

JAPANESE AMMUNITION

TALPO.IT



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I JULY 1945

RESTRICTED

U. S. NAVY BOMB DISPOSAL SCHOOL
Washington 15, D. C.

1 July 1945

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TABLE OF CONTENTS

Table of Contents	1-11
Explanatory Remarks	111

SECTION I IDENTIFICATION OF JAPANESE AMMUNITION BY PROPELLANT CASE

A. 6.5 mm - 20 mm, Army and Navy	2-3
B. Army 37 mm - 30 cm	6-11
C. Navy 25 mm - 20 cm	13-16

SECTION II JAPANESE ARMY AMMUNITION

Color System	18-19
Projectile Nose Fuze	20-21
Army 40 mm - Above	
40 mm, HO-301 - High Explosive	102-103
47 mm, High Explosive	104-105
47 mm, Armor Piercing	106-107
5.7 cm (57 mm) H.E. Type 0	108-109
A.P. Type 9	110-111
7 cm (70 mm) Infantry Gun	
H.E. Type 92	112-113
Hollow Charge Type 3	114-115
Illuminating Type 95	116-117
7 cm (70 mm) Tank Gun	
H.E. Type 92	118-119
A.P. Type 91	120-121
7 cm (75 mm)	
Incendiary	122
Complete rounds charts (and propellants)	123
Propellant Cases - Type 41 Mountain Gun	124
Propellant Case - Type 94 Mountain Gun	
Type 38 Field Gun Group	125
Propellant Case - Type 90 Field Gun	126
- Type 88 Field A.A. Gun	127
Projectiles:	
H.E.-A.A. (?) Type Undetermined	128-129
H.E.-A.A. Long-pointed Type 90	130-131
H.E. Long Pointed Type 90	132-133
H.E. Type 94	134-135
H.E. Design "A"	136-137
H.E. Design "B"	138-139
H.E. (Converted) Type 98 Modified	140-141
H.E. Semi-Steel Type 90	142-143
H.E. Semi-Steel Type 97	144-145
Hollow Charge Type 2	146-147
A.P.-H.E. Type 95	148-149
A.P. Type 1	150-151
Shrapnel Type 38	152-153
Shrapnel Type 90	154-155
Smoke (W.P.) Type Undetermined	156-157
Smoke (W.P.) Type 90	158-159
Incendiary Type 90	160-161
Illuminating Type 90	162-163
Target Type 11 Yr. (?)	164-165
Liquid Incendiary Type Undetermined	166-167
Vomit Gas Type Undetermined	168-169
H.E.-A.A. Long Pointed Type 100	170-171

SECTION III JAPANESE NAVY AMMUNITION

Marking of Japanese Navy Projectiles	202-207
Japanese Navy Projectile Fuze	208-209
Navy 5 cm and above	
5 cm (47 mm) Complete Round, Common Projectile	250-251
8 cm (76.2 mm - 3 inch) Semi-Fixed	
Complete Round	252-253
High Explosive	254-255
8 cm (76.2 mm - 3 inch) Fixed	
Complete Round	256-257
High Explosive	258-259
Special Common	260-261
Unidentified	262-263

SECTION III
JAPANESE NAVY AMMUNITION (cont)

10 cm (100 mm - 3.9 inch) Fixed		
Complete Round	264-265	
High Explosive	266-267	
12 cm/Short (120 mm - 4.7 inch) Fixed		
Complete Round	268-269	
High Explosive	270-271	
12 cm (120 mm - 4.7 inch) Semi-Fixed		
Complete Round	272-273	
High Explosive (1)	274-275	
High Explosive (2)	276-277	
12 cm (120 mm - 4.7 inch) Fixed		
Complete Round	278-279	
High Explosive (1)	280-281	
High Explosive (2)	282-283	
Incendiary Shrapnel	284-285	
12.7 cm (127 mm - 5 inch) Fixed		
Complete Round	286-287	
High Explosive	288-289	
14 cm (140 mm - 5.5 inch) Bag		
Propellant and Tank	290-291	
High Explosive (1)	292-293	
High Explosive (2)	294-295	
Common	296-297	
Common Capped	298-299	
Illuminating	300-301	
15 cm (152 mm - 6 inch) Semi-Fixed		
Complete Round	302-303	
Common	304-305	
20 cm (203 mm - 8 inch) Semi-Fixed		
Complete Round	306-307	
High Explosive	308-309	

Appendix

Conversion Table (Inches - millimeters & millimeters - inches). App. 2
Conversion Table (Fractions of an inch & millimeter equivalent). App. 3

EXPLANATORY NOTESA. Japanese Weapons

1. Japanese Army Weapons are generally copies of German or French designs or are developed following their customs.
2. Japanese Navy Weapons are generally copies of British Navy Weapons or are designed in keeping with the principles established by the early British influence.
3. The bore diameters of Japanese Army weapons measure an even number of millimeters (metric system).
4. The bore diameter of Japanese Navy Weapons quite often measures to an even inch in keeping with the English system, though some common Navy guns are designed with a bore diameter in an even number of millimeters.
5. Both Japanese services designate their guns by nominal sizes, usually to the nearest even centimeter. Hence, an Army 75 mm gun may be designated "7 cm", and a Navy 3-inch (76.2 mm) gun, "8 cm". Both services designate the size of guns under 5 cm. by the actual size in millimeters, e.g. 47 mm, 40 mm, 30 mm, 20 mm.

To avoid confusion, ammunition is classified in this book by the nominal bore size of the weapon according to Japanese nomenclature with the actual size given in parenthesis. In Navy ammunition above 5 cm. the actual size is given in both metric and English measurement.

B. Classification of Projectiles1. Army Projectiles

In the Army section the Japanese nomenclature for projectiles is followed as far as practicable. The Japanese Army terminology is self-explanatory and conforms fairly well with U. S. custom.

Needing some explanation are the terms A.P. and A.P.-H.E.

"A.P." indicates a projectile intended for piercing heavy armor, for example, armor plate of thickness equal to or greater than the caliber of the projectile.

Japanese "A.P." projectiles have an H.E. bursting charge.

"A.P.-H.E." indicates a solid-nosed projectile in general similar to the "A.P.", but designed for much lighter penetration. These carry an H.E. charge approaching that of a standard "H.E." projectile. Hence, the term "A.P.-H.E." is intended to indicate its intermediate status between an "H.E." projectile and heavy armor-piercing projectile.

"A.P.-H.E." projectiles are painted like "H.E." projectiles, but obviously may be differentiated by their form.

2. Navy Projectiles

The classification and designation of Navy projectiles by the Japanese is highly irregular and cumbersome. Complete and accurate identification of a projectile requires (a) identification of the gun, (b) descriptive nomenclature of the projectile, and (c) mark (or type) and modification number.

Example: 14 cm/50 (gun) (General type of Projectile) Type O (Design number)

For this reason an arbitrary system of nomenclature is used in this book. Japanese Navy nomenclature is given as a sub-title where known.

In Japanese Navy nomenclature all projectiles with a relatively high explosive charge (including light armor-piercing types) are designated TSUJODAN (通 常 弹) which may be translated either "Ordinary Projectile" or "Common Projectile". Since this is a composite group including standard High Explosive projectiles as well as light penetrating types, the translation "Ordinary" is used in this book for Japanese designations and the term "Common" is reserved for specific use as a descriptive title for light penetrating types of projectiles (solid nose, base-fuzed) in accordance with the U. S. meaning of "Common".

SECTION I

IDENTIFICATION

OF JAPANESE AMMUNITION

BY PROPELLANT CASE

A.
15 MM - 20 MM.

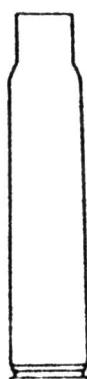
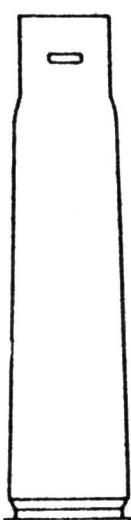
ARMY AND NAVY

—ARMY—

6.5MM
SEMI-RIMMED7.7MM
RIMLESS7.7MM
SEMI-RIMMED7.9MM
RIMLESS

U.S. CAL.30

12.7MM

LGTH=2"
BASE=17/32"LGTH=2 9/32"
BASE=15/32"LGTH=2 1/4"
BASE=11/32"LGTH=2 1/4"
BASE=15/32"LGTH=2 1/2"
BASE=17/32"LGTH=3 3/8"
BASE=3/4"6.5 mm LMGs
6.5 mm LMGs7.7 mm LMGs
7.7 mm LMGs
7.7 mm LMGs
7.7 mm (Alternat-7.7 mm Type 92 Hm
(Standard)
7.7 mm ACMGs

9 mm ACMGs

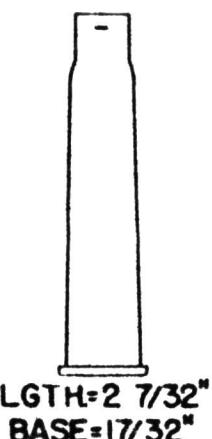
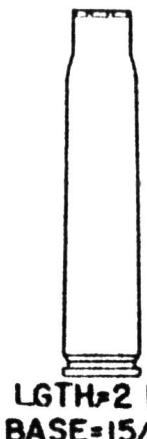
U.S. no Japanese
Fitter weapon

12.7 mm ACMG

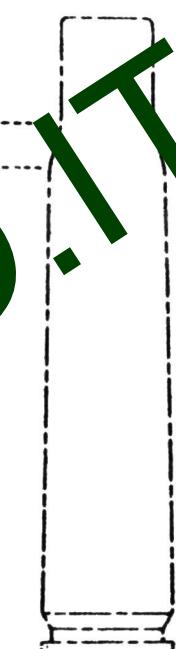
7.7 MM
RIMMED7.9MM
RIMLESSNAVY
13MM

13.2MM

U.S.CAL. 50

LGTH=2 7/32"
BASE=17/32"LGTH=2 1/4"
BASE=15/32"LGTH=2 1/2"
BASE=11/16"

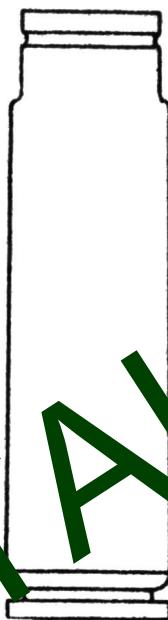
13 mm ACMG

LGTH=3 7/8"
BASE=25/32"13.2 mm Type 3 ACMG
13.2 mm Type 93 AAMG
13.2 mm Type 96 AAMG
Army 13.2 known,
but not recovered.LGTH=3 7/8"
BASE=25/32"U.S. - Not
Interchangeable
with Japanese
13.2 mm

7.9 mm ACMG

**ARMY
20MM****TYPE 98 A.A./ATK. GUN**

**TYPE 97 ANTI-TANK GUN
FIXED AND FLEX. A.G.CANNON
(HO-1 AND HO-3)**

HO-5 A.C. CANNON

LENGTH = $3 \frac{11}{16}$ "
DIA. OF BASE = $3 \frac{1}{32}$ "



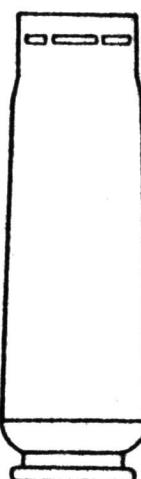
LENGTH = $4 \frac{29}{32}$ "
DIA. OF BASE = $1 \frac{7}{8}$ "



LENGTH = $5 \frac{19}{32}$ "
DIA. OF BASE = $1 \frac{5}{16}$ "

—NAVY—**20MM**

**TYPE 99 MK.2
A.C.CANNON**

**TYPE 99 MK.1
A.C.CANNON**

LENGTH = $2 \frac{13}{16}$ "
DIA. OF BASE = $\frac{3}{4}$ "

LENGTH = 4 "
DIA. OF BASE = $\frac{3}{4}$ "

**OERLIKON AA****HISPANO AC****U.S. 20 MM GUNS**

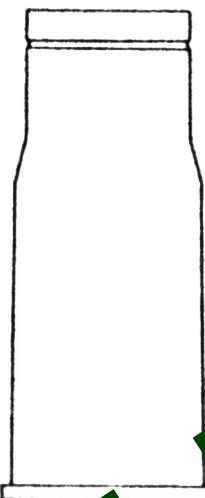
**—U.S.—
FOR COMPARISON**



B.
TALPOIT
ARMY 37 MM. - 30 CM.
TALPOIT
TALPOIT

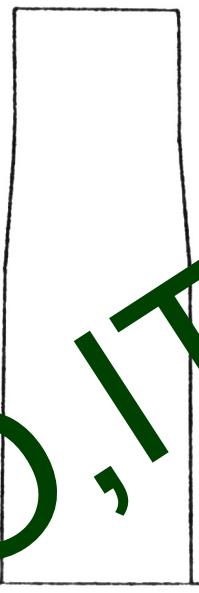
—ARMY—
37MM

TYPE 11YR. INF. GUN
HO 203 AC CANNON



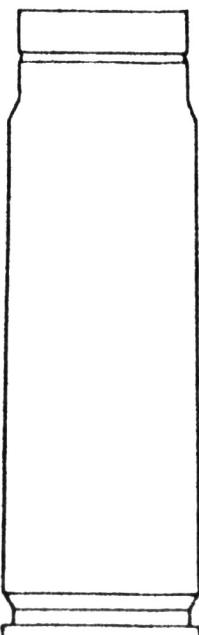
LENGTH = 4 3/8"
DIA. OF BASE = 1 27/32"

TYPE 94 TANK GUN



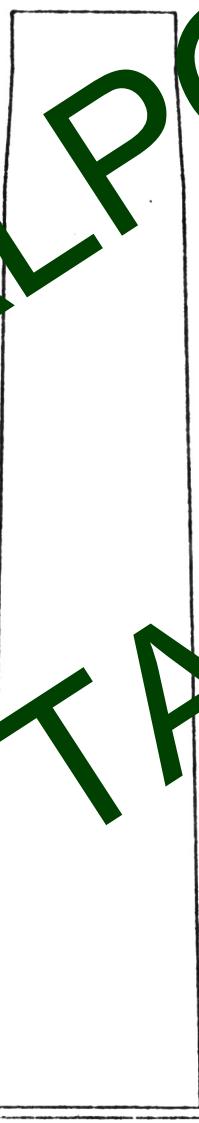
LENGTH = 5 1/4"
DIA. OF BASE = 1 27/32"

HO 204 AC CANNON

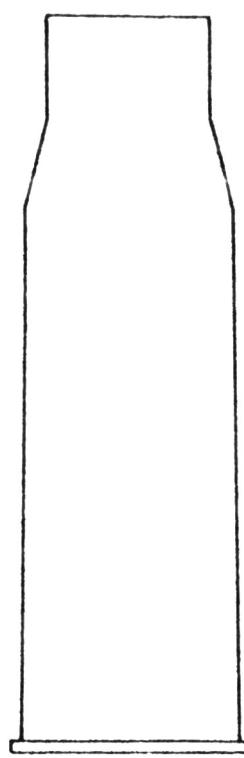


LENGTH = 5 21/32"
DIA. OF BASE = 1 1/2"

TYPE 97 ANTI-TANK GUN
(GERMAN COPY)



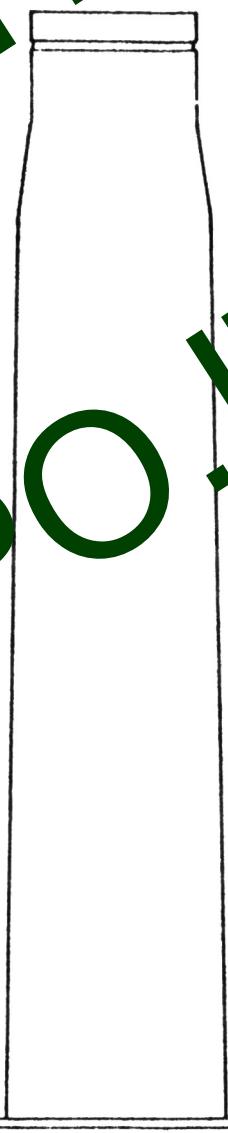
TYPE 94 ANTI-TANK GUN
EXP. TYPE 98 TANK GUN
EXP. TYPE 100 TANK GUN



LENGTH = 6 1/2"
DIA. OF BASE = 2 1/8"

LENGTH = 9 7/8"
DIA. OF BASE = 2 1/32"

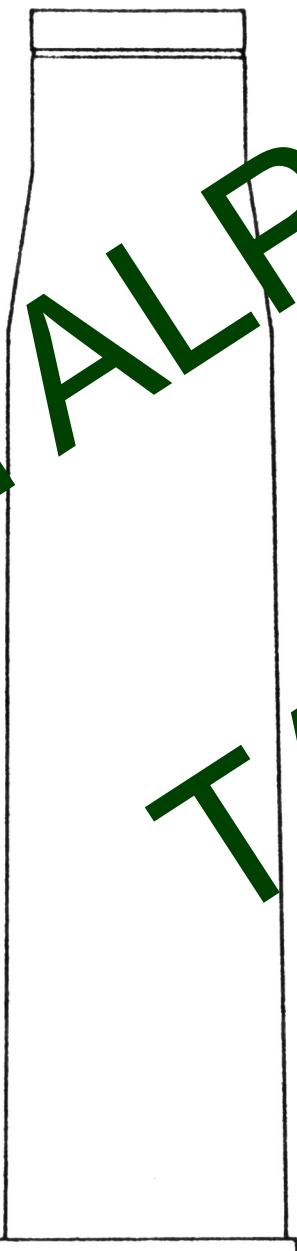
TYPE TANK GUN



LENGTH = 9 27/32"
DIA. OF BASE = 2 1/8"

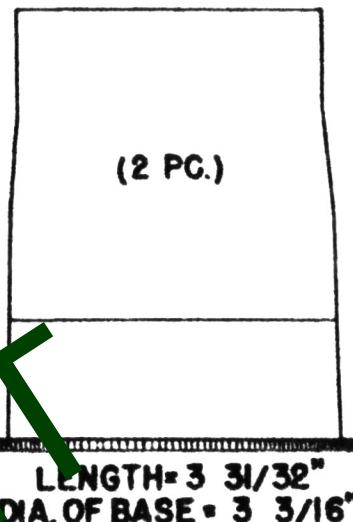
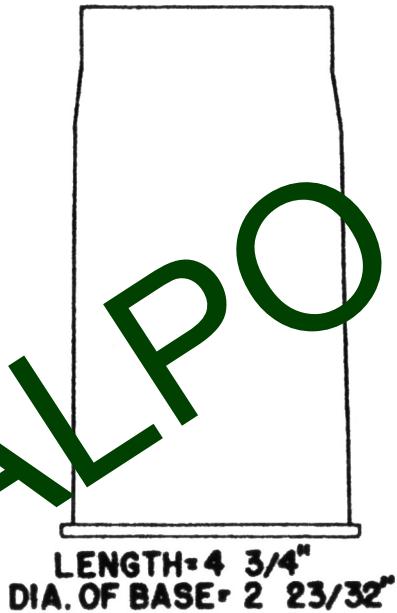
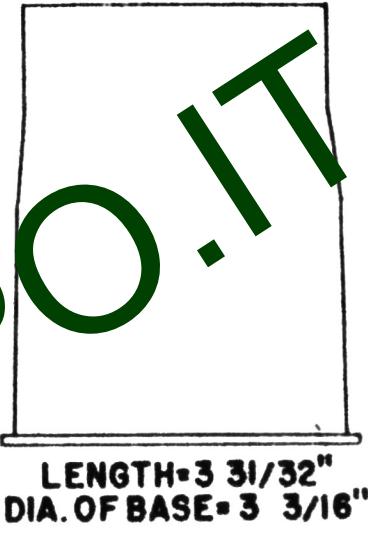
ARMY

47MM.

TYPE 1 TANK GUN
TYPE 1 ANTI-TANK GUN

70MM.

TYPE 92 INF. GUN CASE "A"

57MM.
TYPE 90 TANK GUN
TYPE 97 TANK GUNTYPE 92 INF. GUN CASE "B"
TYPE 94 TANK GUN CASE "B"LENGTH = 11 1/8"
DIA. OF BASE = 2 27/32"

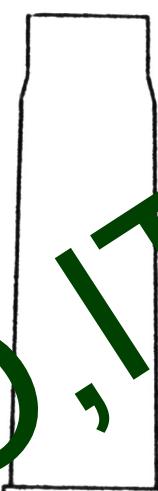
—ARMY—**75MM**

TYPE 94 MOUNTAIN GUN
TYPE 38 FIELD GUN
MODIFIED TYPE 38 FIELD GUN
TYPE 41 CAVALRY GUN
TYPE 95 FIELD GUN
TYPE 11 YR FIELD/AA GUN

TYPE 41 MOUNTAIN GUN



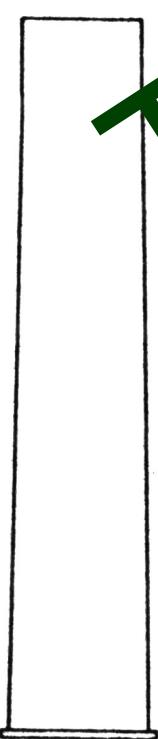
LENGTH = 7 1/4"
DIA. OF BASE = 3 9/16" DIA. OF BASE = 3 11/16"



LENGTH = 11 9/16"
DIA. OF BASE = 3 11/16"

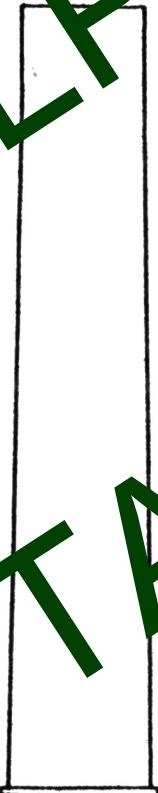
TALPOIT

TYPE 90 FIELD GUN



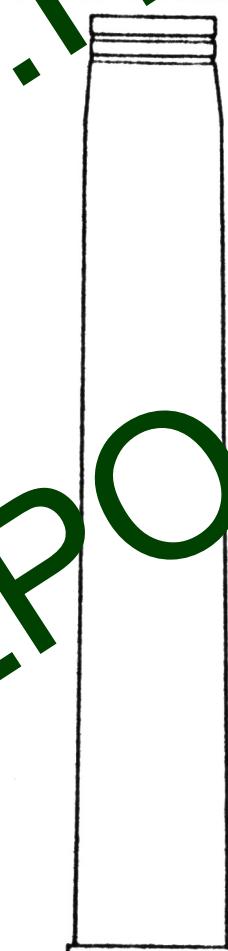
LENGTH = 16 11/16"
DIA. OF BASE = 3 11/16" DIA. OF BASE = 3 11/16"

TYPE 88 FIELD/AA GUN
TYPE 88 SPECIAL
FIELD/AA GUN

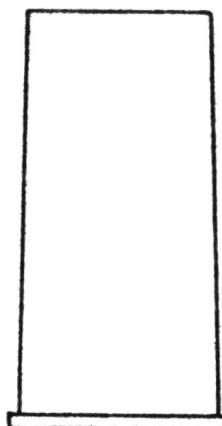


LENGTH = 19 9/16"
DIA. OF BASE = 3 11/16"

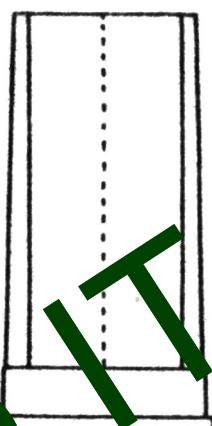
88MM
TYPE 99 AA GUN



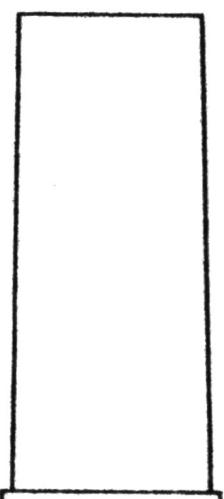
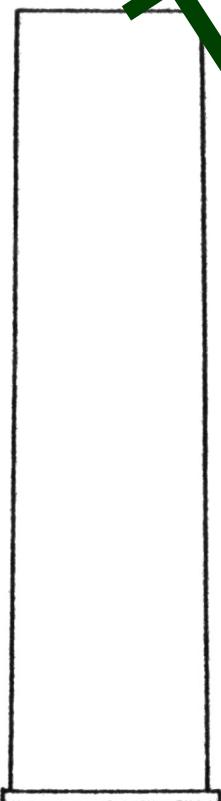
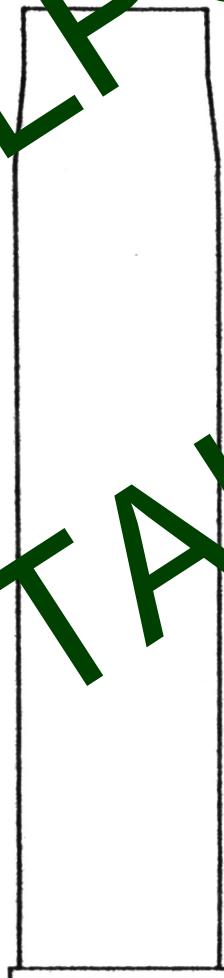
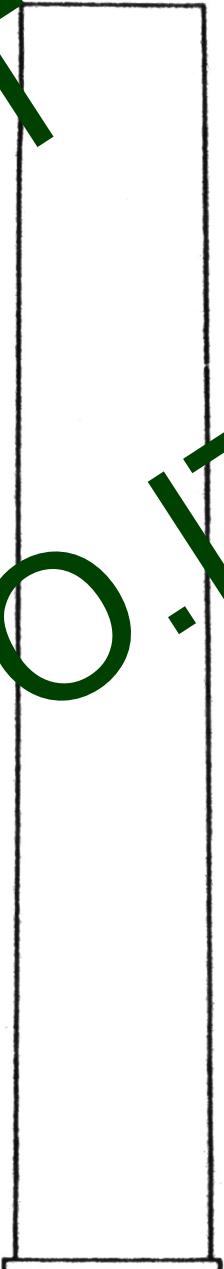
LENGTH = 22 3/8"
DIA. OF BASE = 4"

ARMY
105MM**TYPE 91 HOWITZER**

BRASS

LENGTH = 9 9/16"
DIA. OF BASE = 4 13/16"**TYPE 91 HOWITZER**

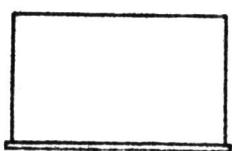
STEEL (SECTIONED)

LENGTH = 9 9/16"
DIA. OF BASE = 4 13/16"**TYPE 38 GUN**LENGTH = 11 1/8" (APPROX.)
DIA. OF BASE = 4 13/16" (APPROX.)**TYPE 14 YR GUN**LENGTH = 18 1/8"
(APPROX.)
DIA. OF BASE = 4 15/16"
(APPROX.)**TYPE 14 YR AA GUN**LENGTH = 22 1/4"
DIA. OF BASE = 4 15/16"
(APPROX.)**TYPE 92 GUN**LENGTH = 29"
DIA. OF BASE = 4 15/16"

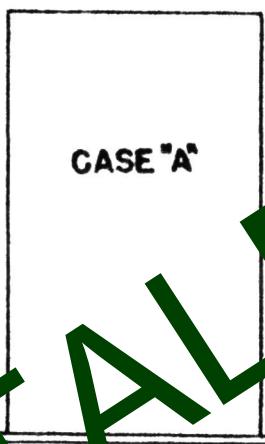
~~ARMY~~

120MM

TYPE 38 HOWITZER

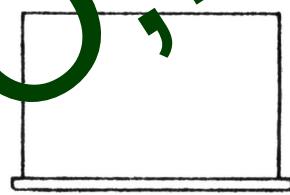
LENGTH = 3 1/4"
DIA OF BASE = 5 1/2"TYPE 45 GUN
TYPE 7 YR GUN
TYPE 90 GUN

TYPE 4 YR. HOWITZER



150MM

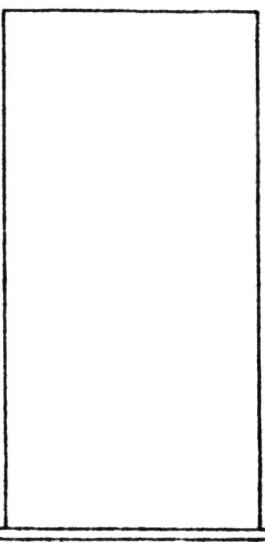
TYPE 38 HOWITZER

LENGTH = 4 1/8"
DIA. OF BASE = 6 1/16"

TYPE 89 GUN

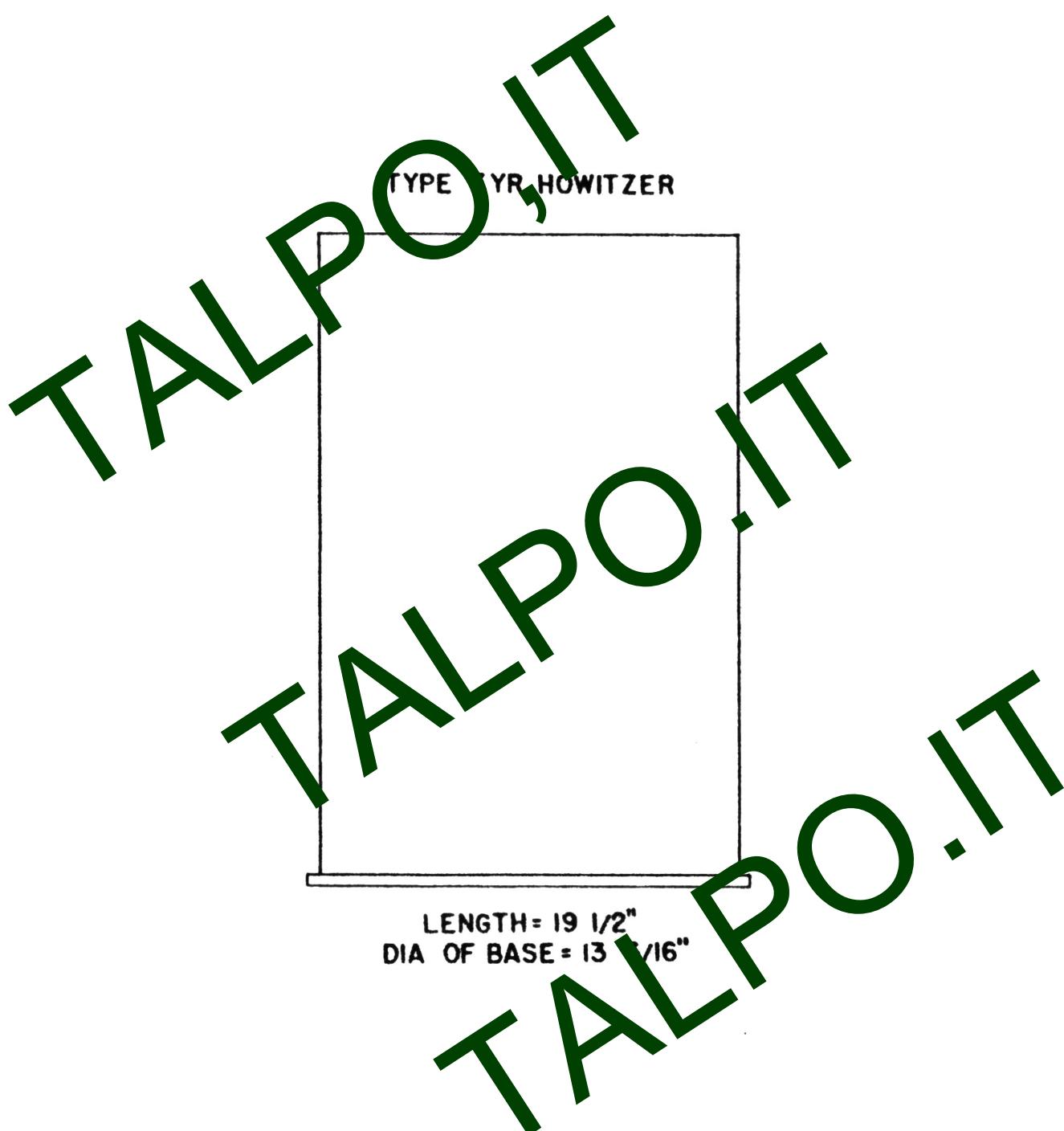
BAG
CHARGE

TYPE 96 HOWITZER

LENGTH = 12 5/8"
DIA. OF BASE = 6 11/16"LENGTH = 26" (APPROX.)
DIA. OF BASE = 5 1/8"LENGTH = 47 5/16"
DIA. OF BASE = 7 1/8" (APPROX.)

TALPO.IT

— ARMY —
30 CM.

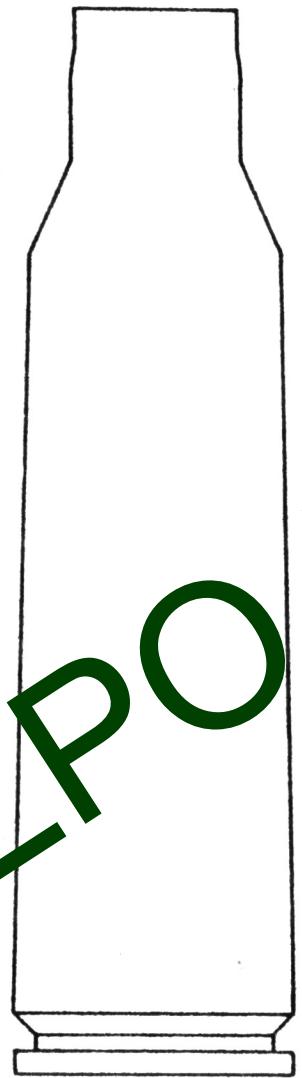


TALPO. IT
C.
NAVY 25 MM. - 20 CM.

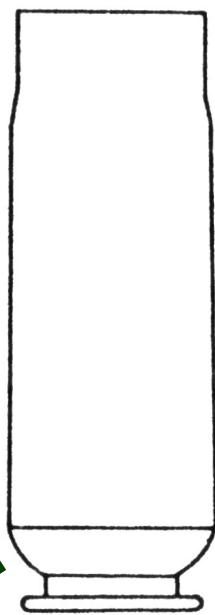
TALPO. IT

NAVY**25 MM**

TYPE 96 A.A GUN
LENGTH = 6 7/16"
DIA. OF BASE = 1 11/16"

**30MM**

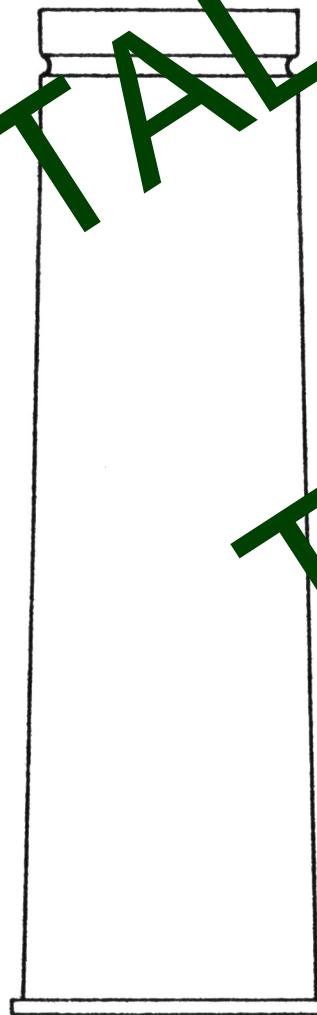
TYPE 2 A.C.CANNON



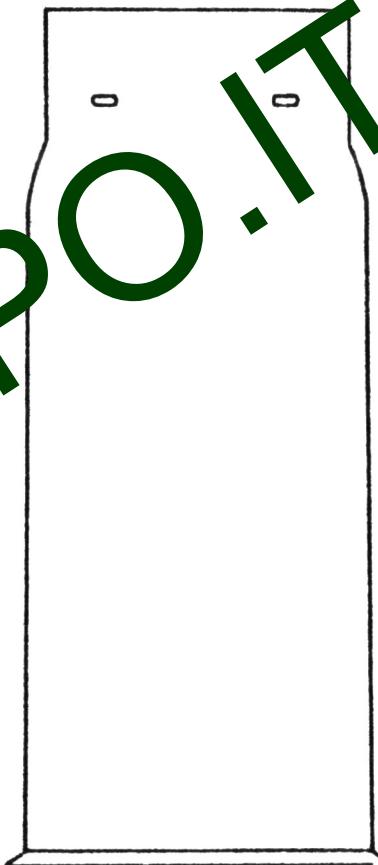
LENGTH = 3 5/8"
DIA. OF BASE = 1 1/8"

40MM

40MM AUTO AA
(BRITISH COPY)
LENGTH = 6 1/8"
DIA. OF BASE = 1 7/8"

**5CM.(47 MM)**

SHORT 5 CM. GUN

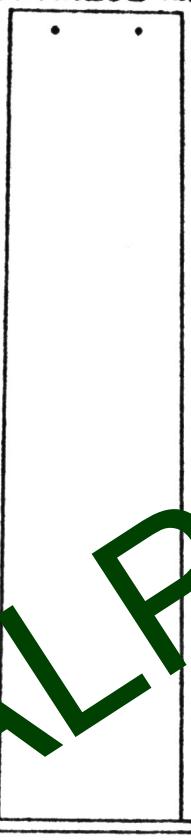


LENGTH = 5 3/32"
DIA. OF BASE = 2 3/8"

—NAVY—

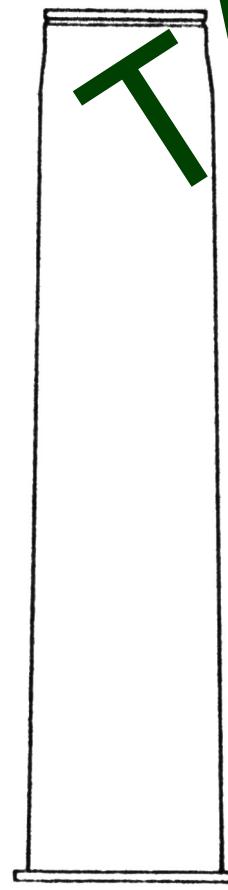
8CM.(3 INCH)
SEMI-FIXED

BRITISH ARMSTRONG GUN
(BRITISH OR JAPANESE MANUFACTURE)



LENGTH = 15 1/16"
DIA. OF BASE = 4 1/8"

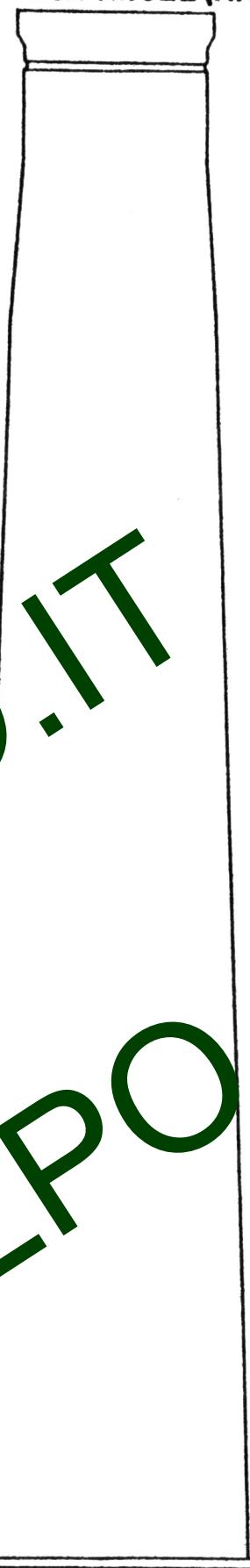
8CM.(3 INCH) FIXED
TYPE 3YR. HIGH ANGLE (AA) GUN



LENGTH = 16 1/16"
DIA. OF BASE = 4 1/8"

10CM.(3.9 INCH)
FIXED

TYPE 98 HIGH ANGLE (AA) GUN

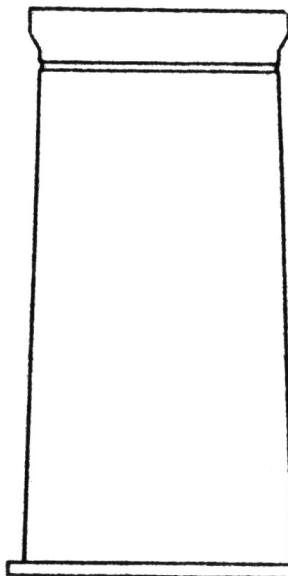


LENGTH = 32 7/8" (APPROX)
DIA. OF BASE = 6 13/16"

TALPO.IT

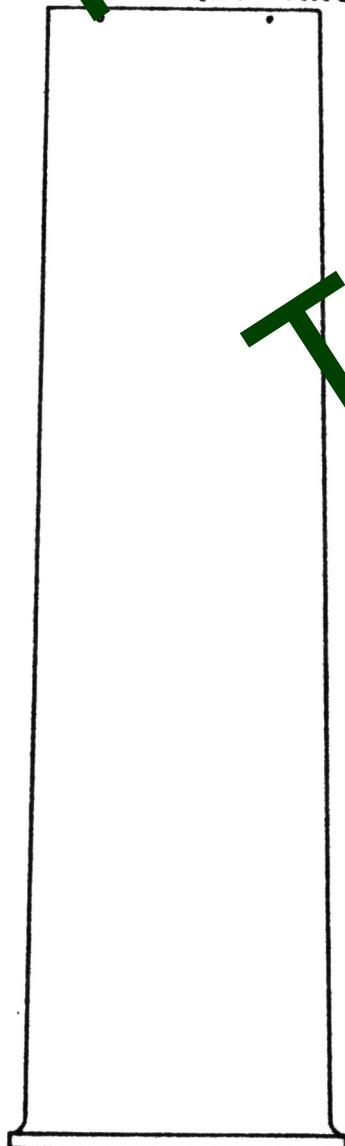
NAVY

12CM.
SHORT FIXED
SHORT 12CM.GUN



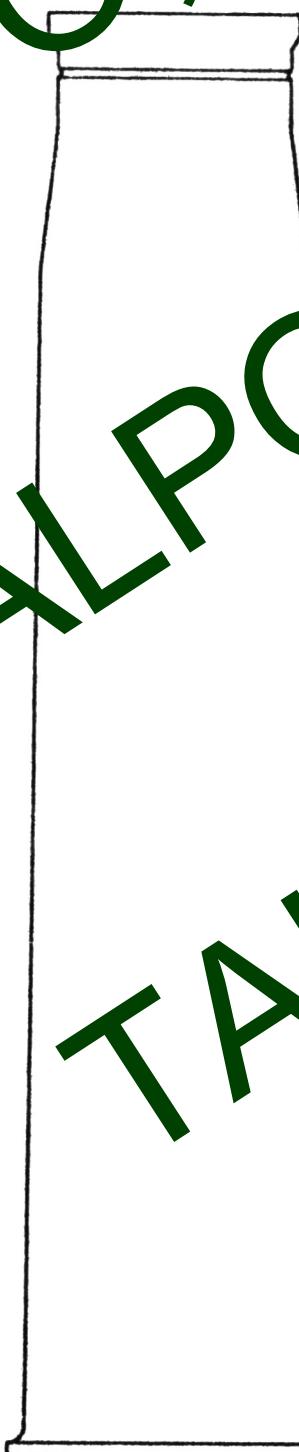
LENGTH = 11 3/16"
DIA. OF BASE = 5 13/16"

SEMI-FIXED
BRITISH ARMSTRONG TYPE
TYPE 3 YR GUN (LOW ANGLE)



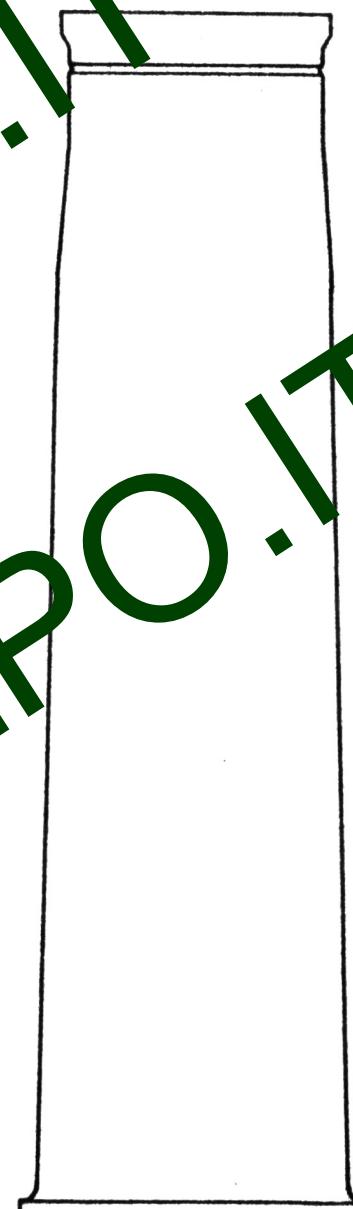
LENGTH = 21 5/8"
DIA. OF BASE = 6 3/8"

12CM.
FIXED-A.A.
TIRE IOYN HIGH
ANGLE(AA) GUN



LENGTH = 26 15/16"
DIA. OF BASE = 6 1/4"

12.7CM.(5 INCH)
FIXED
TYPE 89 HIGH
ANGLE(AA) GUN

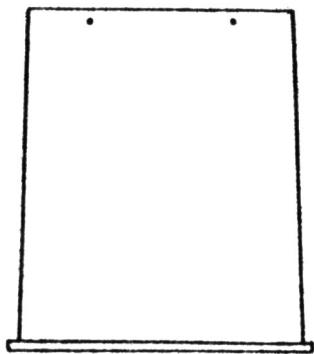


LENGTH = 22 7/8"
DIA. OF BASE = 6 21/32"

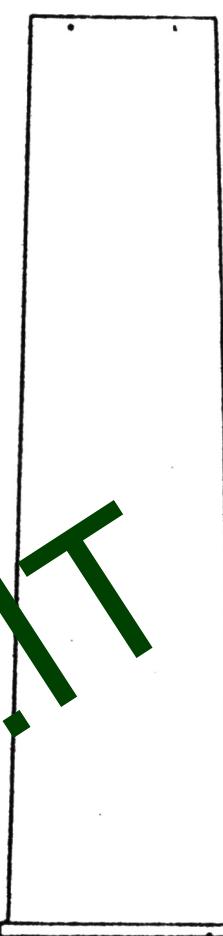
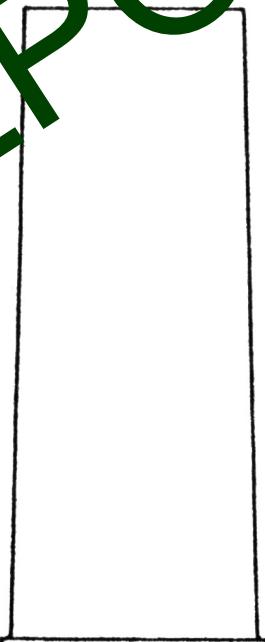
14 CM. BAG

TYPE 3 YR 14 CM/50 GUN
(LOW ANGLE)LENGTH = 28"
DIA. OF BASE = 5"SHORT 20 CM.
SEMI-FIXED

SHORT 20 CM. GUN

LENGTH = 11"
DIA. OF BASE = 9"

15 CM. SEMI-FIXED

TYPE 41(MEIJI) 15 CM/40 GUN
(LOW ANGLE)LENGTH = 29 1/2"
DIA. OF BASE = 7 3/4"UNIDENTIFIED
SEMI-FIXEDLENGTH = 20 1/2"
DIA. OF BASE = 7 1/2"

SECTION II**JAPANESE ARMY AMMUNITION**

TALPO.IT

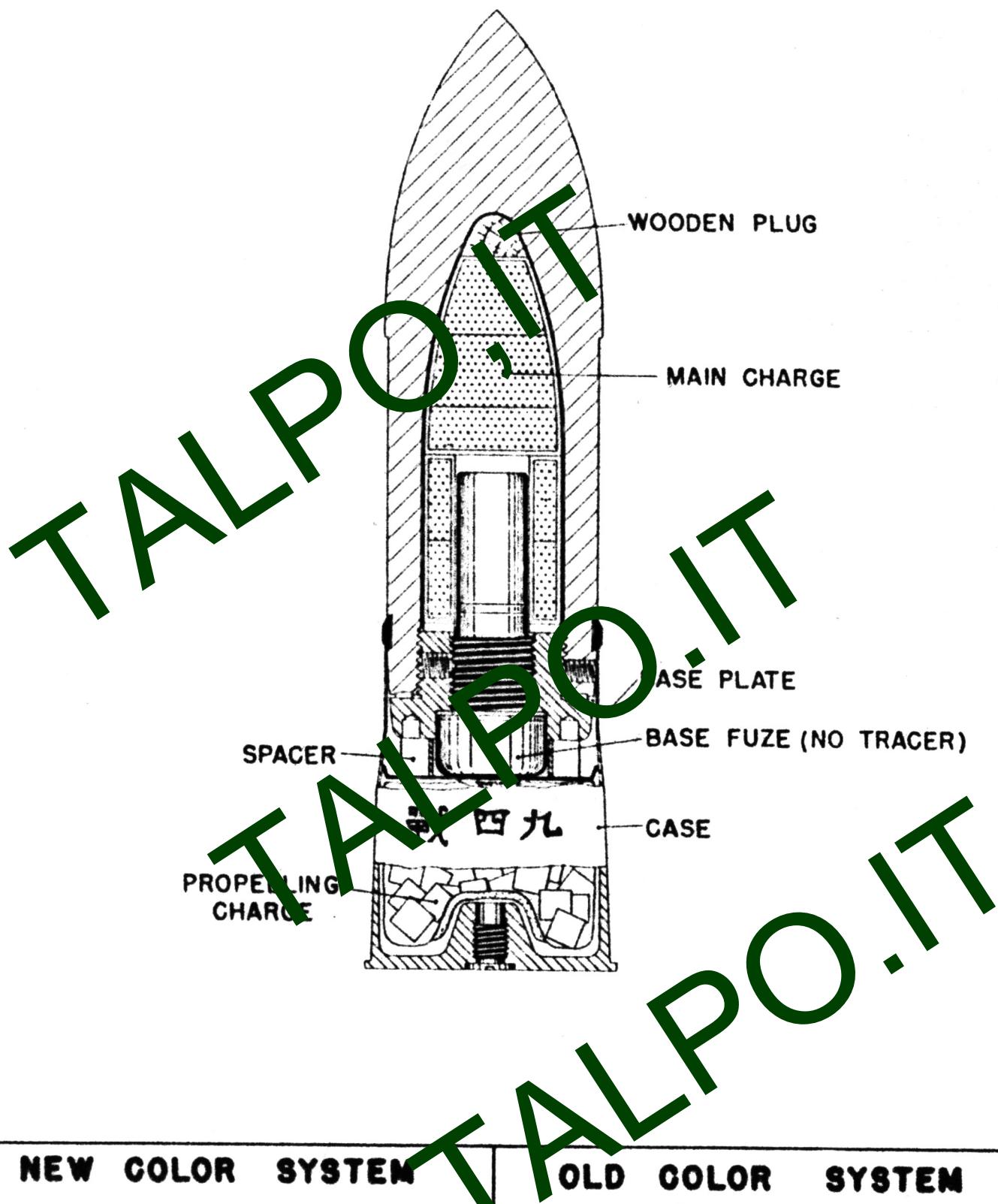
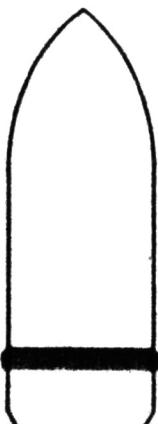
TALPO.IT

TALPO.IT

ARMY 7CM.(70 MM.) ARMOR PIERCING

COMPLETE ROUND FOR TYPE 94 TANK GUN

PROJECTILE TYPE 95

**NEW COLOR SYSTEM****OLD COLOR SYSTEM**

**ARMOR PIERCING
TYPE 95 PROJECTILE****ARMY
7 CM (70 MM)**Type 94
Tank Gun

WEIGHT OF COMPLETE ROUND 5.04 Kg. (11.10 lb.)

WEIGHT OF PROJECTILE, FUZED 4.45 Kg. (9.80 lb.)

WEIGHT OF FILLING 0.170 Kg.

FILLING:

Preformed, paper-wrapped filling.

Forward portion "OSHIYAKU"
(Picric Acid 90%, paraffin 10%)

After portion T.N.T.

DIMENSIONS:

Diameter at Base of projectile	. . . . .	70 mm (minus tolerance)
Length of projectile /o base	. . . . .	mm (in.)
Length of propellant case	. . . . .	101 mm (4 in.)
Length of assembled round	. . . . .	307 mm (12-1/16 in.)
Diameter at base of case	. . . . .	81 mm (3-3/16 in.)
Width of rotating band	. . . . .	10 mm

FUZE:

Type 95 Small A.P. Base Fuze.

PROPELLANT:

5 mm square grain (medium) - 120 grains.

REMARKS:

No specimens of this round have been recovered. It is derived from documents.

ARMY 7 CM. (75 MM)-INTRODUCTION

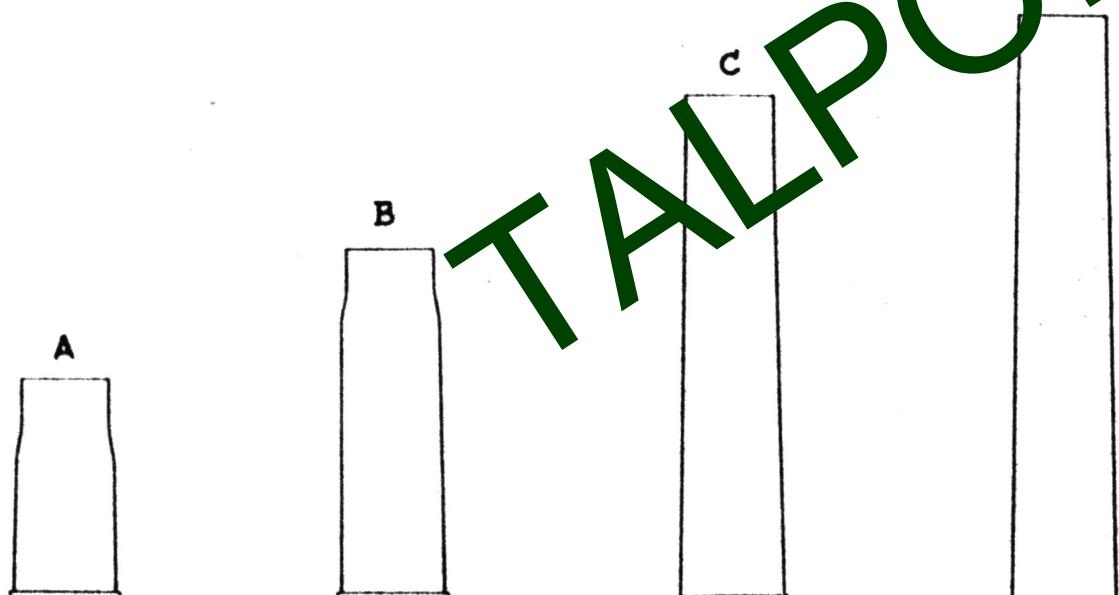
There are ten or more 75 mm guns in current use in the Japanese Army. Though the weapons vary considerably in design, length of bore, and employment, the bore diameter (75 mm) is held constant and in large part the projectiles are designed to be interchangeable for numerous guns. In this way, identical projectiles may be assembled with different sizes of case and propellant charge to fit the various weapons.

For this reason the cases and propellant charges for the different weapons will be treated separately and the projectiles will be presented as a group of designs which are potentially interchangeable for all Army 75 mm guns. The specific purpose of a given projectile or a given gun will limit the occurrence of many of the possible combinations.

Ammunition for Japanese Navy guns designated "8 cm" is comparable in size to Army 7 cm, but the Navy guns have a bore diameter of three inches (76.2 mm) and Army and Navy projectiles and ammunition are not interchangeable. Navy guns as well as Army guns are found commonly in shore defenses, but the identity of the installations, weapons, and ammunition remain distinctly Army or Navy.

CLASSIFICATION OF JAPANESE ARMY 75 mm GUNS
BY SIZE OF CHAMBER (SIZE OF PROPELLANT CASE)

Size of Case	Weapon	Marking on Case
A	Type 41 Mountain Gun/Field Gun	四一山 Written vertically (Rare)
	Type 34 Mountain Gun	九四山 Written vertically
B	Type 38 Field Gun	九三八
	Type 41 Cavalry Gun	九一
	Type 38 Improved Field Gun	五三一八
	Type 95 Field Gun	野野騎野
	Type 11 Yr. Field/AA Gun	No marking known.
C	Type 90 Field Gun	九〇
D	Type 88 Field/AA Gun	八八式七高
	Type 88 Field/AA Gun (Special)	八八式七高特



LGTH.: 184 MM. (7½") LGTH.: 294 MM. (11¾") LGTH.: 424.4 MM. (16½") LGTH.: 497 MM. (19¾")

*For convenience in reference, this group, in which the propellant case bears the multiple designation for four weapons, will be termed "Type 38 Field Gun Group".

ARMY 7CM.(75MM) COMPLETE ROUNDS

Projectile	Propellant Charge Used For Various Guns						
	Type 41 Mountain	Type 94 Mountain	Type 38 Group	Type 90 Field	Type 88 Field-AA	Type 88 Special	Type 11 YR Field-AA
H.E.A.A. (?)	- -	- -	- -	- -	- -	- -	Mk. 1 Flat Strip 600 g.
H.E.A.A. (L.P. Type 90)	- -	- -	- -	- -	(Sing perf cyl. sticks 1474 g.) *	Mk. 3 *	Mk. 1 Flat Strip 600 g.
H.E. (L.P.) Type 90	- -	No data	Mk. 1 600 g.	Mk. 3 Med. Flat Strip 200 g.	- -	Mk. 2 *	Flat Strip 260 g.
H.E. Type 94	Mk. 1 * Sq. Grain 265 g.	Sq. Grain 492 g. *	Mk. 1 Flat Strip 600 g.	Mk. 1 Flat Strip 655g.	- -	Mk. 1 Flat Strip 675 g.	- -
H.E. Design "A"	Mk. 1 Sq. Grain 265 g.	No data	Flat Strip 600 g.	- -	- -	- -	- -
H.E. Design "B"	Mk. 1 Sq. Grain 265g.	No data	Mk. 1 Flat Strip 600 g.	- -	- -	- -	- -
H.E. (conv't'd) Type 98 (Modif)	No data	-	No data	- -	- -	- -	- -
H.E. Semi-St. Type 90	Mk. 1 Sq. Grain 265 g.	No data	Mk. 1 Flat Strip 600 g.	No data	- -	- -	- -
H.E. Semi-S. Type Undet.	Mk. 1 Sq. Grain 265 g.	No data	- -	- -	- -	- -	- -
Hollow Charg. Type 2	(Sq. Grain 227 g.) *	No data	- -	- -	- -	- -	- -
A.P.H.E. Type 95	Mk. 1 Sq. Grain 265 g.	No data	Mk. 1 Flat Strip 600	No data	- -	- -	- -
A.P. Type Undet.	Mk. 1 * Sq. Grain 265 g.	No data	- -	- -	- -	- -	- -
Shrapnel Type 38	Mk. 1 Sq. Grain 265 g.	No data	Mk. 1 Flat Strip 600	Mk. 1 Flat Strip 655 g.	- -	No data	- -
Shrapnel Type 90	Mk. 1 Sq. Grain 265 g.	No data	Mk. 1 Flat Strip 600 g.	Mk. 1 Flat Strip 655 g.	- -	- -	- -
Smoke (WP) Type Undet.	- -	- -	- -	- -	- -	- -	- -
Smoke (WP) Type 90	Mk. 1 Sq. Grain 265 g.	* Sq. Grain 320 g.)	Mk. 1 * Flat Strip 600 g.	Mk. 1 Flat Strip 655 g.	- -	- -	- -
Incendiary (Non-liquid) Type 90	No data	No data	No date	No data	- -	- -	- -
Illuminating Type 90	Mk. 1 Sq. Grain 265 g.	No data	Mk. 1 Med. Flat Strip 410 g.	Mk. 1 Med. Flat Strip 35 g.	- -	No data	- -
Target Type 11.Yr(?)	- -	- -	- -	- -	No data	- -	Mk. 1 Med. Sq. Grain 160 g.
Incendiary (Liquid) Type Undet.	(Sq. Grain 265 g.) *	- -	- -	- -	- -	- -	- -
Vomit Gas Type Undet.	* No data	No data	- -	- -	- -	- -	- -

K.Y: Blank (--) : signifies that the indicated combination of projectile and propellant case has neither been recovered nor found listed in Japanese documents.

"No data" : indicates that this combination is listed in documents or has been recovered, but that no information on the propellant is available.

Asterisk : signifies that the indicated combination of projectile and propellant case has been recovered or specimens have been observed in the field.

This chart is based primarily on Japanese documentary information. Data derived from recovered specimens are entered in parentheses.

PROPELLANT CASES
TYPE 41 MOUNTAIN GUN (REGIMENTAL GUN)

ARMY

7 CM. (75MM.)

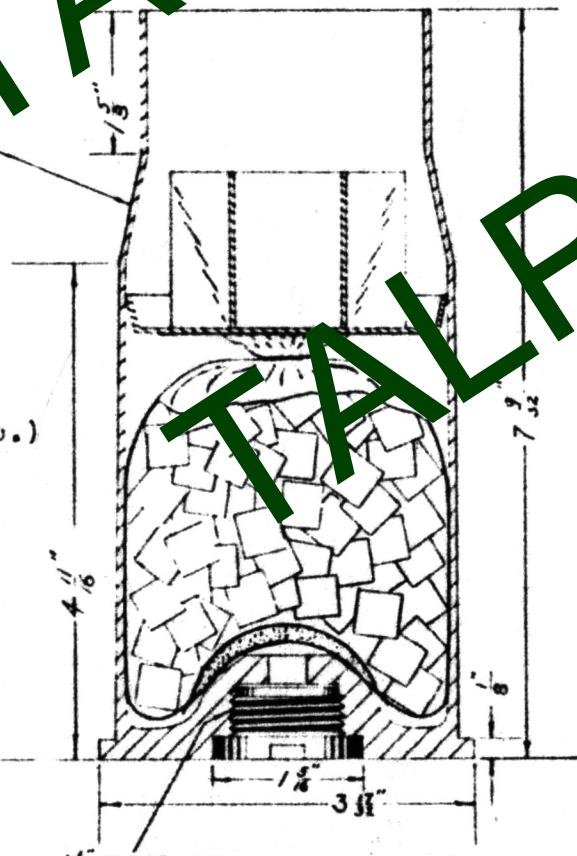
CASE:
DRAWN BRASS

Weight of Case:
822 grams (1.7 lb.)



CASE:
DRAWN BRASS
OR
DRAWN STEEL

Weight of Case (Brass):
947 grams (2.08 lb.)



PROPELLANT CASE

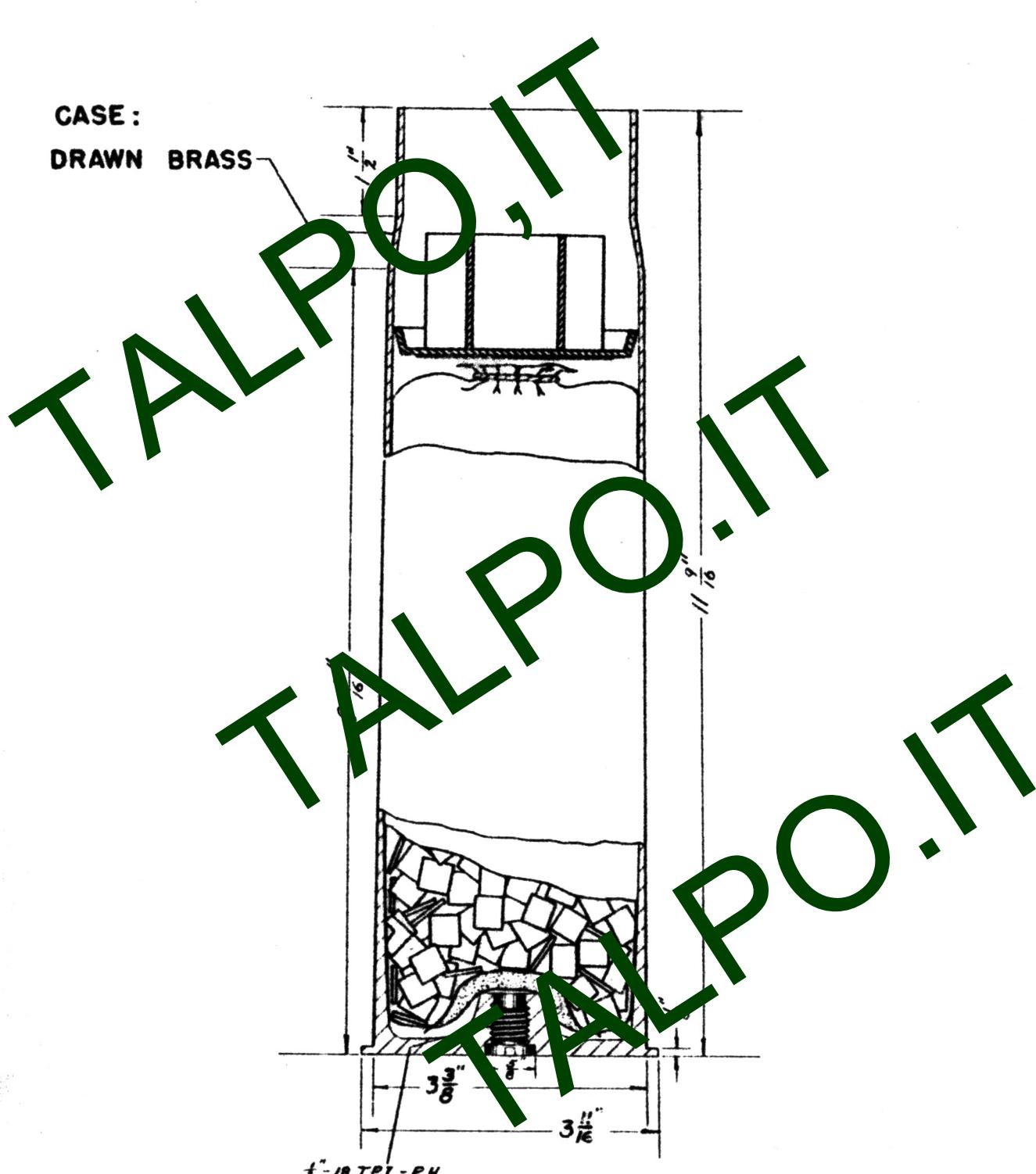
TYPE 94 MOUNTAIN GUN
TYPE 38 FIELD GUN GROUP
TYPE II YR. FIELD - A.A. GUN

ARMY

7 CM. (75MM.)

CASE:

DRAWN BRASS

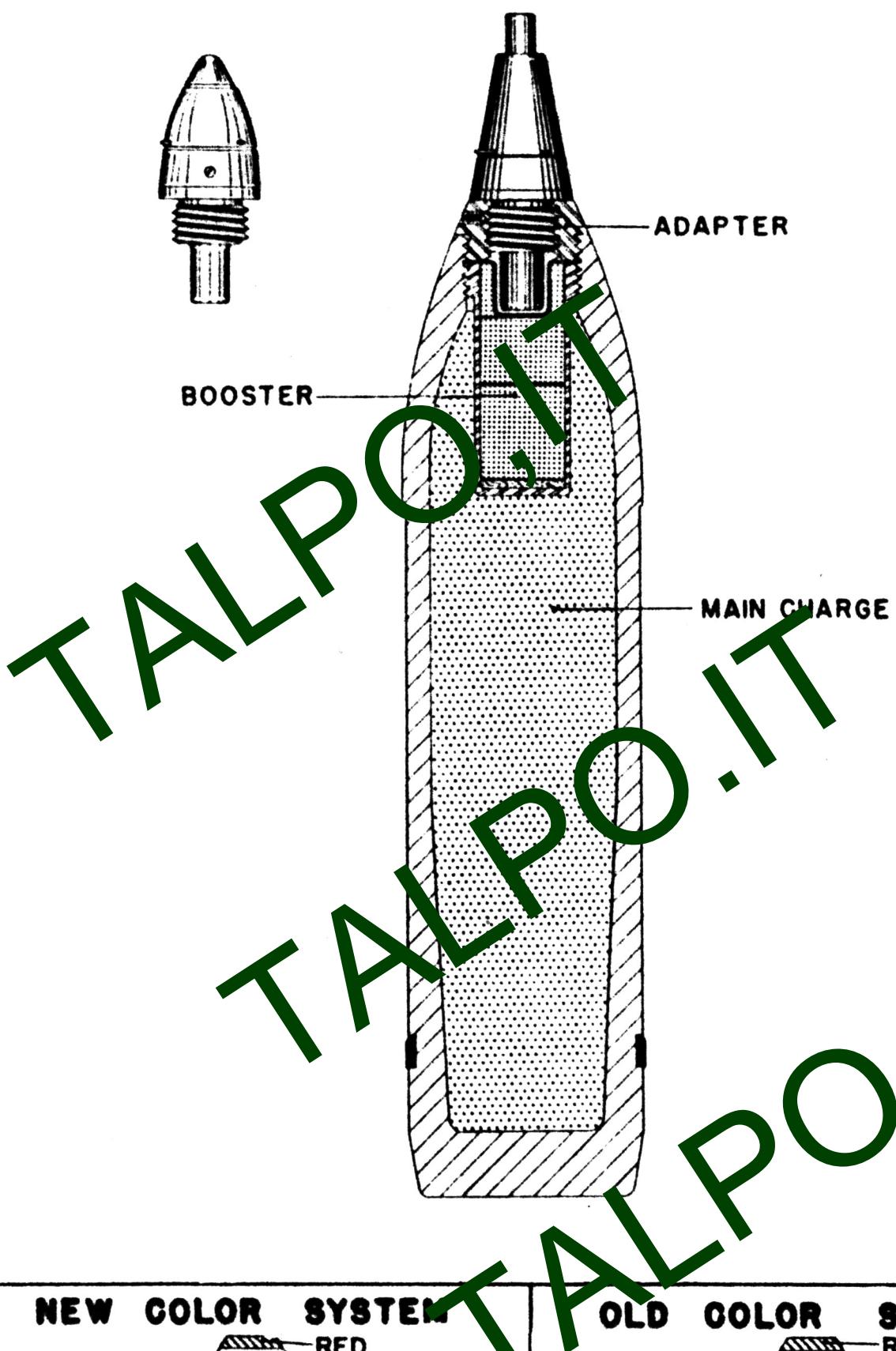


Weight of Case 1250 grams (2.75 lb.)

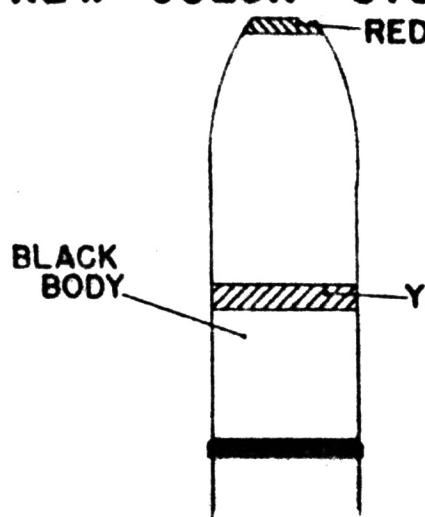
This case has been recovered both with large and with small type primer.

ARMY 7 CM. (75 MM.) HIGH EXPLOSIVE

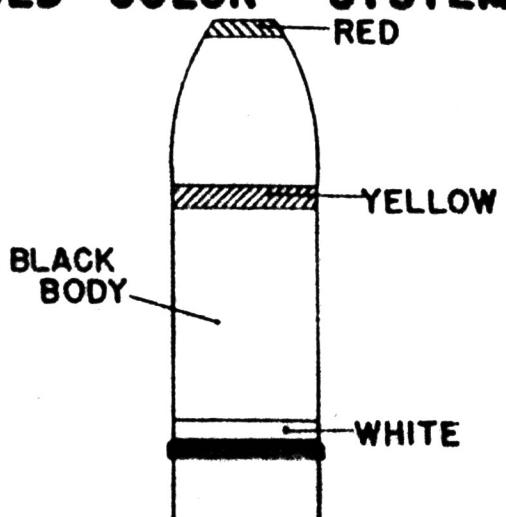
TYPE 94



NEW COLOR SYSTEM



OLD COLOR SYSTEM



HIGH EXPLOSIVE

TYPE 94

ARMY

7 CM. (75MM.)

WEIGHT OF PROJECTILE, FILLED (TNT) 6.02 Kg. (13.24 lb.)
 WEIGHT OF FILLING 0.81 Kg. (1.78 lb.)

FILLING:

- Standard: T.N.T. cast directly into lacquered cavity.
 Alternate: (1) - "ANGA" (Ammon. nitrate-RDX) (Documentary)
 Indicated by " 安瓦 " on projectile body.
 Alternate: (2) - "HEINT" (Trinitrophenetole). (Recovered).
 Indicated by " 平寧 " on projectile body.

DIMENSIONS:

Diameter at bore crest 75 mm (minus tolerance)
 Length overall w/o fuze 303 mm (11-15/16 in.)
 Length protruding from case 264 mm (10-3/8 in.)
 Width of rotating band 10 mm

FUZING:

- Type 88 Instantaneous Nose Fuze (Gun Type)
 Type 88 Short Delay Nose Fuze (Gun Type).

WEAPONS IN WHICH USED:

- *Type 41 Mountain Gun (Regimental Gun) . . Case, 7-1/4 in.
 *Type 94 Mountain Gun Case, 11-9/16 in.
 *Type 38 Field Gun Group Case, 11-9/16 in.
 Type 88 Field A.A. Gun Case, 19-9/16 in.
 Type 88 Field A.A. (Searchlight Gun) . . . Case, 19-9/16 in.
 Type 90 Field Gun. Case, 16-11/16 in.

Asterisks indicate weapons for which complete rounds have been observed or recovered. Others are derived from documents.

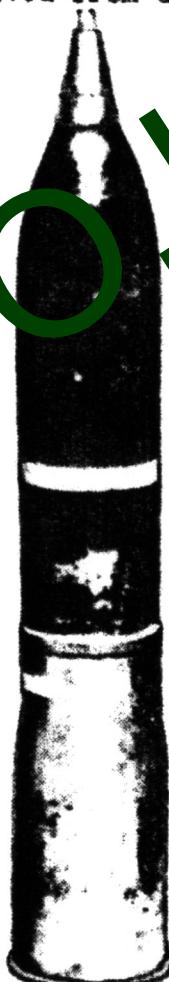
REMARKS:

In other designs essentially the same as the Type 94 are known:

- (1) H.E. - Type 10 Yr.
- (2) H.E. - Type 90

These have the same overall length as the Type 94, and have the same external form and general construction except for the following features:

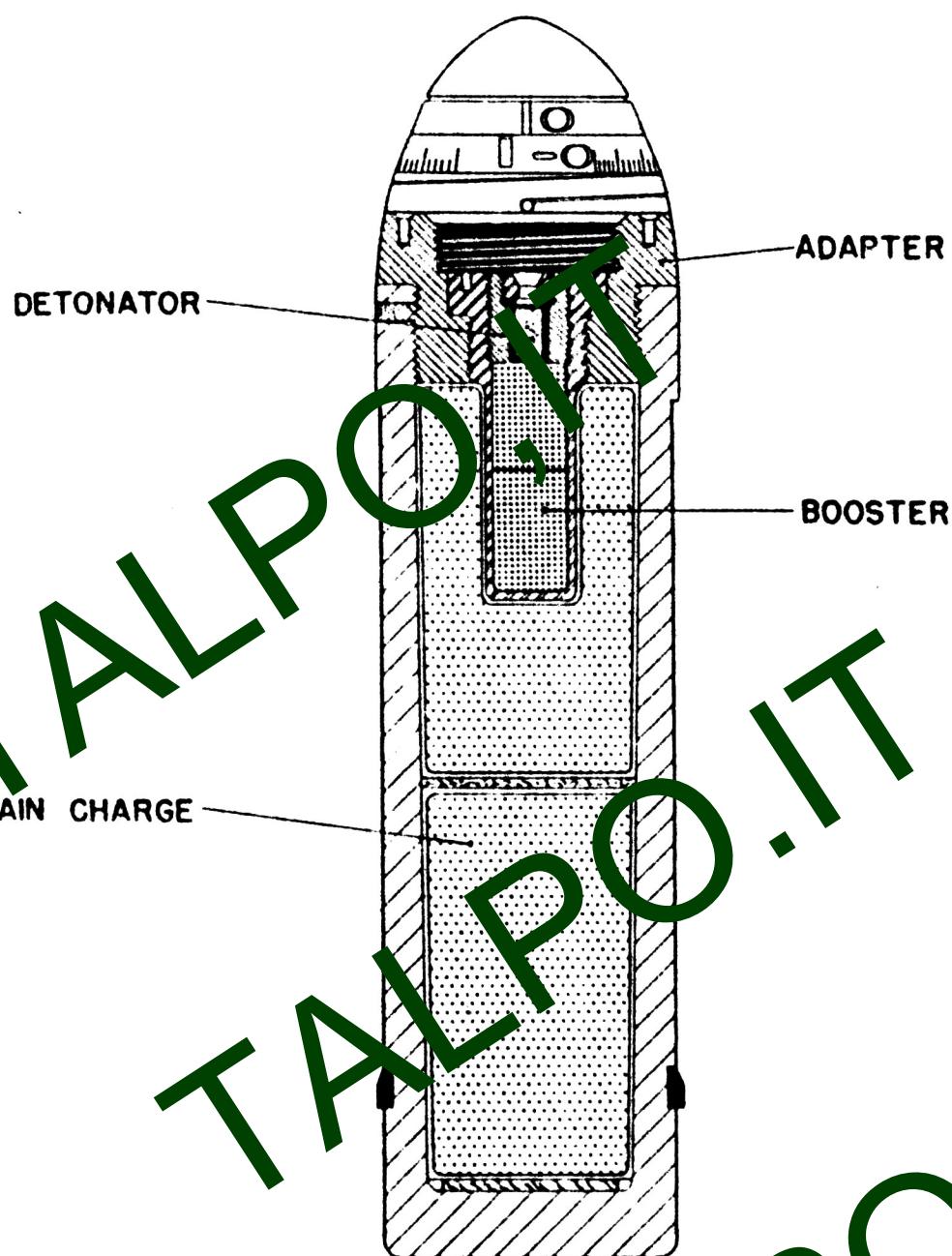
- (a) The explosive cavity does not taper in at base as in the Type 94 but is straight-sided.
- (b) The slight bout-tail present on the Type 94 is absent in the other designs.
- (c) Below the rotating band in the Type 10 Yr. design only, there is an annular groove into which the case is crimped.



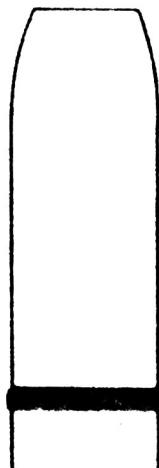
Assembled Round For
Type 41 Gun

ARMY 7 CM (75 MM.) HIGH EXPLOSIVE

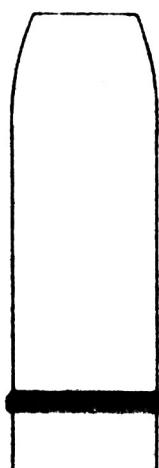
DESIGN "A"



NEW COLOR SYSTEM



OLD COLOR SYSTEM



**HIGH EXPLOSIVE
DESIGN "A"****ARMY****7 CM. (75MM.)**

WEIGHT OF PROJECTILE, FILLED 6.46 Kg. (14.2 lb.)
WEIGHT OF FILLING 0.625 Kg. (1.38 lb.)

FILLING:

"ONA" - a mixture of picric acid and dinitronaphthalene, in two preformed blocks.

DIMENSIONS:

Diameter at bourrelet 75 mm (minus tolerance)
Length overall w/o fuze No data
Length protruding from case No data
Width of rotating band No data

FUZING:

Type 3rd V. combination time and impact fuze.

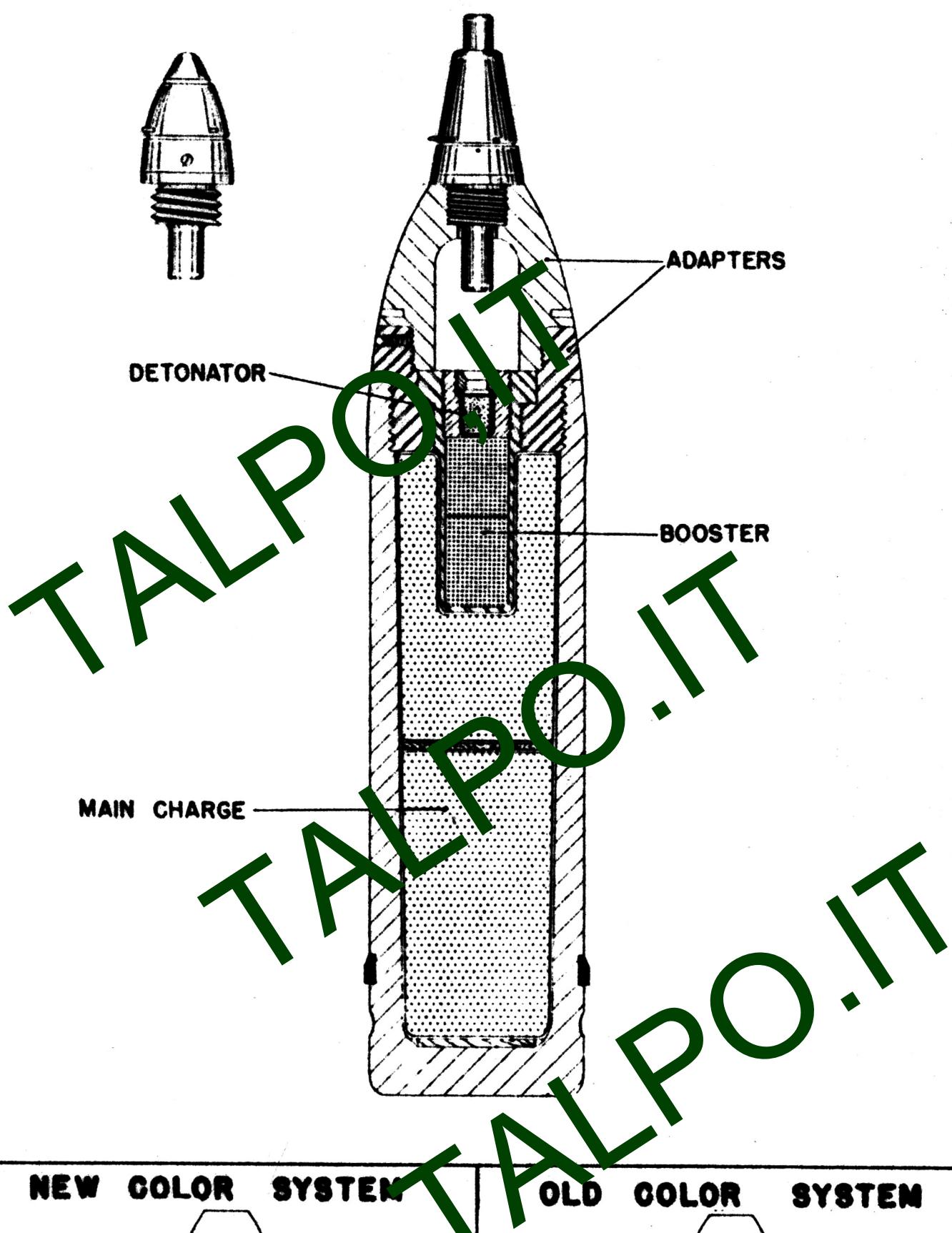
WEAPONS IN WHICH USED:

Type 42 Mountain Gun (Regimental Gun) . . Case, 7-1/4 in.
Type 34 Mountain Gun Case, 11-9/16 in.
Type 38 Field Gun Group Case, 11-9/16 in.

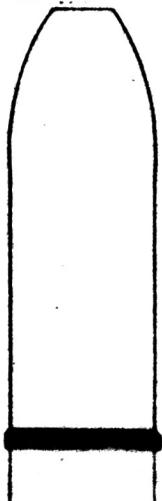
This projectile is known only from documents.

ARMY 7 CM. (75MM.) HIGH EXPLOSIVE

DESIGN "B"



NEW COLOR SYSTEM OLD COLOR SYSTEM



**HIGH EXPLOSIVE
DESIGN "B"****ARMY
7 CM. (75MM.)**

WEIGHT OF PROJECTILE, FILLED 6.61 Kg. (14.5 lb.)
WEIGHT OF FILLING 1.24 lb.

FILLING:

"ONA" - a mixture of picric acid and dinitronaphthalene in two preformed blocks wrapped as a single unit.

DIMENSIONS:

Diameter at bourrelet 75 mm (minus tolerance)
Length overall w/o fuze 12-3/8 in.
Length protruding from case w/o fuze . . . 10-7/8 in.
Width of rotating band No data

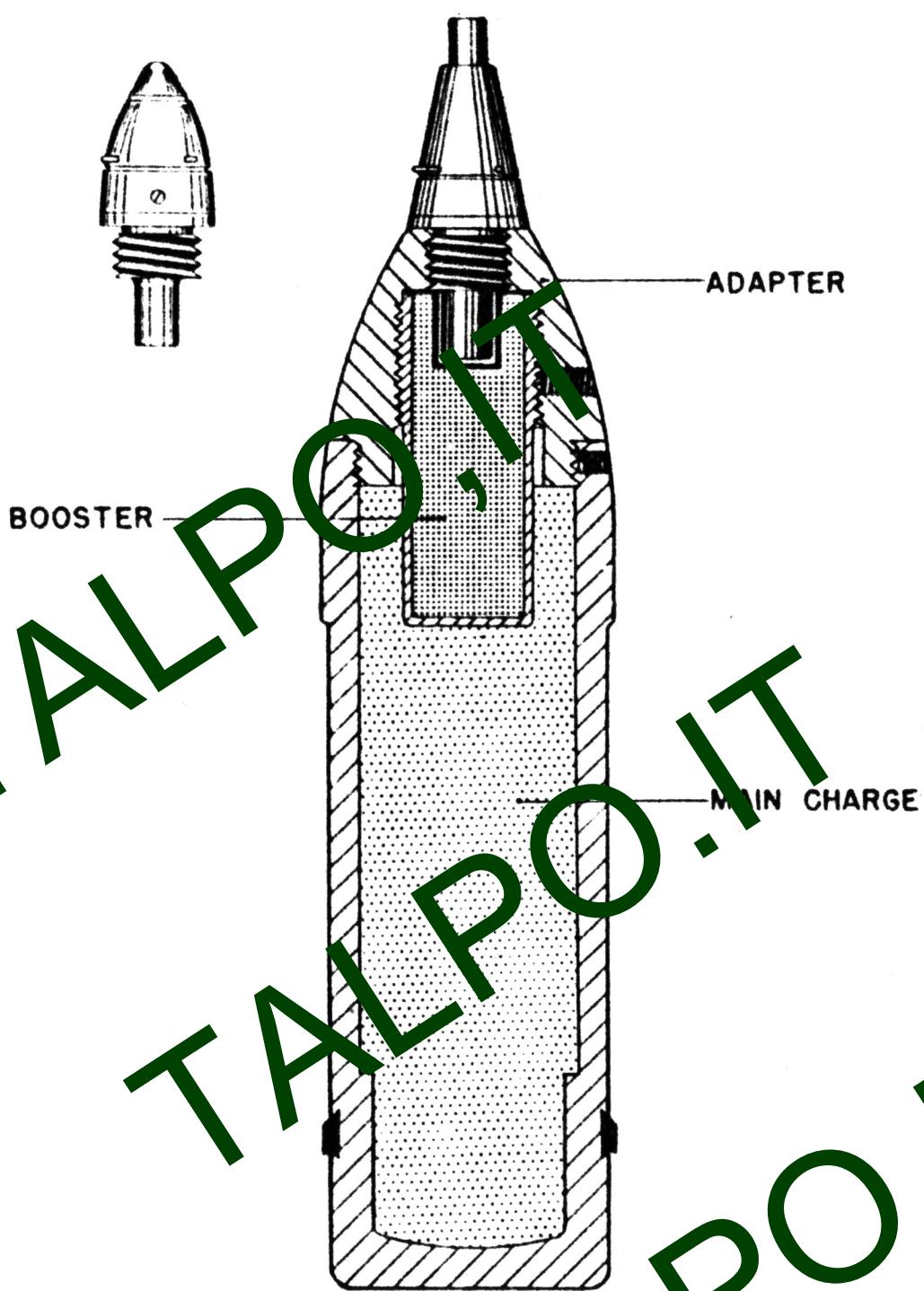
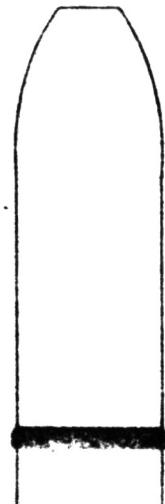
FUZING:

Type 8 Instantaneous Nose Fuze (Gun Type).
Type 8 Short Delay Nose Fuze (Gun Type).

WEAPONS IN WHICH USED:

Type 41 Mountain Gun (Regimental Gun) . . Case, 7-1/4 in.
Type 41 Mountain Gun Case, 11-9/16 in.
Type 38 Field Gun Group Case, 11-9/16 in.

Asterisk indicates recovery.

ARMY 7CM.(75MM) HIGH EXPLOSIVE (CONVERTED FROM SHRAPNEL)**TYPE 98 MODIFIED****NEW COLOR SYSTEM****OLD COLOR SYSTEM**

WHITE

BLACK BODY

RED

YELLOW

WHITE

**HIGH EXPLOSIVE (CONVERTED)
TYPE 98 MODIFIED****ARMY
7 CM. (75MM.)**

WEIGHT OF PROJECTILE, FILLED 4.5 kg. (9.9 lb.)
WEIGHT OF FILLING 0.95 kg. (2.1 lb.)

FILLING:

T.N.T. cast directly into lacquered cavity.

DIMENSIONS:

Diameter at bourrelet 75 mm (minus tolerance)
Length overall w/o fuze 279 mm (11 in.)
Length protruding from base 240 mm (9-1/2 in.)
Width of rotating band 10 mm

FUZING:

Type 88 Instantaneous Nose Fuze (Gun Type)
Type 88 Short Delay Nose Fuze (Gun Type) has not been
recovered in the projectile but is interchangeable with
the Type 88 Instantaneous and may be used.

WEAPONS IN WHICH USED:

Type 41 Mountain Gun (Regimental Gun) . . . Case, 7-1/4 in.
Type 38 Field Gun Group Case, 11-9/16 in.

Asterisk indicates weapon for which complete rounds have
been recovered or observed. Others are derived from
documents.

REMARKS:

The body of this projectile was designed for use as a shrapnel
projectile employing a large combination fuze. In the con-
verted form, the projectile is filled with T.N.T. instead
of the shrapnel filling of lead balls, and a large ogival
adapter permits the use of standard point-detonating fuze
and a standard R.C. booster.

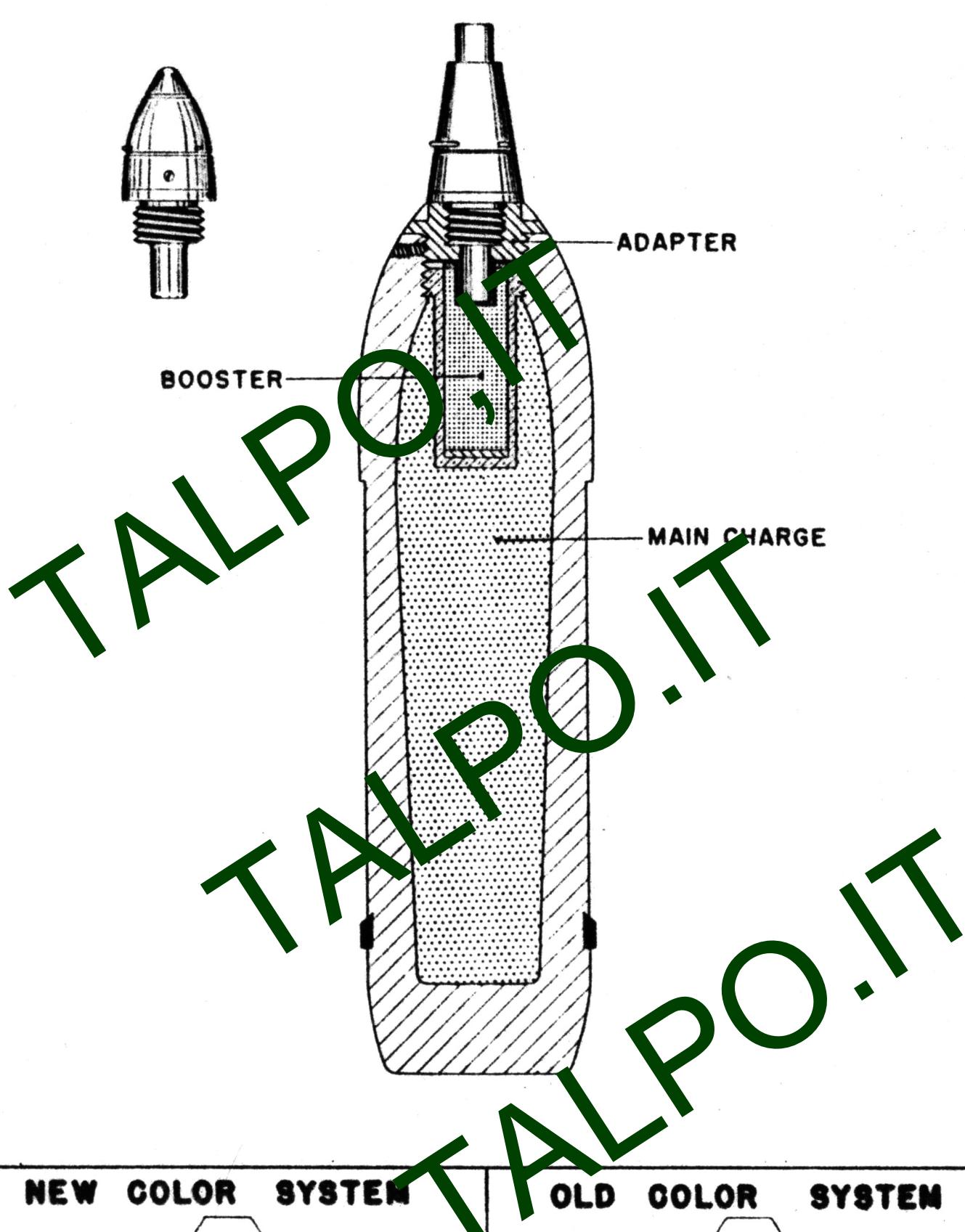
Distinctive marking for this projectile is attained by painting
the large adapter white.

Assembled Round For
Type 41 Gun

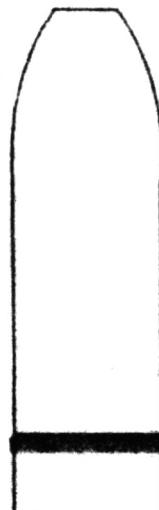


ARMY 7 CM.(75MM) H.E. SEMI-STEEL

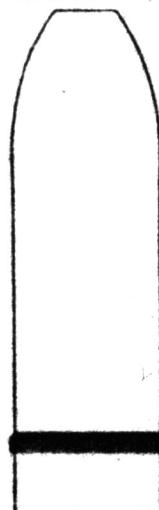
TYPE 90



NEW COLOR SYSTEM



OLD COLOR SYSTEM



**H.E. SEMI-STEEL
TYPE 90****ARMY****7 CM. (75MM.)**

WEIGHT OF PROJECTILE, FILLED 6.18 Kg. (13.7 lb.)
WEIGHT OF FILLING 0.42 Kg. (0.92 lb.)

FILLING:

Cast T.N.T.

DIMENSIONS:

Diameter at bourrelet 75 mm (minus tolerance)
Length overall w/o fuze No data
Length protruding from base(w/o fuze). 253 mm (9-15/16 in.)
Width of rotating band No data.

FUZING:

Type 88 Instantaneous Nose Fuze (Gun Type)
Type 88 Short Delay Nose Fuze (Gun Type)

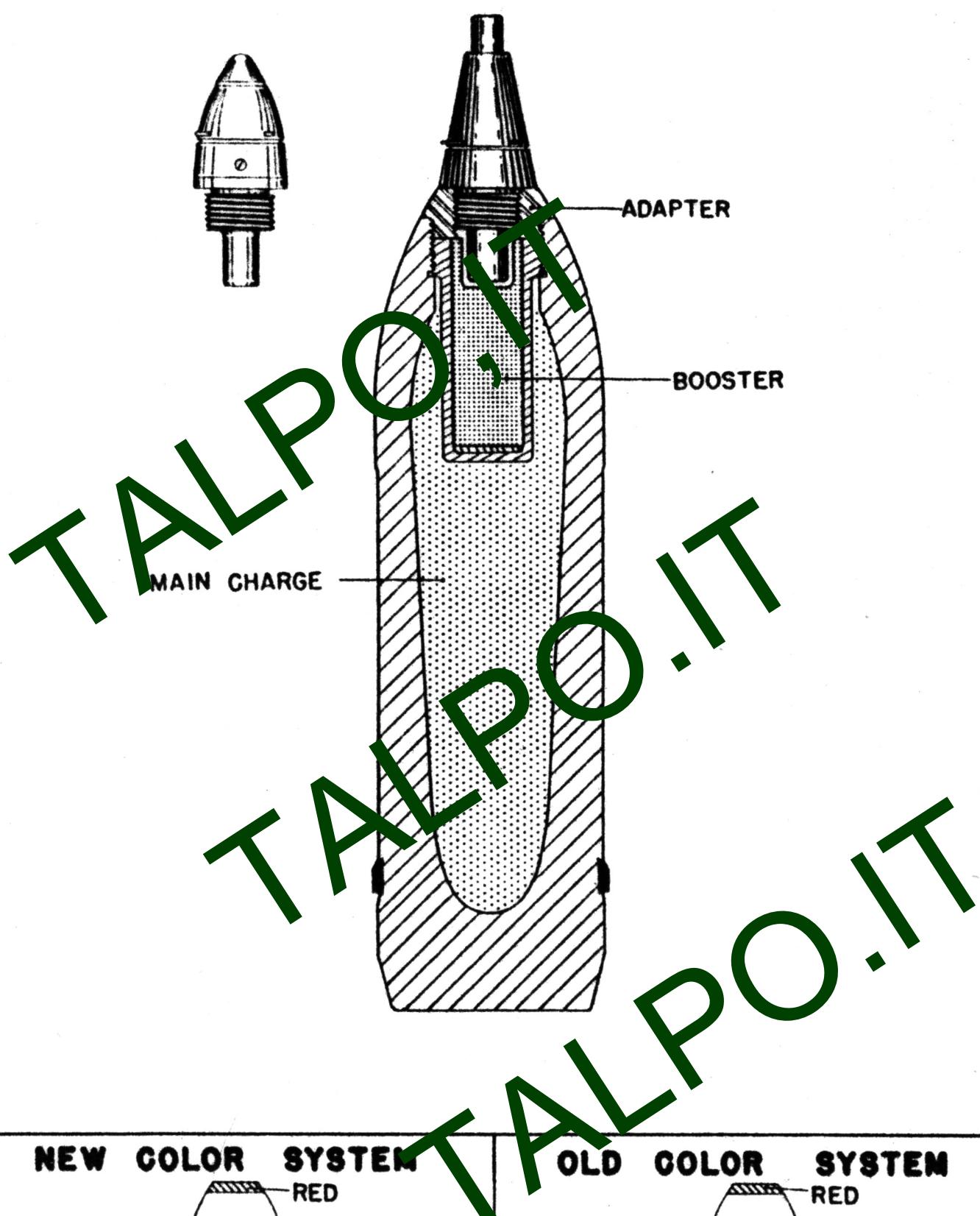
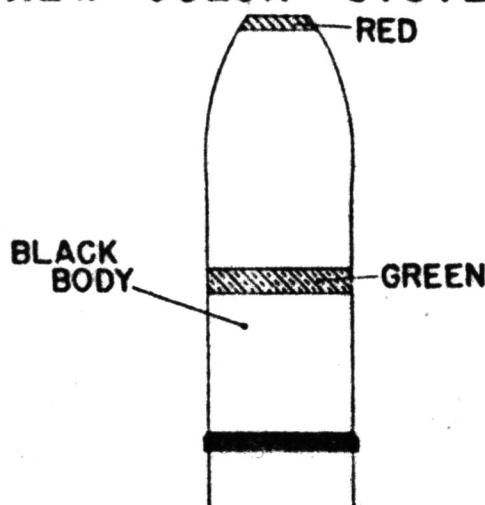
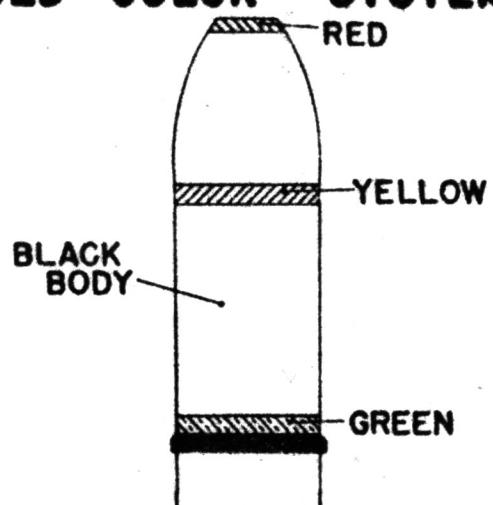
WEAPONS IN WHICH USED:

Type 41 Mountain Gun (Regimental Gun) . . Case, 7-1/4 in.
Type 90 Mountain Gun Case, 11-9/16 in.
Type 38 Field Gun Group Case, 11-9/16 in.
Type 90 Field Gun Case, 16-11/16 in.

This projectile is known from documents only.

REMARKS:

No specimens of this projectile have been recovered. It is presumed that the color marking would be identical to that given for the H.E. Semi-steel Type 97, which follows.

ARMY 7CM (75 MM.) H.E. SEMI-STEEL**TYPE 97****NEW COLOR SYSTEM****OLD COLOR SYSTEM**

**H.E. SEMI-STEEL
TYPE 97****ARMY****7 CM. (75MM.)**

WEIGHT OF PROJECTILE, FILLED 5.5 Kg. (12.1 lb.)
WEIGHT OF FILLING 0.45 Kg. (0.99 lb.)

FILLING:

T.N.T. cast directly into lacquered cavity.

DIMENSIONS:

Diameter at bourrelet 75 mm (minus tolerance)
Length overall w/o fuze 302 mm (11-7/8 in.)
Length protruding from base(w/o fuze) . . No data
Width of rotating band 10 mm

FUZING:

Type 86 Instantaneous Nose Fuze (Gun Type)
Type 88 Short Delay Nose Fuze (Gun Type)

WEAPONS IN WHICH USED:

* Type 41 Mountain Gun Case, 7-1/4 in.

Asterisk indicates weapon for which complete rounds have been recovered or observed. Others are derived from documents.

REMARKS:

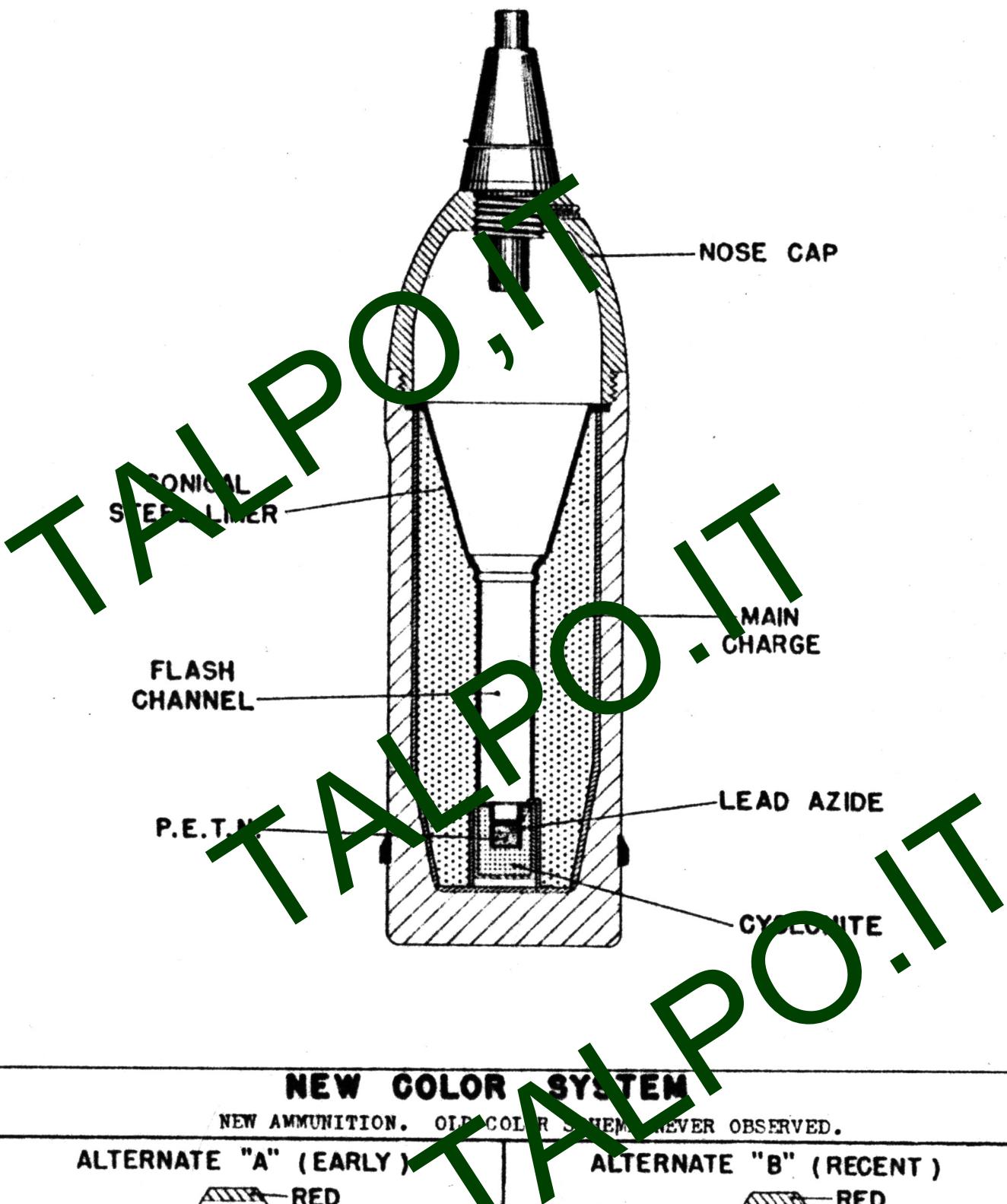
Because of the low tensile strength of the steel employed, the base must be extremely thick to withstand the forces in the gun.



Components of Complete Round For Type 41 Mountain Gun

ARMY 7 CM. (75 MM.) HOLLOW CHARGE

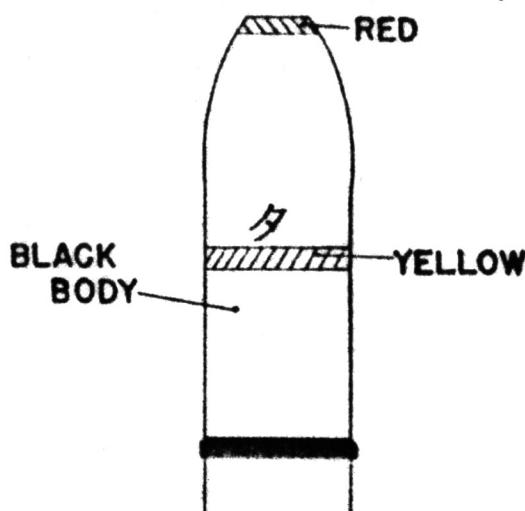
TYPE 2



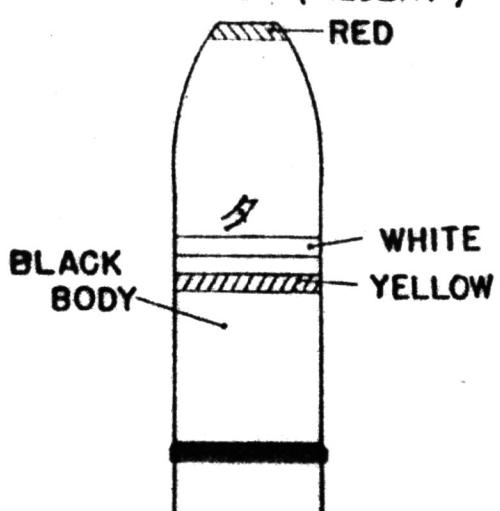
NEW COLOR SYSTEM

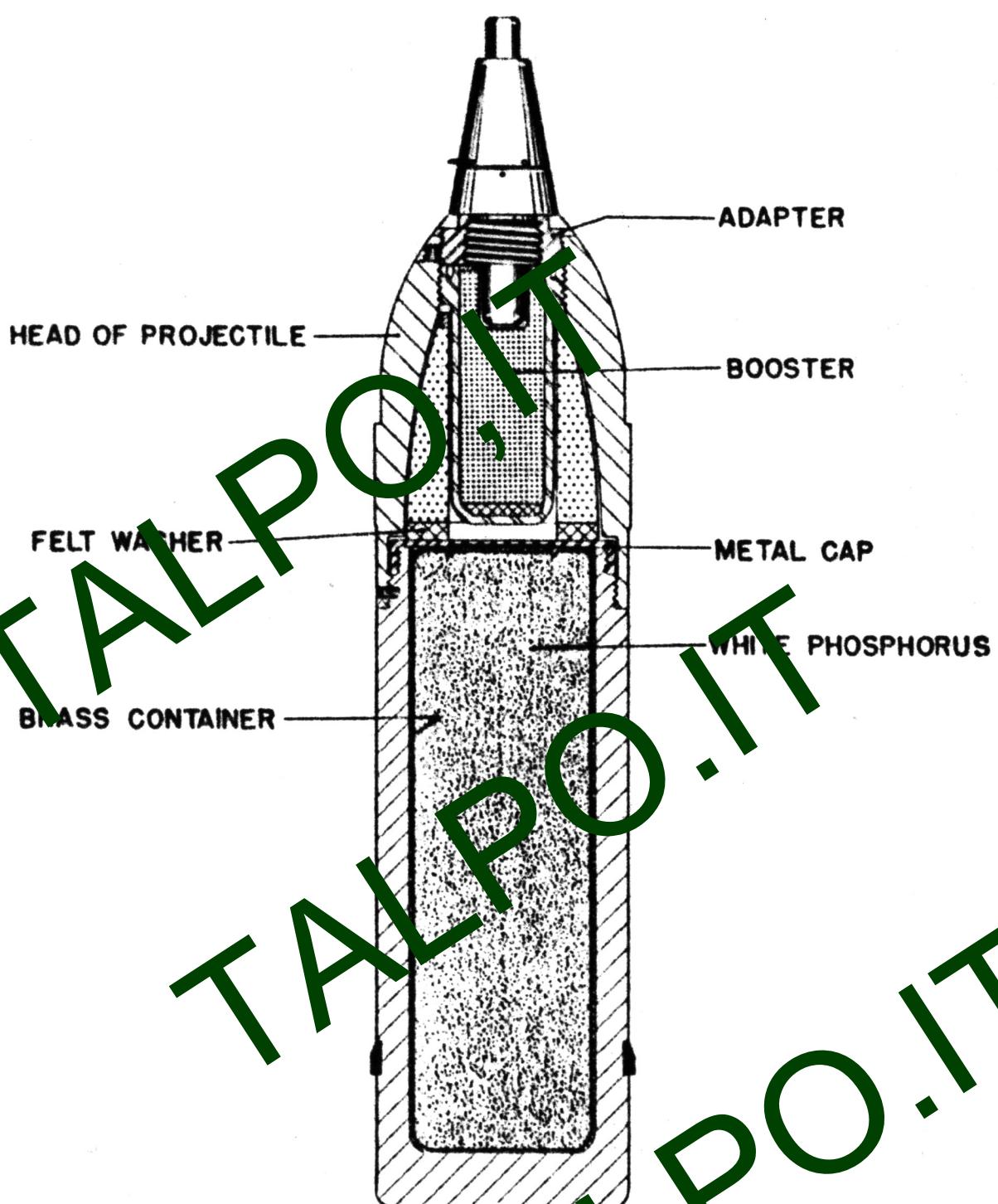
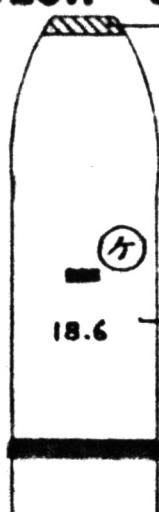
NEW AMMUNITION. OLD COLOR SCHEME NEVER OBSERVED.

ALTERNATE "A" (EARLY)



ALTERNATE "B" (RECENT)

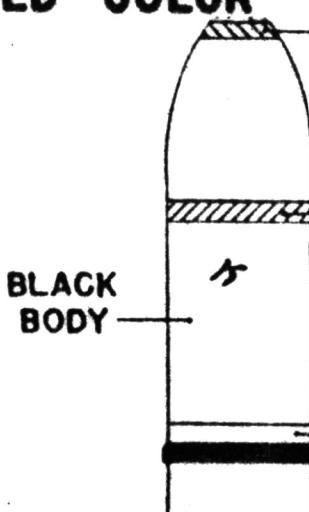


ARMY 7 CM. (75MM.) SMOKE (W.P.)**TYPE 90****NEW COLOR SYSTEM**

RED

WHITE BODY

18.6

OLD COLOR SYSTEM

RED

BLACK BODY

18

YELLOW

WHITE

SMOKE (W.P.)

TYPE 90

ARMY

7 CM. (75MM.)

WEIGHT OF PROJECTILE, FILLED 5.72 Kg. (12.60 lb.)

BURSTING CHARGE 0.10 Kg. (0.22 lb.)

"ONA" - a 50-50 mixture of picric acid and dinitronaphthalene
in a preformed, paper-wrapped block.

CHEMICAL AGENT 700 grams

White Phosphorus sealed in a soldered brass can which fits
into the lacquered cavity below the bursting charge.

DIMENSIONS:

Diameter at base	75 mm (minus tolerance)
Length overall w/o fuze	292 mm (11-1/2 in.)
Length projecting from case w/o fuze	253 mm (10 in.)
Width of rotating band	10 mm

FUZING:

Type 88 Instantaneous Nose Fuze (Gun Type)

WEAPONS IN WHICH USED:

Type 41 Mountain Gun (Regimental Gun)	Case, 7-1/4 in.
*Type 94 Mountain Gun	Case, 11-9/16 in.
Type 38 Field Gun Group	Base, 11-9/16 in.
Type 90 Field Gun	Case, 16-11/16 in.

Asterisk indicates weapon for which complete rounds have been recovered or observed. Others are derived from documents.

SCREENING CAPACITY: (Japanese figures)

Height - 20 meters
Width - 20 meters
Duration - one to two minutes

Adapter



Sealing Cup

Nose Piece



Booster Well

Metal Cap



Sealed Container Of W.P.

Main Body

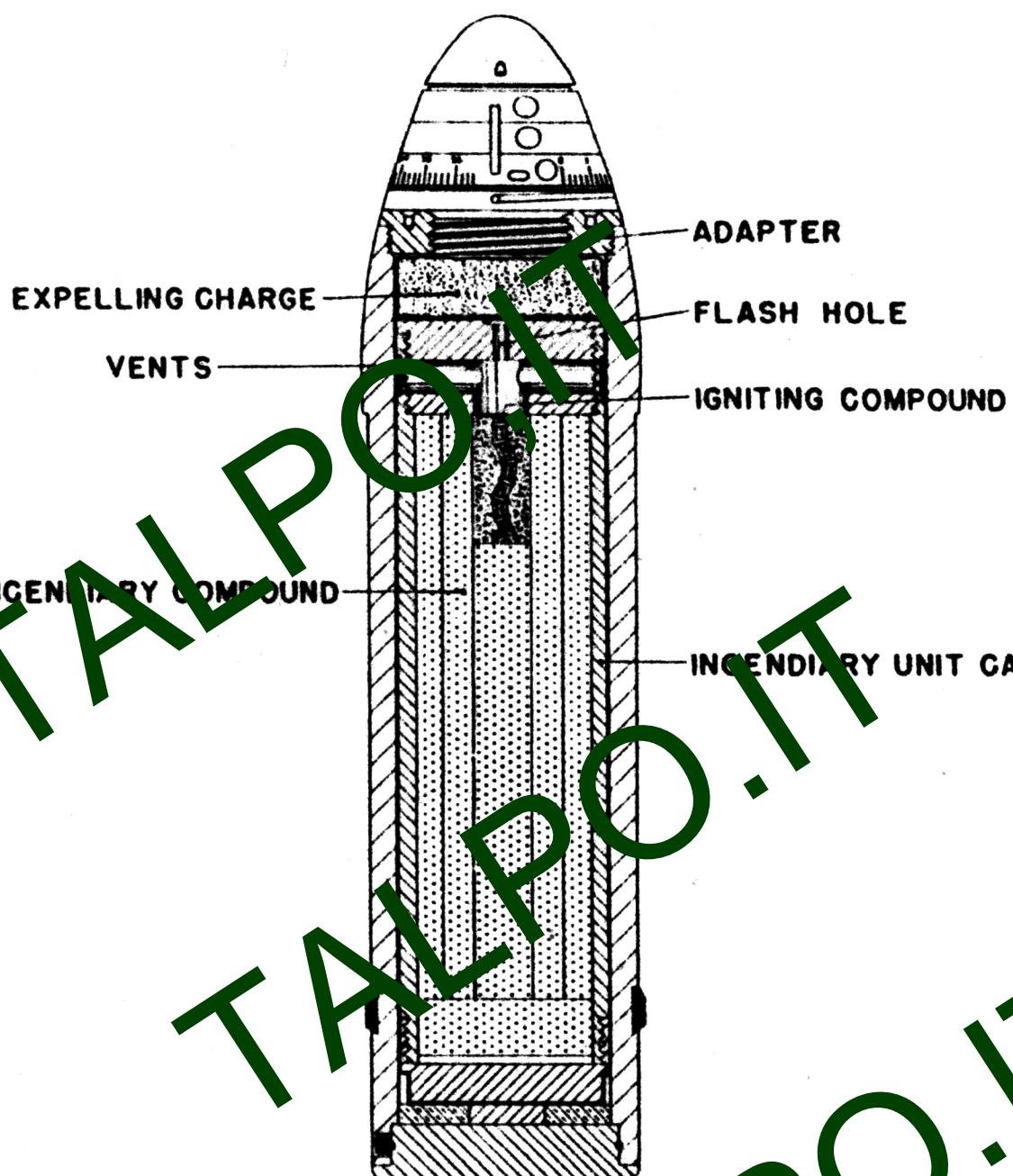


Components Of Projectile

Assembled Round For
Type 94 Gun

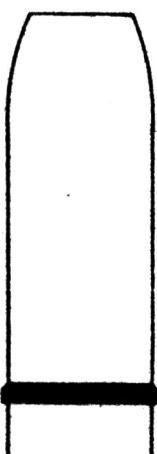
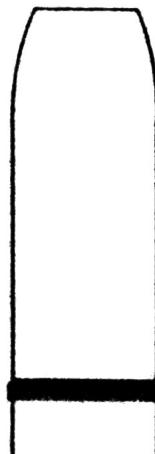
ARMY 7 CM. (75MM.) INCENDIARY (NON-LIQUID)

TYPE 90



NEW COLOR SYSTEM

OLD COLOR SYSTEM



**INCENDIARY
TYPE 90****ARMY****7 CM. (75MM.)**

WEIGHT OF PROJECTILE, FILLED, with fuze 6.94 Kg. (15.3 lb.)
WEIGHT OF EXPELLING CHARGE 20 grams
WEIGHT OF INCENDIARY COMPOSITION : 530 grams

EXPELLING CHARGE: Black Powder

INCENDIARY COMPOSITION: Not determined.

DIMENSIONS:

Diameter at bourrelet 75 mm (minus tolerance)
Length of projectile w/o fuze No data
Length protruding from case (w/o fuze) . . . 213 mm (8-3/8 in.)
Width of rotating band No data

FUZING:

Type 5th Year model C1 combination fuze (gun)

WEAPONS USED IN:

Type 41 Mountain Gun Case, 7-1/4 in.
Type 24 Mountain Gun Case, 11-9/16 in.
Type 90 Field Gun Group Case, 11-9/16 in.
Type 90 Field Gun. Case, 16-11/16 in.

This projectile is known only from captured drawings and documents.

OPERATION:

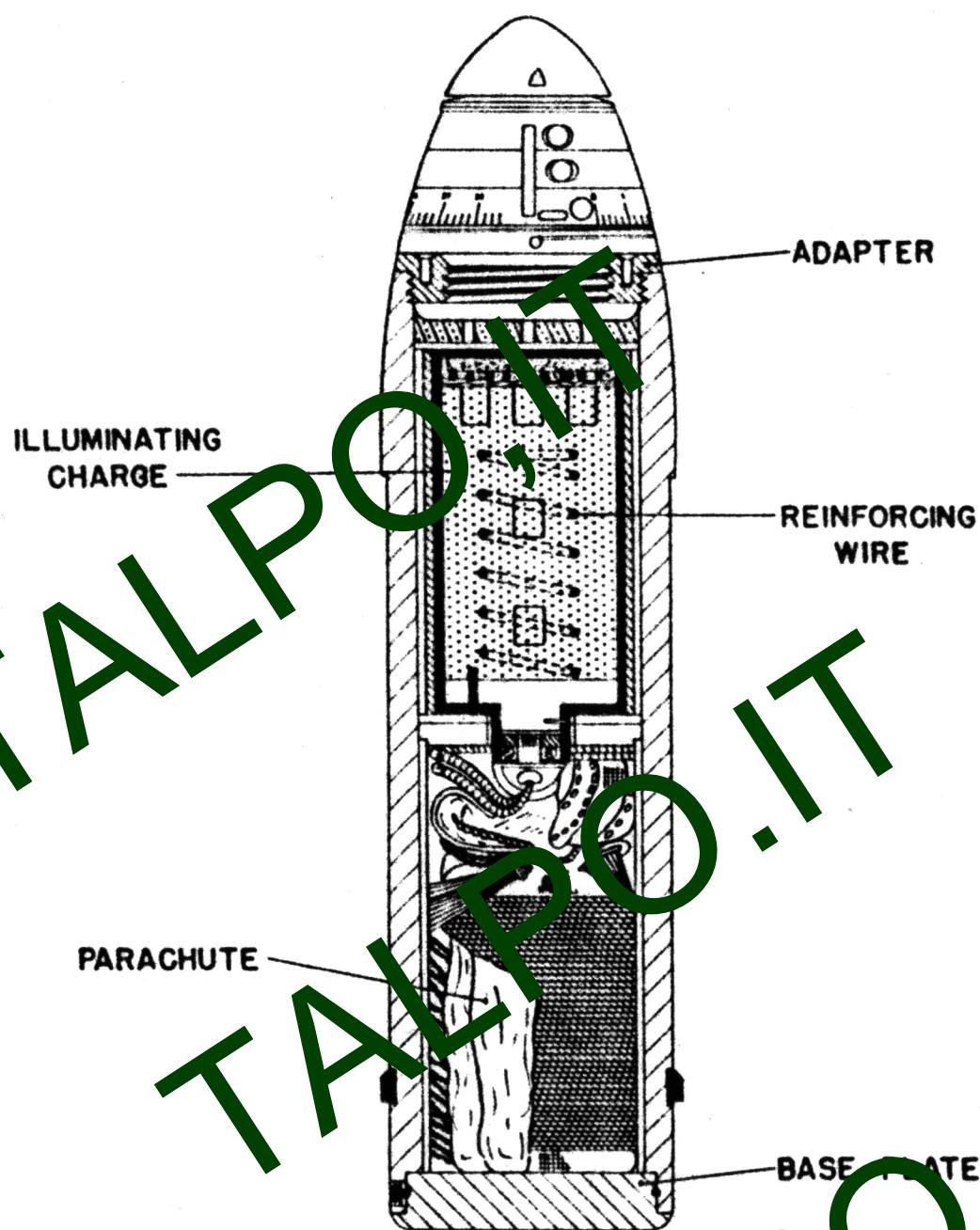
After a pre-set time or on impact, the combination fuze fires the expelling charge. This forces the incendiary unit out the base of the projectile and at the same time ignites it. Information pertaining to the incendiary unit is lacking, but the burning compound is apparently a dry composition.

REMARKS:

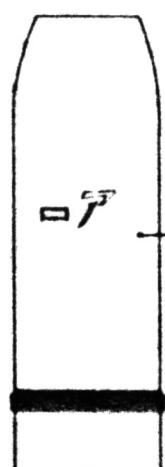
No projectiles of this type have been recovered. According to the new marking system, outlined in captured documents, this projectile may be expected to be painted as follows: Yellow body with the symbol  stencilled near the middle.

ARMY 7 CM. (75 MM.) ILLUMINATING

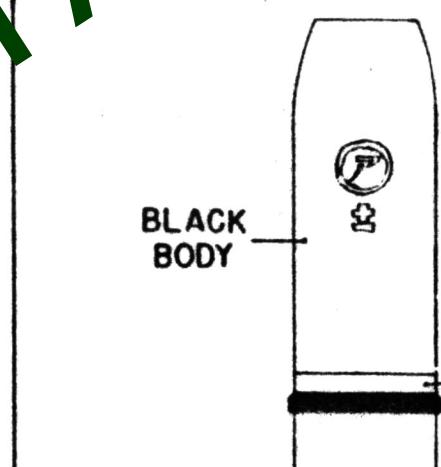
TYPE 90



NEW COLOR SYSTEM OLD COLOR SYSTEM



RED BODY



BLACK BODY

WHITE

ILLUMINATING
TYPE 90

ARMY

7 CM.(75MM.)

WEIGHT OF PROJECTILE, FILLED (Fuzed) 5.65 Kg. (12.44 lb.)
WEIGHT OF ILLUMINATING COMPOUND 0.25 Kg. (0.55 lb.)

FILLING:

Expelling Charge	- Black Powder.
Illuminating Compound	- Not known. (A common illuminating compound used by the Japanese is a mixture of barium nitrate, magnesium and aluminum.)

DIMENSIONS:

Diameter at bore	75.0 mm (minus tolerance)
Length overall /o fuze	No data
Length protruding from case	210.0 mm (8-1/4 in.)
Width of retaining band	No data

FUZING:

Type 5th Year combination fuze

WEAPONS IN WHICH USED:

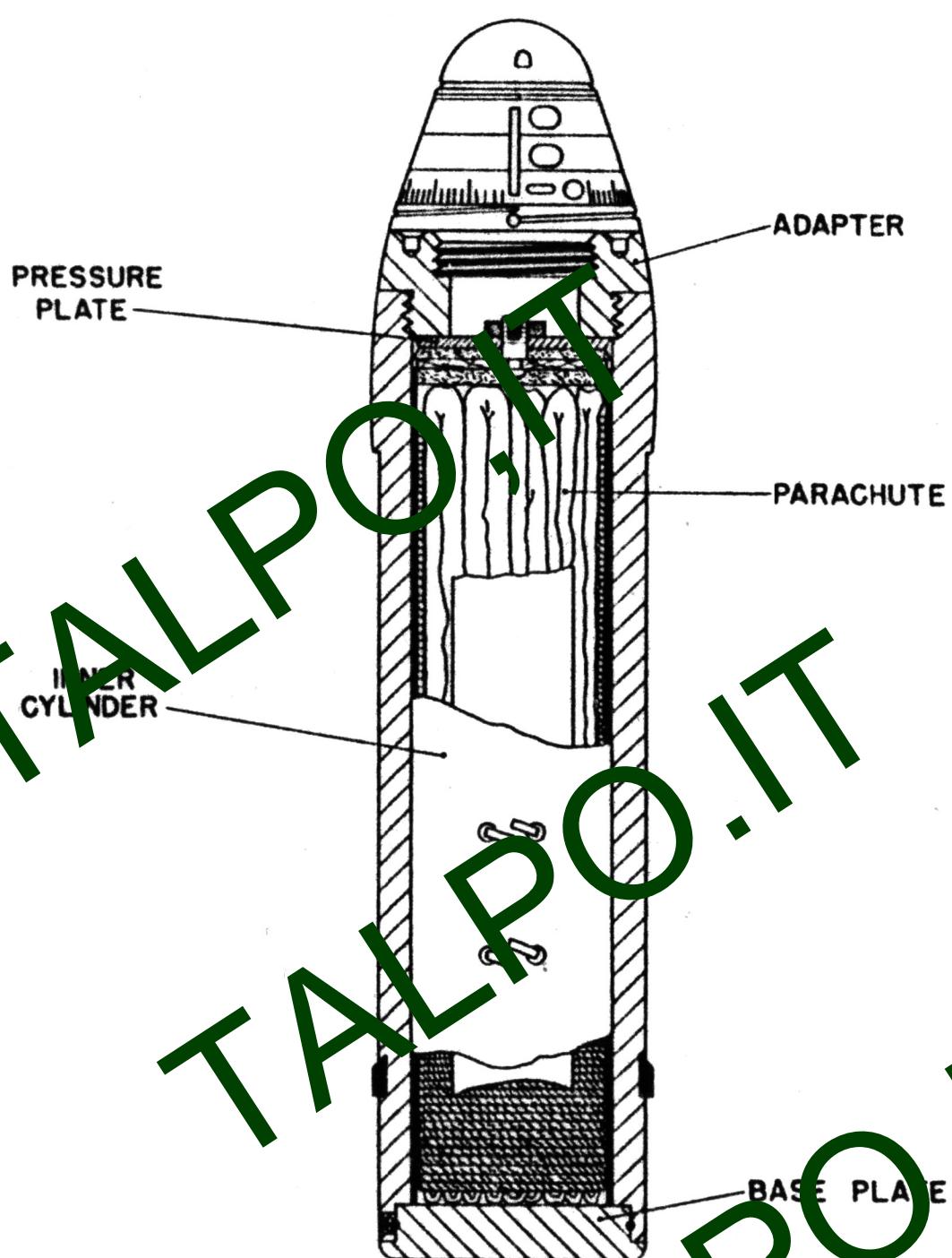
Type 41 Mountain Gun	Case, 7-1/4 in.
Type 38 Field Gun Group	Case, 11-9/16 in.
Type 90 Field Gun	Case, 6-11/16 in.
Type 94 Mountain Gun	Case, 11-9/16 in.

REMARKS:

- (1) Japanese figures state that this illuminating charge burns with an intensity of approximately 90,000 candle-power, for a period of 20 seconds.
- (2) No projectiles of this type have been recovered. According to the marking system, outlined in captured documents, this projectile may be expected to be painted as follows: Red body with a symbol  stencilled near the middle.

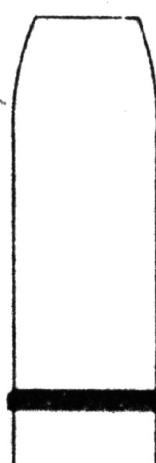
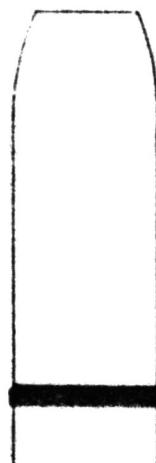
ARMY 7CM. (75MM) TARGET

TYPE II YR. (?)



NEW COLOR SYSTEM

OLD COLOR SYSTEM



**TARGET
TYPE II YR. (?)****ARMY****7 CM. (75MM.)**

WEIGHT OF PROJECTILE, FILLED (Fuzed) 5.04 Kg. (11.10 lb.)

FILLING:

Folded parachute and shrouds in cardboard cylinder.

DIMENSIONS:

Diameter at bourrelet	75.0 mm (minus tolerance)
Length overall w/o fuze	No data
Length protruding from case	No data
Width of rotating band	No data

FUZING:

Type 10th Year A.A. time (weak)

WEAPONS IN WHICH USED:

Type 11 . . . Field A.A. Gun	Case length not known
Type 88 Field A.A. Gun	Case, 19-9/16 in.

REMARKS:

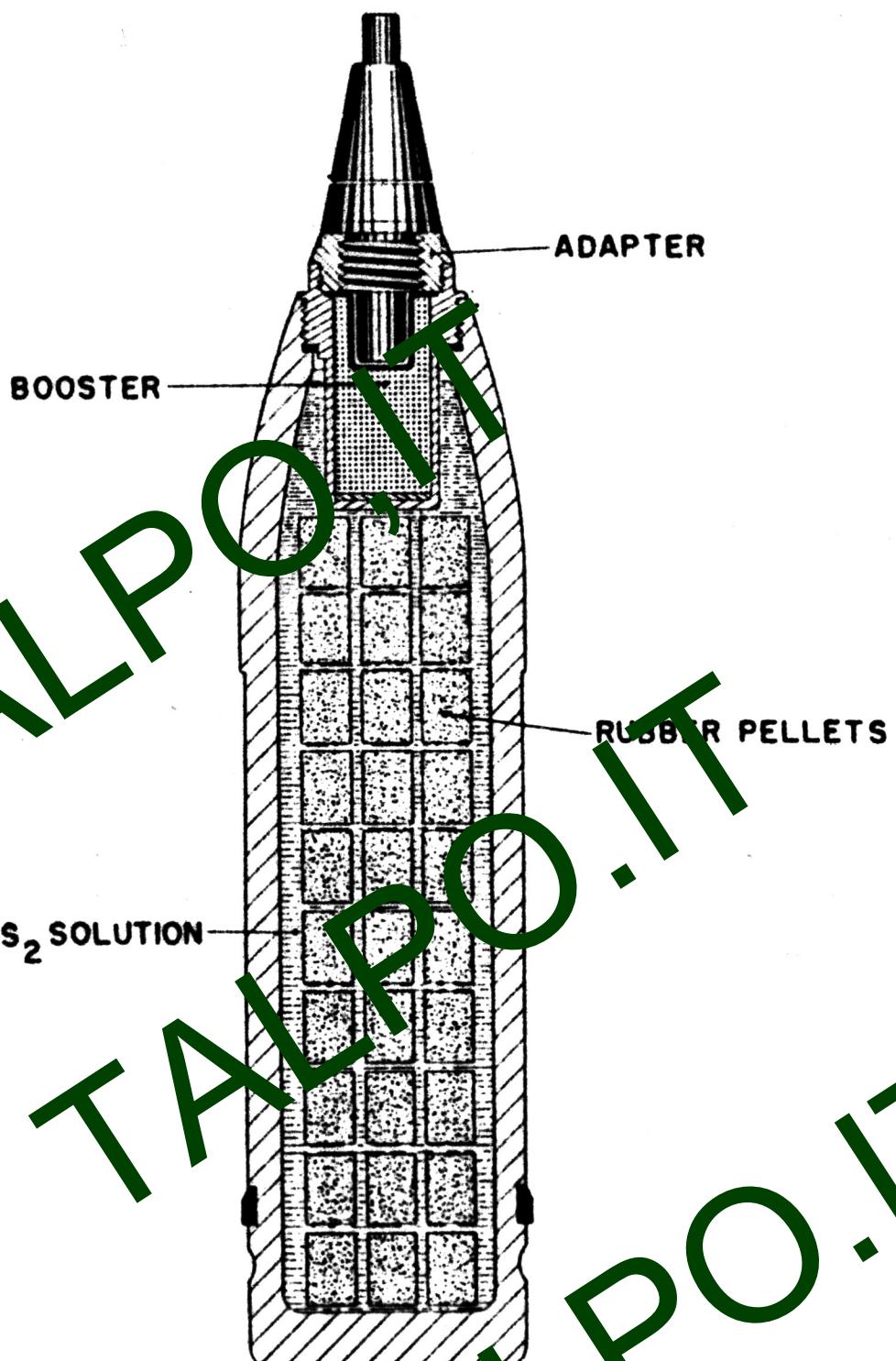
Projectiles designated "Target" in Japanese Army nomenclature are believed to be actual parachute-suspended aerial targets for anti-aircraft practice. The drawings and the data given here are from captured documents. Though operation was not described, it is presumed that the time fuze ejects the parachute at the desired altitude and that the projectile body remains attached to weight. The descending parachute then serves as a target for A.A. fire. No ejection charge other than the magazine charge in the fuze is indicated in the document, and the fuze is designated as "weak". It is assumed that this arrangement is intended to decrease the force of explosion to the minimum necessary to eject the parachute.

COLOR MARKING:

No projectile of this type have been recovered. According to the new marking system, outlined in captured documents, this projectile may be expected to be painted as follows: Black body, no color bands, the symbol  stenciled near the middle of the body.

ARMY 7 CM. (75MM.) LIQUID INCENDIARY

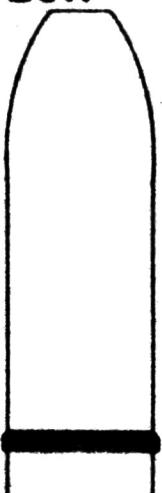
Type Undetermined



NEW COLOR SYSTEM

OLD COLOR SYSTEM

RED

GRAY
BODY

LIQUID INCENDIARY

Type Undetermined

ARMY

7 CM. (75MM.)

WEIGHT OF PROJECTILE, FILLED (Fuzed) 5.36 Kg. (11.75 lb.)

BURSTING CHARGE:

A standard 40-gram booster (fine granular picric acid in paper container) serves as the only bursting charge.

INCENDIARY FILLING:

A solution of White Phosphorus (WP) and rubber pellets in carbon disulphide (CS₂).

Liquid 0.30 Kg. (0.66 lb.)
Rubber Pellets 0.32 Kg. (0.70 lb.)

DIMENSIONS:

Diameter at shoulder 75 mm (minus tolerance)
Length overall w/o fuze and adapter 300 mm (11-13/16 in.)
Length protruding from case 242 mm (9-1/2 in.)
Width of rotating band 10 mm

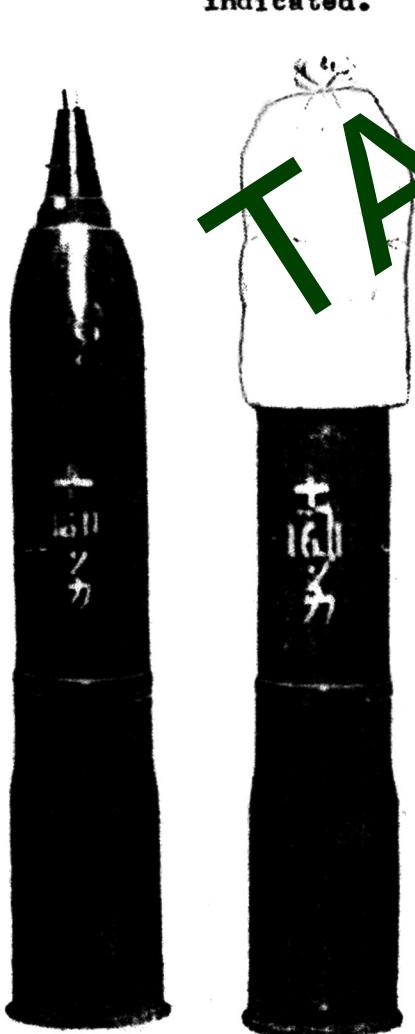
FUZE NUMBER:

Type 88 Instantaneous Fuze (Gun Type)

WEAPON IN WHICH USED:

*Type 41 Mountain Gun or Regimental gun case, 7-1/4 in.

This projectile has been found in ammunition for the gun indicated.



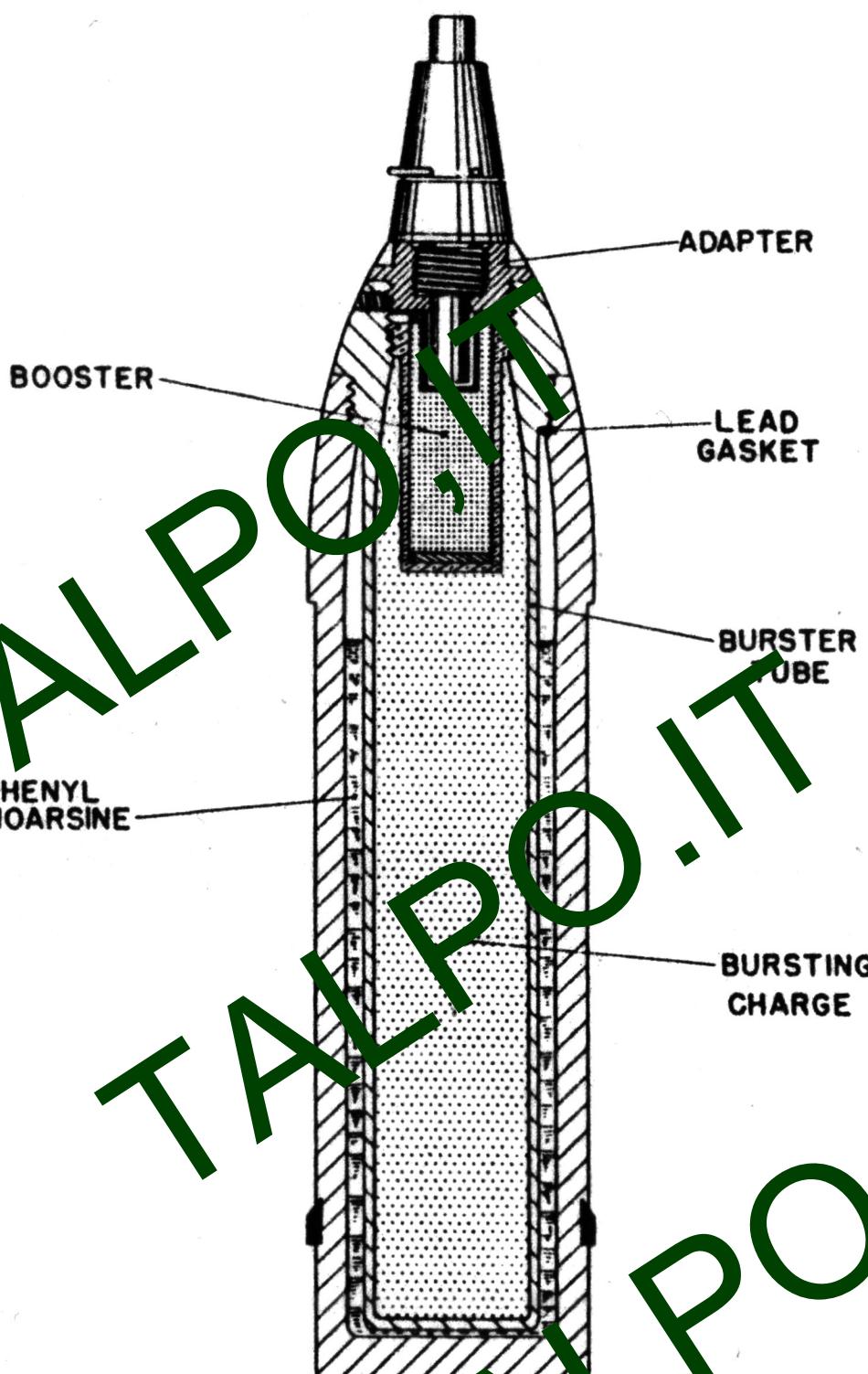
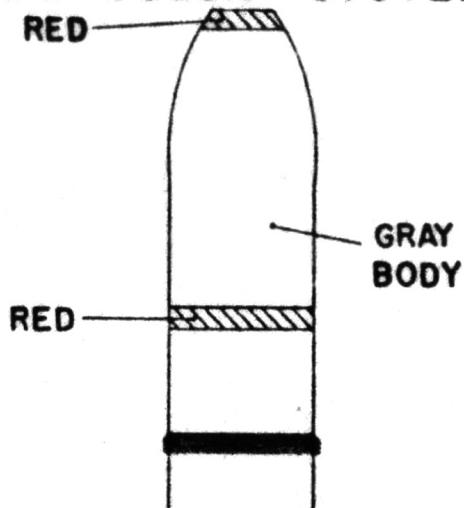
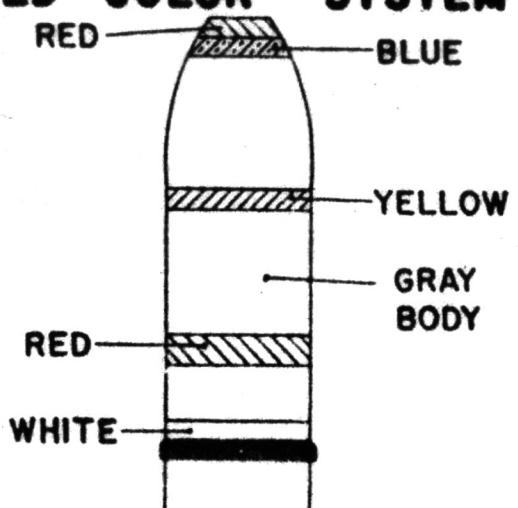
Assembled Round For
Type 41 Gun

REMARKS:

Because of the danger of leaking phosphorus solution, these projectiles are shipped with a bag of clay-like, diatomaceous earth tied around the nose end. It is presumed that this is intended as an absorbent should leakage occur.

ARMY 7CM. (76 MM) VOMIT GAS

Type Undetermined

**NEW COLOR SYSTEM****OLD COLOR SYSTEM**

VOMIT GAS

Type Undetermined

ARMY**7 CM. (75MM.)**

WEIGHT OF PROJECTILE, FILLED (w/o fuze) 6.00 Kg. (13.25 lb.)

BURSTING CHARGE:

A mixture of 70% trinitrotoluene and 30% naphthalene.
(Naphthalene is probably used to decrease sensitivity of
T.N.T.) 0.46 Kg. (1.02 lb.)Liquid Filling:
Crude diphenylcyanarsine 0.17 Kg. (0.37 lb.)

DIMENSIONS:

Diameter at bourrelet 75.0 mm (minus tolerance)
Length overall (w/ fuze) 305.0 mm (12 in.)
Length protruding from case 265.0 mm (10-7/16 in.)
Width of rotating band 9.0 mm (3/8 in.)

FUZING:

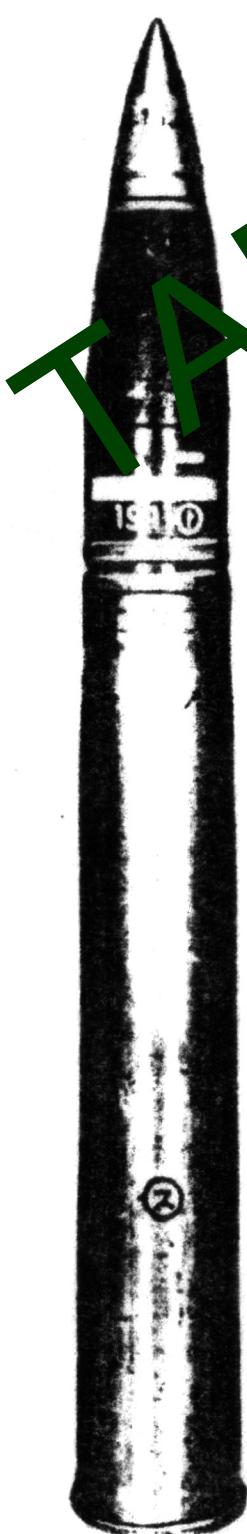
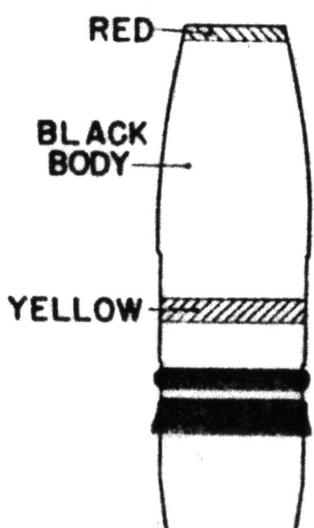
Presumably Type 88 Instantaneous Fuze

WEAPON IN WHICH USED:

Type 41 Regimental or Mountain Gun . . Cal. 7-1/4 in.

ARMY 8 CM.(88MM.) H.E.-A.A. LONG POINTED

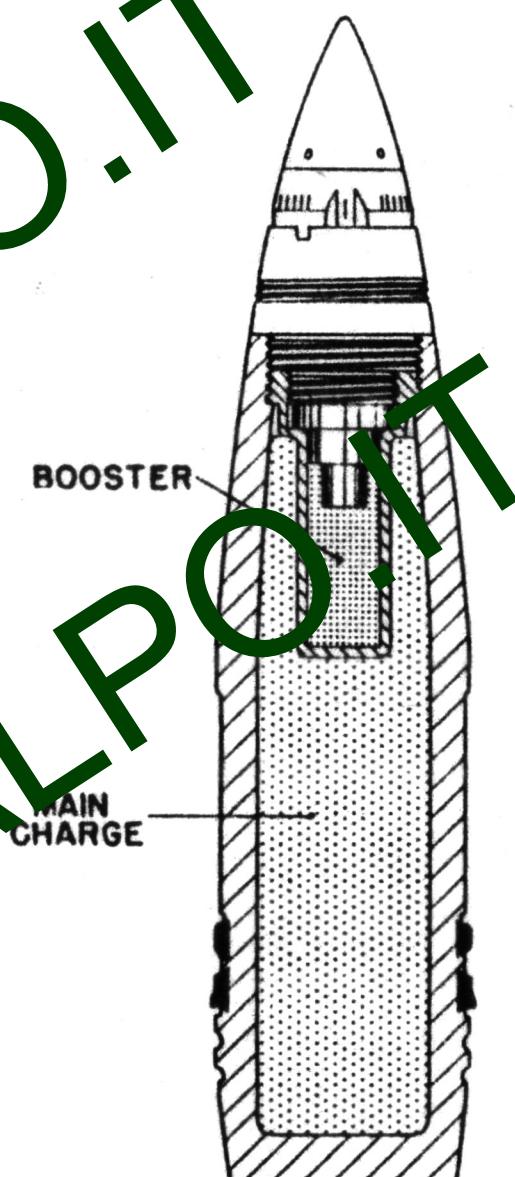
COLOR DIAGRAM
NEW COLOR SYSTEM ONLY



COMPLETE
ROUND



CASE:
DRAWN BRASS



PROJECTILE
TYPE 100

**H.E.-A.A. LONG POINTED
TYPE 100 PROJECTILE****ARMY****8 CM* (88MM.)**

WEIGHT OF COMPLETE ROUND Not available.
WEIGHT OF COMPLETE PROJECTILE, w/fuze 19.6 lb. (approx.)
WEIGHT OF EMPTY PROJECTILE (with auxiliary
fuze) . . . 7.4 Kg. (16.3 lb.)

WEIGHT OF FILLING 0.9 Kg. (2 lb.)*

FILLING T.N.T.*

DIMENSIONS:

Diameter at bourrelet	88 mm (minus tolerance)
Length of projectile w/o fuze	298 mm (11-11/16 in.)
Length of propellant case	570 mm (22-3/8 in.)
Length of assembled round w/o fuze	804 mm (31-9/16 in.)
Diameter of base of case	100 mm (4 in.)
Width of rotating band: Forward	8 mm (5/16 in.)
After	8 mm (5/16 in.)
Distance between rotating bands	6 mm (1/4 in.)

PROPELLANT No. 16 Cylindrical 2330 grams (5.1 lb.)*

FUZING

Type 100 Mechanical Time Fuze (combination time and impact) with an auxiliary detonating fuze. The auxiliary fuze is the same as that used in the 7 cm (75 mm) H.E.-A.A. Projectile Type 90.

***REMARKS:**

This ammunition is for a gun which is believed to have been modeled after one of the German 88 mm guns. Though the ammunition has been recovered (Saipan), none of the guns have been found. The dimensions of the propellant case correspond closely to the German 88, though it could not be determined that they are identical. The rotating bands and the general form of the projectile also appear to follow German design.

Nomenclature and data marked with asterisks are derived from a Japanese document in which they are listed for a gun designated "Type 99 8 cm. A.A. gun". The remaining information is derived from a recovered specimen which was examined after being inerted. The diameter of the bourrelet of the recovered projectile measures 88 mm (minus tolerance) and would logically be designated "9 cm" in Japanese nomenclature. However, the recovered ammunition is believed to be for the same gun referred to in documents as "8 cm", and the Japanese nomenclature is used in this publication.

TALPOIT
TALPOIT
TALPOIT

Pages 173 - 200 (inclusive)
are omitted in the initial
publication of "Japanese
Ammunition" to allow for the
inclusion at a later date of
sizes of Army ammunition above
88 mm.

SECTION III

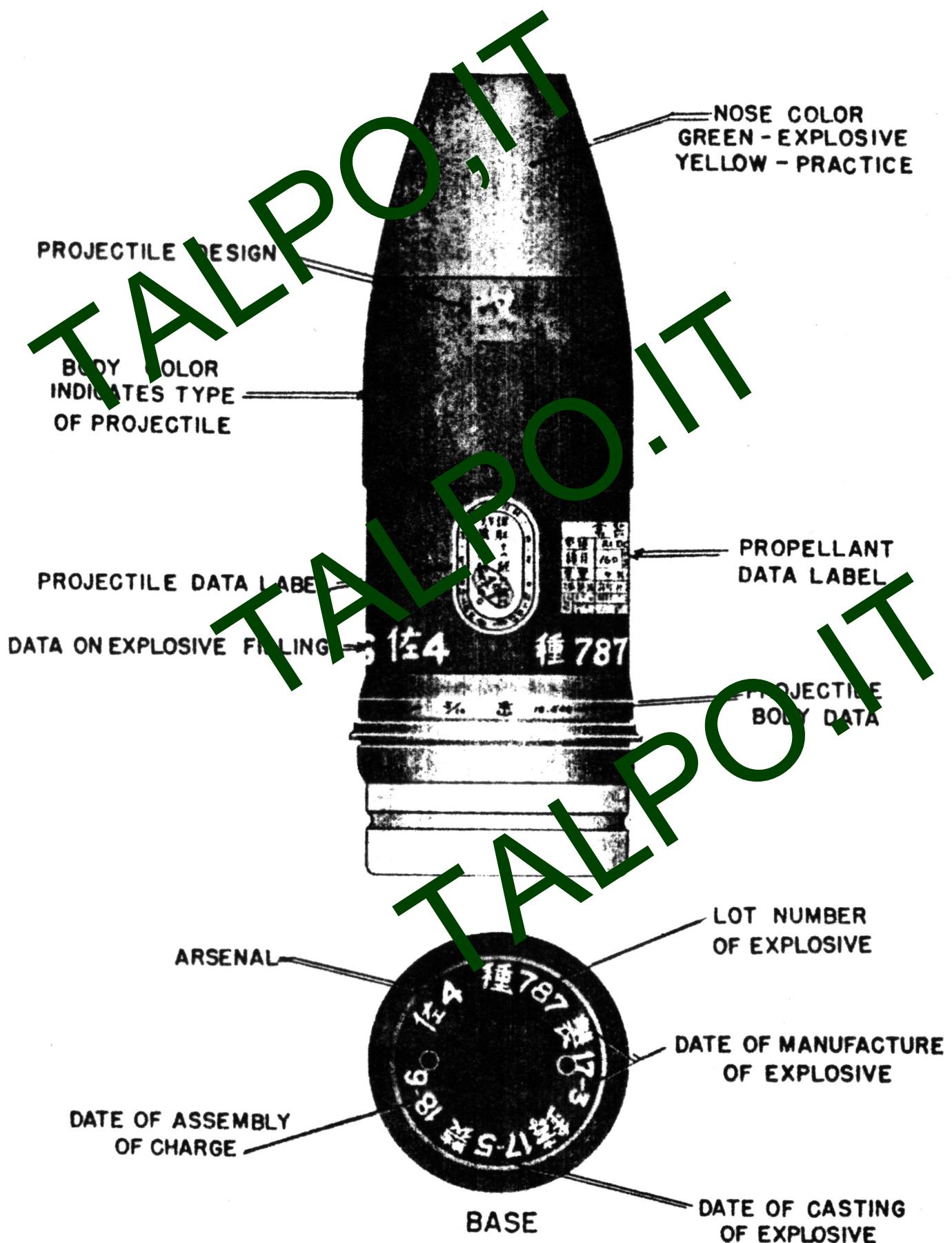
TALPOIT
NAVY AMMUNITION
TALPOIT
TALPOIT

MARKING OF JAPANESE NAVY PROJECTILES

I. LARGE CALIBER SYSTEM - PROJECTILES OVER 40 MM.

The Navy system of marking projectiles for all sizes over 40 mm is relatively simple and reasonably consistent. Some discrepancies still exist between documentary evidence and data from recovered specimens.

The following system applies to projectiles of over 40 mm, but carries over in part into the marking of smaller caliber ammunition.



BODY COLOR

The main color of the projectile body indicates the basic type of shell.

TYPE OF PROJECTILE	PRESCRIBED COLOR (Documentary)	COLOR AS RECOVERED
Japanese "Ordinary"	Maroon	Maroon
Armor-Piercing	White	White
Illuminating	Blue	Red
Shrapnel	Gray	Not recovered
Target	Green	Not recovered
Smoke Tracer	Red	Not recovered
Practice	Black	Black
Incend.-Shrapnel	Not listed	Red with identifying characters

* Japanese classification "Ordinary" includes common and capped common projectiles as well as various designs of H.E. projectiles.

COLOR OF NOSE

Certain additional information is indicated by the painting of the nose of the projectile as follows:

1. Green Nose - indicates "explosive-filled". Specific identity of explosive is not made. Black Powder as well as H.E. is marked in this way.
2. Red Tip on Green Nose - indicates "base-fuzed", but is not used when ammunition is of the fixed type.
3. Yellow Nose - indicates "practice use". This is applied to standard practice projectiles painted black, and may also be used to indicate projectiles converted from service types. Projectiles converted for practice retain their original painting except for the yellow nose.
Practice projectiles which are to be used with time fuzes are stated to have two rows of white dots around the ogive just below the yellow nose.

The length of the green or yellow tip is 100 mm for 12 cm. gun and larger, 50 mm for 10 and 8 cm. guns, 15 mm for 6 cm. and smaller.

The length of the red tip is exactly half that of the green.

CENTER OF GRAVITY

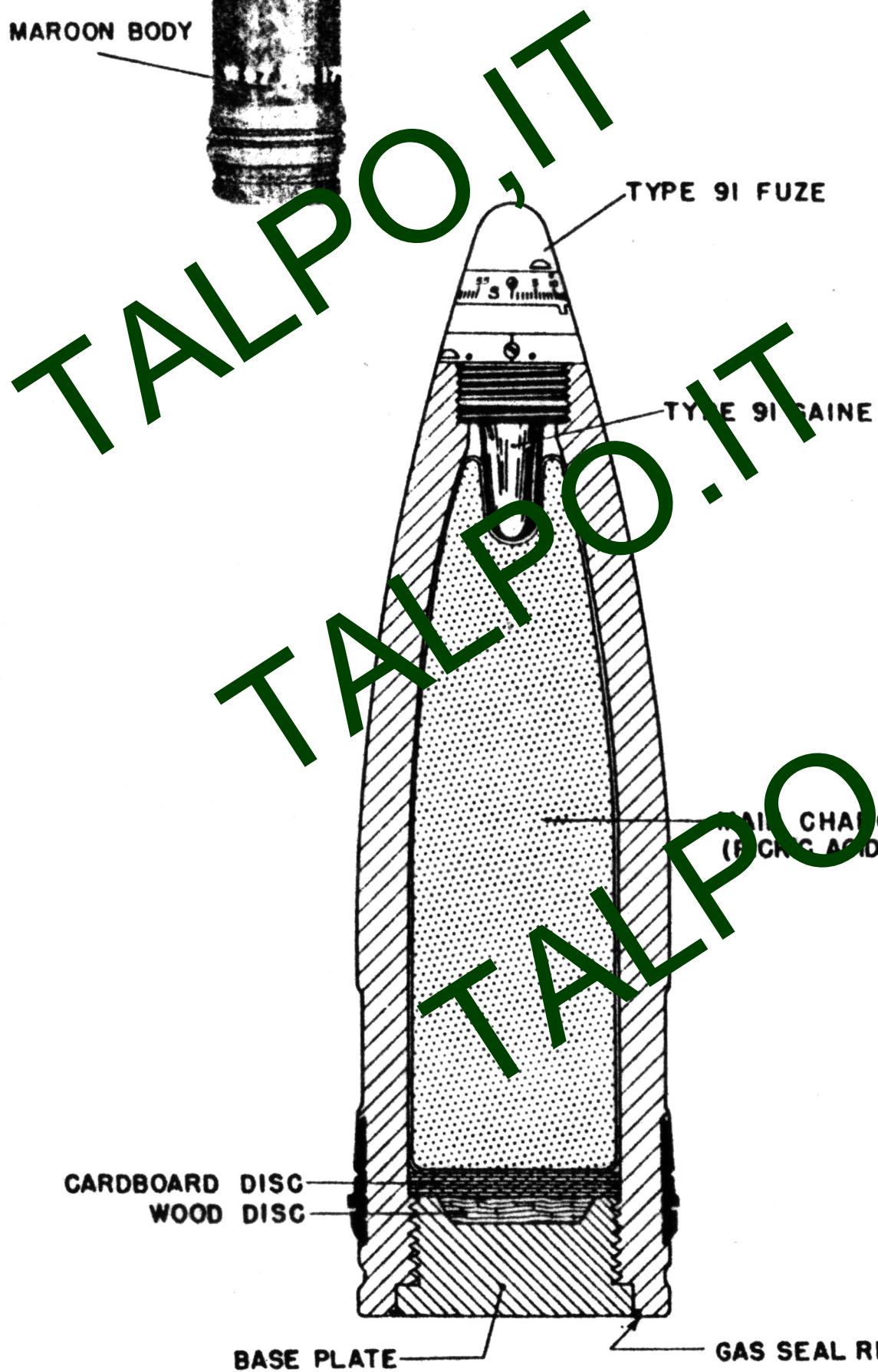
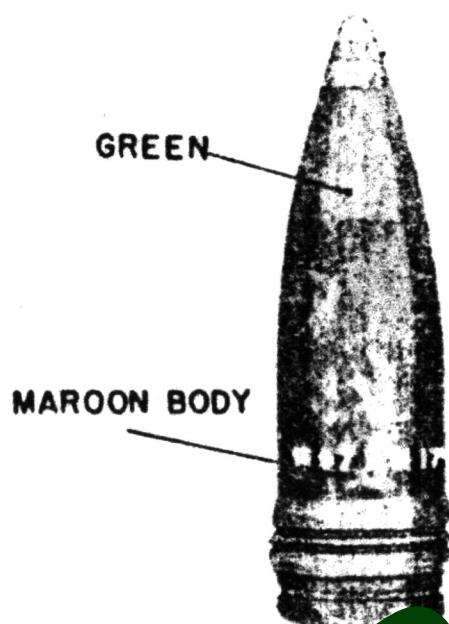
The center of gravity of larger projectiles is indicated by a color band painted at the appropriate position near the middle of the body. The color of this band is varied to contrast with the color of the projectile body.

COLOR OF PROJECTILE BODY	COLOR OF BAND	WIDTH OF BAND
Maroon or Blue	Yellow	0 mm for projectiles 20 cm and above
White	Red	20 mm for 15.5 (and under)
Black	White	10 mm on all sizes

The center of gravity is not required to be marked on projectiles of 15 cm. and under, but where projectiles of these sizes already bear the color band at the point of balance (apparently from earlier requirements) repainting is not required.

NAVY 12.7 CM (127 MM.
5 INCH) FIXED HIGH EXPLOSIVE

12.7 CM./40 ORDINARY



HIGH EXPLOSIVE**12.7 CM./40 ORDINARY****NAVY
12.7 CM.
(127 MM.-5 INCH)
FIXED****ASSEMBLED ROUND:**

Weight of complete round 73.57 lb.
Length of complete round, with Type 91 fuze . . . 36.0 in. (approx.)

PROJECTILE:

Weight of filled projectile, w/o fuze 48.42 lb.
Weight, empty 44.48 lb.
Weight stamped on rotating band (sample) 20.170 kg.
(Varies with individual projectiles)

DIMENSIONS:

Length of projectile, w/o fuze 14.9 in.
Diameter at bourrelet 4.96 in. (126.0 mm)
Distance from base to rotating band 1.19 in.
Width of rotating band 1.95 in.
Radius of ogive 6 cal.

FILLING:

Cast picric acid (Shimose) 3.94 lb.

The charge consists of a single block of explosive cast and sealed in a waxed paper container, encased in a heavy cotton flannel bag, and sealed in the projectile with paraffin.

FUZING:

Type 91 Mechanical Time Fuze

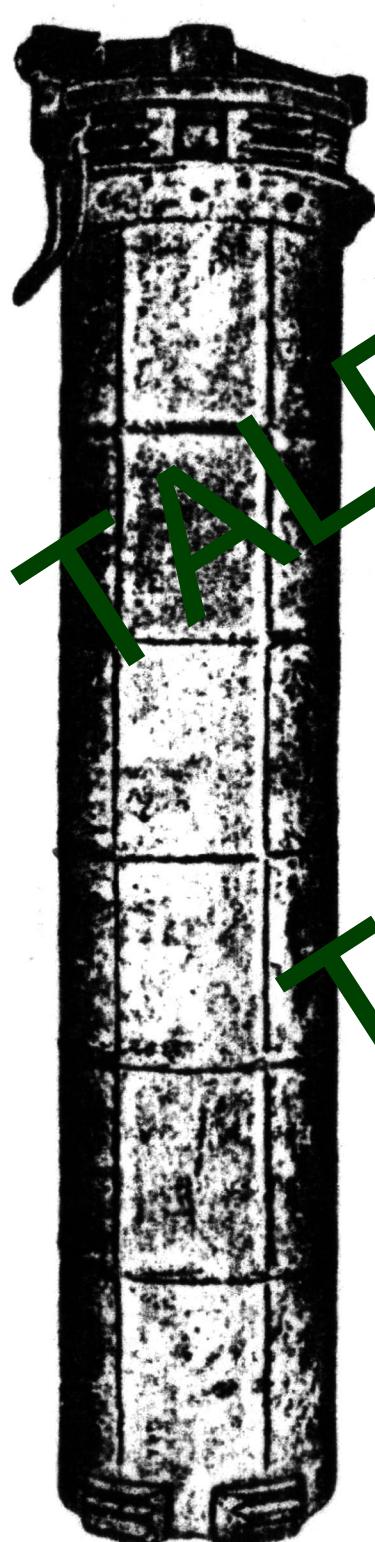
Type 91 Mechanical Time Fuze with gear ring

Type 88 Point Detonating Fuze

WEAPON:

Type 89 12.7 cm/40 High Angle Gun

Type 88 12.7 cm. Similar to above.

NAVY 14 CM. (140 MM. 5.5 INCH) BAG PROPELLANT AND TANKS

POWDER TANK
CAST STEEL



PROPELLANT



POWDER TANK
SHEET STEEL

PROPELLANT AND TANKS

NAVY

14 CM.

(140 MM. - 5.5 INCH)

BAG

POWDER TANKS:

For storage purposes, the propellant charges are sealed in water-proof containers commonly known as "powder tanks". Two types of the tanks have been recovered: one is a heavy tank (26.4 lb.) of cast steel and bronze; the other is sheet steel and aluminum and weighs 15.4 lb. Both are well lacquered inside and have the same internal dimensions, 6.2" x 33".

PROPELLANT:

37 C 24.51 lb. (11.14 kg.)

Unperforated cylindrical sticks, approximately 3.7 mm (.15") x 28" graphited double base powder.

The propellant sticks are enclosed in a bag of heavy brownish silk.

An ignition pan containing 17.2 grams of granular black powder is placed onto the base of the charge.

PRIMER:

Mk 2 Lock Percussion Primer

WEAPON:

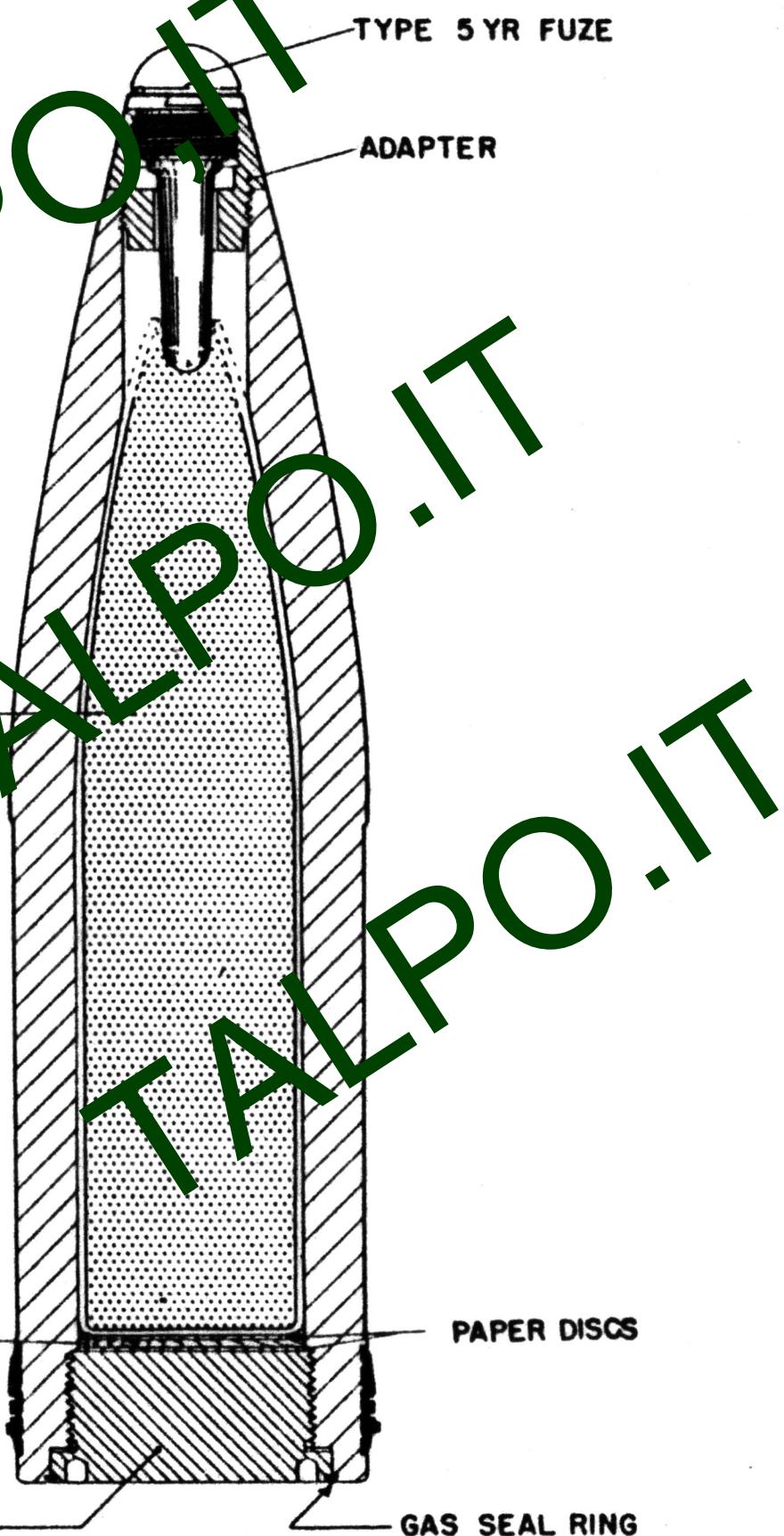
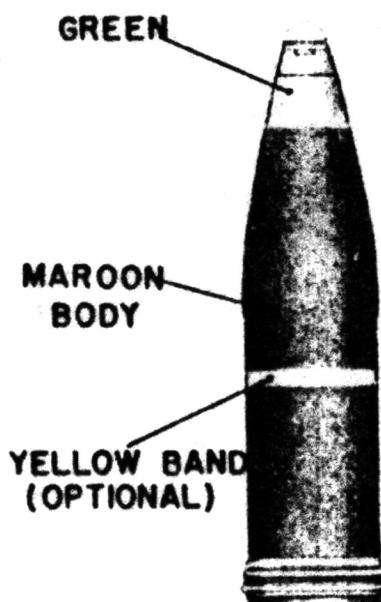
Type 3 Yr. 14 cm/50 Gun (Low Angle)

This is a pedestal-mounted deck gun employing bag ammunition. It is commonly found in shore emplacements for coastal defense and limited anti-aircraft use. Strongly resembling the Type 3 Yr. 12 cm/45 gun in design, this weapon also has three recoil cylinders all mounted above the tube and an interrupted thread breech block hinged on the right. This gun has been found both with a splinter shield attached, and without.

A 14 cm/45 gun is known from documentary sources. It is believed that there is also a 14 cm gun using case ammunition.

NAVY 14 CM (140 MM.
(5.5 INCH) BAG HIGH EXPLOSIVE (I)

UNDETERMINED



HIGH EXPLOSIVE (I)

UNDETERMINED

**NAVY
14 CM.
(140 MM. - 5.5 INCH)
BAG**

WEIGHT OF FILLED PROJECTILE, w/o fuze 82.7 lb.
WEIGHT, empty 74.43 lb.
WEIGHT STAMPED ON ROTATING BAND (Sample) No data
(Varies with individual projectiles)

DIMENSIONS:

Length of projectile, w/o fuze, with adapter . . 21.02 in.
Length of projectile, w/o fuze or adapter . . . 19.75 in.
Diameter at bourrelet 5.49 in. (139.5 mm)
Distance from base to rotating band60 in.
Width of rotating band 1.60 in.
Radius of ogive 5 cal.

FILLING:

Cast picric acid (Shimakaze) 7.9 lb.

The charge consists of a single block of explosive cast and sealed in a waxed paper container, encased in a heavy cotton funnel bag and sealed in the projectile with paraffin.

FUZING:

Type 5 Yr. Point Detonating Fuze

Removal of the adapter does not permit alternate fuzing, because the lower threaded portion of the adapter is larger than any known fuze.

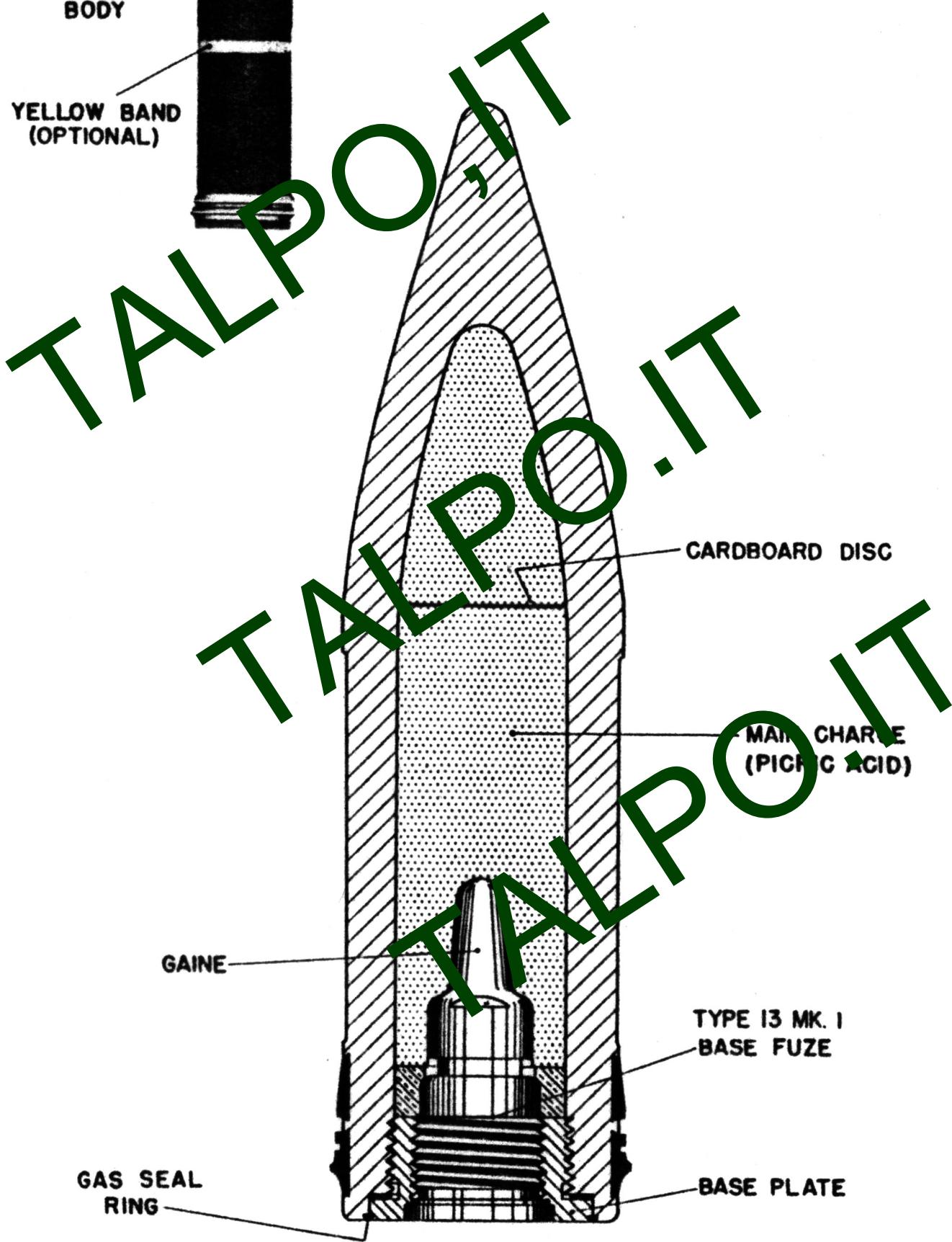
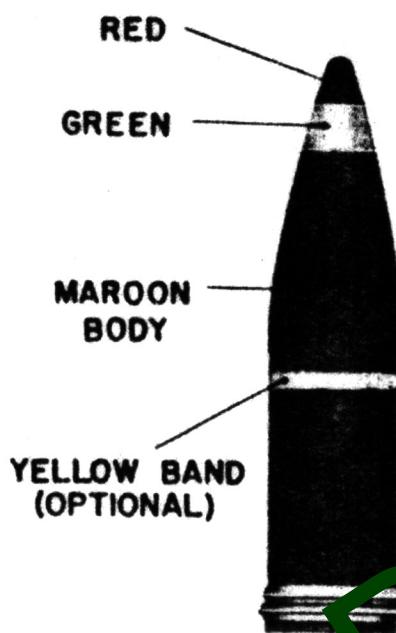
WEAPON:

Type 3 Yr. 14 cm/50 Gun (Low Angle)

NAVY 14 CM. (140 MM. 5.5 INCH) BAG

COMMON

14 CM. ORDINARY MK. I



COMMON
15 CM./40 ORDINARY MODIF. I

NAVY
15 CM.
(152 MM.-6 INCH)
SEMI-FIXED

WEIGHT OF FILLED PROJECTILE No data
WEIGHT, empty No data
WEIGHT STAMPED ON ROTATING BAND (Sample) 39.62 kg.
(Varies with individual projectiles)

DIMENSIONS:

Length of projectile	22.50 in.
Diameter at bourrelet	5.98 in. (152.0 mm)
Distance from base to rotating band . . . . .	.66 in.
Width of rotating band	1.75 in.
Radius of ogive	2 cal.

FILLING:

Cast picric acid (Shimose) No data

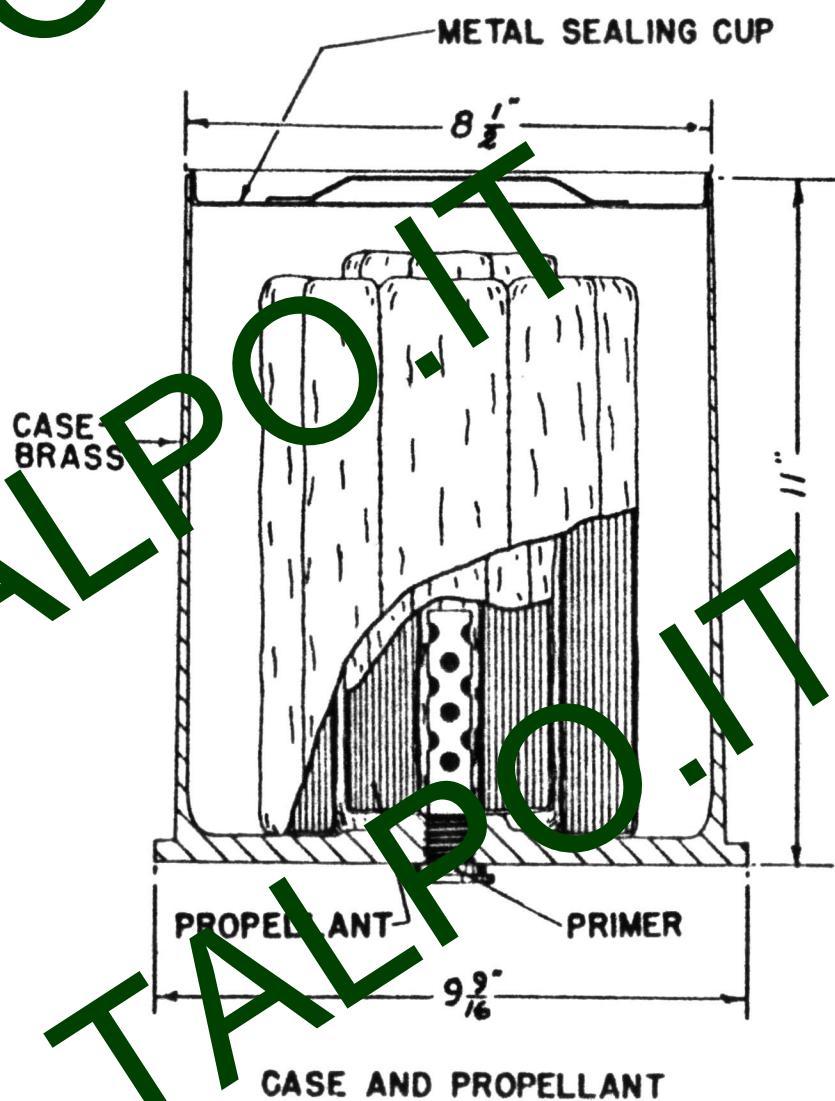
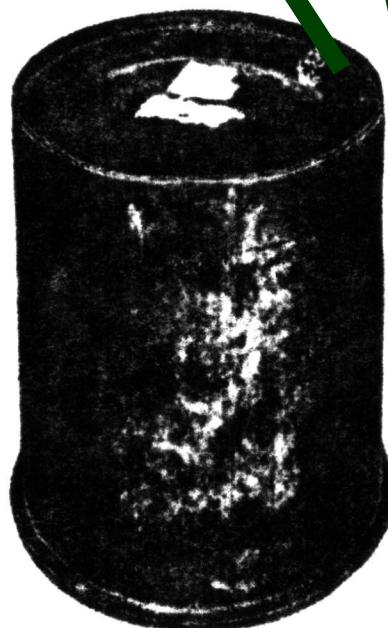
The charge consists of a block of explosive cast and sealed in a waxed paper container, encased in a heavy cotton flannel bag and sealed in the projectile with paraffin.

FUZING:

Type 13 Mk 1 Base Fuze

WEAPON:

Type 41 (Meiji) 15 cm/40 Gun or the British prototype.

NAVY 20 CM.(^{202 MM.}_{8 INCH}) SEMI-FIXED COMPLETE ROUND

COMPLETE ROUND

COMPLETE ROUND

NAVY
20 CM. / SHORT
(202 MM. - 8 INCH)
SEMI-FIXED

CASE:

Length 11.0 in.
Diameter of base : 9.56 in.
Material : Brass
Weight (empty) : 18.49 lb.

PROPELLANT:

10 C3 (Type 89 Propellant) 4.4 lb. (2.0 kg.)

Unperforated cylindrical sticks, approximately 1 mm (1/32") x 8-1/2-9", amber colored, double base powder.

The propellant sticks are enclosed in two compartmented bags of heavy brown cloth. The inner bag contains 0.960 kg. (2.1 lb.) of propellant. The outer bag contains 1.040 kg. (2.3 lb.) of propellant.

PRIMER:

11.7 Case Percussion Primer, Model 4

WEAPON:

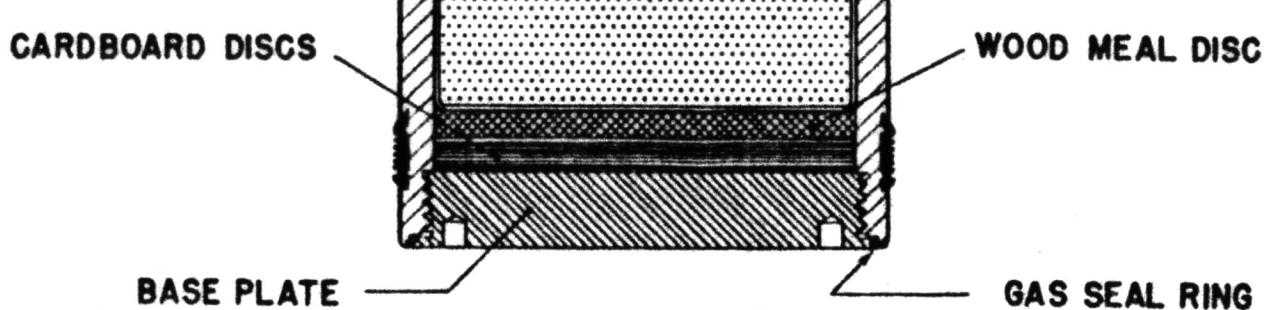
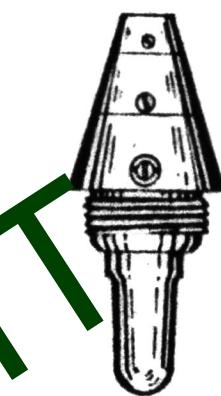
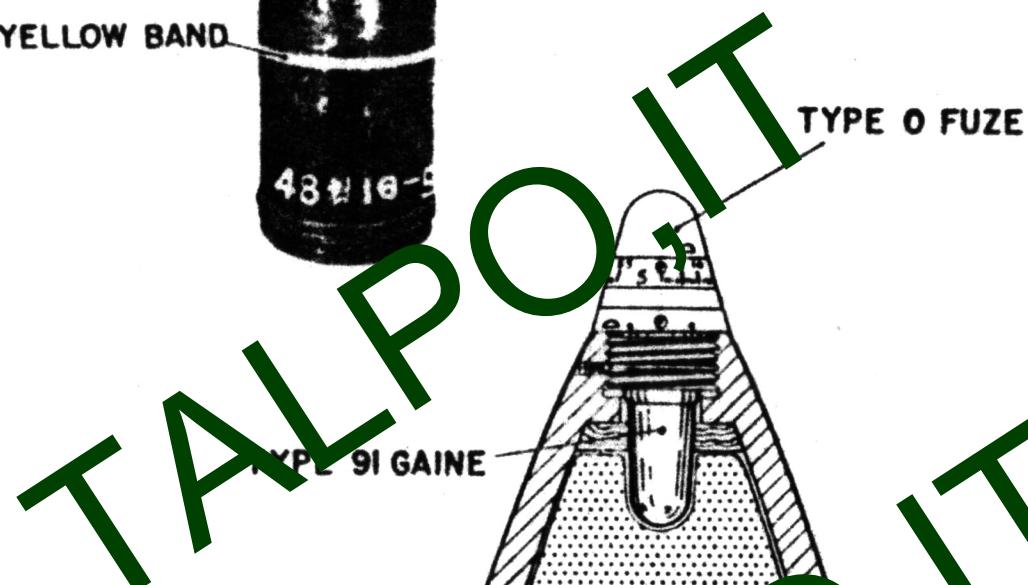
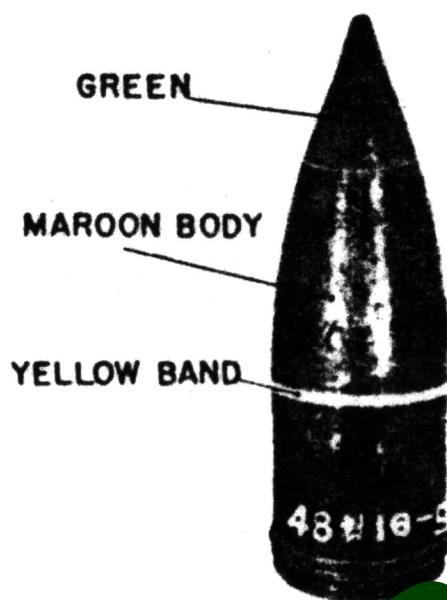
Short 20 cm Gun

This is a short-barrelled (12 cal.) gun of low muzzle velocity and light construction on a pedestal mount, designed originally for use on the light decks of merchant ships. The purpose of this weapon is to deliver a relatively heavy projectile at a limited range for anti-submarine attack and to throw up low level anti-aircraft barrage.

This gun fires semi-fixed ammunition; the breech block is of the interrupted thread type. It has been found mounted in shore emplacements.

NAVY 20 CM.(202 MM.
8 INCH) SEMI-FIXED HIGH EXPLOSIVE

20 CM. / SHORT ORDINARY MK. I



HIGH EXPLOSIVE
20 CM. / SHORT ORDINARY MK. I

NAVY
20 CM. / SHORT
(202 MM. - 8 INCH)
SEMI-FIXED

WEIGHT OF FILLED PROJECTILE, w/o fuze 111.0 lb.
WEIGHT, empty 72.50 lb.
WEIGHT STAMPED ON ROTATING BAND (Sample) 32.42 kg.
(Varies with individual projectiles)

DIMENSIONS:

Length of projectile, w/o fuze 21.94 in.
Diameter at bourrelet 7.94 in. (201.5 mm)
Distance from base to rotating band 1.0 in.
Width of rotating band 1.0 in.

FILLING:

Trinitroanisole (Type 91 Explosive) 28.50 lb.

The charge consists of three blocks of explosive cast and sealed in a waxed paper container and sealed in the projectile with paraffin.

FUZE:

Type 88 Mechanical Time Fuze

Inst.-5 Sec. Selective Nose Fuze

Type 88 Point Detonating Fuze

APPENDIX

TABLES

TALPOIT
TALPOIT
TALPOIT

INCHES TO MILLIMETERS

Basis: 1 inch = 25.4 Millimeters

In.	MM	In.	MM	In.	MM	In.	MM
1	25.4	26	660.4	51	1295.4	76	1930.4
2	50.8	27	685.8	52	1320.8	77	1955.8
3	76.2	28	711.2	53	1346.2	78	1981.2
4	101.6	29	736.6	54	1371.6	79	2006.6
5	127.0	30	762.0	55	1397.0	80	2032.0
6	152.4	31	787.4	56	1422.4	81	2057.4
7	177.8	32	812.8	57	1447.8	82	2082.8
8	203.2	33	838.2	58	1473.2	83	2108.2
9	228.6	34	863.6	59	1498.6	84	2133.6
10	254.0	35	889.0	60	1524.0	85	2159.0
11	279.4	36	914.4	61	1549.4	86	2184.4
12	304.8	37	939.8	62	1574.8	87	2209.8
13	330.2	38	965.2	63	1600.2	88	2235.2
14	355.6	39	990.6	64	1625.6	89	2260.6
15	381.0	40	1016.0	65	1651.0	90	2286.0
16	406.4	41	1041.4	66	1676.4	91	2311.4
17	431.8	42	1066.8	67	1701.8	92	2336.8
18	457.2	43	1092.2	68	1727.2	93	2362.2
19	482.6	44	1117.6	69	1752.6	94	2387.6
20	508.0	45	1143.0	70	1778.0	95	2413.0
21	533.4	46	1168.4	71	1803.4	96	2438.4
22	558.8	47	1193.8	72	1828.8	97	2463.8
23	584.2	48	1219.2	73	1854.2	98	2489.2
24	609.6	49	1244.6	74	1879.6	99	2514.6
25	635.0	50	1270.0	75	1905.0	100	2540.0

MILLIMETERS TO INCHES

Basis: 1 inch = 25.4 Millimeters

MM	In.	MM	In.	MM	In.	MM	In.
1	0.03937	26	1.023622	51	2.007874	76	2.992626
2	.078740	27	1.062992	52	2.047244	77	3.031496
3	.118110	28	1.102362	53	2.086614	78	3.070866
4	.157480	29	1.141732	54	2.125984	79	3.110236
5	.196850	30	1.181102	55	2.165354	80	3.149506
6	.236220	31	1.220472	56	2.204724	81	3.188976
7	.275591	32	1.259843	57	2.244194	82	3.228346
8	.314961	33	1.299213	58	2.283463	83	3.267717
9	.354331	34	1.338583	59	2.322833	84	3.307087
10	.393701	35	1.377953	60	2.362205	85	3.346457
11	.433071	36	1.417323	61	2.401575	86	3.385927
12	.472441	37	1.456693	62	2.440945	87	3.425197
13	.511811	38	1.496063	63	2.480315	88	3.464567
14	.551181	39	1.535433	64	2.519685	89	3.503937
15	.590551	40	1.574803	65	2.559055	90	3.543307
16	.629921	41	1.614173	66	2.598425	91	3.582677
17	.669291	42	1.653543	67	2.637795	92	3.622047
18	.708661	43	1.692913	68	2.677165	93	3.661417
19	.748031	44	1.732283	69	2.716535	94	3.700787
20	.787402	45	1.771654	70	2.755906	95	3.740157
21	.826772	46	1.811024	71	2.795276	96	3.779528
22	.866142	47	1.850394	72	2.834646	97	3.818898
23	.905512	48	1.889764	73	2.874016	98	3.858268
24	.944882	49	1.929134	74	2.913386	99	3.897638
25	.984252	50	1.968504	75	2.952756	100	3.937008

BINARY FRACTIONS OF AN INCH TO DECIMAL INCHES AND MILLIMETERS

FRACTIONS				DECIMAL	MILLIMETERS
			1/64	.015625	0.396875
		1/32	.031250	0.793750	
		3/64	.046875	1.190625	
		5/64	.062500	1.587500	
	1/16	7/64	.078125	1.984375	
		9/64	.093750	2.381250	
		11/64	.109375	2.778125	
		13/64	.125000	3.175000	
		15/64	.140625	3.571875	
		17/64	.156250	3.968750	
		19/64	.171875	4.365625	
		21/64	.187500	4.762500	
	1/8	23/64	.203125	5.159375	
		25/64	.218750	5.556250	
		27/64	.234375	5.953125	
		29/64	.250000	6.350000	
		31/64	.265625	6.746875	
		33/64	.281250	7.143750	
		35/64	.296875	7.540625	
		37/64	.312500	7.937500	
	1/4	39/64	.328125	8.334375	
		41/64	.343750	8.731250	
		43/64	.359375	9.128125	
		45/64	.375000	9.525000	
		47/64	.390625	9.921875	
		49/64	.406250	10.318750	
		51/64	.421875	10.715625	
		53/64	.437500	11.112500	
	3/8	55/64	.453125	11.509375	
		57/64	.468750	11.906250	
		59/64	.484375	12.303125	
		61/64	.500000	12.700000	
		63/64	.515625	13.096875	
		65/64	.531250	13.493750	
		67/64	.546875	13.890625	
		69/64	.562500	14.287500	
	1/2	71/64	.578125	14.684375	
		73/64	.593750	15.081250	
		75/64	.609375	15.478125	
		77/64	.625000	15.875000	
		79/64	.640625	16.271875	
		81/64	.656250	16.668750	
		83/64	.671875	17.065625	
		85/64	.687500	17.462500	
	5/8	87/64	.703125	17.859375	
		89/64	.718750	18.256250	
		91/64	.734375	18.653125	
		93/64	.750000	19.050000	
		95/64	.765625	19.448750	
		97/64	.781250	19.843750	
		99/64	.796875	20.240625	
		101/64	.812500	20.637500	
	3/4	103/64	.828125	21.034375	
		105/64	.843750	21.431250	
		107/64	.859375	21.828125	
		109/64	.875000	22.225000	
		111/64	.890625	22.621875	
		113/64	.906250	23.081750	
		115/64	.921875	23.415625	
		117/64	.937500	23.812500	
	7/8	119/64	.953125	24.209375	
		121/64	.968750	24.606250	
		123/64	.984375	25.003125	
1		125/64	1.000000	25.400000	