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INTELLIGENCE REPORT

ON

JAPANESE CHEMICAL WARFARE

Instructors Reading Volume V

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Name _____ Date _____

JAPANESE CHEMICAL WARFARE

EQUIPMENT AND MATERIEL

268089

Office of the Chief Chemical Officer

GHQ, AFPAC

APO 500

TOKYO, JAPAN

15 May 1946

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30 SEP 1946

INTELLIGENCE REPORT

ON

JAPANESE CHEMICAL WARFARE

Volume V

Part E

JAPANESE CHEMICAL WARFARE

EQUIPMENT AND MATERIEL

15 May 1946

OFFICE OF THE CHIEF CHEMICAL OFFICER

GENERAL HEADQUARTERS, ARMY FORCES, PACIFIC

TOKYO, JAPAN

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C.) PROJECTILES AND SHELLS

This group of reports has been subdivided into three main categories, gun-howitzer, mortar and rocket. Some of the items ar obviously not strictly CW items. However as they were found for the most part, in military establishments which were concentrating primarily on CW problems, their occurrence in such places may have a significance to anyone reveiwing this and similar reports, hence are included.

One outstanding and different use of CW agent fillings has been utilized by the Japanese in their projectile design. Quite a few projectiles, especially in the gun-howitzer class, contain a small vomiting gas, filling, almost always DC, in an annulus between a heavy projectile wall and a large HE center charge. These projectiles are apparently to have a primary effect of the normal HE round, with an added secondary, effect that of a harassi agent. It was not known by those preparing these reports how effective would be the vomiting gas, dispersed in this manner, however it seems to be a method inferior to a slower, burning method of dispersion. Markings are fairly well established on gun-howitzer projectiles and shells but not so on the rocket and mortar types.

1) Gun-Howitzer

Chemical filled gun-howitzer projectiles have a gray body color. A colored band about one-third of the way from the base end of the projectile identifies the gas filling. The colors and their significance are given below:

Yellow - blister gas
Blue - Choking gas
Brown - Blood and nerve poisons
Red - Vomiting gas
Green - Tear gas

Generally the exact agent filling e.g., H or L among the blister gases, cannot be determined from the markings above. Sometimes a label or stamped mark on the projectile or packing box does reveal this information. In such cases the following symbols are used.

Mk I - Tear gas
Mk II - Vomiting gas
Mk IIA - Diphenylcyanarsin
Mk IIB - Diphenylchlorarsi
Mk III Blister gas
Mk IIIA- Mustard
Mk IIIB- Lewisite

A red band on the nose of the projectiles indicates the projectile is filled with explosive components, abblue band below it, filled with liquid components. A white band near the base end of the projectile indicates a high grade steel projectiles. This latter marking occurs in the old system of marking is absent on new system.

Weight variations markings are frequently present on gun-howitzer projectiles. These are:

++ - 1.5% to 2.5% overweight
+ - 0.5% to 1.5% overweight
± - 0.5% plus or minus
- - 0.5% to 1.5% underweight
-- - 1.5% to 2.5% underweight

C.) PROJECTILES AND SHELLS (cont)

Reference is made to "Handbook of Japanese Explosive Ordnance," ONAV 30-3M, 15 August 1945 pages 136-137 for a detailed explanation of old and new marking systems.

Frequently on the projectiles examined in the preparation of these reports, common markings were missing. This confusion can be explained in two ways. One, the projectiles were taken from a point in the production line at which markings had not yet been added. As many of the items were collected from arsenals this possibility is the most likely explanation. Second, markings may be missing as a result of a strict and consistent specification system. Most likely both factors are involved.

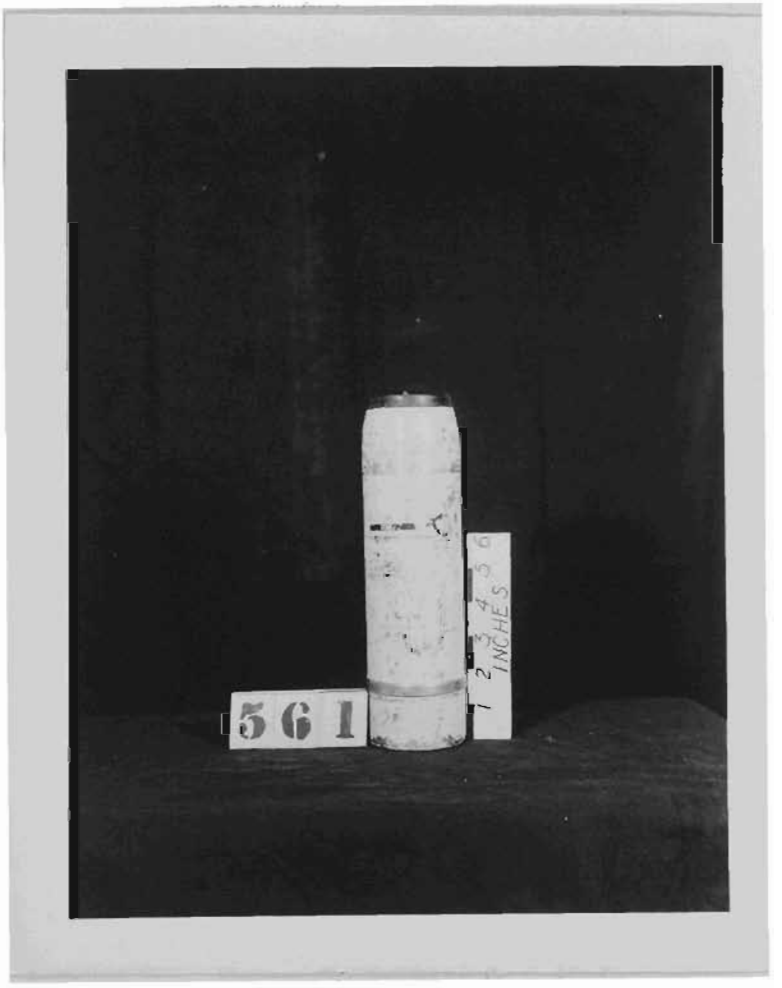
561-PROJECTILE, 75mm, INCENDIARY (EMPTY)

General:

Color:	Yellow
Markings:	Black Markings, two bars and the symbol "Ya"(Incendiary) between band and bourrelet.
Components:	Empty and without fuze but with black plastic screw cap.
Weight:	7.7 lbs (Empty).

Description: This shell is fixed munition type believed to be designed for the model 90 gun. It has a plain copper rotating band and a non-tapering base. It measures 5.93 inches from band to bourrelet and has a 1.53 inch base. Bourrelet plus ogive measures 1.53 inches. There is very little taper to the ogive.

Remarks: Reference is made in "Handbook of Japanese Explosive Ordnance" OPNAV 30-3M to a similar shell on page 146 footnote 14. "According to the new marking system outlined in documents this projectile (Type 90 Incendiary) may be expected to be painted yellow over all with the (Japanese) symbol (meaning "Ya"-Incendiary) stenciled near the middle". This shell apparently was to have an Incendiary filling.



560A-PROJECTILE, 75MM, GAS (cutaway)

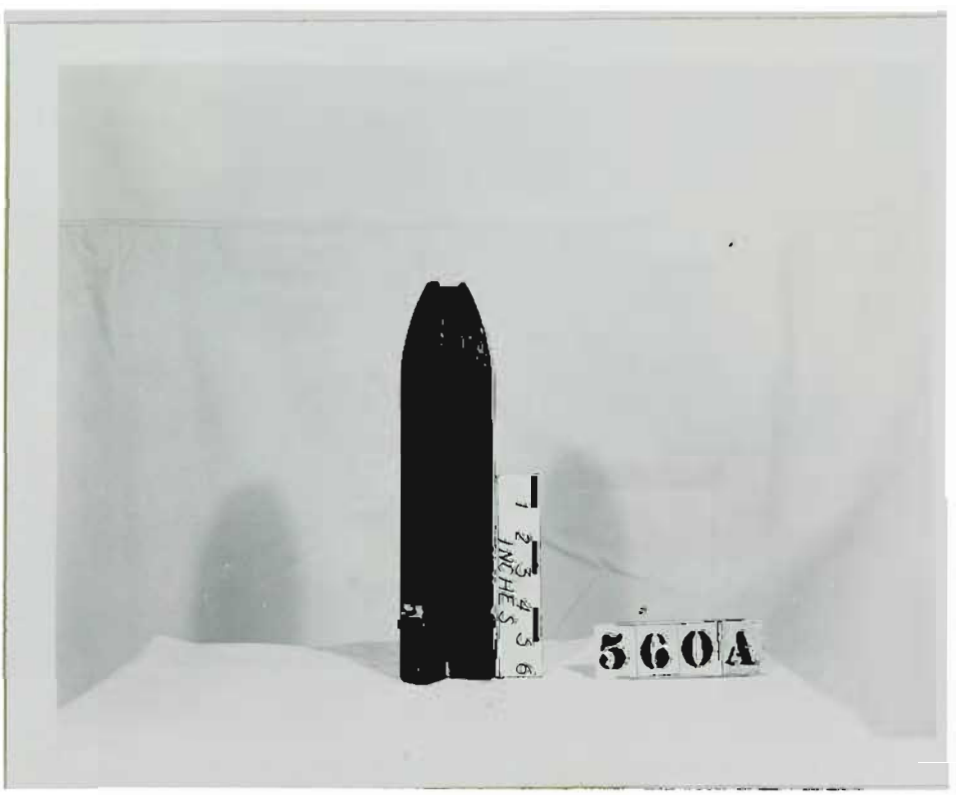
General:

Color: Blue grey.
Markings: White band just above rotating band, Japanese characters in white giving nomenclature.
Dimensions: 12" long, 74mm diameter.

Description: This projectile has a short ogive. A single rotating band is near the tail of the projectile. A burster charge case 1-3/4" long, 1-3/16" in diameter is welded to the inside of the nose of the projectile. A threaded recess for the fuze type unknown, is at the nose end. The average wall thickness is 7/16".

Remarks: The filling for this projectile is not known. The color of the projectile is the one used by the Japanese Army for designation of chemical shells. The white band is evidently indicative of a high grade steel casing. There are no type filling markings on the projectile examined. Filling would have to be done before the placement of the burster tube, hence the projectile could not be filled with gas under pressure. Filling must be solid or liquid.

Estimated volume for projectile filling is .20-.25 gallons.



560C-PROJECTILE, 75MM, GAS, (CUTAWAY), VESICANT FILLED

General:

Color:	Blue grey
Markings:	White band just above the rotating band, one yellow band one third of the way from tail, one yellow band just below bourrelet.
Dimensions:	12 inches long, 74mm diameter.

Description: This projectile has a short ogive. The copper rotating band at the rear of the projectile, is 5/16 inches wide. The interior of the projectile is divided into two section by a curved, concave upward, steel plate. The upper compartment apparently serves as a burster well. The space in this section for explosive filling is about 3 inches long and 2½ inches in diameter. A booster well screwed to the inside wall of the nose is 3 inches long, 7/8 inches in diameter. The nose of the projectile is screw fitted to the body just above the bourrelet. The average body wall thickness is 3/8 inches. The type fuze used is unknown.

The rear inner compartment of the projectile is 7 inches long and 2 inches in diameter. A threaded opening in the heavy steel base would permit the filling of the projectile in that manner.

Remarks: The yellow band between the rotating band and bourrelet indicates a vesicant filling. Forward yellow band is common army designation for a gas filling. It is estimated that the volume of the rear section of the projectile is .15 gallons which as mustard filling would be about 1.5 to 2.0 lbs.



[redacted]

560- PROJECTILE, 75MM, GAS (cutaway), VOMITING GAS FILLED

General:

Color:	Blue grey.
Markings:	White band just above rotating band, red band one third way from tail end, yellow band just below bourrelet.
Dimensions:	11.5 inches long, 74mm diameter.

Description: This projectile has a short ogive. A copper rotating band, 1 inch wide near the tail consists of three sections (projectile examined had grooves in rotating bands as if it had been fired). The interior of the projectile consists of a burste charge well, 9½" long, 1-5/8" in diameter, a booster charge well, 2-3/4 inches long and 1 inch in diameter inside the burster and a small gaine, 5/8 inches long inside the booster.

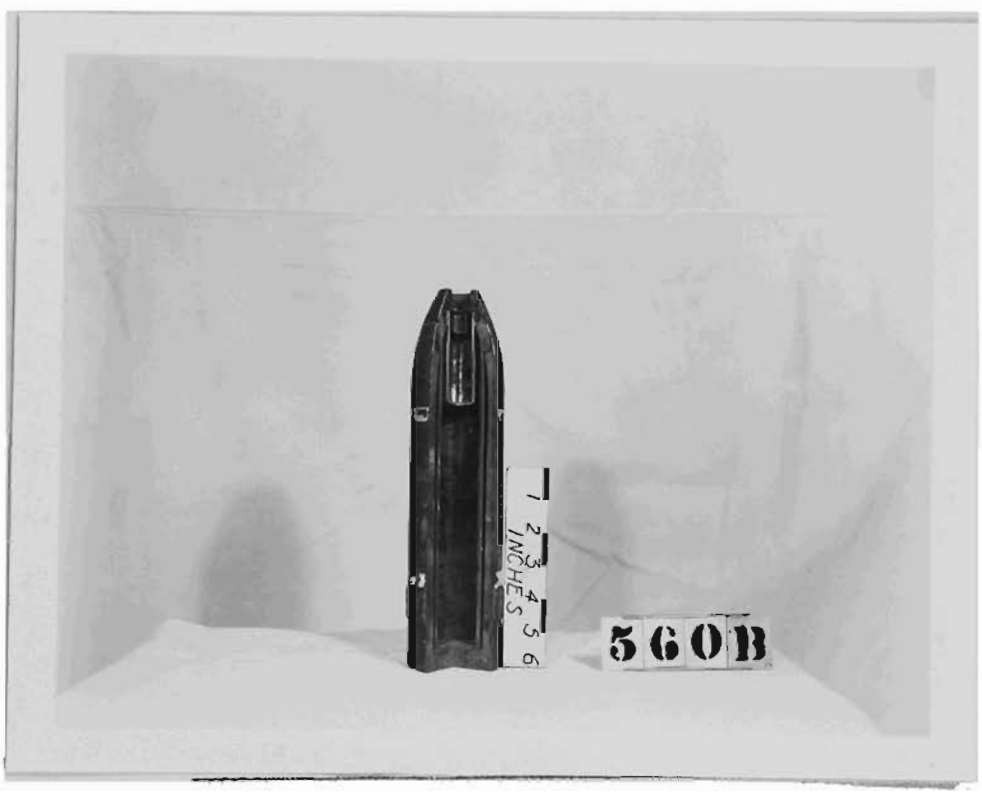
The nose of the projectile is the fore part of the burster charge well. The body of the projectile is screwed to the burster charge well about 1½ inches from the nose end. The booster well is screwed into the inside top of the burster well. The nose is threaded for the adapting of a fuze, type unknown. There is an annular space of 1/8" average width between the burster well outer wall and the inner wall of the body of the projectile.

Remarks: A filling of vomiting gas (most likely DC) is probably placed in the annular space in the projectile. It is estimated that no more than ½ lb. of an agent could be placed in the small space.

The detonation of the large quantity of HE in the booster could conceivably disperse the vomiting gas filling to small particle size, however this method of dispersal doesn't compare favorably with the burning type vomiting gas munition.

Red band on projectile indicates vomiting gas, yellow band by bourrelet is a standard marking for chemical shells.

[redacted]



560B-PROJECTILE, 75MM, GAS (cutaway), VOMITING GAS FILLED

592A-PROJECTILE, 100MM, (CUTAWAY)

General:

Color:	Blue grey
Markings:	White band just above rotating band.
Contents:	Unknown
Dimensions:	15-4/5" long, Diameter of body 99mm.
Weight:	Unknown.

Description: This projectile has a low caliber ogive. One inch from the rear end of the projectile is a 1.3 in. wide copper rotating band. The shell is made in two pieces. The main, body component extends from the nose of the shell five sixths of the way back to the tail. The second component consists of a metal cup, having the same outside diameter as the rest of the shell. It screws onto the base of the main component. The copper rotating band is attached to this cup. There are 15-7/16" diameter holes in the base of the cup grouped around a percussion cap and 10-7/16" diameter holes in the side wall of the cup which lead to the inner surface of the rotating band. Apparently expansion of the rotating band is accomplished by the expansion of gases through these holes. There is a celluloid cup which fits snugly into the metal cup covering the holes in the base and sides. A booster type "gaine" 3½" long, 1" in diameter is screwed into the nose of the shell and extends into the interior of the main component. The wall of the projectile body is 5/16" thick. The wall of the tail cup is ½" thick.

Remarks: The blue grey color establishes this as a chemical shell according to the army system of marking referred to in "Handbook of Japanese Explosive Ordnance," 15 August 1945. Approximate volume of interior of the projectile is .3 gal. Partially obliterated Japanese characters are translated to say "light shell____."

[redacted]



592A-PROJECTILE, 100MM, (CUTAWAY)

[redacted]

715-PROJECTILE, 105 MM, TYPE 92, VESICANT FILLED

General:

Color:	Grey
Markings:	Wide yellow band between bourrelet and rotating band. There is, also, a red and blue band at the nose. White markings are stenciled on body denoting weight (standard), date of manufacture, and place filled (N).
Components:	Projectile only (Fuzeless)
Dimensions:	105mm diameter, 20" long without fuze.
Weight:	35 lbs. (filled.)

Description: This steel projectile has a long tapering ogive and a copper insert bourrelet. The rotating band has two grooves forming three gas rings. There is a short burster tube screwed into the nose and a short gaine threaded to the burster and set with a screw. The projectile is liquid filled. It takes type 88 instantaneous fuze.

Remarks: Refer to the corresponding lithograph #32 for complete detailed description. Notation on lithograph has following information: "Streamlined K 11."



[redacted]

九一式十糎榴彈砲彈藥

陸軍假制式兵器圖（野戰彈藥）

昭和九年四月四日　陸密第一七五號制定

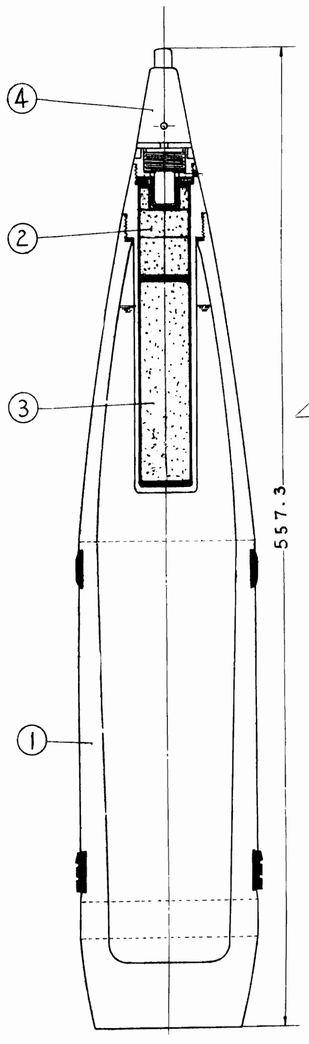
陸軍技術本部印刷

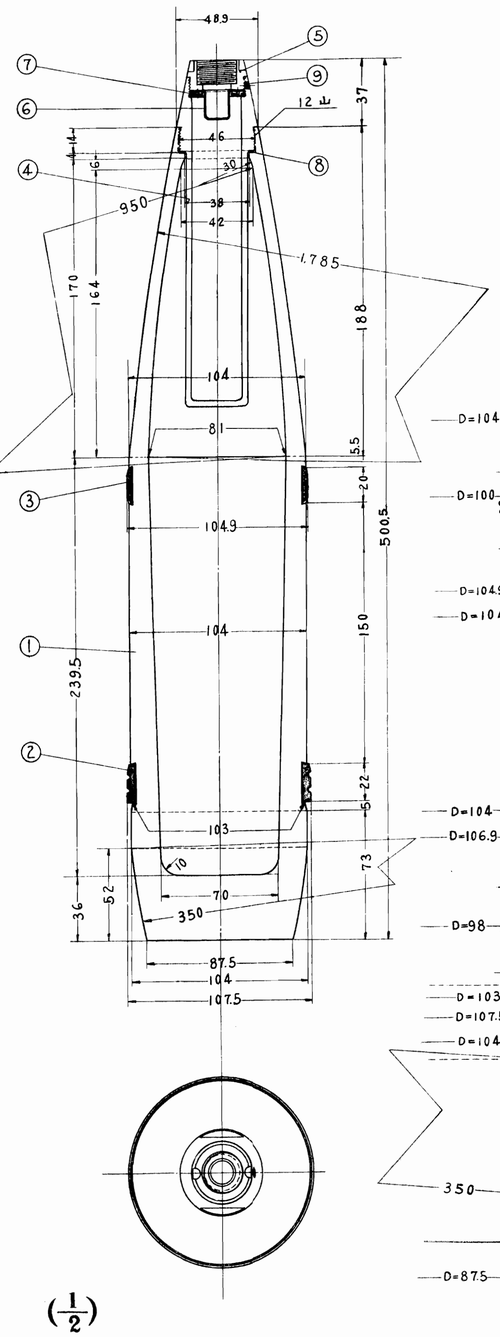
整備區分第一種

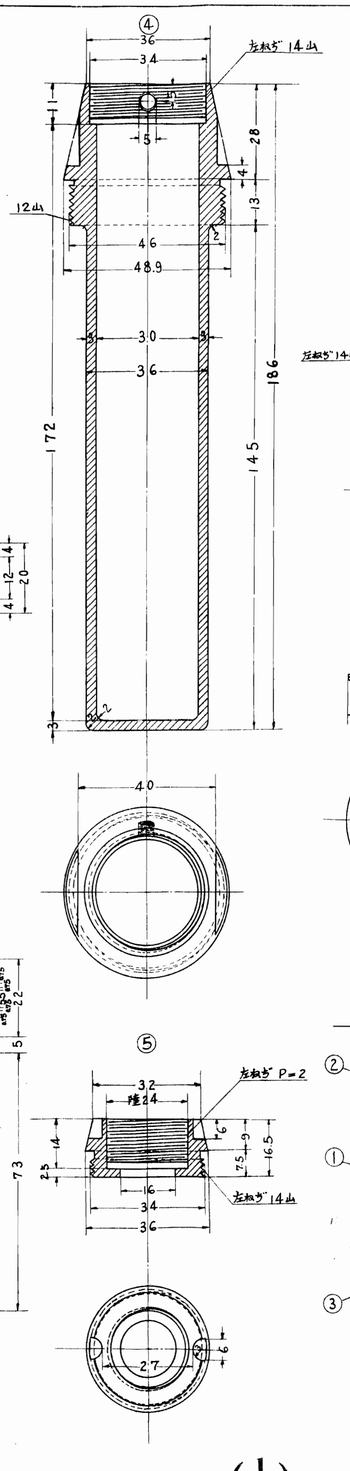
九二式尖鋭きい彈(甲)　野彈 60594

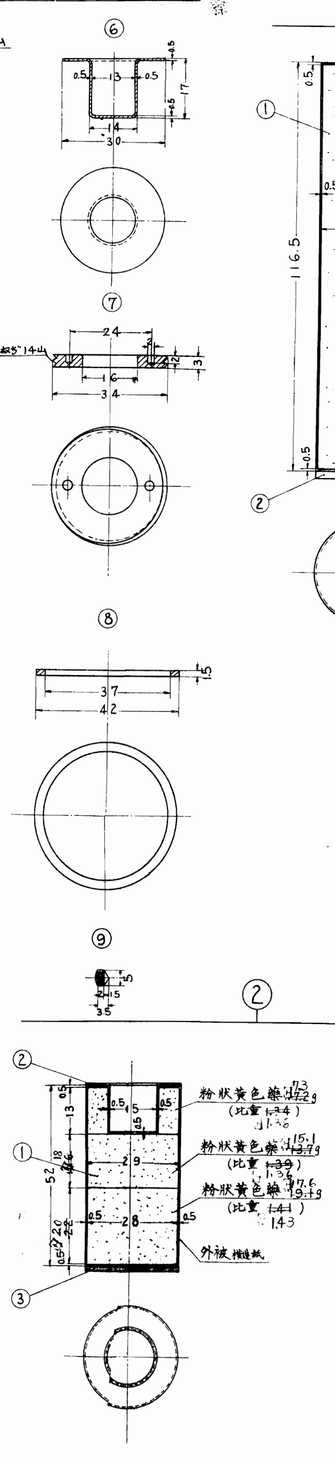
M. 92 STREAM-LINED "KII" (BLISTERING GAS) SHELL OF M. 91 10 CM. HOWITZER

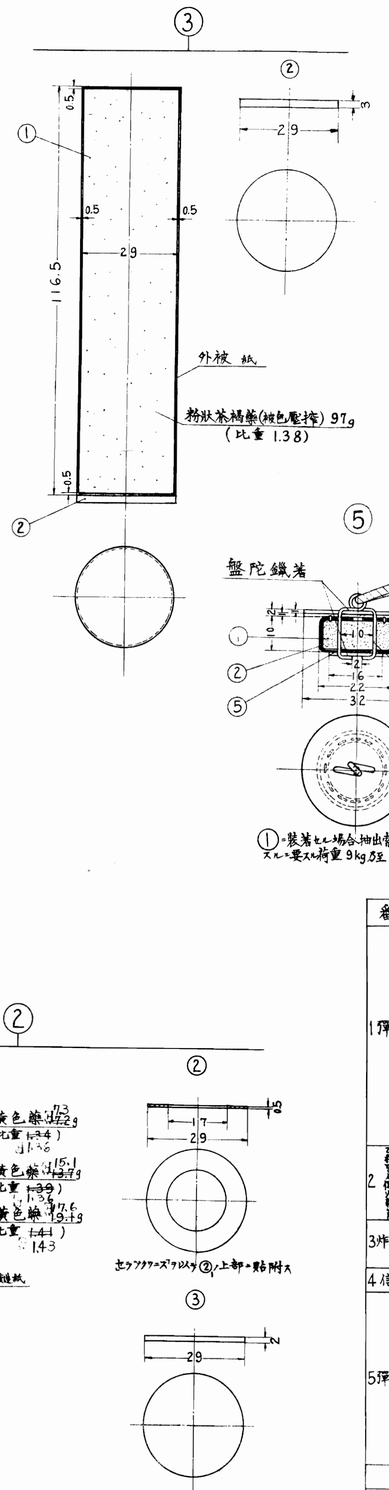
全体











①裝着セル場合抽出索ヲ帯トヲ離脱スルニ要スル荷重 9kg.5至 16kg ナルヲ要ス

重量表

空彈量		13.30 kg
塡実物量	きい一号50% きい二号50%	2.23 〃
炸藥量		0.10 〃
傳火藥筒量		0.04 〃
信管量	WT. OF FUSE	0.17 〃
仝備彈量		15.84 〃

TOT. WT. OF PROJECTILE

註記

1. 本尖鋭きい彈(信管ヲ除ク)ハ十四年式十糎加農彈藥ノモノニ同シ
2. 本尖鋭きい彈(模実物ヲ除ク)ハ九一式十糎榴彈砲彈藥九二式尖鋭弾ヲシロ彈ニ同シ
3. 爲彈丸要部形部 内面ノ半径 950mm及 30mmノ標準寸法ヲ示シタルモノニシテ各一點精密ニ此ノ寸法ヲクラシムルノ意ニ非ス
4. 爲彈丸ノ外部着色要領中標識線及塗料色ノ下記ノ要領ニ施行ス
   一. 外部塗料ハ鼠色塗料トス
   二. 彈帯ノ上方ニ彈帯上方圓堵部、長サノ四角ノ下ヲ除キテ圓堵部但シ五分ノ一幅ニ黄色ノ一線ヲ標示ス
   三. 炸藥ノ標識ハ之ヲ施サス
   四. 彈腔容積ノ標識ハ彈帯ノ下方ニ黒色塗料ヲ以テ適宜ノ大サニ正負ノ符號ヲ下記區分ニ依リ附スルモノトス

彈腔容積			±
〃	正負各	1% 以内ノモノ	
〃	正	1%(乙含ム)乃至3%	+
〃	正	3%(〃)乃至5%	++
〃	負	1%(〃)乃至3%	−
〃	負	3%(〃)乃至5%	−−

   以上2%ヲ増減スル毎ニ逐次符號ヲ増加ス
5. 爲彈腔容積ハ約 1549 cc トス
6. 爲塡實空積ハ6%ヲ通常トスルモ冬期塡實スルトキハ8%トス
7. 爲塡實作業ニ當リ炸藥室ヲ彈丸体ニねぢ込ム際シハ其ねぢ部ニマグネシアキットヲ塗抹スルモノトス
8. 爲信管(零下25℃以下)用塡実物トシテきい一号丙ヲ使用スル此ノ場合ノ塡実物量ハ1.77kgトス

番號及名稱		品質	員數	摘要
1彈丸	1体	彈丸鋼第一号	1	内面ニベークライトワニス一號ヲ3回焼附ス
	2彈帯	鋼第一號	1	
	3定心帯	〃	1	
	4炸藥室	彈丸鋼第一号	1	内面ニ漆液ヲ塗林シ外面ニアスファルトワニス一號ヲ3回焼附ス
	5承螺	特鋼第二種乙第二種	1	
	6蓋板	鋼第一號	1	之ニラックワニスヲ塗林ス
	7蓋螺	黄銅	1	
	8鉛螺	鉛	1	
	9導螺小ねぢ	特鋼第二種第一第四種	1	
2信管(零下25℃以下用)	1体		1	外面ニ之ラックワニス2ヲ塗林ス
	2坐環	ボール紙	3	本部品ハ①②③ノ間ニ區等1箇ヲ使用スルモノニシテ前述隊ノ定ムルトキハ場合ニヨリ更ニ1箇乃至2箇ヲ使用スルモノトス
	3坐褥	フエルト	1	之ラックワニスヲ以テ②ノ下部ニ貼附ス
3炸藥	1体		1	外面ニ之ラックワニスヲ塗林ス
	2坐褥	フエルト	1	之ラックワニスヲ以テ③ノ下部ニ貼附ス
4信管			1	八八式瞬發信管(榴弾)
5彈口栓	1体	コルク	1	
	2被包	厚木綿	1	⑤ヲ綿第ヒ圓ヲ上面ニ折返シ縫綴ス
	3坐褥	絨	1	パラフィン浴ヲ行ヒ⑤ニ綁着ス
	4蓋板	鋼棒第二種甲第四種	1	鎳亞鉛
	5坐板	〃	1	〃
	6緊束子	軟鋼	1	1.6mm線、鎳亞鉛
	7抽出索		1	3mm 特別白麻索、長サ 200mm

(1/2)　(1/1)

Eighth U. S. Army Printing Plant
(Boonjudo)

軍事秘密

55-A PROJECTILE, 105M.M. (CUTAWAY), CHEMICAL FILLED

General:

Color:	Blue-Grey
Markings:	White band just above rotating band, red band 1/3 the way up the body, yellow band just below the bourrelet.
Dimensions:	Length: 19.7 inches, Diameter: (of body) 104 M.M.
Weight:	Unknown.

Description: The "bourrelet" of this shell is a brass band 3/10 of an inch wide. There is a 7/8 inch wide copper rotating band which is grooved twice along its circumference dividing it into three equal segments. The inside of the shell consists of a cylindrical burster charge, a booster inside the burster, and a fuse well inside the booster. The burster charge canister extends all the way to the base plate and nearly fills the entire inside of the shell, leaving an average space of only 3/16 of an inch between the burster wall and the shell wall. This space is occupied by the chemical filling. The booster extends 1 9/16 inches into the burster and the fuse well extends 11/16 inches into the booster. The average thickness of the shell wall is 1/2 inch.

Remarks: Since there is no apparent facility for filling the shell with a gaseous chemical under pressure, we assume that the fill is a liquid or solid. According to one Japanese system of marking shells the red band indicates vomiting gas.

This projectile is very much like the one recorded in the loose-leaf notebook, Japanese Chemical Warfare, except for the lack of red and blue nose bands and the addition of the yellow band by the bourrelet.



55-B PROJECTILE 105MM. (CUTAWAY), CHEMICAL FILLED

General:

Color:	Blue Grey
Markings:	White band just above rotating band, yellow band one third the way up the body.
Dimensions:	Length: 19.7 inches, Diameter: (of body) 104 MM.
Weight:	Unknown.

Description: The "bourrelet" of this shell is a brass band 4/5 inches wide. There is a 7/8 inch wide copper rotating band which is grooved twice along its circumference dividing it into 3 equal segments. The burster charge is small being 6.9 inches long and 1.4 inches in diameter. The chemical filling occupies the rest of the space in the shell casing. The average thickness of the shell wall is 1/2 inch.

Remarks: According to the Japanese marking system the yellow band indicates blister gas. It is estimated that the volume of chemical filling would be about 1/2 gal., approximately 5 or 6 lbs. if the filling were mustard.



55-C PROJECTILE, 105MM. (CUTAWAY), CHEMICAL FILLED.

General:

Color:	Blue Gray.
Markings:	White band just above rotating band one third the way up the body, yellow band just below the "bourrlet".
Contents:	A booster, a burster charge, a fuse well, and a chemical fill.
Dimensions:	Length: 19.2 inches, Diameter: (of Body) 104MM.
Weight:	Unknown.

Description: The "bourrlet" of this shell is a brass band 3/10 of an inch wide. There is a 7/8 in. wide copper rotating band which is groved twice along its circumference dividing it into three equal segments. The inside of the shell consists of a cylindrical burster charge, a booster inside the burster, and a fuse well inside the booster. The fuse well extends 1.34 inches down into the booster, the booster extends 3.5 inches down into the burster, and the burster extends 9.71 inches down into the shell. The remaining space is taken up by the chemical fill. The average thickness of the shell wall is 1/2 inch. Inner wall of shell is lacquered, provides corrossion resistance against mustard.

Remarks: Since there is no appearent facility for filling the shell with a gaseous chemical under pressure, we assume that the fill is a liquid or solid. According to one Japanese system of marking, the lower yellow band indicates blister gas. It is estimated that the volume of chemical filling would be about 3/8 gal., approximately 4 to 5 lbs if the filling were mustard.



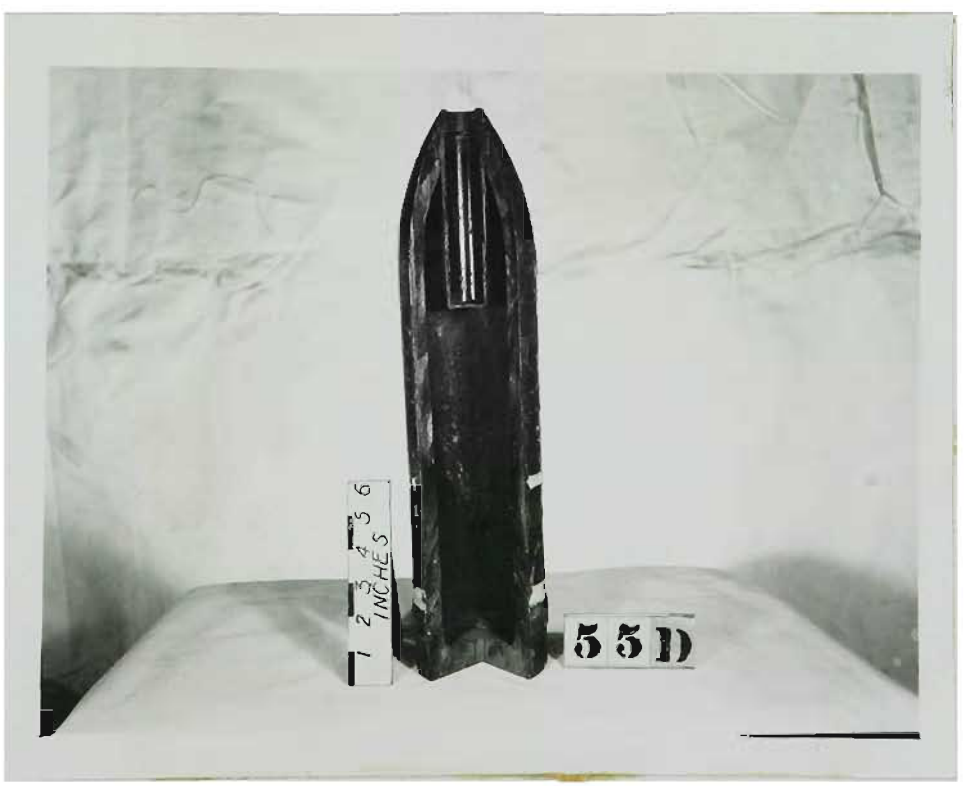
55D-PROJECTILE 105MM, CHEMICAL FILLED (CUTAWAY)

General:

Color: Blue grey
Markings: White band just above rotating band, blue band one third the way up the body, second white band just above blue band.
Dimensions: 16-3/4" long, Diameter (of body) 104mm.

Description: This projectile has a short ogive. There is a .83 in. wide rotating band. The inside of the projectile consists of a burster charge "gaine", 5-1/20" long and 1-7/16" in diameter The remainder of the projectiles interior is occupied by the chemical filling. The approximate volume of the interior of the projectile for filling is .4 gal. The nose of the projectile is threaded for receipt of fuze.

Remarks: There was no filling in this projectile, however marking (blue band) indicates a choking gas filling.





55E-PROJECTILE, 105MM, VOMITING GAS

This item was described in the looseleaf notebook, "Japanese Chemical Warfare," page W28a, without photograph. Photograph has been given to better illustrate this item. Pertinent data: 19" long w/o fuze, weight - 35 lbs. (filled), filling - DC and HE, Fuze-Type 88, gun used in - 105mm gun.

322A-PROJECTILE, 12.7 cm, MAGNESIUM FLARE, BLUE

General:

Color:	Blue
Markings:	Black nose tip, unpainted metal band on nose White label.
Dimensions:	17⅛" long, including dummy fuze plug. 125 mm. diameter.
Weight:	49½ lbs.

Description: The projectile is conically shaped, made of heavy steel. The nose screws into the body and two grub screws prevent the nose from loosening. The upper part of the projectile can be removed by removing two screws and then unscrewing the upper part of the projectile.

There is a copper rotating band near the base of the projectile.

Remarks: The filling of the projectile was not determined as no examination of the contents was made. According to the label on the projectile this is a magnesium flare projectile.

The projectile is similar in its outer appearance to the 12.7 cm AA projectile reported in "Japanese Projectiles and Fuzes", MIIV #4, 19 January 1945, page 119.

Photograph shows both 322A and 322B.



[redacted]

322B-PROJECTILE, 12.7 cm, MAGNESIUM FLARE, RED

General:

Color:	Red
Markings:	Black nose tip, White label.
Dimensions:	17½ in. long, including dummy fuze plug. 125 mm. diameter.
Weight:	48½ lbs.

Remarks: This projectile is identical with Projectile, 12.7 cm, Magnesium, Flare, Blue, item 322A except for the color and markings.

Photograph for 322A shows this item marked B.

[redacted]

713-PROJECTILE, 150MM, TYPE 92, VESICANT FILLED

General:

Color:	Blue Grey
Markings:	Blue band and red band at nose tip, one yellow band near rotating band.
Dimensions:	23" long, (less fuze), 154 mm diameter.
Weight:	69 lbs.

Description: The projectile is made of heavy steel and from the bourrelet forward is conically shaped. The nose plug can be removed and replaced by a nose fuze. There is a copper rotating band near the base of the projectile. There is a booster well which contains the booster charge. This projectile uses a type 88 instantaneous fuze.

Remarks: No examination was made of the contents of this shell It is identical with the lithograph No. 44 which describes this shell as containing blister gas.

The projectile is used in a Type 4, 15 cm Horwitzer.



秘 軍事秘密

四年式十五糎榴彈砲彈藥

整備區分第一種

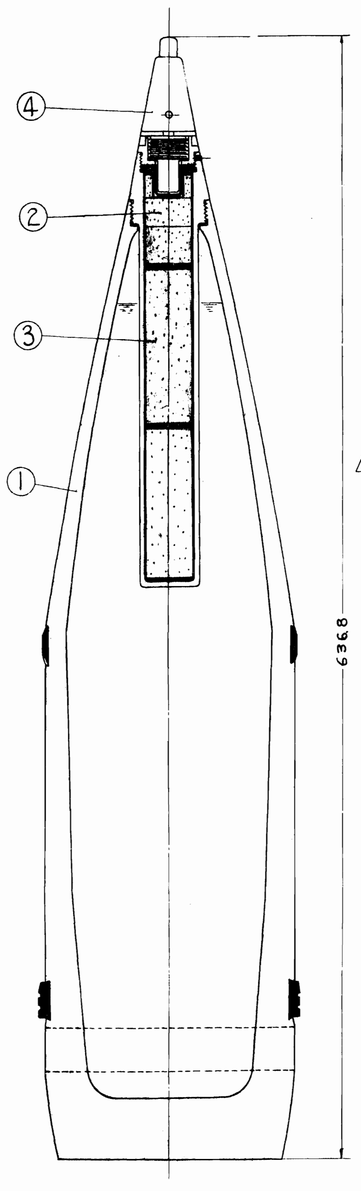
九二式尖鋭きい彈(甲)

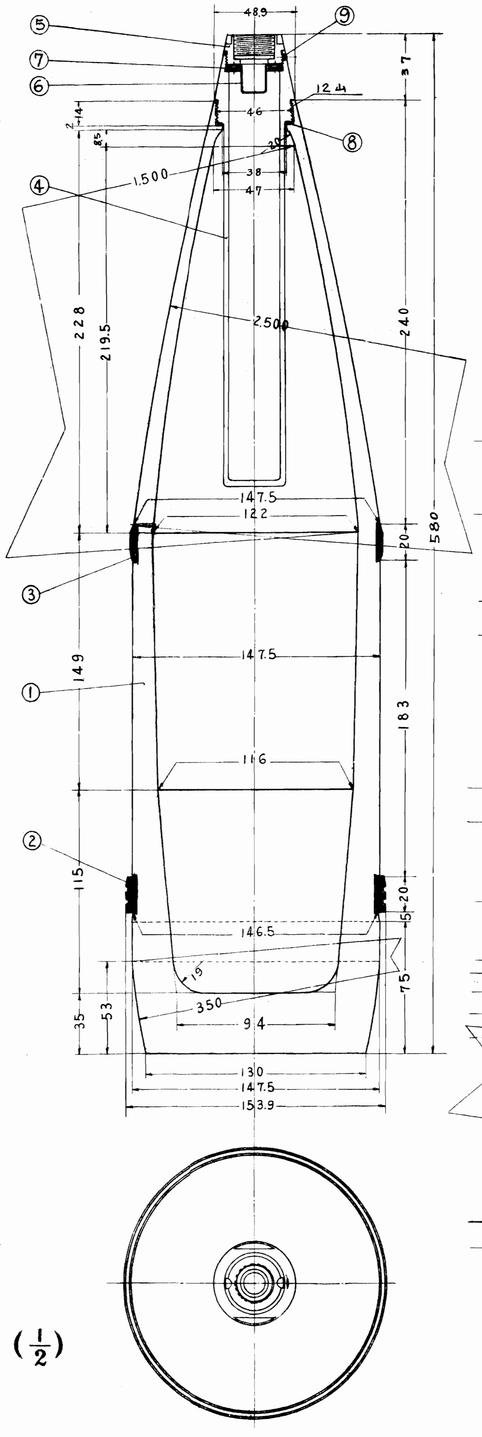
M. 92 STREAM-LINED "KII" (BLISTERING GAS) SHELL OF M. 4 15 CM. HOWITZER

要彈 60592

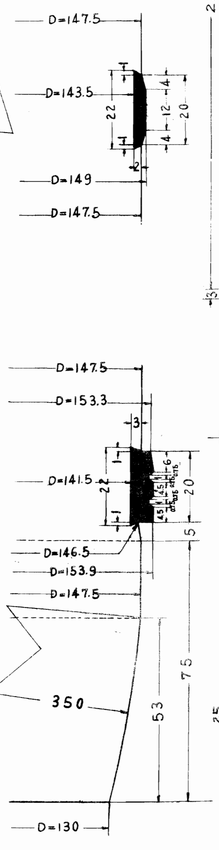
陸軍假制式兵器圖（要塞彈藥）
昭和九年三月二十二日 陸密第一三七號制定
陸軍技術本部印刷

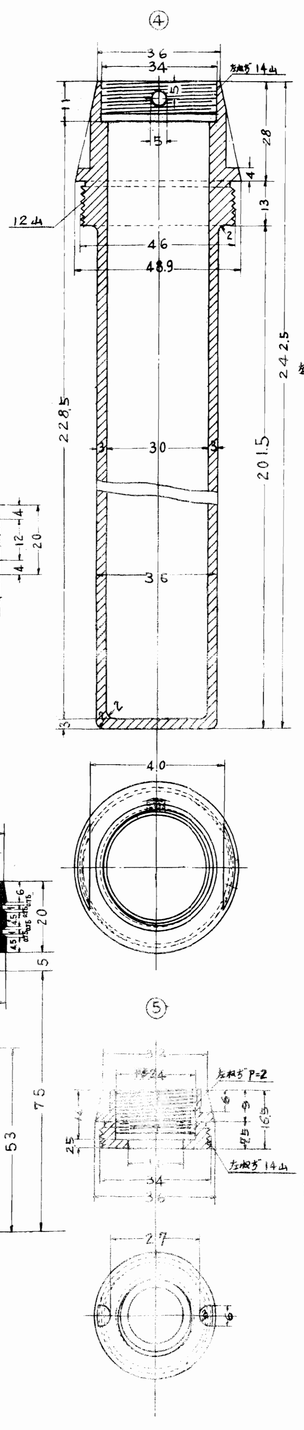
全体

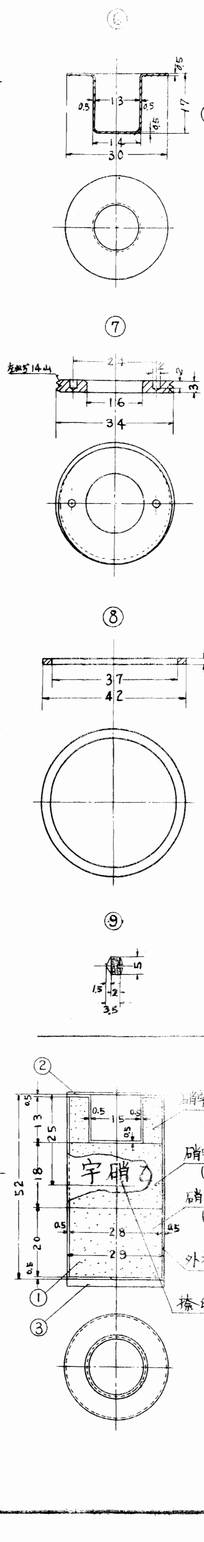


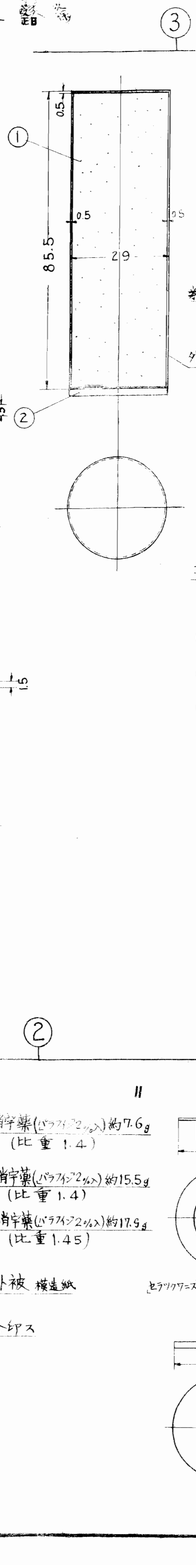


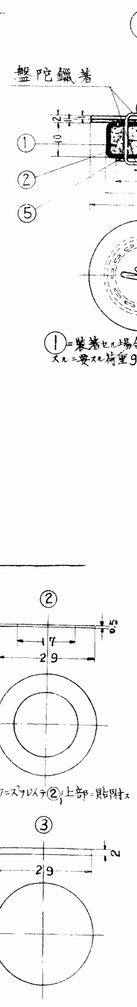
(1/2)











(1/1)

註記 1. 本尖鋭きい彈(填実物ヲ除ク)ハ四年式十五糎榴彈砲彈藥九二式尖鋭あをしろ彈ニ同シ

イ. 彈丸蕾形部内面ノ半徑1500㎜及20㎜ノ標準寸法ヲ示シアルモノニシテ各點精密ニ此ノ寸法ヲクジルルノ意ニ非ス

ロ. 彈丸外部着色(要領中標識線及塗料色)ノ下記ノ要領ニ依リ施ス

一. 外部塗料ハ鼠色塗料トス

二. 彈帶ノ上方、彈帶上方圓壔部長サノ四分ノ一ノ下際ト[illegible]壔部徑五分ノ一幅ノ黃色一線ヲ標示ス

三. 炸藥ノ標識ハ之ヲ施サス

四. 彈腔容積ノ標識ハ彈帶ノ下方ニ黑色塗料ヲ以テ適宜ノ大サニ正負ノ符號ヲ下記區分ニ依リ附スルモノトス

彈腔容積	正負各	±
〃	1% 以内モノ	
〃 正	1%(之ヲ含マス)乃至3%	+
〃 正	3%(〃)乃至5%	+
〃 負	1%(〃)乃至3%	−
〃 負	3%(〃)乃至5%	−

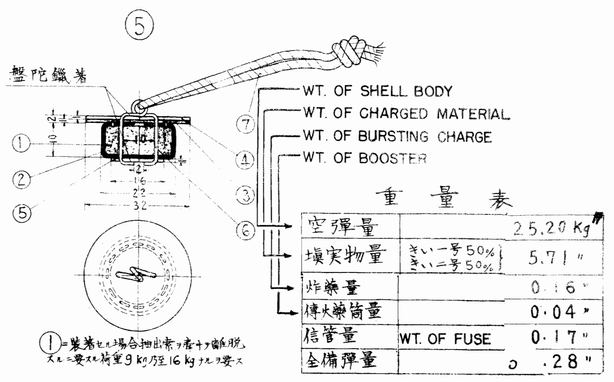
以上2%ヲ增減スル毎ニ逐次符號ヲ增加ス

ハ. 彈腔容積約3974ccトス

ニ. 炸藥實空積6%通常トスルモ[illegible]

ホ. 炸藥實作業ニ當リ炸藥室ヲ彈丸体ニ打ち込ム際シテハ其ノ外吉印ニグラオシアキンドヲ塗擦スルモノトス

ヘ. 7. 酷寒(零下25℃以下)用填実物トシテきい一号丙ヲ使用スル此ノ場合ノ填実物量ハ4.53kgトス



① = 裝藥セル場合抽出栓ヲ有セサル點ヲ除クノ外ハ要スル荷重9kg乃至16kgナルヲ要ス

重量表

空彈量		25.20 Kg
塡実物量	きい一号50% きい二号50%	5.71 〃
炸藥量		0.16 〃
傳火藥筒量		0.04 〃
信管量	WT. OF FUSE	0.17 〃
全備彈量		26.28 〃

TOT. WT. OF PROJECTILE

番號及名稱		品質	員數	摘要
1彈丸	1体	彈丸鋼第一號	1	内面ニ「ラクワニス」一號ヲ3回燒附ス
	2彈帶	鋼第一號	1	
	3定心帶	〃	1	
	4炸藥室	彈丸鋼第一號	1	内面ニ漆液ヲ塗林シ外面ニ「ラクワニス」一號ヲ3回燒附ス
	5啄螺	棒鋼第三種又ハ第五種	1	
	6蓋板	鋼第一號	1	セラックワニス」ヲ塗林ス
	7蓋螺	黃銅	1	
	8鉛螺	鉛	1	
	9啄螺小ねぢ	棒鋼第三種若ハ第四種	1	
2甲種の傳火藥筒	1体		1	外面ニ「セラックワニス」ヲ塗林ス
	2坐環	ボール紙	3	本部ニ於テ①ノ(6)ノ附屬書ノ「傳火藥筒ニ關スル件」ニ基キ之ヲ製造ス
	3坐椹	フエルト	1	セラックワニス」ヲ以テ②ノ下部ニ貼附ス
3炸藥	1体		1	2 外面ニ「セラックワニス」ヲ塗林ス
	2坐椹	フエルト	1	セラックワニス」ヲ以テ[illegible]ノ部ニ貼附ス
4信管			1	本部ニ於テ製造ス 記ス
5彈帽	1体	コルク	1	
	2被包	厚木綿	1	⑤ノ體ト圓ノ上面ノ前後ヲ縫着ス
	3坐褥	綿	1	パラフィン浸ノ打 ⑤ニ附着ス
	4蓋板	鋼板第二種若ハ第四種	1	各1枚
	5坐板	〃	1	〃
	6螺束子	針鋼		16mm 螺 鍍亞鉛
	7抽出索		1	3mm 撚別白麻索 長サ200mm

Eighth U. S. Army Printing Plant
(Boonjudo)

714-PROJECTILE, 150mm, TYPE 93, VOMITING GAS FILLED

General:

Color-	Blue gray
Markings-	Red band and blue band at nose tip, red band near rotating band.
Dimensions-	22 inches long (Less fuze), 154mm diameter
Weight-	70½ lbs filled

Description: The projectile is made of heavy steel. From the bourrelet forward is conical shaped. The nose plug can be removed and replaced by a nose fuze. There is a copper rotating band near the base of the projectile. The projectile is equipped with a booster charge that is contained in a booster tube. It uses a type 88 instantaneous fuze.

Remarks: The contents of the projectile were not examined, however is probably D C. This projectile is identical to that shown in lithograph No. 47.

Translation: Lithograph has additional notation: "Streamlined AC." The projectile is used in a Type 4, 15 cm Howitzer.



四年式十五糎榴彈砲彈藥

整備區分第一種

九三式尖鋭あか榴彈

M.93 STREAM-LINED "AKA" (SNEEZING GAS) SHELL OF M.4 15CM. HOWITZER

要彈 60656

陸軍假制式兵器圖（要塞彈藥）

昭和九年十一月二十六日 陸密第七〇〇號制定

陸軍技術本部印刷

秘 軍事祕密

全体

(1/1)

(1/2)

(1/1)

註記：1. 本彈藥ノ陸軍兵器製作圖ヲ省略ス

2. 彈丸体錐形部内面半徑1500mm及15mm並外轉室圓形部内面半徑1500mm及20mmハ標準寸法ヲ示シタルモノニシテ各隊精密ニ此ノ寸法ヲタタシタルノ意ニ非ス

3. 彈丸外部着色要領中標識線及塗料色ハ下記ノ要領ニ施行ス

一 外部塗料ハ鼠色塗料トス

二 彈帶止方ニ彈帶上方圓壔部ノ長サノ四分ノ一ヲ下際トシテ圓壔部徑ノ五分ノ一幅ニ赤色ノ一線ノ標示ス

三 彈腔容積ノ標示ハ彈帶ノ下方ニ黒色塗料ヲ以テ適宜大サニ正負符號ヲ下記區分ニ依リ附スルモノトス

彈腔容積	正負各	1個	以内ノモノ	±
〃	正	1個	(之ヲ含マス)乃至 3個	+
〃	正	3個	(〃)乃至 5個	++
〃	負	1個	(〃)乃至 3個	−
〃	負	3個	(〃)乃至 5個	−−

以上 2個ヲ增減スル毎ニ逐次符號ヲ增加ス

4. 彈腔容積ハ約1020ccトス

5. 填實空積ハ 5%トス

6. 填實作業ニ當リ炸藥室ヲ彈丸体ニ取付ケ込ミ際シテハ共ニ取付部ニ「グラホシプキットヲ塗抹スルモノトス

(1)ニ裝着セル場合引出索ヲ牽キテ離脫スルニ要スル荷重9kg乃至16kgナルヲ要ス

WT. OF SHELL BODY
WT. OF CHARGED MATERIAL
WT. OF BURST. CHGE.

重量表

空彈量		27.250kg
填實物量	あか一號	1.275 〃
炸藥量	苓褐藥 80%：混合焙燒 ナフタリン 20%	3.325 〃
傳火藥筒量	WT. OF BOOSTER	0.080 〃
信管量	WT. OF FUSE	0.170 〃
全備彈量		32.100 〃

TOT. WT. OF PROJECTILE

番號	名稱	品質	員數	摘要
1 彈丸	1 体	彈丸鋼第一號	1	内面ニ「ラクライトフニス」一號ノ三回燒附ス
	2 彈帶	鋼第一號	1	
	3 定心帶	〃	1	
	4 炸藥室	彈丸鋼第一號	1	如ヲ部ヲ除キ内面ニ漆液ヲ塗抹シ外面ニ填實物接スル面ハ「ラクライトフニス」一號ノ三回燒附ス
	5 鉛環	鉛	1	
	6 吸螺	機械鋼第三種乃至第五種	1	
	7 蓋板	鋼第一號	1	「ラクフニス」ヲ塗抹ス
	8 傳火藥筒室	黄銅	1	如ヲ部ヲ除キ内外面ニ漆液ヲ塗抹ス
	9 傳火藥筒室小ねぢ	機械鋼第三種乃至第四種	1	
	10 吸螺小ねぢ	〃	1	
2 彈帶裏張及緩衝	1 体		1	外面ニ「ラクフニス」ヲ塗抹ス
	2 座環	ボール紙	1	「ラクフニス」ヲ以テ②ノ上部ニ貼附ス
	3 座梅	フエルト	1	「ラクフニス」ヲ以テ②ノ下部ニ貼附ス
3 定心帶緩衝	1 体		1	外面ニ「ラクフニス」ヲ塗抹ス
	2 座梅	フエルト	1	「ラクフニス」ヲ以テ③ノ下部ニ貼附ス
4 信管			1	八八式瞬發信管捕ヒ
5 口栓	1 体	コルク	1	
	2 被包	厚木綿	1	⑤ニ棚卷シ迴圍シテ上面ニ折返シ縫綴ス
	3 座梅	絨	1	パラフイン浴ヲ行ヒ⑤ニ棚卷ス
	4 蓋板	鋼板第三種乃至第四種	1	亞鉛めつき
	5 座板	〃	1	〃
	6 緊束子	軟鋼	1	1.6mm線、亞鉛めつき
	7 引出索		1	(補)特別白麻索3 長サ200mm

Eighth U. S. Army Printing Plant
(Boonjudo)

590-PROJECTILE, 150mm, TYPE 13 YEAR, SMOKE

General:

Color:	White
Markings:	Japanese characters giving kind of shell and date of manufacture, a red band at the nose.
Components:	Nose, Body
Dimensions:	25½" long, Diameter 150mm.
Weight:	75 lbs.

Description: Nose: The nose is conical shaped and screwed onto the body. There are flat places on opposite sides that a wrench may be fitted onto in order to loosen the nose from the body. The plug on the end of the nose may be removed and a fuze inserted in its place.

Body: The body is 18.3" long. There is a copper rotating ring, ½" wide, 1.6" from the base of the shell.

Remarks: On the shell crate there are Japanese characters stating that this projectile is to be used in a 4 Year 15 Shrapnel Gun. No other reference could be found on this projectile. The type of filling is unknown, but the white color of the shell seems to denote white phosphorous. The color is identical with the color of Projectiles, 90mm, Mortar, Type 1, Smoke Provisional for Type 94 Light Mortar, which is known to contain white phosphorous. This shell was made in June, 1943.



[redacted]

57A-PROJECTILE, 15cm. EMPTY

General:

Color:	Gray
Markings:	1 white band in front of the rotating ring, 1 blue band 6 in. from the base, 1 white band in front of the blue band.
Dimensions:	23½ in. long, 149mm. diameter
Weight:	62½ lbs. (empty)

Description: The nose is ogival shaped and is adapted for a screw-in fuze. The body is cylindrically shaped and has a copper rotating ring, 1 3/4 in. from the base of the shell.

Remarks: The shell was empty and the filling to be used in it is unknown, however color and markings would indicate a choking gas filling. Photograph shows items 57A, 57B, 57C, 57D in that order.



[redacted]

57P-PROJECTILE, 15cm, EMPTY

General:

Color:	Gray
Markings:	1 white band in front of the rotating band.
Dimensions:	23½ in long, 149mm. diameter.
Weight:	80 lbs. (empty)

Remarks: Except for the weight of the projectile and the markings, this shell is identical with the projectile described in Item 57A.
Photograph illustrating 57A shows this projectile marked P.

[redacted]

57C-PROJECTILE, 15cm, EMPTY

General:

Color:	Gray
Markings:	1 white band in front of the rotating band, 1 olive drab band 6 in. from base of the shell.
Dimensions:	23½ in long, 149mm. diameter
Weight:	62½ lbs. (empty)

Remarks: Except for the markings, this projectile is identical with the Projectile described in Item 57A.

The projectile examined had been launched as the rotating band bore rifling marks. The significance of the olive drab band color is not known. It is believed that this projectile is filled with a chemical agent.

Photograph illustrating 57A shows this item marked C.

[redacted]

57D-PROJECTILE, 15cm, EMPTY

General:

Color:	Gray
Markings:	1 white band in front of the rotating band, 1 yellow band 6 in. from the base of the shell.
Dimensions:	23½ in. long, 149mm. diameter
Weight:	62½ lbs. (empty)

Remarks: Except for the markings, this projectile is identical with the one described in Item 57A.

Filling for this projectile is not known, however the yellow band in indicates a blister gas filling.

Photograph for 57A shows this item marked D.

57E-PROJECTILE, 15cm.

General:

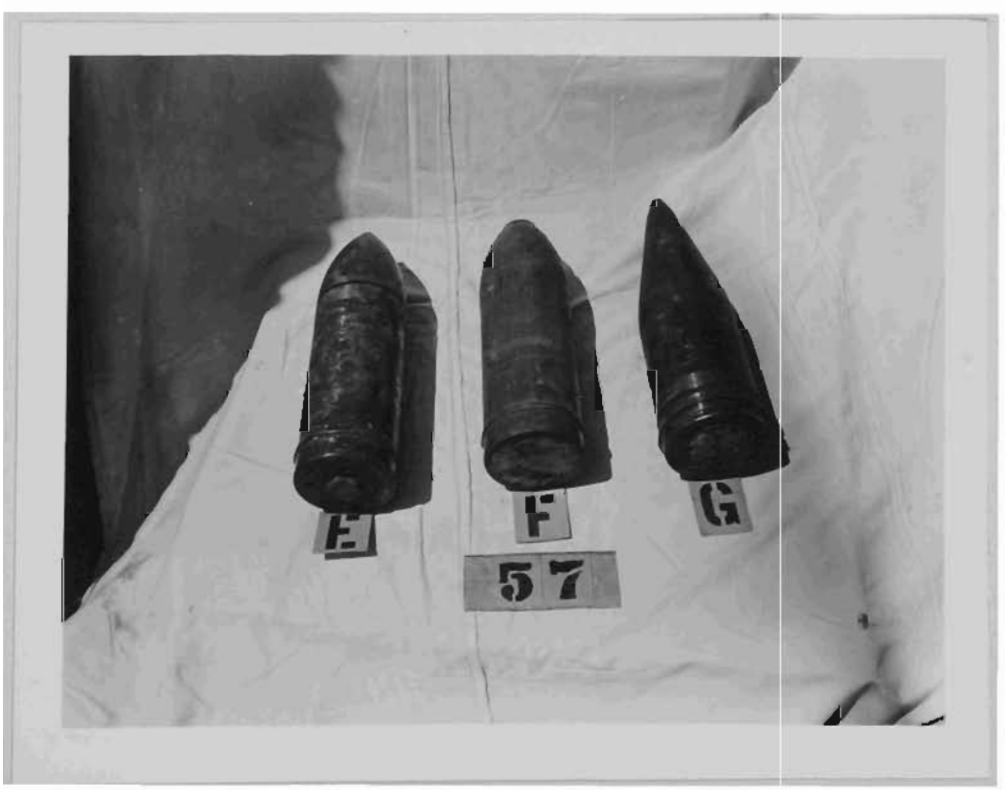
Color:	Gray
Dimensions:	21½ in. long, 148 mm. diameter
Weight:	60 lbs. (empty)

Description: The ogival shaped nose screws onto the body. There is a fuze adapter which accepts a nose fuze.

The body has a copper rotating band 1½ in. from the base. The front end of the projectile is enclosed by a steel disc. On the base end of the shell there is a 1 7/8 in. hexagonal nut which can be removed to permit the filling of the shell. An air vent, ½ in. in diameter, threaded to accept a plug, is located in the base of the shell. Two indentures, 5/8 in. in diameter and 3/8 in. deep, are located 180 degrees diametrically opposite each other on the base of the shell. A forked wrench fits into these indentures and permits the shell to be opened.

Remarks: It is believed that markings had not yet been placed on the projectile. This projectile is apparently to be filled from the base end with a blister gas (see item 59E).

Photograph shows items 57E, 57F, and 57G.



57F-PROJECTILE, 15cm, EMPTY

General:

Color:	Blue-gray.
Dimensions:	19½ inches long, 148mm diameter.
Weight:	67 lbs. (empty).

Description: The ogival shaped nose screws onto the body and has a threaded adapter which recieves a fuze. A metal disc closes the end of the nose that connects to the body. Upon removing the nose the body may be filled. The disc separates the filling in the body from the charge in the nose.

A copper rotating band is located 1-3/4 in. from the base of the projectile.

Remarks: This projectile is believed to filled with a vesicant gas. The particular shell examined was empty.

Photograph for 57E shows this item marked 57F.

57G-PROJECTILE, 15 cm

General:

Color: Red
Markings: One yellow label.
Dimensions: 22-3/4" long, 148 mm diameter.
Weight: 92½ lbs.

Description: The entire shell is made of one piece except the base plug, 4½ in. in diameter. The front end of the shell tapers to a very sharp point. The shell casing is made of heavy machined steel. There are two copper rotating bands near the base of the shell. There is a smaller threaded plug in the center of the main plug. Both plugs are equipped with indentures to permit the use of a forked wrench for loosening the plugs.

Remarks: The contents of this projectile are unknown. It is possible that the chemical agent insert, for 15 cm Projectile item 31A is to be used in this projectile.
Photograph for 57E shows this item marked G.

559A-PROJECTILE, 15cm, CHEMICAL FILLED, (CUTAWAY)

General:

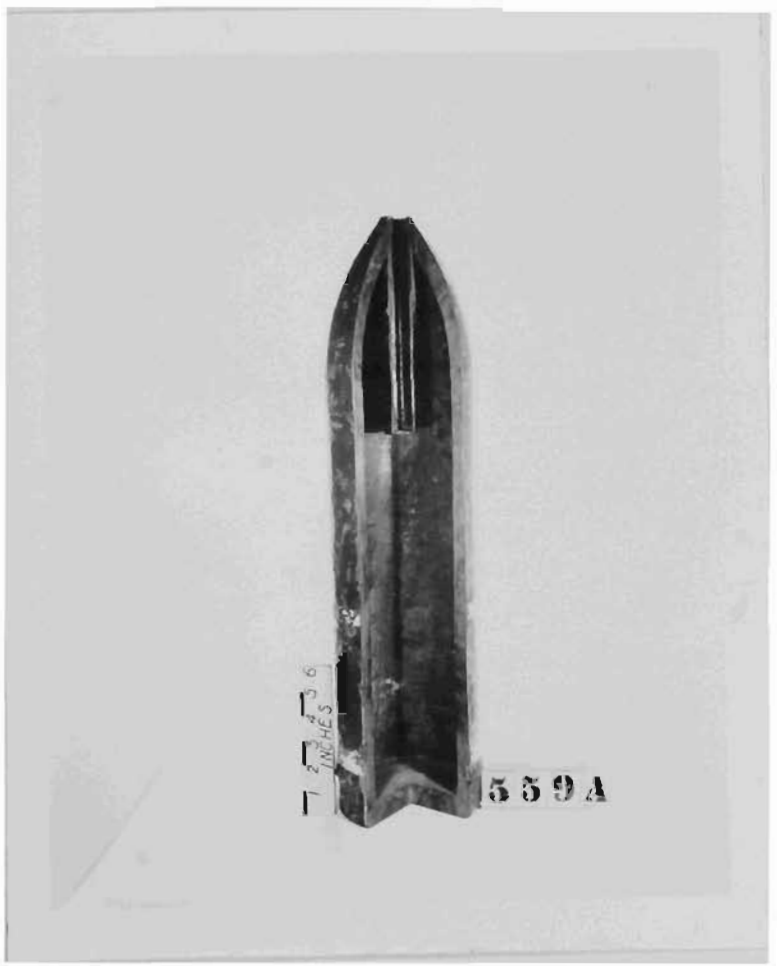
Color: Blue gray
Markings: White band above rotating band, blue band about one third the way up body, white band above blue band.
Dimensions: 23½ inches long, 149 mm diameter

Description: This projectile has a one piece body and nose. The nose is short ogival shaped. A burster will 7 3/8 inches long, 1 5/16 in. diameter is screwed to the inside of the nose. A 7/8 inch fuze pocket for receipt of a fuze is in the nose. A 5/8 inch wide copper rotating band is located 1 to 2 inches from the rear end of the projectile.

The interior of the projectile is one large cavity for whatever filling is to be used. Average wall thickness is 9/16 inches. The base is 7/8 inches thick. Approximate capacity of space for filling is .75 gallons.

Remarks: The blue band marking indicates a choking gas filling.

This cutaway appears to be identical to the whole projectile 57A (Projectile, 15 cm).



559B - PROJECTILE, 15cm, (CUT AWAY)

General:

Color: Blue gray
Markings: White band above rotating band
Dimensions: 23 in. long, 149 mm diameter

Description: This projectile has a long, tapered nose which is threaded internally to receive a fuze. Seated inside the nose and projecting downward into the interior of the projectile is a buster 2.5 inches long, 1 3/16 inches in diameter. Within this buster is a gaine casing 3/8 inches long and 5/8 inches in diameter.

A 1 inch wide copper rotating band, segmented twice around its circumference making three rings, is closeto the rear end of the projectile.

The estimated internal volume of the projectile for filling is .8 gallons.

Remarks: The filling for this projectile is not known, however it is believed to be chemical agent filled. The one white band presumably indicates the high grade quality of the steel in the projectile.



[redacted]

5590-PROJECTILE, 15cm, CHEMICAL FILLED, (cutaway)

General:

Color: Blue grey.
Markings: White band above rotating band, red band one third way up body, yellow band below bourrelet
Dimensions: 22 inches long, 148 mm diameter.

Description: This projectile has a long tapered nose, is made of heavy, high grade (indicated by lower white band) steel. It is composed of three parts; the body, the burster section and the nose tip.

The body is of average 9/16 inch wall thickness, has a 7/8 inch thick solid base. A copper rotating band is located near the base end of the projectile. This band is .8 inch wide, is grooved equally spaced, twice around its circumference. The base end is tapered slightly to a smaller diameter below the rotating band. A bourrelet is located on the upper part of the body ending at the point at which the taper to the nose tip begins

The burster section screws, into a threaded recess in the body of the projectile 7-3/4 inches from the nose end. This section consists of 6½ inches of the tapered nose and includes the burster tbe 19 inches long, 3 inch diameter. This burster extends to the base of the projectile on the inside. A small annular space remains between the body wall and burster wall. The chemical filling of the projectile is placed in this space.

The nose section is the top 1½ inches of the tapered nose length. It is screwed to the burster section of the projectile. It is threaded internally for receipt of a fuze. A gaine (intermediate charge container) and fuze well are screwed to the inside of the nose and burster sections.

Remarks: The red band marking indicates a vomiting gas filling.



559C-PROJECTILE, 15cm, CHEMICAL FILLED, (cutaway)

[redacted]

559D-PROJECTILE, 15 cm, CHEMICAL FILLED, (CUTAWAY)

General:

Color:	Blue gray
Markings:	White band above rotating band, yellow band 1/3 way up body, yellow band below bourrelet.
Dimensions:	32 in. long, 148 mm diameter.

Description: This projectile is constructed of high grade steel, varying in thickness in the wall from about 3/8 inches to 13/16 inches. It has a long tapering nose and can be disassembled into three sections, the body, nose midsection and nose tip.

Slightly over 2½ inches from the tapered base end is a 3/4 inch copper rotating band which is grooved twice along its circumference making three rings. The solid base end is 13/16 inch thick. The forward end of the body is internally threaded for receiving the nose midsection. The rear end of the burster of the projectile is fixed to the inside forward end of the body. It extends approximately 5 inches into the interior of the body and is 3-3/4 inches in diameter.

The nose midsection, is about 4½ inches of the tapered nose. It screws into the body, provides the top half of the burster hollow.

The nose end of the projectile screws into the nose midsection about 1½ inches from the tip. This nose is internally threaded for a fuze. A gaine, 2-7/8 inches long, 1-13/16 inches is screwed to the inside of the nose end. A small fuze pocket is suspended on the inside top of the gaine.

The estimated capacity of the space below the burster for chemical filling is .9 gallons.

The inner wall of the chemical filling section of the projectile is lacquered.

Remarks: The markings on the projectile indicate a blister agent filling. The lacquered walls of the filling section supports this conclusion. The burster is undoubtedly filled with HE.

[redacted]



559D-PROJECTILE,15 cm, CHEMICAL FILLED (CUT AWAY)

559E-PROJECTILE, 15 cm, CHEMICAL FILLED, (CUTAWAY)

General:

Color-	Blue gray
Markings-	White band above rotating band, yellow band 1/3 the way up body, yell band below bourrelet.
Dimensions-	20⅝ inches long, 148 mm diameter

Description: This projectile has a short ogive, is made of high grade steel of 9/16 inches wall thickness. The interior of the projectile is lacquered. The projectile can be disassembled into two sections, the body and the ogival nose. The base end of the body is 1½ inches thick. A 1 7/8 inch hexagonal nut is screwed into the opening in the base. Presumably filling the of the rear section of the projectile can be done through this opening. A single copper rotating band, tapered to the nose end is located 1¼ inches from the base end. A bourrelet is on the fore end of the body section ending at the joining surface between body and nose. Female threads are in the top of the body for receiving the nose piece. A ½ inch thick steel plate located across the top of the body, just below the threads. This plate separates the burster section, mainly the nose of the projectile, from the chemical filling compartment. [illegible] The nose is female threaded for receiving a fuze and contains at its forward end a gaine tube, 3 inches long, 1 inch in diameter.

Estimated capacity of chemical filling section is .85 gallons.

Remarks: It is believed that the rear compartment of this projectile is blister gas filled. The markings and the lacquering of the inner walls support this belief. The forward (nose) compartment is probably H D filled.

This cutaway section seems to be identical to the whole projectile, 15 cm, item 57E.



60A-SHELL, 50MM, 10TH YEAR FLARE "A"

General:

Color:	Clear lacquered Brass Body
Markings:	Japanese characters stamped on bottom of body giving mfr. and mfg. date. Japanese characters stamped on body reading "Special Secret".
Contents:	Base: primer and propellant charge. Body: two pyrotechnic trains, igniters and filling.
Dimensions:	Overall - 6" long. Body - 5" long.
Weight:	1.2 lbs.

Description: The body of the shell is constructed of a shaped piece of sheet metal and has a hemispherical nose. On the sides of the shell toward the base are four gold colored metal foils each covering seven circular flame ports. These foils are burned through when the shell is ignited.

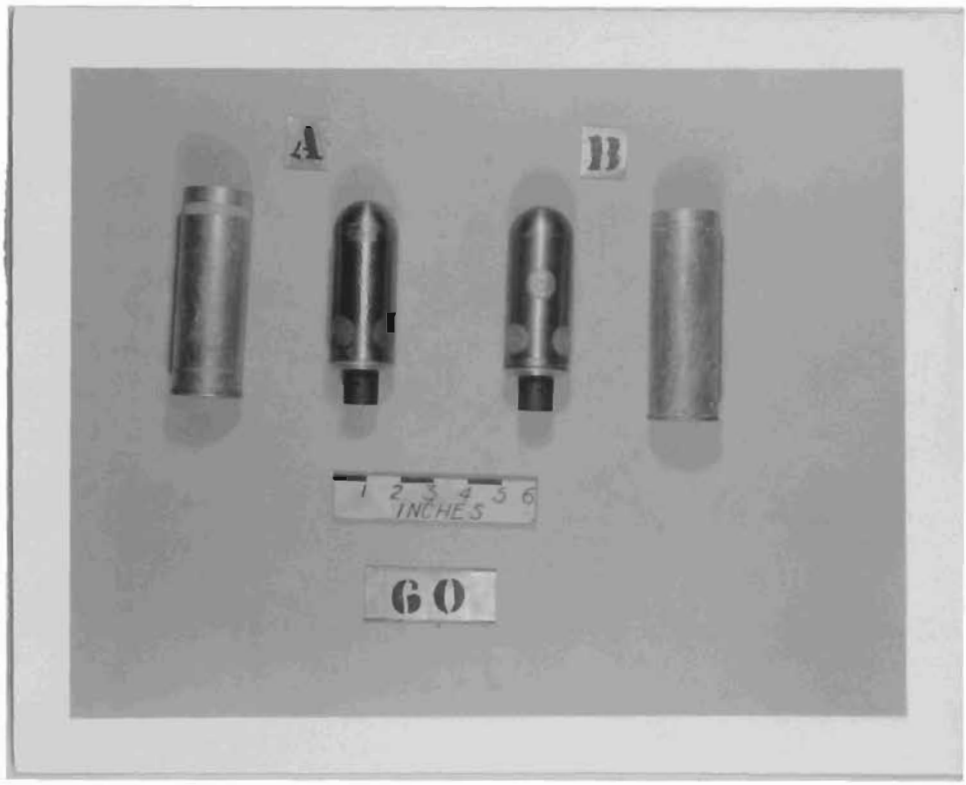
The primer, and propellant charge in the base are in line with igniter and pyrotechnic trains in the body. All of these elements are set off in succession following initial detination.

Translations taken from the shell labels, state that this shell is fired from the type 89 Grenade Discharger and the shell is used as a air burst flare.

Remarks: This shell is very nearly identical to "50mm Incendiary Shell" (Special Type) reported in "Japanese Chemical Warfare notebook, Office of Chief Chemical Officer, Hqs., USAFOS, APO 501. However considering the definite nomenclature on shell examined which differs from that in aforementioned notebook and lack of information of the composition of the filling, this shell has been considered as possibly a different one.

Photograph shows items 60A and 60B, respectively.

[redacted]



60A-SHELL, 50mm, 10th YEAR, FLARE "A"
60B-SHELL, 50mm, 10th YEAR, FLARE "B"

60B-SHELL, 50MM 10TH YEAR FLARE B

General:

Color:	Natural brass with unpainted base and a black propellant assembly.
Components:	Body, Base, Propellant Assembly.
Weight:	1.12 lbs.

Description: Body: The body is made of sheet metal with a hemispherical shaped nose. There are eight sets of perforations each of which has seven circular flame ports. These perforations are covered with silver colored metal foil.

Base: The base is made of very light metal, presumably aluminum or aluminum alloy. Into this is screwed a steel cylinder containing the propellant charge and primer.

Propellant Assembly: In this assembly there are six holes which permit the escape of the gases caused from the exploding propellant.

Remarks: This flare was designed to be fired from the Type 10th Year Grenade Discharger which is a Forerunner of the "Knee Mortar". The contained charge is unknown as no analysis was made. 10th Year is 1935 according to the Showa era calendar.

Reference: Handbook of Japanese Explosive Ordnance, 15 Aug. 1945, page 158-159.

[redacted]

658- SHELL, 75 mm., TYPE 1 [illegible], PROV, FOR TYPE 90 FIELD GUN

General:

Color-	Black with red tipped nose	
Markings-	Projectile:	White band. Above the white band and in white is the plus-over-minus sign of a normally weighted shell. Also above the white band is the Japanese character of Yellow. Below the band is a red circle and the Japanese characters for "Steel Special"
	Cartridge Case:	"18.4 A" and what is believed to be an arsenal mark are in indelible blue on the cartridge case
Components-	Projectile, cartridge case, propellant charge	
Dimensions-	Diameter of Shell -- 75 mm.	
	Length of cartridge case -- 16 3/4 inches	
	Length of projectile -- 10½ inches	
Weight-	22 lbs.	

Description: Apparently this is fixed ammunition, however this round was found disassembled, projectile and cartridge case packed separately. The projectile is steel with a sharp ogival nose. It has two copper rotating bands and has a fuze at the base which is initiated by the burning of the propellant charge. The propellant charge consists of two bundles of olive colored power strips tied together with silk cord. One of these bundles is about one third the length of the other. The long bundle is wrapped at the base in a cloth bag to which has been sewed a small bag of black powder initiator.

Remarks: A shell presumed to be this one is shown in "Handbook of Japanese Explosive Ordnance," 15 August 45, a chart on projectile data on page 146, a photograph (item I) on page 145. A medium Mk. 1 fuze is used in the projectile referred to. Filling is H E.



658-SHELL, 75 mm., TYPE 1 A.T., APCV, FOR TYPE 90 FIELD GUN

717-SHELL, 75mm, TYPE 92, VESICANT FILLED

General:

Color-	Grey
Markings-	Wide yellow band one third of the way between the rotating band and bourrelet. There is, also, a blue and red band at the nose. White markings are stenciled on the body denoting weight, date, and place of filling (N).
Components-	Fixed round of loaded cartridge and loaded projectile.
Dimensions-	Diameter of Projectile- 75mm, Overall length of fixed round 22 inches (less fuze)

Description: Four rounds of this fixed type ammunition are packed in a wooden box. Type 88 instantanious fuzes are individually packaged and contained in the box.

The projectile is similar to Item 716 (q.v.) but has a shorter burster tube and is liquid filled (blister gas).

Remarks: Refer to the corresponding lithograph # 20 for complete detailed description.

This projectile is to be used in a Type 38 Field Gun.



[redacted]

野戰彈藥

砲砲砲砲 野騎野野 式式式式 八一三五 三四改九 造

陸軍假制式兵器圖（野戰彈藥）
昭和九年四月十九日 陸密第二二八號制定
陸軍技術本部印刷

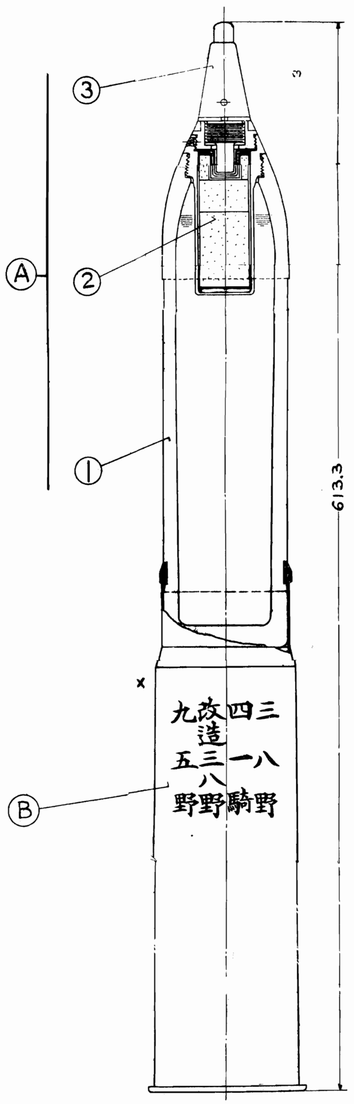
*整備區分第一種

野彈 50272

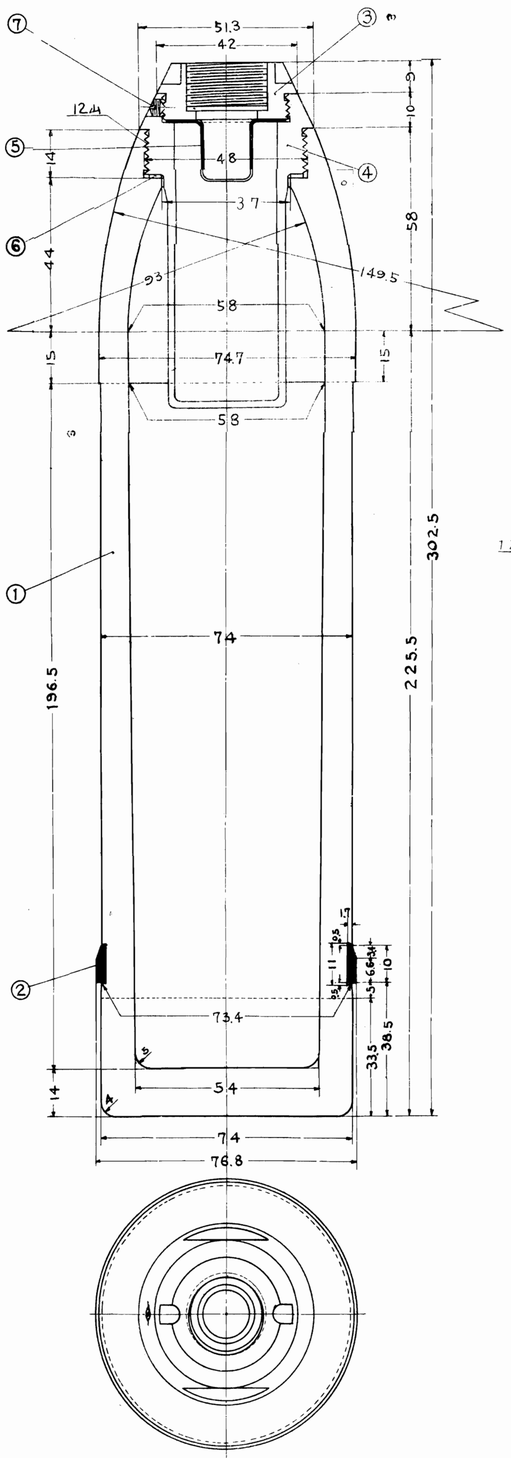
九二式きい彈(甲)彈藥筒

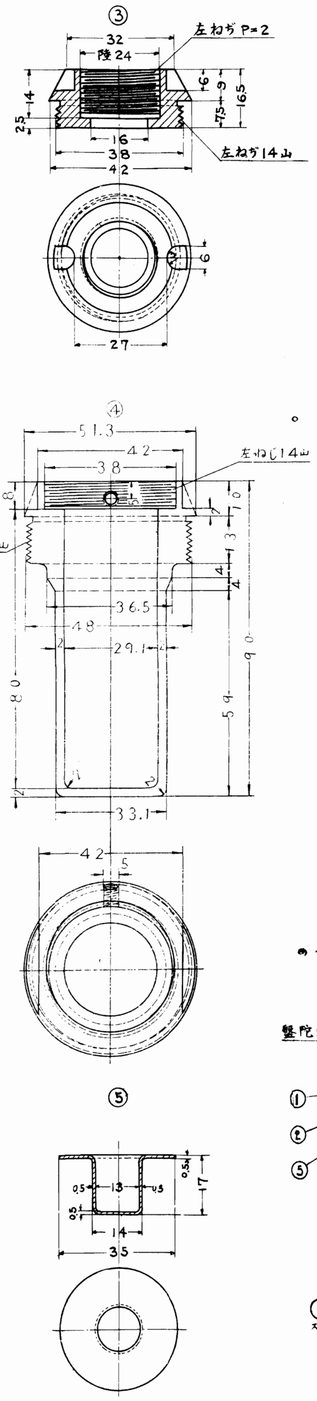
M92 "Kii" (blistering gas) shell of M38 field gun etc.

全体

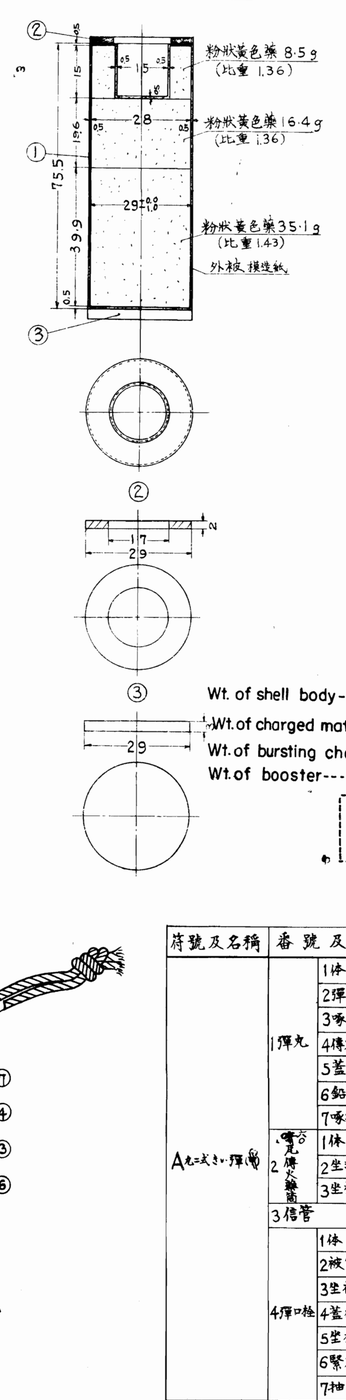


(1/2)









①ヲ裝着セル場合ニ曳出索ヲ拳ヲ以テ離脫スルニ要スル荷重 9Kg乃至16Kgナルヲ要ス

註記 1. 本きい彈ハ四一式山砲，九四式野砲及九四式山砲ニ兼用ス
2. 彈丸蛋形部内面ノ半徑 93mm ハ標準寸法ヲ示シタルモノニシテ各點精密ニ此ノ寸法ヲタラシムル意ニ非ス
3. 彈丸外部着色要領中標識線及塗料色ハ下記ノ要領ニ施行ス
   一. 外部塗料ハ鼠色塗料トス
   二. 彈帶ノ上方ニ彈帶上方圓壔部，長サ四分ノ一ヲ下隙トシテ圓壔部徑，五分ノ一幅ニ黃色ノ一線ヲ標示ス
   三. 炸藥，標識ハ之ヲ施サス
   四. 彈腔容積ノ標識ハ彈帶下方ニ黑色塗料ヲ以テ適宜，大サニ正負，將號ヲ下記區分ニ依リ附スルモノトス

彈腔容積	正負各	1% 以内ヒノ	全
〃	正	1% (之ヲ加ス) ノ至	3% +
〃	正	3% (〃) ノ至	5% ++
〃	負	1% (〃) ノ至	3% −
〃	負	3% (〃) ノ至	5% −−

以上 2% ヲ增減スル毎ニ逐次符號ヲ增加ス

4. 彈腔容積ハ約 1/580 容ヒトス
5. 填實空積ハ 6% ヲ通常トスルモ冬期填實ヲ行ヒ 8% トス
6. 填實作業ハ當リ傳火藥筒室ヲ彈丸体ニネヂ込ムニ際シテハ其ノネヂ部ニさグネシアキヤドヲ塗抹スルモノトス
7. 酷寒(零下25℃以下)用填實物トシテきい一号丙ヲ使用スル此ノ場合ノ填實物量ハ 0.64kg トス

重量表

Wt. of shell body----
Wt. of charged material
Wt. of bursting charge
Wt. of booster------
Total wt. of projectile
" " " fixed ammunition

空彈量		4.570 kg
填實物量	きい一号50% きい二号50%	0.800 〃
傳火藥筒量		0.065 〃
信管量		0.170 〃
全備彈量		5.610 〃
全備彈藥筒量		7.490 〃

符號及名稱	番號及名稱		品質	員數	摘要
A九二式きい彈(甲)	1彈丸	1体	彈丸鋼第一號	1	内面ニ"ニトロセルローズ一號"ノ三回燒附ス
		2彈帶	鋼第一號	1	
		3導螺	棒鋼第二號乃至第五種	1	
		4傳火藥筒室	〃	1	内面ニ漆液ヲ塗抹シ外面ニ"ニトロセルローズ一號"ヲ燒附ス
		5蓋板	鋼第一號	1	亦ラックワニスヲ塗抹ス
		6鉛鑞	鉛	1	
		7導螺小ねぢ	棒鋼第二種若ハ第四種	1	
	2信管	1体		1	外面ニ亦ラックワニスヲ塗抹ス
		2坐環	ボール紙	1	亦ラックワニスヲ以テ②ノ上部ニ貼附ス
		3坐褥	フエルト	1	亦ラックワニスヲ以テ②ノ下部ニ貼附ス
	3信管			1	八八式瞬發信管 野山加
	4彈口栓	1体	コルク	1	
		2被包	厚木綿	1	④ノ糊着シ包圍シテ上面ニ折返シ縫綴ス
		3坐褥	絨	1	パラフィン油ヲ打ヒ④ニ糊着ス
		4蓋板	鋼林第二種若ハ第四種	1	鍍亞鉛
		5坐板	〃	1	〃
		6緊束子	軟鋼	1	16mm 線鍍亞鉛
		7抽出索		1	3mm 特別白麻索，長サ 200mm
B藥筒				1	九二式榴彈藥筒ノ項ニ準ス

Eighth U. S. Army Printing Plant
(Boonjudo)

716-SHELL, 75MM, TYPE 92, VOMITING GAS FILLED

General:

Color:	Gray
Markings:	Wide red band one third of the way between the rotating band and bourrelet. There is also, a blue and red band at the nose. Whi markings are stenciled on the body denotin weight (under), date, and place of fillin (N).
Components:	Fixed round of loaded cartridge and loaded projectile.
Dimensions:	Diameter of Projectile 75mm, Overall lengt of fixed round, 22" (less fuze).
Weight:	18 lbs. filled.

Description: Four rounds of this fixed type ammunition are packed in a wooden box. Type 88 instantaneous fuzes are individually packaged and contained in the box.

The projectile has a narrow copper rotating band, a long body and a short tapering ogive. A large burster tube is screwed into the nose and a booster is screwed into the burster and set with a screw. A sneezing gas filling (believed to be DC) lies between the burster and the steel projectile, wall.

Remarks: Refer to the corresponding lithograph #21 for complete detailed description.





秘 軍事秘密

野戰彈藥

九三式野砲 八九式野砲 八八式野騎砲 三八式野騎砲 四一改造野砲

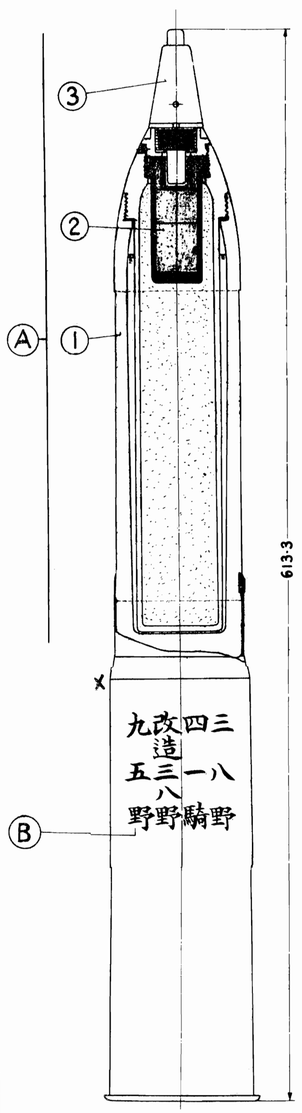
陸軍假制式兵器圖（野戰彈藥）
昭和九年四月十九日 陸密第二二八號制定
陸軍技術本部印刷

整備區分第一種

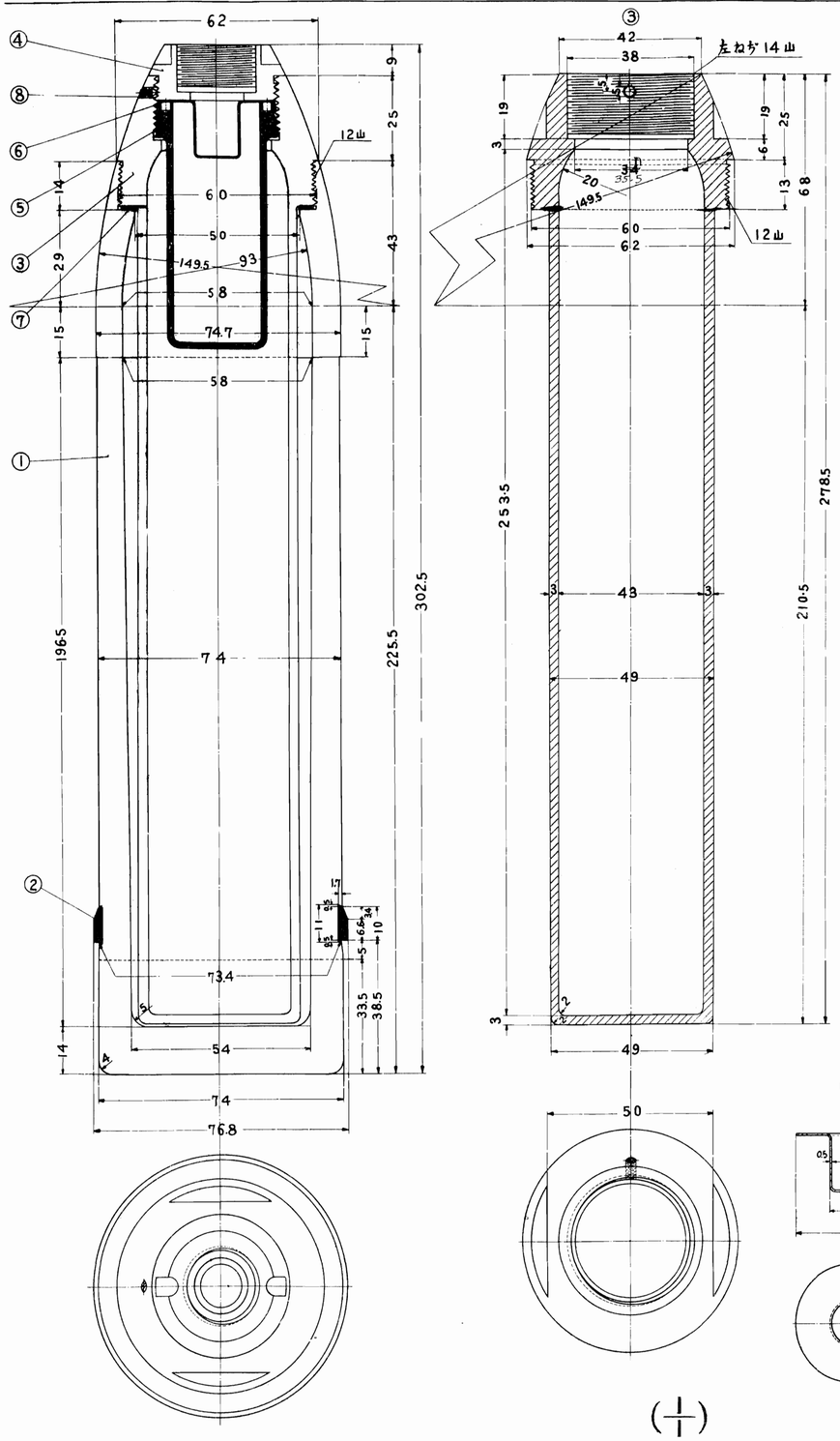
九二式あか榴彈彈藥筒

Ⓐ M92 "AKA"(sneezing gos) shell

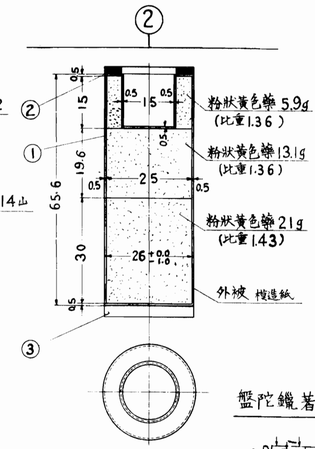
全体

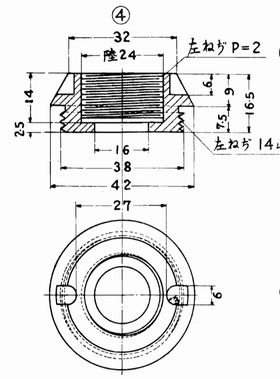


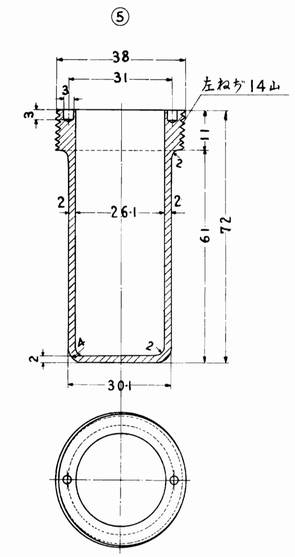
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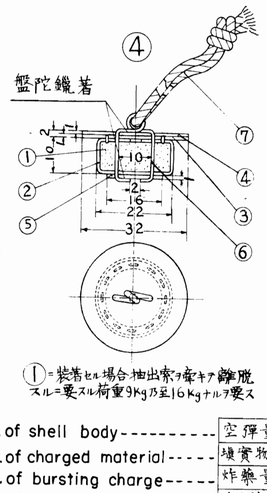


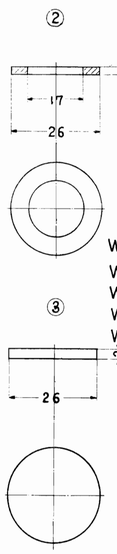
(1/1)

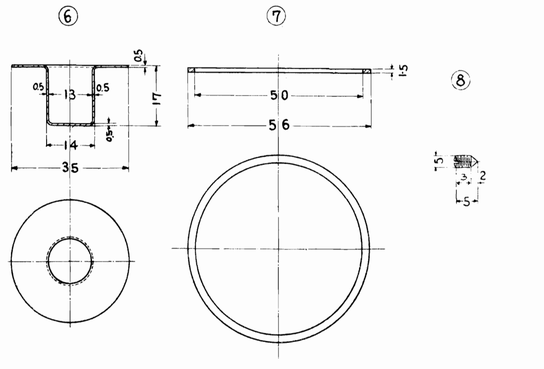












註記 1. 本あか彈ハ四一式山砲、九四式野砲及九四式山砲ニ兼用ス
2. 彈丸蛮形部内面半徑 93mm ハ標準寸法ヲシテタルモノニシテ各點精密ニ比ベ寸法クラシル處ナキヲ要ス
3. 彈丸外部着色要領中標識線及塗料色ハ下記ノ要領ニ依行ス
一. 外部塗料ハ鼠色塗料ヲ以テス
二. 彈帶上方ニ彈帶上方圓壔部ノ長サノ四分ノ一ヲ下隔テテ圓壔部ノ徑ノ五分ノ一ノ幅ニ赤色ノ一線ヲ標示ス
三. 彈腔容積、標識、彈帶ノ下方ニ黑色塗料ヲ以テ適宜、大サニ正負ノ符號ヲ下記區分ニ依リ附スルモノトス

彈腔容積	正負各	1% 以内ノモノ	±
〃	正	1% (ヲ含ス) ヲ超ヘ 3% 迄	+
〃	正	3% (〃) ヲ超ヘ 5% 迄	++
〃	負	1% (〃) ヲ超ヘ 3% 迄	−
〃	負	3% (〃) ヲ超ヘ 5% 迄	−−

以上 2% ヲ増減スル毎ニ逐次符號ヲ増加ス
4. 炸藥ハ填實物、填實前ニ於テ穿メ填實スルモノトス
5. 彈腔容積ハ約 137 cc トス
6. 填實空積ハ 5% トス
7. 填實作業ニ當リ炸藥室ヲ彈丸体ニねぢ込ムニ際シテハ其ノねぢ部ニピクリンサンモシアキットヲ塗抹スルモノトス

① = 裝薬セル場合抽出索ヲ牽キテ離脫スルニ要スル荷重 9Kg 乃至 16Kg ナルヲ要ス

重量表

Wt. of shell body	空彈量	5.44 Kg
Wt. of charged material	填實物量	あか一號 0.18 〃
Wt. of bursting charge	炸藥量	茶褐藤 80% ナフタリン 20% 混合熔填 0.45 〃
Wt. of booster	傳火藥筒量	0.04 〃
Wt. of fuse	信管量	0.17 〃
Total Wt. of projectile	全備彈量	6.28 〃
〃 〃 〃 fixed ammunition	全備彈藥筒量	8.16 〃

符號及名稱	番號及名稱		品質	員數	摘要
A九二式あか榴彈	1彈丸	1体	彈鋼第一號	1	内面ニ ゼークライトワニス一號ヲ三回燒附ス
		2彈帶	鋼第一號	1	
		3炸藥室	彈丸鋼第一號	1	内面ニ漆液ヲ塗抹シ外面ニゼークライトワニス一號ヲ二回燒附ス
		4吸螺	特鋼第三種乃至第五種	1	
		5傳火藥筒室	黄銅	1	ねぢ部ヲ除キ内外面ニ漆液ヲ塗抹ス
		6蓋板	鋼第一號	1	セラソクワニスヲ塗抹ス
		7鉛鑞	鉛	1	
		8吸螺小ねぢ	特鋼第三種若ハ第四種	1	
	2甲種ノ保護被覆	1体		1	外面ニセラソクワニスヲ塗抹ス
		2坐環	ボール紙	1	セラソクワニスヲ以テ②ノ上部ニ貼附ス
		3坐椿	フエルト	1	セラソクワニスヲ以テ②ノ下部ニ貼附ス
〃	3信管			1	八八式瞬發信管（野山砲）
			亞鉛箔ヲ以テ被覆シタル鋼	1	
B藥筒				1	三八式野騎砲、四一式山砲彈藥九七式榴彈彈藥筒ニ兼用ス

Eighth U. S. Army Printing Plant
(Boonjudo)

560D-SHELL, 75MM

General:

Color:	Red projectile
Markings:	Japanese characters painted in white on projectile, Japanese characters and Arabic numerals stamped on cartridge case.
Dimensions:	Shell length: 21½" Cartridge case length: 11½" Projectile length: 11.4" Diameter of projectile: 74mm Diameter of cartridge case: 84mm
Weight:	Projectile (empty, w/o fuze) - 8-7/8 lbs. Cartridge case(empty) - 2-3/4 lbs.

Description: Projectile: A separating plate approximately 3" in from the nose end sectionalizes the projectile interior into two compartments. There are three ¼" holes in this plate arranged in a line. The middle hole opens into a 6 inch deep hollow. The two outside holes open into an annular section between the projectile wall and the hollow. A single rotating band is at the base end of the projectile.

It seems likely that fuze and gaine fill the forward compartment and a burster tube is inserted into the 6 inch hollow. It is not known what filling would go into the annular space, however the construction indicates a chemical agent filling.

Cartridge case: It was of the type used in the type 11th year AA Gun.



5500-SHELL, 75MM

621-COLORIZING AGENT, YELLOW, 12.7 CM, 40 CAL. DUAL PURPOSE GUN

General:

Color:	Black with white label.
Markings:	Japanese characters on label giving nomenclature and factory date of manufacture.
Dimensions:	3-3/4" long, 3-1/8" Diameter.
Weight:	1.25 lbs.

Description: The container is made of heavy metal and has a conical nose 0.6" long and 2" in diameter.

Remarks: This container is used in a 12.7 CM shell. Apparently it can be used as a signal or as a target indicator.



[redacted]

31A-[illegible], C.W. AGENT, FOR 15 cm NAVAL SHELL

General:

Color:	Brass
Markings:	White labels.
Components:	Conical container, Flat container.
Dimensions:	Length 4½ in. (overall), Diameter 3.3 in. (at base).
Weight:	1.28 lbs. (total).

Description: Conical container: The container is conical shaped with a hemispherical nose of 1 in. diameter. The nose and base are soldered to the body. This insert contains DC which has an average purity, based on the percentage of arsenic, of 91.1 percent.

Flat container: The flat container is ½ in. thick and 3.3 in. in diameter. The lid is soldered to the container. This insert contains CN. There is a brass colored disc that is placed between this container and the conical container.

Remarks: Both of these inserts are used together in a Mk 4, 15 cm Gun. Apparent object of the use of this insert is to obtain harassing effect of the chemical agents at the time of the explosion of the projectile.



[redacted]

31B-INSERT, C.N. AGENT, FOR 12.7 cm NAVAL SHELL

General:

Color:	Brass
Markings:	White label giving nomenclature and manufacturing data.
Dimensions:	3-3/4" long, 3 " diameter.
Weight:	1.38 lbs.

Description: The container is cylindrically shaped and has an extension which is 2½ in. in diameter and tapers to 2 in. in diameter. The extension is 5/8 in. long. Cylinder is made of ab 1/32" steel plate, brass lacquer coated.

Remarks: This insert contains CN. It is used in a 12.7 cm Gun. According to the translation of the label, this insert was manufactured in March 1939, by the Naval Technical Research. The extension on the insert fits into an indenture in the base o the 12.7 cm Projectile. Presumably the remainder of the projectile contains an explosive charge.

The projectile in which this insert is used is identical to the 12.7 cm AA projectile, the largest Japanese fixed ammunition reported.

[redacted]

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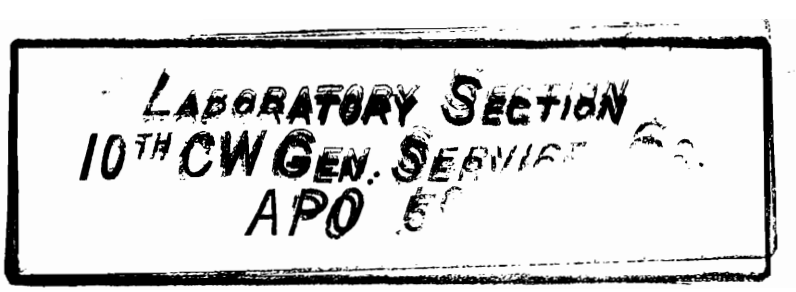
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