has been and is blue-grey. The old color pattern consisted of painting the key color as a broad band on the nose and tail struts. The colors on the nose and struts might be, and usually were, the same. A band slightly aft of the suspension lug might be an additional key. Thin red stripes 180° apart and running from nose to apex of tail cone appeared on all service bombs.

In the new scheme all bombs containing explosive have the nose tipped in green. A key colour appears as a band immediately behind the green tip. On some special bombs another key color is used on the tail struts, but on the majority of bomb types the struts are the same color as the body. The red stripes and body band are dropped.

Examples:

Land Bombs (HE)

Old color scheme

Green nose.
Blue-grey body.
Green tail struts.
Blue band round body. (Sometimes a green band on some 250 Kg bombs)
Two thin red stripes 180° apart.

New color scheme

Green nose.
Brown band immediately aft of nose.
Blue-grey body and tail struts.

Sizes recovered

80 kg, 250 Kg and 800 Kg

Ordinary Bombs (HE) (Streamlined and cylindrical)

Old color scheme

Green nose
Blue-grey body
Green tail struts
Red stripes

New color scheme

As for land bombs.

In the 800 Kg size a 2" green band is present just aft of the guide stud for the suspension band.

Sizes recovered

Streamlined:
30, 60, 250 Kg

Cylindrical:
60, 250, 800 Kg

Special Bombs

Only the ones which have been recovered, or are likely to be recovered, are listed. Information on unrecovered types, is taken from captured documents.

Mk I

(Chemical)
Land Type Bomb

None recovered.

Old color scheme

Unknown.

New color scheme

Green nose.
Yellow band immediately aft of nose.
Blue-grey body.
Yellow tail struts.

Mk II

(Anti-Submarine)
Land Type Bomb

Old color scheme

Blue nose
Blue-grey body
Blue tail struts
Red stripes

New color scheme

Green nose.
Blue band immediately aft of nose.
Blue-grey body and tail struts.

Sizes recovered

60, 250Kg

Mk III

(Air burst Incendiary - Shrapnel)

Old color scheme

Silver nose.
Blue-grey body.
Silver tail struts
Red stripes.

This is the marking for the 30 Kg; for the 250 Kg the tail struts are red.

New color scheme

Green nose.
Silver band immediately aft of nose.
Blue-grey body.
Red tail struts.

Sizes recovered

30 Kg Ordinary type
250 Kg Land type

MK V

(A.P.)
(Ordinary type)

Old color scheme

Unknown

New color scheme

Green nose.
White band immediately aft of nose.
Blue-grey body and tail struts.

Sizes recovered

800 Kg

MK VI

(Impact-incendiary)
(Land type)

Old color scheme

Red nose.
Blue-grey body
Red tail struts
Red stripes.

New color scheme

Green nose.
Red band immediately aft of nose.
Blue-grey body
Red tail struts.

Sizes recovered

70 Kg.

MK. V111

(Use unknown)
(Land type)

Old Colour scheme.

Unknown

New Colour scheme.

Green nose
Brown band immediately aft of nose
Blue-grey body and tail struts

Sizes recovered.

250 Kg

MK. 21

(Container for smaller shaped-charge bombs)

Old Colour scheme.

Unknown

New Colour Scheme.

Green nose
Brown band immediately aft of nose
Blue-grey body no tail struts.

Sizes recovered.

60 Kg

Smoke bombs.

(None recovered)

Old Colour scheme.

Unknown

New Colour scheme.

Green nose
Black band immediately aft of nose.
Blue-grey body and struts.

PRACTICE BOMBS
(With Spotting Charge)

Old Colour scheme.

Various
1 Kg. Practise
White rubber nose, black body, white tail and fins.

30 Kg. Practise
Nose unpainted
barrel black, tail and struts white,
Red longitudinal stripes

Type 99 - No. 3 Practise
Nose green or black, barrel black, tail and struts white.
Red longitudinal stripes

New Colour Scheme.

Green nose
Black band immediately aft of nose
White body and struts

NOTES ON MARKINGS.

(i) A dummy round for the 75 m.m. Type 94 Mountain Gun has a black wooden "shell" with a white dummy fuze.

(ii) A shrapnel round for the 75 m.m. Type 41 Mountain Gun has the following characteristics :-

Basic body colour - black.
White band immediately forward of driving band.
Red band at nose.

(iii) One HE Shell from a 75 m.m. Type 41 Mountain Gun has been found completely painted a bright orange.

(iv) The airburst smoke shell for the 50 m.m. Type 89 Grenade discharger is painted black with two white bands, one forward of the driving band and the other aft of the front band. The usual markings indicating date of filling, smoke, etc., are present.

(v) Converted shrapnel shell for the Type 41 Mountain Gun has the following colour markings :-

Basic body colour - black.
White band forward of driving band.
Yellow band aft of front band.
Fuze adapter - white.
Red band at nose.

Converted Shrapnel is marked with the characters for Type 98 modified Shrapnel on the body below the ogive on the opposite side to the filling marking.

(vi) 75 m.m. Smoke Shell have been recovered with the following markings :-

Basic body colour - white.
Red tip at nose.

The usual loading and smoke symbols are present.

(vii) Stamped markings on shell and base of cartridge case give the date and place of manufacture. On the shell these are above the driving band and are relatively small, (i.e., about 3/16" high). Weight discrepancy markings for the empty shell body are occasionally stamped on.

(viii) A captured document lists a series of target indicator projectiles for the Type 89 Grenade Discharger. They indicate the target by emission of flashes (for night); or coloured smoke (for day).

There are said to be three types :-

(a) Red - emits red - a coloured smoke.
(b) Yellow - emits a yellow-coloured smoke.
(c) Flash - emits a flash by night.

Markings are the symbol 毛 (mo) in white meaning target indicator. This is enclosed in a circle coloured red, yellow or white for a, b, c, respectively. The basic body colour is presumably black.

S.A.A.

ARMY

S.A.A. types are distinguished by a coloured band at the junction of the projectile and the cartridge case.

The following colours hold for all types:

Light Red - Ball (e.g., 12.7 mm. aircraft M.G., 7.7 mm. M.G., 6.5 mm. Service rifle)
Green - Ball/Tracer (e.g. 12.7 mm., 7,7 mm.)
Black - A.P. (e.g., 7.7 mm.)

For the 12.7 mm. aircraft M.G., the following additional colors are encountered:

Green/White A.P. with Tracer
White H.E./Incendiary (fuzed)
Deep purple-black H.E./Incendiary (fuzeless)

Three rounds, all H.E./I., of Italian origin are used in the 12.7 mm. Aircraft M.G. These are distinguished by the letters BPD S on the base of the cartridge case. The whole of the shell body, below the fuze and above the cartridge case, is painted either dull red, blue or green.

For the 7.7mm. M.G. the following additional colours are encountered:-

Bright red - Incendiary.
Deep purple - Incendiary.

NAVY

S.A.A. types are distinguished by a coloured annulus around the percussion cap.

The following colours hold for all types:

Black - Ball)
Red (Scarlet) - Ball/Tracer) e.g. 13 mm and 7.7 mm
White - A.P.) aircraft M.G.

For the 7.7 mm. M.G. the following additional colours are encountered.
Green - Incendiary (W.P. type)
Dull Red - HE/I

NAVAL 20 MM. AMMUNITION FOR AIRCRAFT CANNON

These are used in the type 99 aircraft cannon. There are two sizes of cartridge case, designated Marks I and II, the Mk II being distinguished by its greater length.

A considerable number of different types of shell have been recovered. The shell are painted with an overall solid body color, and one, two, or three 5 mm. wide white bands or one 10 mm. wide white band, denoting modifications.

Also, some of these rounds are of Swiss Oerlikon Manufacture. These are distinguished by an "Oe" on the base of the cartridge case.

Type		Manufacturer	Color of Shell
1.	HE	Japanese	Rust or dark brown
(a)	mod 2		Two white bands
2.	HE	Japanese	Blue
3.	HE	Swiss	Yellow or Dark Brown
4.	HE/Tracer	Japanese	Red
(a)	Mod 1		One white band
(b)	Mod 2		two white bands
(c)	Mod 3		three white bands
(d)	Mod 4		one wide white band
5.	HE/T/ Self destroying	Japanese	Red
6.	HE/T/SD	Swiss	Black
7.	HE/Incend	Japanese	Greenish yellow or yellow
(a)	Mod 1		One white band
(b)	Mod 2		Two white bands
(c)	Mod 4		one wide white band
8.	AP/Incend	Japanese	White
9.	Tracer (fuzeless)	Japanese	Red
(a)	mod 2		Two white bands
(b)	mod 3		Three white bands
10.	Tracer (fuzeless)	Swiss	Green
11.	Practise (fuzeless) or Ball	Japanese	Black

Mk I size:- HE; HE/T; HE/T/SD; HE/I; AP/I; Tracer; Practise

Mk II size:- HE; HE/T; HE/I; and AP/I (no Mk II size are Swiss made.)

NAVAL 25 MM. MACHINE GUN (POM-POM) AMMUNITION

The shell are painted with a solid body color and may or may not have a 39 mm. wide green band at the nose.

Color	Type
Maroon	HE (filled TNT or CE)
Maroon with green band	HE (filled aluminised TNT)
Brown	(as for Maroon with green band)
Green	HE/I (aluminised TNT and a canister of phosphorus)
Orange	HE/T (TNT or CE)
Orange with green band	HE/T (alluminised TNT)
Blood red	HE/T (sometimes S.D.) as for previous
Blood red with green band	HE/T (aluminised TNT)
Black with white tip and white band forward of drivin~ band.	AT/T

TYPICAL JAPANESE ROUNDS

ARMY

20 mm. (Type 97)

Use:- Biped gun (Type 97) by ground troops and will probably be used in forward positions by infantry as an anti-tank weapon.

Recognition:- Large bottle-necked, rimless, brass case. Projectile may or may not be nose fuzed; projectile body is black in colour and may have yellow, white, green or red, or combinations of these colours in rings around its body.

Types:-

(a) A.P. Tracer, No fuze.
(b) H.E. Tracer, Nose fuzed.

20 mm. (Type 98)

Used in the model 98 Anti-aircraft, Anti-tank gun.

Recognition:- Very similar to the type 97 and easily mistaken for it. However, comparison will reveal that the type 98 has a much longer case. It is a rimless type with a very abrupt bottle neck. The projectile will be painted black with red, white, green or combinations of these colours in bands around the body. The projectile may or may not be fuzed.

Packing:- These rounds are packed in cylindrical cardboard individual containers with cloth tear-off strips.

Types:- (a) A.P. Tracer, No fuze
(b) H.E. Tracer, Nose fuzed.

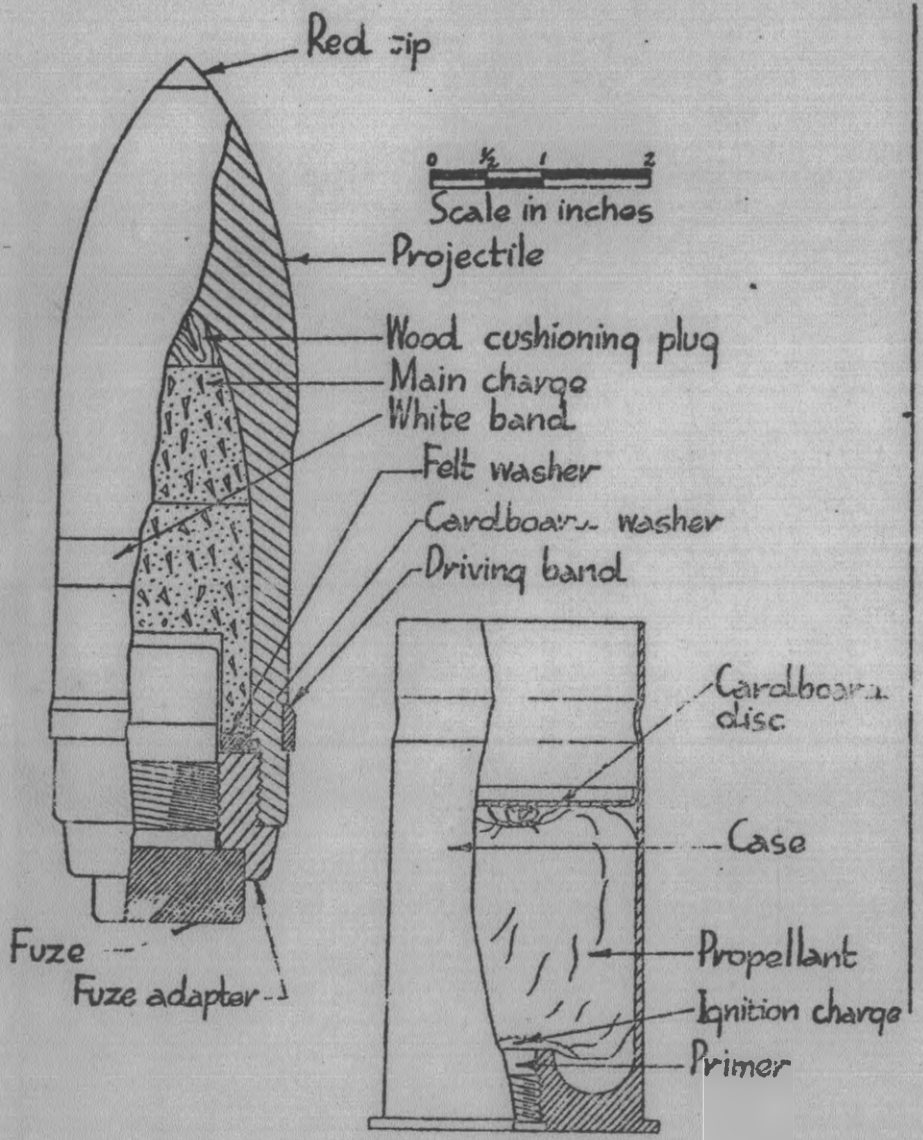
20 mm. A.A./Tk. A.

A.P. Shot - The shot is painted dull black and has two bands 2.5 mm. wide, one green and the other white, situated approximately 14 mm. in front of the driving band.

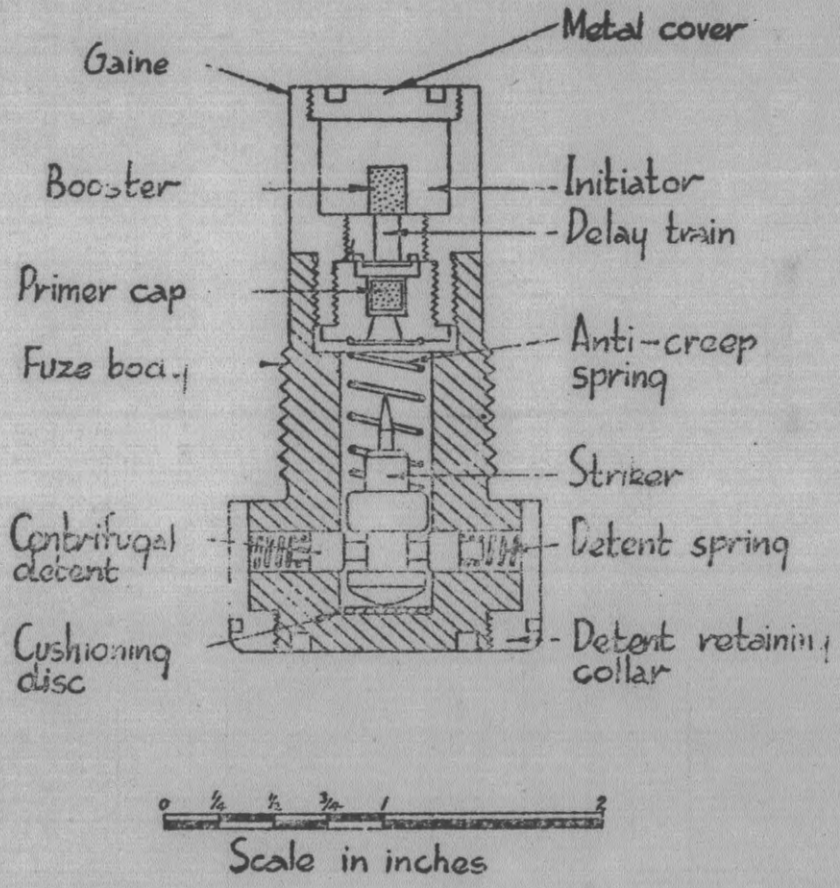
H.E. Shell - The shell is painted black and has a 3 mm. wide red band immediately to the rear of the front band. A 2.5 mm. wide yellow band and a 2.5 mm. green band are painted around the body 23 mm. in front of the driving band.

Packing:- These rounds may be packed in cylindrical cardboard cartons closed at one end and having a wooden cylinder inside the closed end to receive the shell.

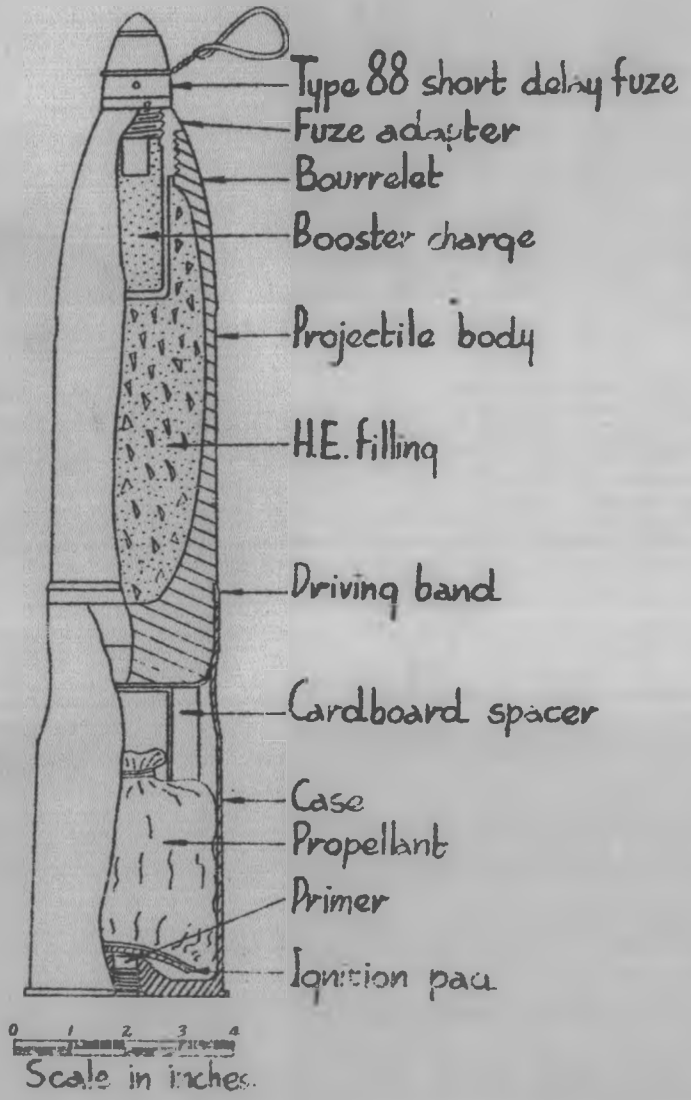
57M.M. AP Ammunition



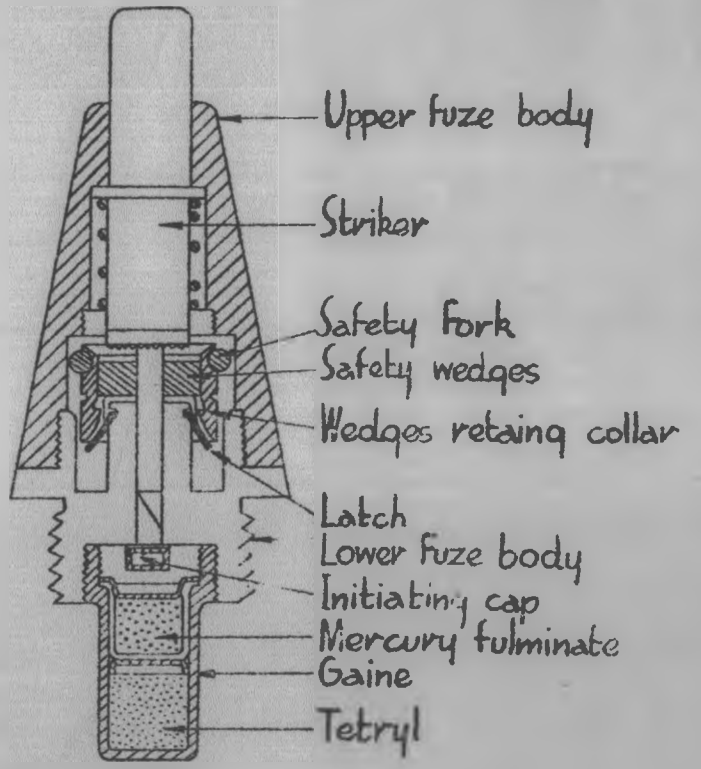
57M.M. AP Ammunition Fuze Details.



75 M.M. Ammunition Regimental Gun Model 41 H.E. Shell.



75 M.M. Ammunition Type 88 Instantaneous Nose Fuze



37 mm.

Used in A/T guns and infantry weapons.

Recognition:- Rimmed brass bottle necked case, black projectile screw-in primer. Projectile may have yellow, red, or white bands or combinations and may or may not be fuzed.

Types:- (a) A.P. base fuzed.
(b) H.E. Nose fuzed.

Packing:- This ammunition is packed six (6) rounds in an individual box with fuzes in a separate compartment of the same box.

57 mm. Gun

Use:- General bombardment

Recognition:- Short, straight, rimmed brass case with screw-in primer. Projectile-black with red band around nose. May have yellow or white band around body. Nose fuzed.

Known Types:- High Explosive.
A.P. Base fuzed.

57 mm. A.P.

Markings:- The projectile is painted black. The tip of the nose is painted red and there is a white band 9.5 mm. in width 27 mm. forward of the driving band.

70 mm.

Use:- General bombardment, used in Battalion gun.

Recognition:- Extremely short, rimmed case. In some rounds of this type, the base of the case will screw off, allowing the increments to be varied. Projectile is black with red band around the nose, and may have either white or yellow bands around the projectile body.

Known Types:- High Explosive

75 mm. (Regimental gun) Model 41

Use:- General bombardment and anti tank

Recognition:- Relatively short, rimmed, slightly bottle-necked brass case with screwed in primers. Projectile usually black and will usually have a red tip and yellow or white bands.

Known Types:- (a) H.E. - black in colour.
(b) H.E. - orange in colour.
(c) H.E. - black with green band indicating cast iron.
(d) A.P. - black
(e) Shrapnel - black.

75 mm. (Mountain Gun - Model 94)

Use:- General bombardment

Recognition:- Similar to mountain gun ammunition for the Model 41 gun, but has a longer case, rimmed with slight bottle-neck. Projectile is black with usual red nose and white or yellow bands.

Known Types:- High Explosive

75 mm. A.A.

Use:- Anti-aircraft.

Recognition:- Very long slightly tapering rimmed brass case, black projectile with long pointed brass fuze. Projectile has a copper driving band on the forward band. The usual red nose with white or yellow bands will be present on the projectile body.

Known Types:- A.A.-base fuzed only

75 mm. Type 2 Hollow Charge A.P. Shell

This ammunition externally resembles that used with 70 mm. Battalion gun. It is distinguished from other shell of the same calibre by its shorter length and its separate screw-in head. This shell is nose fuzed and is used as A.P. due to the coned bursting charge.

Markings:- The shell is painted black and has a 9 mm. wide red band at the fuze hole and a 9 mm. wide yellow band around the body, the lower edge of which is 71 mm. from the driving band.

75 mm. Regimental Gun, Model 41

(a) Shrapnel shell:-

Markings:- shell painted black with a white band just forward of the driving band.

(b) H.E. Shell:-

Markings:- shell painted an orange colour with no coloured bands. This orange colour represents a radical change in Japanese Army colour scheme.

(c) HE shell cast iron:-

Markings:- Painted black with a red band around the fuze adapter and a green band around the body at the centre of gravity. The green band is believed to indicate that the shell is of cast iron and the red band means that the shell is filled.

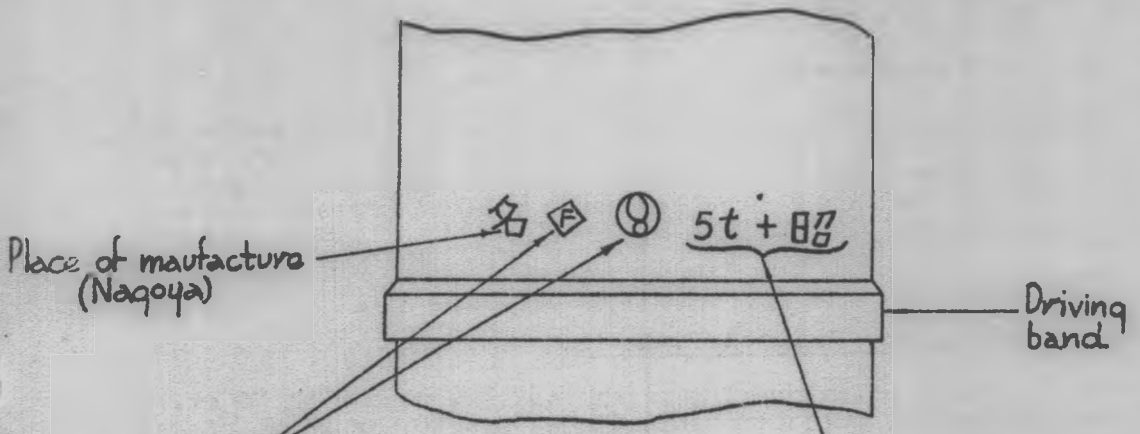
Incendiary Shell for 75 mm. Type 41 mountain gun.

Basic body colour - blue-grey
Red band at nose.

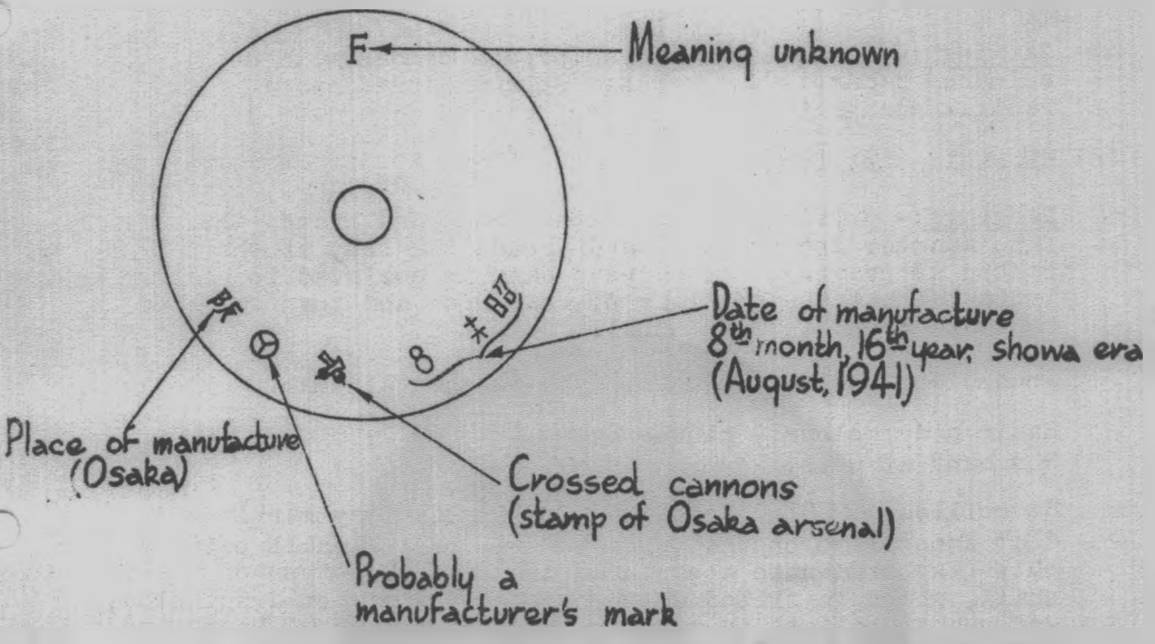
Stencilled 7) "Ka" below the filling factory markings "Ka" stencilled on the opposite side of the shell painted out. According to a captured document this type of shell, which is filled white phophorus - carbon disulphide, and rubber pellets is used in the type 41 and 94 Mountain Guns, and the type 38 field gun. This document also states that "Ka" means Incendiary for this type of Shell.

Sketch of 75 M.M. Shell Showing Typical Stamped Markings.

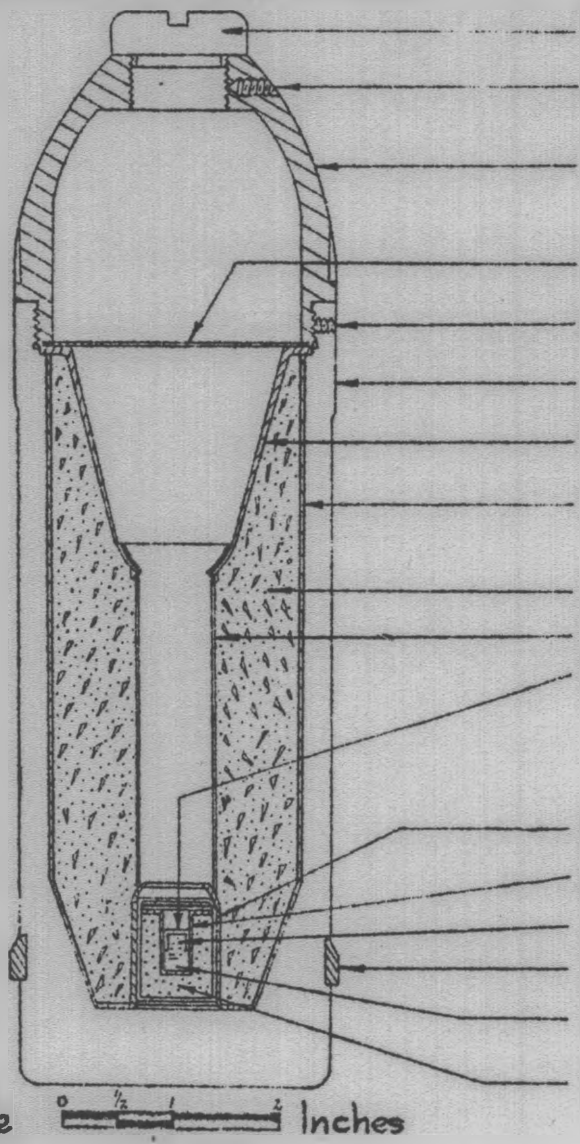
A serial number is stamped into the fuze adapter and on the ogive adjacent to the fuze adapter.



Base of a Cartridge Case Showing Typical Stamped Markings.



75 M.M. Hollow Charge A.P. Shell.



75 mm. Smoke Ammunition. (Mountain Gun Type 94)

Markings:- The projectile is painted white with a red band approximately ½ inches wide painted around the fuze adaptor.

Packing:- Four rounds are packed in a dark green wooden box, 11 ins x 12 ins x 29 ins; fitted with a tar paper lining and woodon frames to hold shells in place.

NOTE: This ammunition is of the white phosphorus bursting type.

75 mm. Gun Type 88

This type of ammunition is apparently of the high velocity type designed for use against light tanks, landing craft and like targets. The projectile is longer and heavier than the A.A. shell and is threaded to take a nose fuze. It has a long ogive, copper front band and a double copper driving band and is streamlined.

Markings:- Projectile body is painted black. Just below the nose fuze is a 12 mm. wide red band and at the centre of gravity a 10 mm. wide yellow band.

105 mm. Howitzer

Use:- General bombardment

Recognition:- Relatively short, straight, rimmed, brass case with screw-in primer; black, flat based projectile with nose fuze. The usual red nose and white or yellow bands on shell body.

Known Types:- High Explosive

105 mm. How. Shell

Markings:- The shell is painted black and has a 15 mm. red band at the nose and a 20 mm. yellow band on the body, the lower edge being 100 mm. from the front of the driving band. These colour markings indicate an HE filling.

105 mm. Gun Type

Use:- General bombardment

Recognition:- Long, straight, rimmed brass case with small screw-in primer, black projectile with long tapering ogive and is streamlined. Also has a copper driving head on forward band, the usual red tip with white or yellow bands appear on the shell body.

Known Types:- HE

105 mm. HE Gun Shell

Markings:- The body is painted black with a 20 mm. wide red band the tip of the nose adaptor and a 20 mm. wide yellow band around the body 70 mm. above the driving band. These are normal markings for HE shell.

150 mm. How. Type

Use:- General bombardment

Recognition:- Relatively short, straight, rimmed, brass case with screw-in primer; black, flat based, nose fuzed projectile. The usual red tip and yellow or white bands appear on the shell body.

Known Types:- HE

TYPICAL JAPANESE ROUNDS

NAVY

25 mm.

Use:- Anti-aircraft, double or triple pom-poms, possibly quadruple.

Recognition:- Relatively large, tapering, bottle-necked, rimless, brass case. Wide driving band. Projectile may have a painted brass nose fuze or a black bakelite shipping plug in it and may be maroon or orange in colour. Either round may or may not have a green stripe around the nose.

Known Types:- (a) HE Maroon or Maroon with green band.
(b) HE Tracer, orange or orange with green band.

40 mm.

Use:- Anti-aircraft, anti-tank or anti-amphibious craft.

Recognition:- Straight, rimmed, brass case with a deep crimp at projectile end a large screw-in primer. Case and projectile appear to be of about equal length, may or may not be nose fuzed and its colours will vary.

Known types:- (a) HE Maroon with green band, time fuzed.
(b) AP white with green tip, base fuzed.
(c) Orange with tracer; purpose unknown.
(d) HE Nose fuzed. This round is British 2 Pdr and is used interchangeably with Japanese ammunition.

75 mm.

Use:- General and coast defence.

Recognition:- Straight, rimmed, brass case. Brass nose fuze in adaptor.

Known Type:- HE Maroon with green band at nose.

75 mm. A.A.

Use:- Anti-aircraft

Recognition:- Long, straight, rimmed brass case, long pointed. Brass nose fuze (army type 94) with four rings. A plug may be in the nose in place of the fuze.

Known Types:- Anti-aircraft only, but it is believed it can be adapted to a D.A. fuze by the use of an adapter.

140 mm.

Use:- General bombardment, coast defence. In common use aboard many types of Japanese Men-of-war. Also used for illumination of targets at night.

Recognition:- This type is B.L. ammunition. The projectile has a double driving band, the after (or lower) band has an extremely high lip on it. Projectile colours are usually maroon but may vary. The base plug is sealed with a copper ring. A yellow band may be found around the body.

Known Types -

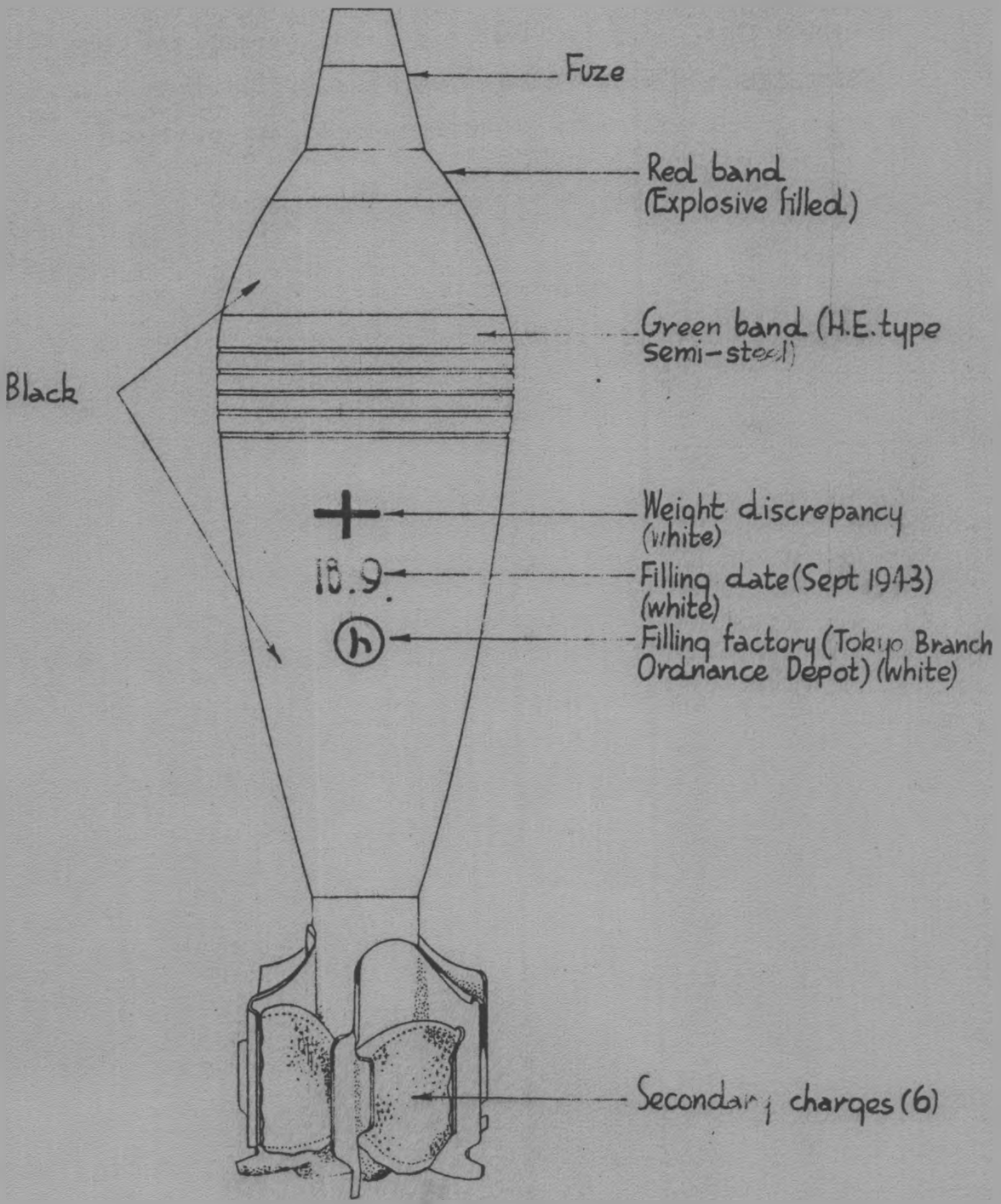
(a) Common capped, maroon with green band and red tip on nose; has an iron cap and is generally mistaken for an armour piercing type, base fuzed.

(b) Common uncapped, maroon with green band and red tip; has no cap and is base fuzed.

(c) Bombardment type, time or D.A. nose fuzed, maroon with green band around nose.

(d) Illuminating, time fuzed, bright red in colour.

Mortar Bomb With Late Type Markings



MORTAR AMMUNITION

GENERAL

Japanese mortar ammunition is usually Army ammunition and Army markings. However, certain types of Navy manufacture is used by the Marines. These rounds are identical with their Army counterpart, except for their colour.

Type 91 Grenade:

Use:- Used by infantry as a hand grenade or in the "Knee Mortar" (type 98 Grenade discharger).

Recognition:- Black cylindrical body with deeply-scored squares. A brass fuze projects from one end and a somewhat larger steel propellant container from the other. This container has a cap on the bottom and six flash ports on its sides.

Markings:- Black with red ring on top cover.

Known types:- High explosive

Model 89 Grenade Shell:

Use:- Used in the type 89 Grenade discharger.

Recognition:- Cylindrical body with one rounded end which carries a brass fuze. The opposite end is flat and has a copper driving band; in the base eight gas ports and a central initiating cap. Body is black or maroon, with the usual white or yellow bands.

Known types:-
(a) HE Army, black
(b) HE Navy, maroon
(c) Smoke, air burst, time fuzed, black.

Spigot Type Mortar Ammunition

Use:- Used in type 98 Grenade discharges

Recognition:- A square block-shaped charge on a wooden handle or spigot.

Known Types:-
(a) Demolition (HE)
(b) Smoke

Bangalore Type

Use:- Used in the grenade discharger type 98.

Recognition:- A long thin tube having fins on its after end.

70 mm. Barrage Shell

Use:- Used in 70 mm. Mortar

Recognition:- Cylindrical in shape, has a wooden plug in one end and has gas vents in its base.

Markings:- Black in colour, red band around top.

NOTE: This projectile is extremely dangerous to handle or disassemble. It ejects seven (7) steel tubes 3¼ inches in length and 11/16 inch in diameter filled with a very sensitive explosive. Attached to each tube by a six (6) foot cord is a 15-inch diameter paper parachute. The tube is exploded by jerking on the cord. Under no circumstances should unexploded tubes be handled by untrained personnel.

81 mm. Mortar

Use:- Infantry support and attack against dug-in or concentrated troops.

Recognition:- Tear-drop shape with fins on the tapered end. A propellant charge resembling a 12-gauge shot-gun shell is screwed into the base, and additional propellant may be present between the fins of the tail section in blue oval cloth packets.

Markings:- Body is black with a white and a yellow band.

90 mm. Mortar

Use:- Infantry support and attack against dug-in and concealed troops.

Recognition:- Long tear-drop shape with fins on the tapered end. A propellant charge resembling a 12-gauge shot-gun shell is screwed into the base, and additional propellant may be found between the fins in small oval packets.

Markings:- Black body with yellow and red bands. May have a red or red and blue band around the nose.

Known Types:- (a) High Explosive
(b) Incendiary

90 mm. HE Mortar Bombs

The two types of bombs for the purposes of comparison are designated long and short types. These bombs are packed in pairs in boxes plugged.

Short type - Markings.

The metal parts of the bomb are chemically blackened, a red band 8 to 10 mm. wide is at the nose on the adaptor and a green band 15 mm. wide immediately in front of the guide band.

Long type - Markings.

The metal parts of the bomb are painted with a glossy black enamel. Painted at the nose on the adaptor is a red band 10 mm. wide and immediately in front of the guide band is a yellow band 10 mm. wide.

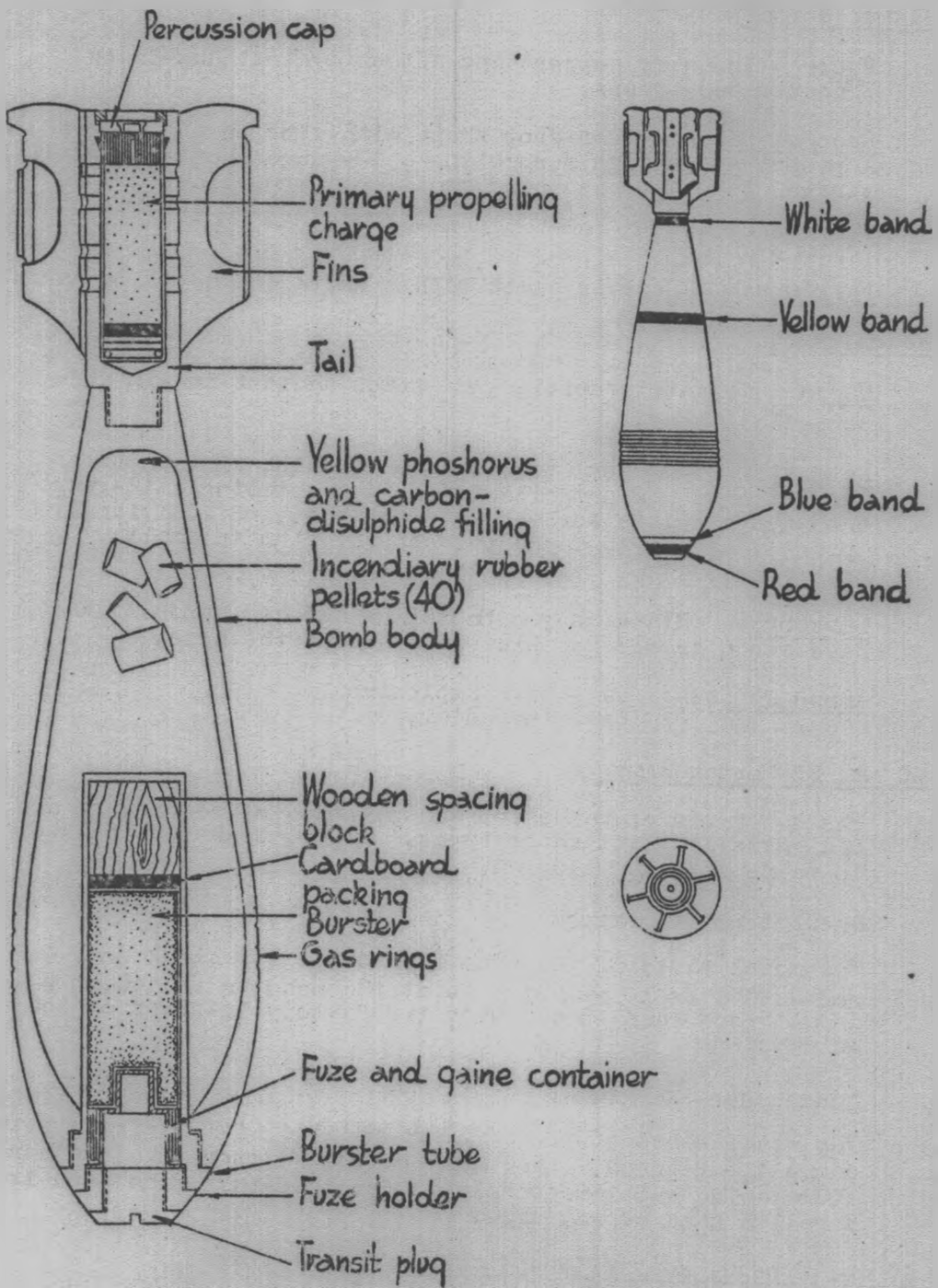
90 mm. Type 94 Mortar Incendiary Bomb

This bomb is similar in appearance to the 82 mm. mortar bombs.

Markings:- Four coloured bands are painted around the circumference as follows:-

Red band just below fuze.
Blue band between fuze and front band.
Yellow band half way between front band and tail assembly.
White band at the junction of body and tail fin assembly.

Japanese 90.MM. Incendiary Mortar Bomb. Type 94.



GRENADES

Stick Grenades

This grenade is similar to the German "Potato-Masher", consisting of a steel case fixed on a wooden handle, with an overall length of 7¾ inches. Under a screw cap on the end of the handle is a pull string for the friction igniter.

Type 97 Grenade

This missile can be recognized by the serrated cylindrical body with a fuze protruding from the end. Including the fuze, its length is four (4) inches. This fuze is actuated as follows:

1. Turn down the exposed screw in the head of the fuze.
2. Remove the U-shaped safety pin.
3. Strike the fuze on a hard surface. The delay time is 4 to 5 seconds.

When the grenade is found with a recessed threaded base (or with a propellant charge screwed into this recess), it is called a Type 91 Mortar Grenade, and has a delay time of 7½ seconds.

Improved Japanese Hand Grenade

This grenade differs in outward appearance from those previously encountered.

The two main improvements noted are:-

(a) New type striker which eliminates screwing down before striking.
(b) The flash deflector to reduce burns to the thrower and observation by opposing forces at night.

Markings:- Black in colour with brass fuze.

Pull Type Grenade

This type grenade has horizontal grooves running around the cylindrical body, and two rings on each end of the body. On one end is fitted the fuze, covered by a threaded lead cap which is released by a thumb lever; underneath this cap is the pull string for the friction ignitor.

Offensive Grenade

A smooth-sided cylindrical grenade, this missile has the same type fuze as the Type 97 hand grenade. It is small be comparison, being only 3½ inches long.

General Precautions

Do not delay in throwing these grenades after the delay train is ignited, because the times of burning are not always reliable. To render grenades safe, re-insert the safety pin or a piece of wire; or, in the case of the pull string types of fuzes, remove the lead cap and immerse the grenades in water.

Hollow Charge Rifle Grenades:

This is a 1/3 Kg. missile carrying a cone-shaped charge and fitted with a base fuze. The entire assembly is 7 inch long. An adaptor or discharger as well as a special cartridge is necessary to fire this grenade from a rifle. If this grenade fails to function on impact, it may be found in an extreme sensitive condition and should not be handled.

Type 91 Grenade Used as a Rifle Grenade:

A Type 91 Mortar Grenade with a fin assembly screwed in the base and used with the adaptor and special cartridge is a common type of rifle grenade.

SMALL ARMS AMMUNITION

.256 pr .25 Calibre service round

Use:- Standard infantry rifle and light machine guns.

Recognition:- Long narrow bullet, bottle-necked case.

Packing:- May be encountered in rifle clips or in curved box type machine-gun magazines.

.256 Training round

Use:- Training

Recognition: Case similar to the .256 service ammunition, but bullet has a very blunt nose projecting only a small distance forward from the crimp.

NOTE: Sometimes mistaken for a "dum-dum", but the propellent charge is extremely small.

7.7 mm.

(Roughly corresponds to US .30 calibre or British .303 ammunition)

Use:- Type 99 Infantry Rifle and Type 92 "JUKI" heavy machine guns.

Recognition:- Rimless brass bottle-necked case; either cupro-nickel or copper jacketed bullet. No markings on base; either a red band around crimp indicating ball, or a black band around crimp indicating A.P.

Packing:- May be found in clips for rifles or in brass strips for machine guns. The latter hold thirty rounds.

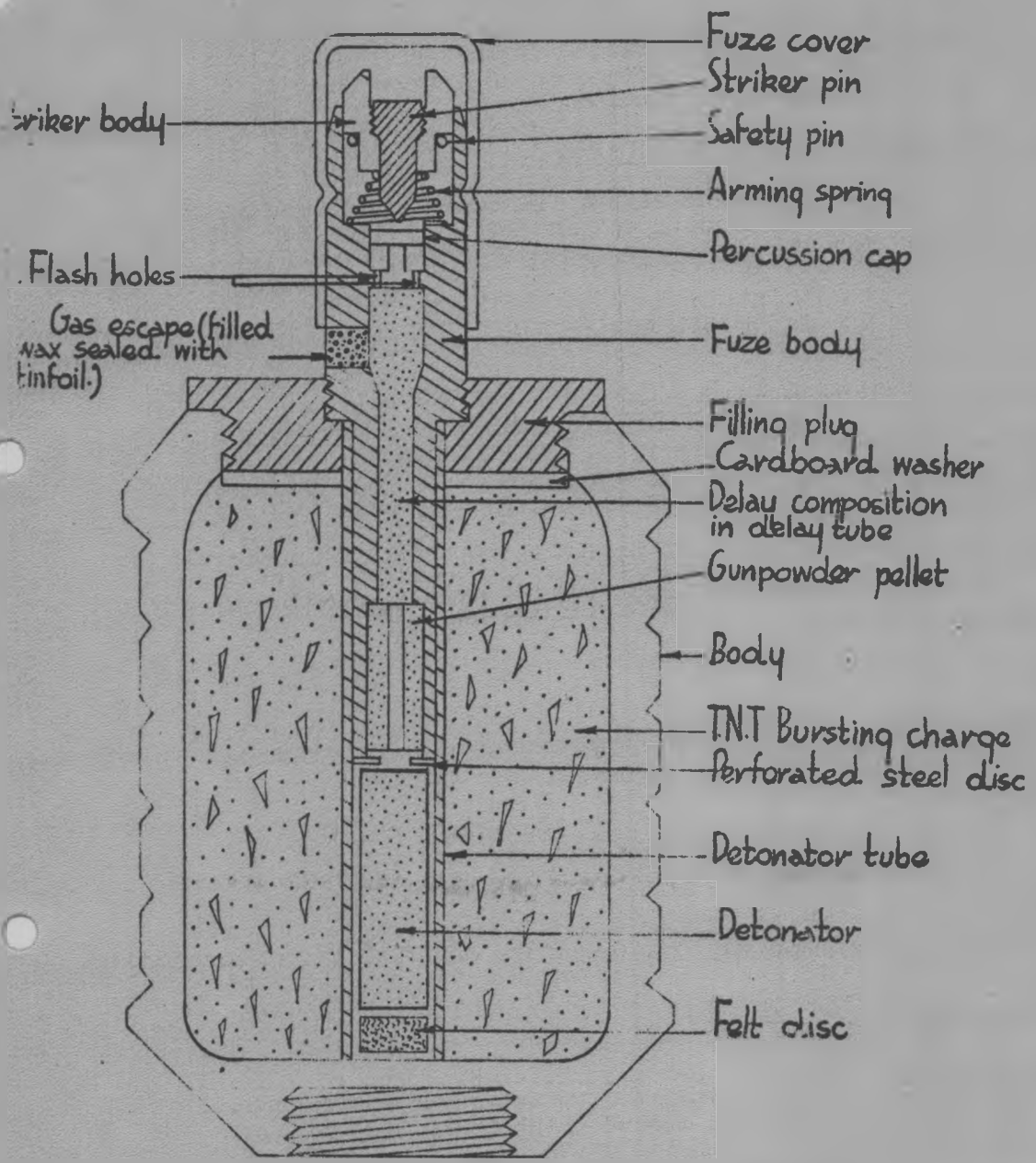
13 mm.

(Corresponds to and resembles U.S. .50 Calibre Ammunition)

Use:- Anti-aircraft or anti-tank machine guns.

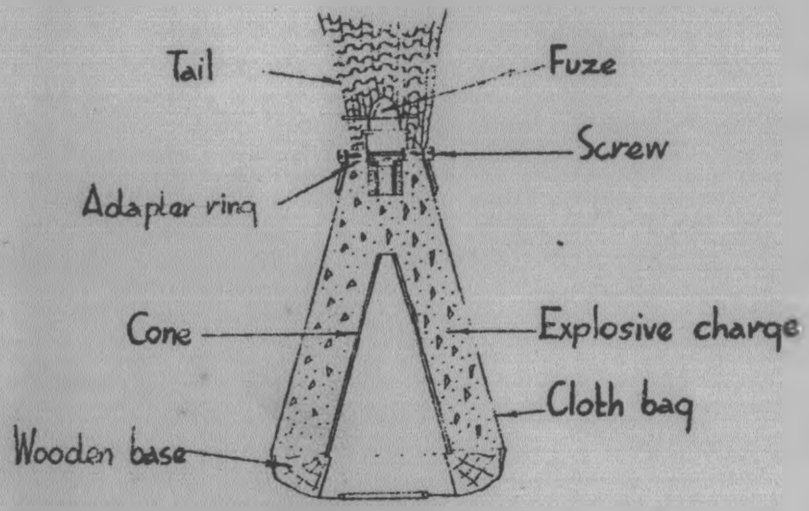
Recognition:- Rimless brass bottle-necked case. Copper jacketed bullet either ball or A.P. Type painted on primer as follows:- Red-tracer, White - A.P. Believed to be of Naval design.

Japanese Type 91 Grenade



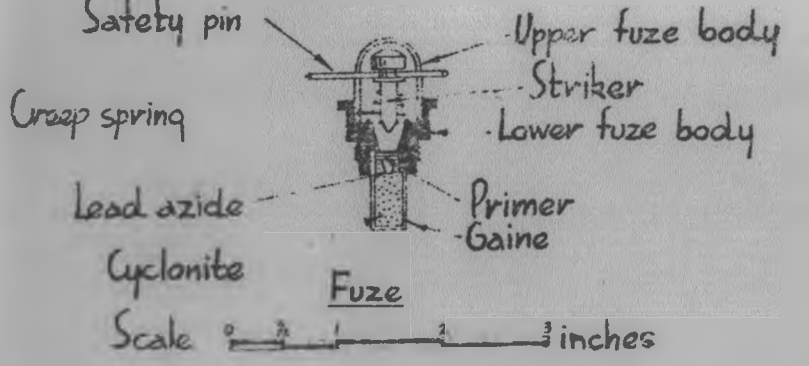
Type 91 grenade with tail fin attached for use as rifle grenade.

Conical TK/A Hand Grenade



Large size grenade

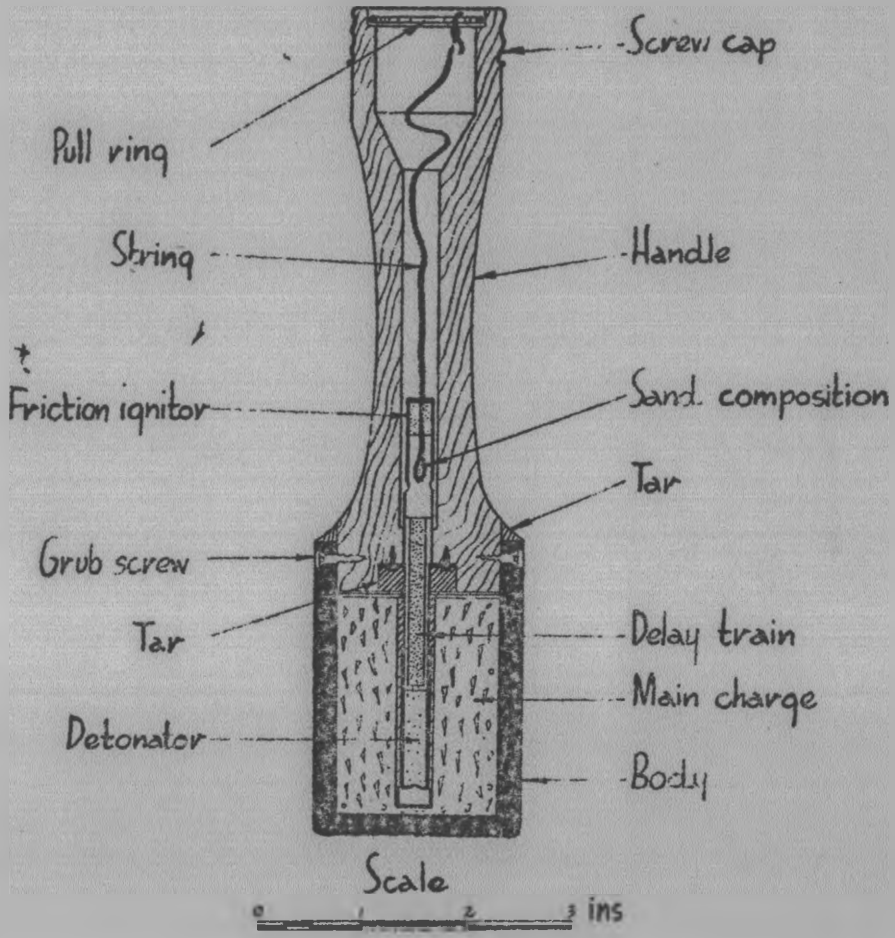
Scale 0 1 2 3 4 5 inches



Fuze

Scale 0 ½ 1 2 3 inches

Japanese Stick Grenade



Scale 0 1 2 3 ins

.50 Calibre HE Ammunition

This ammunition is Army type and is marked with painted bands around the case crimp differently from Navy ammunition which is marked with colours on the cap annulus.

The A.P. tracers have a white and green band with the band nearer the nose.

The HE rounds have a plain white band and the HE/I types have a black and white band, the black band being forward.

AIRCRAFT AMMUNITION

7.7mm. Navy Type

(Resembles U.S. .30 Cal. or .303 British except for rim)

Use:- Naval aircraft machine guns.

Recognition:- Rimmed brass bottle-necked case with cupro-nickel jacketed bullet. Type indicated by colour on cap annulus. White - A.P.; Red - tracer; Green - incendiary.

7.7 mm. Army Type

(Resembles U.S. .30 Cal or British .303 ammunition)

Use:- Army aircraft machine guns.

Recognition:- Rimless bottle-necked brass case, either copper or cupro-nickel jacketed bullet. Marked around crimp to indicate type, e.g., Black - A.P.; Red or Purple - incendiary

NOTE: The incendiary type will ignite if the nose of the bullet is crushed or broken.

Packing:- Generally found in drum type magazines.

12.7 mm.

Use:- Heavy aircraft machine guns, Army type.

Recognition:- Semi-rimless brass bottle-necked case. bullet may or may not be nose fuzed. The fuzed types are H.E. incendiary with nose fuzes. The following are known and usually found loaded in a disintegrating type link belt.

Types:-

(a) Ball tracer - has green band around crimp.

(b) A.P. tracer - has green and white band around crimp.

(c) H.E. incendiary - nose fuzed, made of brass in two parts and a white band around the crimp.

(d) H.E. incendiary - very easily mistaken for ball or A.P. types. Has no fuze and is actuated by direct impact. May be recognised by its blunt (solid) nose. Close examination will reveal a staked joint forward of the crimp, and a black band around the crimp itself.

(e) H.E. incendiary (Italian origen) - body blue, nose fuzed.

(f) H.E. (Italian origen) - body red, nose fuzed.

12.7 mm. (.50 in) A/C Ammunition

Markings:- HE/I Fuzed - white band at junction of projectile and case.
HE/I Fuzeless - black band at junction of projectile and case.
AP/T - white and green band at junction of projectile and case.

Japanese 20 mm. A.P. Incendiary

The projectile is painted white and has a soft copper nose cap .016 ins in thickness extending 7/16 ins. back from the point of the nose. The driving band is similar in construction to the HE and incendiary 20 mm. Aircraft projectiles.

20 mm. Ammunition

Markings:- The projectile body is painted black with a yellow band 4.5 mm. in width around the centre of the body and a red band 3.0 mm. in width just below the front band.

20 mm. Type 99

Use:- In the wing cannon of Japanese planes.

Recognition:- Short rimless brass case which appears very short in comparison with the projectile body. May or may not be nosed fuzed, depending on type.

Packing:- May be found in large cases in dumps near air-strips or revetments, or in drum type magazines in planes.

Types:- (a) Solid brown colour, nose fuzed; this type is HE loaded.
(b) Solid red, nose fuzed; HE. tracer.
(c) Red with white band; HE tracer, self-destroying.
(d) Solid black, nose fuzed; HE tracer, self-destroying.
(e) Greenish-yellow, nose fuzed; HE incendiary.
(f) Greenish yellow with white band, nose fuzed; HE incendiary.
(g) Solid black; ball with short tracer.
(h) Solid red, no fuze; ball with long tracer.
(i) Solid white, no fuze; A.P. incendiary.

NOTE: Fuzed projectiles of this type that have been fired will be in a very sensitive condition.
The incendiary and HE tracer self-destroying types are especially hazardous to tamper with.

20 mm. High Velocity, Type 97

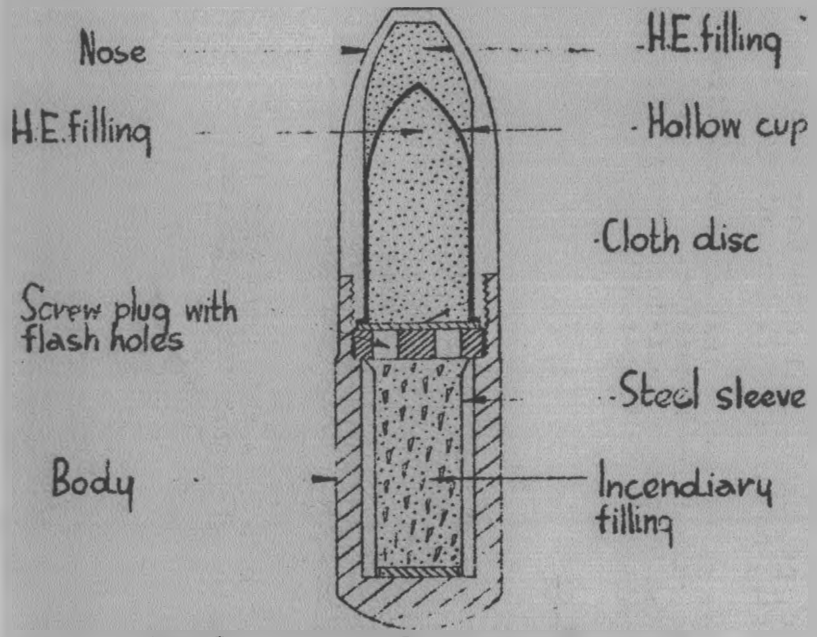
Use:- In a free gun in bombers

Recognition:- Large brass bottle-necked rimless case. May or may not be nose fuzed; projectile body will be black in colour and may have white, red, yellow, green or combinations of these colours around its body.

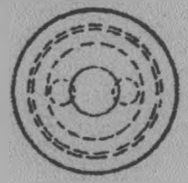
Types:- A.P. tracer, no fuze, sharp pointed.
H.E. tracer, nose fuzed.

NOTE: Fuzed rounds of this type that have been fired may be in an extremely sensitive condition.

12.7 M.M. (.50 IN) A.C. Ammunition



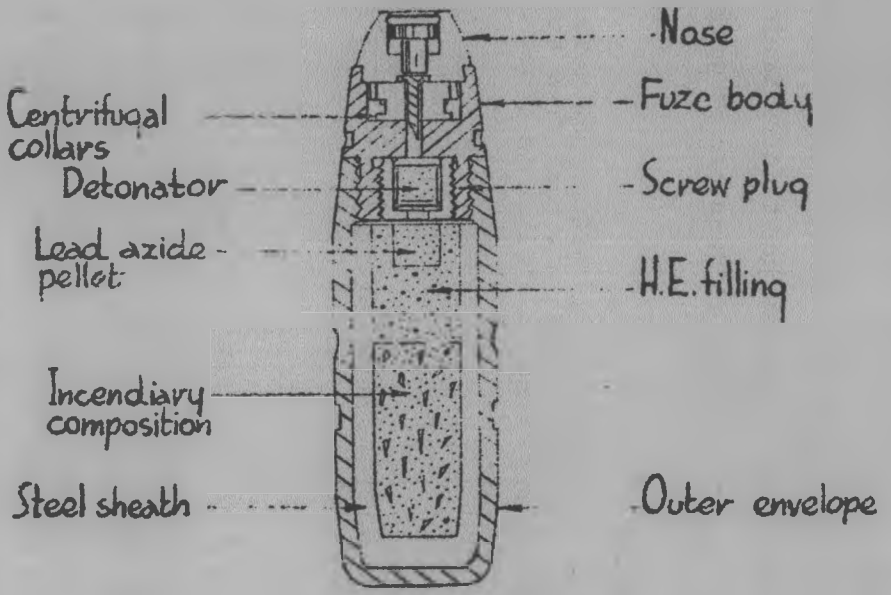
H.E. Incendiary Projectile (Fuzeless)

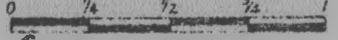


Scale in inches

12.7 M.M. (.50 IN) A.C. Ammunition

H.E. Incendiary Projectile (Fuzed)





Scale in inches

CHEMICAL WARFARE WEAPONS

SMOKE GENERATORS

Screening Smoke Candles and Floats

Type 94 Small Smoke Candle: Grey or dark green to dark brown body, with a white band or label. Length - 6.9 inches. Diameter - 2.2 inches.

Type 94 Floating Smoke Candle: Grey body with white label or brown body with white band. 31.2 inches long, 3.1 inches in diameter, and equipped with inflated belt to keep it afloat. It is believed that larger models of Type 94 candle both for land and sea use exist, varying in weight from 20 lb. to 44 lb.

1 Kg. Smoke Candle: Varnished tin plate body, with labels on top and side. Length, 8.3 inches; diameter, 2.1 inches. A removable cap on the top covers the match-head fuze.

Smoke Float: A welded drum, 14 inches high and 12 inches in diameter, with percussion fuze in a fitting on the top. Protruding from the top of the float are a long discharge tube and a shorter filling pipe. A rubber buoy is attached.

1 Kg. Smoke Generator: This generator is cylindrical in shape and painted externally with clear lacquer.

Self-projecting smoke candles (Screening)

Experimental self-projecting smoke candles: Unpainted grey body, with the marking on top. Length, 8.2 inches, diameter 2.1 inches. Steel spike strapped to the body.

Type 99 Self-projecting Smoke Candle: Dimensions same as the experimental type mentioned above. A longitudinal white line and characters are the distinguishing markings.

Lachrimatory and Toxic Smoke Candles

Type 89 Lachrimatory Candle: A tear-gas type of candle. Grey body with a green band, 7.2 inches in length, 2.2 ins in diameter.

Type 98 Small Sternutatory Smoke Candle: Same dimensions as the Type 89 Lachrimatory Candle, but with a red band around the body. The filling causes coughing, gagging, and irritation of the nose and throat.

Type 97 Medium Sternutatory Smoke Candles: Brown body, red band, 9.8 inches in length, 4.4 inches in diameter.

Type 99 Medium Sternutatory Smoke Candle: Same as Type 97 Sternutatory candle, except that it is an inch shorter and has a short spike hinged to the body.

Type 98 Self-projecting Sternutatory Smoke Candle: Brown body, red band, 7.8 inches in length, 2 inches in diameter, with a steel spike strapped to the body. Types 99 and 100. closely resembles this model in appearance and vary only slightly in weight and length.

General Precautions

A red band appears to indicate that the smoke is toxic, although any of these candles will cause suffocation if burned in a confined space.

Only the Type 94, Floating Candle and the Smoke Float have mechanical fuzes, which can be rendered safe by insertion of the safety pin, or a suitable wire. The other candles are all ignited by striking a match-head with a scratch-block. The simplest way to get rid of this type of smoke generator is to immerse it in water and leave it there. If the candle is to be ignited, hold the match-head away from the body. After striking the match-head retire about fifty (50) feet, as there is danger of explosion.

CHEMICAL GRENADES

Smoke Grenades

Rifle Smoke Grenade: A projectile 8½ inches long with a finned tail. Special firing cartridge in the tail under a pull-out plug. Uses regular rifle adapter.

50 mm. Grenade DischargerSmoke Grenade: A cylindrical projectile 5.9 inches long and 2 inches in diameter. In external appearances it is an exact replica of the 50 mm. Incendiary Grenade. A typical propellant container and cap is fixed in the base. Packed in a cylindrical steel container.

50 mm. Smoke Grenade: This grenade has a nose fuze and propellant unit similar to the Japanese type 91 HE grenade and can be projected from a discharger of 50 mm. calibre Such a grenade is also suitable for throwing by hand as the fuze can be initiated by a blow on the fuze head as well as by shock of discharge from a projector.

Frangible Smoke Grenade: A spherical glass flask 2.8 ins in diameter, packed in a cylindrical tin. The smoke is irritating to skin and lungs.

Incendiary Grenades

Frangible Incendiary Grenade: The Japanese version of the Molotov Cocktail, utilizing a 12-oz beer bottle as the container. The filler is gasoline, which is ignited and scattered by the explosive in the percussion fuze screwed in the neck of the bottle. The fuze has a safety pin.

½ Kg. Incendiary Grenade: A yellow phosphorus-filled, smooth-sided grenade fired by a percussion fuze similar to the Type 97 hand grenade fuze. A propellant container is fixed to the base for use with 50 mm. Type 89 grenade discharger. Total length, 5.7 inches; diameter, 2 inches.

Incendiary Stick Grenade: Yellow phosphorus pellet type filling in a stick grenade 13.1 inches long, with a percussion nose fuze which is similar to that in the ½ Kg. Incendiary Grenade.

50 mm. Incendiary Grenade: A cylindrical streamlined missile fitted with a propellant charge in a metal container screwed in the base. Length, 5.9 inches; diameter, 2 inches. Metal foil discs around the base of the projectile cover the emission holes. The incendiary mixture is ignited, after a delay, by the flash of the propellant. There is no fuze in this weapon.

Chemical Grenade

"C" Type Lachrimatory Grenade: A shell-shaped missile packed in a tin container, 5.2 inches in length and 2.1 inches in diameter. The grenade is exploded by a match-head ignitor which contains a four to five-second delay.

Hydrocyanic Acid Frangible Grenades: The acid is contained in spherical light green or light yellow glass flasks, about 4 inches in diameter. Extending round the flask on its upper half may be found either one or two moulded glass rings. A metal cap and gasket close the neck of the flask. The acid filling, both as a liquid and a gas, is deadly poison, rapid in action, and all the more lethal because its presence is sometimes difficult to detect.

FLARES AND SIGNAL ROCKETS

50 mm. Type 89 Grenade Discharger Flares

Recognition:- The cases of the flares, 6½ inches in length, are heavy tan-coloured cardboard. The colour of the bands indicates the color of the flare, while the number of stars is indicated by the number of bands. The base of the flare, with the attached propellant container, is constructed of yellow brass with tinfoil covered emission holes in the propellant container. The initiating cap is in the case of the propellant container. The top surfaces of the cases are painted the characteristic colour of the flares and save in the case of the black and yellow dragon (Flares), have raised symbols characteristic of the different types glued on; small squares for white flares, triangles for green flares and circles for red flares.

Precautions:- It should be remembered that these missiles contain both explosive and incendiary compositions. Never strike the base of the flares or attempt to dismantle them.

81 mm. Mortar Signal Flares

Green type: A light iron cylindrical projectile 3 inches in diameter and with eight (8) raised bearing surfaces on the upper and lower portions of the case. The top has five (5) green coloured circles on it. Attached to the base is a propellant container similar to the 50 mm. flares. Over-all length of the flare is 7.4 inches.

Parachute Smoke Cylinder: Identical to 81 mm. green type in appearance, except that a broken ring painted yellow is the identification mark on the top of the flare.

Naval Signal Flare:

A cylindrical cardboard container filled with red burning flare mixture and fixed on a wooden handle. The signal is ignited by twisting and pulling off the cardboard cap on the end of the container. A label with both English and Japanese writing on it is pasted on the container.

Signal Rocket, Mark I:

This projectile is very similar to the common variety of commercial fireworks rocket. The brown cardboard rocket cylinder is attached to a stick, to the end of which is fixed a 6½-inch length of rope. Length of the rocket without the rope is about 25 inches. A pull-tab in the base of the rocket container covers a length of fuze, which is lit with a match to fire the rocket.

50 mm. Tenth Year Type A Flare

The flare consists of a brass case, hemispherical at the nose containing the flare filling. The lower end of the case is closed by a base plate, into which screws a cylindrical propellant attachment.

Japanese Dynamite

Made in individual dark brown sticks wrapped in paper.
It is plastic and is capable of being moulded. When handled it resembles an oily mass of putty.
Each stick is 1.06 inches in diameter and 4 ins long.
The carton in which the sticks are packed measures 8.25 ins in length 4.5 ins in width and is 3 ins in height.

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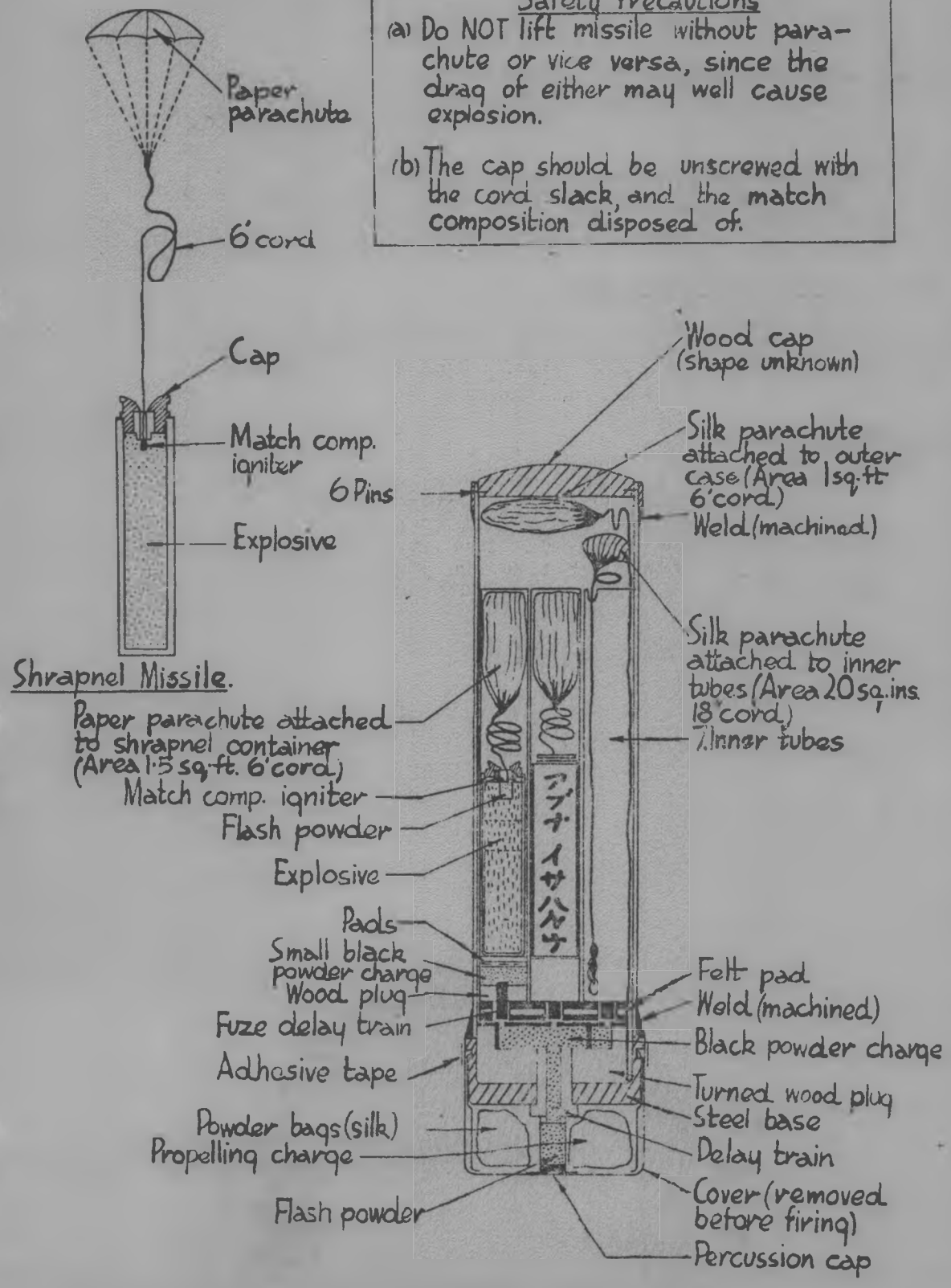
Japanese 70.M.M. Mortar Type Barrage Shell.

Safety Precautions

(a) Do NOT lift missile without parachute or vice versa, since the drag of either may well cause explosion.

(b) The cap should be unscrewed with the cord slack, and the match composition disposed of.



APPENDIX 1 to "RECOGNITION AND SORTING OF JAPANESE AMMUNITION"

Extract from U.S.N. M.E.I.U. No. 1. "Japanese Explosive Ordnance" Revised Edition 1 Jan 45.

"Information on large calibre Japanese Navy Ammunition is very incomplete because of the small amount of ammunition that has been recovered. The colour scheme for this ammunition is listed below :

Overall Colour (indicates type of projectile)

(a)	Maroon	- Common
(b)	White	- A.P.
(c)	Blue	- Illuminating
(d)	Grey	- Shrapnel
(e)	Green	- Target
(f)	Red	- Smoke tracer
(g)	Black (Yellow nose)	- Practice
(h)	Black	- Drill

Accessory colours.

(a) Band at centre of gravity (optional). Yellow - on Maroon or Blue projectile. Red - on white projectile. White - on black projectile.

(b) Green band on nose - HE filled.

(c) Red tip on Green Nose - base fuzed (does not apply to fixed ammunition.

(d) Two rows of White dots on ogive of practice projectile - time fuzed.

(e) Projectiles converted for practice from service types bear original markings, except for nose painted yellow.

(f) Shipping plugs in nose are painted partially Black to prevent confusion with fuzes.

Markings on Naval Ammunition will usually be found in four places : on the projectile body above the driving band, on the base plug, on the driving band, and on the base of the cartridge case. Stencilled on the body and on the base plug will be information about the explosive charge : the date of manufacture, casting and filling, and possibly the place of casting. On the driving band will be the date of manufacture of the projectile, the weight empty, and arsenal marks. On the base of the cartridge case will be the arsenal and inspection marks and the date of manufacture."

Extract from U.S.A. M.E.I.U. No. 1 Supplement to "Japanese Explosive Ordnance" 1 May 45.

"ARMY BOMBS" - Markings.

In addition to the markings formerly observed, Japanese Army bombs are now also marked with the Type number and the nature of the filling, whether "special" or not. These markings appear aft of the weight markings."

"NAVY BOMB WITH ARMY MARKINGS

A Navy Type 97 No. 6 Land Bomb with Army Arsenal markings was found in an Army crate in an Army dump. The case was manufactured by the Navy and painted the Navy grey with a brown nose band. The case was filled at an Army Arsenal with T.N.T. (an Army filling), and bore the Army red nose ring indicating "filled". The date and place of filling were painted in white, as is customary with Army bomb markings. This is the first known instance of Japanese inter-service co-ordination in the manufacture of ordnance."