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AMMUNITION BULLETIN Nº 39

ITEMS 957-993

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DEPARTMENT OF SUPPLY

AMMUNITION BULLETIN NO. 39.

RESTRICTED

Issued by:-

Chief Inspector of Armaments.

Item No.

- 965 Box, ammunition, S.A. H.49 Mk.I.
973 Box, No. 74 Grenades, G.110, Mk.I & II.

AMENDMENT

Bulletin No. 38, Item 948. CARTRIDGES, B.L. 5.5-in, GUN
Delete all reference to DD(L)15496
on Page 14.

- 971 Fuze, percussion, No. 247, Mk.I.
979 Fuzes - Obsolete and Obsolescent.
958 Fuze D.A. and Percussion, No.119. Discontinuance of use in Q.F.
5.25 in. Gun.
963 Fuze, percussion, No.247, Distinguishing marking.
964 Fuze, percussion, No.247, Mk.II.
975 Fuze, safety, No.20.
977 Generator, smoke, No.24 Mk.I.
970 Generator, Smoke, No.28 Mk.I. (FIG.383)
966 Grenades, Miscellaneous - Number constituting a Filled Lot.
972 Grenade, hand, No. 80, W.P., Mk.I. (FIG.385)
980 Grenade, hand, No.83, Smoke, Mk.I (FIG.386)
968 Igniter, Special, No.1 Mk.I. (Detonator No. 83 Mk.I.)
962 Implements, Ammunition.
967 Mine, contact, A/T. Mk.II.
983 Projectiles - Painting & Stencilling.
959 Projectiles, practice, Q.F. 40 m.m. Mk.IX T. (FIG.382)
981 Q.F. 40 m.m. Practice projectiles - Nomenclature.
960 Reel, box, Instantaneous Fuze, Mk.VII.

Item No.

- 982 Shell, Q.F. H.E., 95 m.m. INF. and S.P.How.
957 Simulators, Gun flash, Capsules - Packages for

GERMAN AMMUNITION

GERMAN

- 984 2.7 cm pistol H.E. cartridge (FIG.387).
985 2.7 cm pistol signal cartridge (FIG.388).
986 2.8 cm. Pz B.41, H.E. Cartridge (FIG.389).
987 Hollow Charge Rifle Grenade (FIG.390).
988 Large Hollow Charge Rifle Grenade (FIG.391).
989 Small P.E.T.N. Gaine No. 34 (FIG.392).
990 Fuze A.Z. 5072 (FIG.393).
991 10.5 cm Naval H.E., Cartridge (FIG.394).
992 Fuze E.K.Z. C/28. (FIG.395).
993 10.5 cm. Naval H.E. Cartridge with incendiary unit (FIG.396).

AMENDMENTS.

Bulletin No. 35 Item 810. Line 5 Delete "21.5" and substitute "22.5"

" "6.8" " " "6.65"

" " 29 Item 549. Line 3 After "221" insert ",222".

Delete para. 2.

957. SIMULATORS, GUN FLASH, CAPSULES, - PACKAGES FOR

Reference Bulletin No.37, Item 906. The approved Service packages for the 5 c.c. and 35 c.c. capsules and the method of packing are as described therein, the tinned or terne plate box referred to being designated Box No. 421 Mk.I.

958. FUZE, D.A. AND PERCUSSION, No.119, DISCONTINUANCE OF USE IN Q.F.5.25-in. GUN.

The use of the No.119 fuze in H.E. shell for the Q.F. 5.25-in.gun, when used in a landwards firing role, has been discontinued.

959. PROJECTILE, PRACTICE, Q.F. 40 mm. MK.IX.T. (FIG.382)

This practice projectile, to M. of F. design DD(L)17062, has been approved. It consists of an empty Mk.II T. or IV T H.E. shell filled G.12 gunpowder or composition S.R. 274 and is fitted with a No.251 Mk.I or No.255 fuze and a No. 14 Tracer, igniter.

Method of filling and marking details are shown in the Figure.

960. REEL, BOX, INSTANTANEOUS FUZE, MK.VII.

The abovementioned reel has been approved and is designed to hold 400 feet of Fuze, Instantaneous, Detonating. The flanges are of waxed millboard .2 inches thick secured to collars of waxed rolled paper by a suitable adhesive. Overall dimensions of the reel are :- Diameter $13\frac{1}{8}$ inches, Width 2.15/16 inches.

961. BOX, NO.74 GRENADES, G.112 MK.I.

This wood box has been approved and is designed to pack 4 No.74 Grenades. Sponge rubber packing pieces are provided for the grenade bodies while a centre compartment holds 4 grenade handles. A special wood block prepared to hold 4 detonator assemblies is positioned in the centre compartment on top of the handles.

Stowage dimensions are 17.35 x 15.35 x 8.15 inches.

962. IMPLEMENTS, AMMUNITION.

The undermentioned primer Keys have been approved for Land Service:-

		Use	
Key, No. 193 Mk.I.		For inserting	or removing Primer No.1
" " 194 Mk.I.		" " " "	Primer No.9

963. FUZE, PERCUSSION, NO.247 - DISTINGUISHING MARKING.

Reference Bulletin No.28, Item 505 and Fig.201. The following distinguishing marking has been approved for this fuze :-

- Mark IA - When fitted with Brass cap pellet.
- Mark IZ - When fitted with Zinc base alloy cap pellet.

964. FUZE, PERCUSSION, No. 247, Mk.II.

This fuze has been approved and differs from the No.247 Mk.I in the following particular :-

- (a) A new design of striker, the point of which is somewhat shorter, is not sheared and has a slightly different form.
- (b) A new design of cap pellet, made from lead antimony and having a different form of chamber suited to a 1.7 grain "A" mixture detonator.

(e) A 1.7 grain, instead of a 1.2 grain, "A" mixture detonator.

(d) The fuze cover will be marked "Mk.II."

965. BOX, AMMUNITION, S.A. H.49 Mk.I.

This steel box has been approved and is designed to pack 30 rounds of Oerlikon ammunition to meet A.F.V. requirements in Crusader A.A. Tanks. The following marking is embossed on one panel in $\frac{3}{4}$ -in. lettering :-
"H 49"; Constructor's initials or recognised trade mark; Year of manufacture.

I

Stowage dimensions are 8.5 x 7.0 x 5.75 inches.

966. GRENADES, MISCELLANEOUS - NUMBER CONSTITUTING A FILLED LOT.

Approval has been given for the number of grenades which constitute a filled lot when issued from factory to Ammunition Depots to be as shown below for the grenades concerned:-

Grenade, hand or .303-in. rifle, No. 36 M.	2400
Grenade, hand -	
No. 69 Mk. I.	3600
No. 74 Mk. I & II.	1600
No. 75 Mk. I & II	2400
No. 82 Mk. I	4000
Grenade, training, clay	4000

967. MINE, CONTACT, A.T., MK.II.

Reference Bulletin No. 5, Item 41. The abovementioned mine and all components and packages appertaining thereto have been declared "OBSOLETE".

968. IGNITER, SPECIAL, NO.1 MK.I (DETONATOR NO.83 MK.I)

The Igniter, Special No.1 Mk.I, described in Bulletin No.38, Item 927, will in future be known as Detonator No. 83 Mk.I and the following marking will be moulded on the end face:- "D.83" ; Contractor's initials or recognised trade mark.

I

969. CARTRIDGE, Q.F. 25 pr. SUPERCHARGE INCREMENT - PACKING.

Reference Bulletin No. 34, Item 794 (page 20). Eight $5\frac{1}{2}$ oz. cordite NQ/S 134-040 supercharge increments, for use with 20 lb. projectiles, are packed in a tinned-plate cylinder No.426 fitted with a rolled paper liner and a leatherboard cup, the latter securing the increments in position. The lid of the cylinder is tape banded and bears a descriptive label L.305 (black type on white paper). Stowage dimensions of cylinder are 12.5 x 4.66 inches.

Six cylinders, i.e. 48 increments, are packed in the steel box B.166 stowage dimensions of which are 19.7 x 13.2 x 9 inches.

Details on label L.305 :-

8

SUPERCHARGE
INCREMENTS

Q.F. 25 Pr. CARTRIDGES
20 LB. A.P. SHOT ONLY

$5\frac{1}{2}$ oz. NQ/S.134-040

Lot

Filled .../.....

Pkd.//.....

970. GENERATOR, SMOKE, NO.28 MK.I. (FIG.383).

The empty components of the generator are of tinned or terne plate and comprise a cylindrical body, baffle, igniter cup support, igniter cup, lid and bottom.

The baffle is secured to one end of the body by cameluring and folding over the baffle on to body, the joint being soldered. It carries the igniter cup support and igniter cup which are secured by soldering.

The igniter cup contains a pellet of approx. 23 grams composition S.R.251 on top of which is a blob of match composition P.N.196. A hardwood striker, tipped with match composition, is secured to the baffle with adhesive tape.

Smoke fillings, as under, are used :-

<u>Composition</u>	<u>Amount</u>
(a) P.N. 307A	Approx. $5\frac{1}{4}$ lb. with about 4 oz. P.N.280 inserted prior to the main filling.
(b) P.N. 314A	Approx. 6.2 lb.

The filling is retained by a flanged bottom folded over on to the body. When filling is P.N.307A the flange is coated with approved composition prior to folding over and when P.N.314A is filled the folded joint is soldered.

A lid fits over the body for transit purposes, the junction of lid and body being sealed with a strip of adhesive tape formed with a tag to facilitate removal. To prevent accidental functioning of the match composition a cork or felt washer is interposed between lid and igniter.

To ignite the generator the sealing tape, lid and striker are removed and the latter drawn sharply across the match composition. Smoke is emitted within 30 seconds and continues for 12 to 16 minutes.

Dimensions, Painting and Marking.

Stowage dimensions are 7.96 x 3.8 inches.

The exterior of the generator is laquered or painted green and all printed markings are in black. Generators of laquered plate have a descriptive and instructional legend printed on the lid. Generators painted green bear a label on the lid printed with a similar legend.

Details of all marking are shown in FIG.383.

Packing.

8 Generators are packed in Box M.116 Mk.I. Stowage dimensions of this box are 18.75 x 10.75 x 10.2 inches.

971. FLARE, DISTRESS, MARINE, RED, MK.I (FIG.384).

The flare is cylindrical in shape and comprises a handle and a case. The handle may be of wood or paper, one end being secured in the case by a suitable adhesive while the opposite end carries a wood striker with igniter, the latter being tipped with striker composition and secured to the stem of the striker by a copper tack.

The case is of paper and contains flare composition S.R.237 inserted in 3 pressings, each of about 230 grains, with about 31 grains of composition S.R.252 and a pellet of S.R.252 inserted with the first pressing. The composition S.R.252 is topped with a blob of match composition and covered by a paper disc pasted to the exterior of the case. Another blob of metal composition is placed on top of the disc. A millboard washer and millboard disc, between which is interposed one end of a linen or cotton tear-off tape,

are secured together by two wire staples and positioned over the match composition, the whole being covered by a paper sealing disc secured to the outside of the body with paste. The outer end of the sealing tape is left exposed. The bottom of the case is closed by two millboard discs, the outer disc being fixed in the case by a fillet of shellac adhesive.

To ignite the flare the tear off strip is removed, the striker pulled out from the base and drawn sharply across the match composition. The flare should be held away from the body and pointing down wind.

The flare is designed to burn for 48 seconds. External dimensions are 8.85 x 1.1 inches.

Painting and Marking.

The exterior of the flare is coated with black waterproof paint and bears a descriptive and instructional label (H.1544) which also shows the Maker, Lot Number and Month and Year of manufacture.

Details of the label are given in Fig. 384.

Packing.

Packing is not yet clear.

972. GRENADE, HAND, NO.80, W.P. Mk.I. (FIG.385).

The empty components of this smoke grenade comprise a cylindrical body, top, detonator tube, bottom with charging hole, and a charging hole plug. All are of tinplate except the detonator tube which is of brass. The grenade is fitted with Striker Mechanism, No.1, Mk.I.

The top is secured to one end of the body by a folded joint, the joint being soldered. A threaded recess in the top accommodates the striker mechanism adapter and also carries the detonator tube, the latter secured to it by soldering.

A charging of White Phosphorus is contained in the body and retained by a bottom plate folded over on to the body, the joint being soldered. A charging hole in the bottom is closed by a soldered in plug.

The detonator assembly used is the No. D.75 Mk.I which consists of a zinc alloy cap chamber, a copper cap containing priming composition, a length of No.17 Mk.I safety fuze and a No.63 Mk.II detonator, the latter being crimped to the safety fuze. Details of the complete assembly are included in Fig. 385.

The striker mechanism comprises a zinc base alloy-mazak housing which carries the striker, striker axis pin and striker spring. It is suitably shaped to accommodate the fly-off lever which is retained by a safety pin passed through corresponding holes in the lever and housing. The pin is provided with a ring to facilitate withdrawal. The mechanism is screwed into a zinc base alloy-mazak adapter which in turn is screwed into the recessed top of the grenade.

External dimensions of the grenade are 5.5 x 2.4 inches.

Action.

The safety pin is removed, care being taken to hold the fly-off lever firmly in position. The grenade is then thrown. During flight the striker is rotated around the axis pin by its spring, causing the fly-off lever to be thrown clear. The cap is struck, initiating the bursting of the grenade after a delay of $2\frac{1}{2}$ - 4 seconds.

Painting and Marking.

The grenade body is finished green and is marked as shown in Fig.385.

Packing.

24 grenade bodies with striker mechanisms, each in a paper container, and 24 Detonators in a tin box No. 376 Mk.I are packed in Box P.59 Mk.II.

Stowage dimensions of box are 19.15 x 8.35 x 7.85 inches.

973. BOX, NO. 74 GRENADES, C.110 MKS. I & II.

Reference Bulletin No. 32, Item 649. The above steel boxes have been approved, each being designed to pack 4 No. 74 Grenades Mk.II.

The Mark I box is divided into 4 compartments to accommodate the grenade bodies which are secured in position by spring clips. A centre compartment contains 4 grenade handles and a special wood block prepared to hold 4 detonator assemblies. The lid of the box is secured by a toggle catch.

Stowage dimensions are :- 13.9 x 13.1 x 7.1 inches.

The Mark II box is fitted with a diaphragm to accommodate the grenade bodies and is provided with felt packing pieces. 4 brackets are secured to the sides of the box to hold the grenade handles while a special wood block prepared to hold 4 detonator assemblies is positioned in a centre compartment in the diaphragm. The lid of box is secured by a toggle catch.

Stowage dimensions are 13.2 x 13.05 x 7.15 inches.

974. CARTRIDGES, Q.F. 6 pr. 7 cwt. - DECOPPERING AGENT.

In future, the size of tinfoil or leadfoil strip in Q.F. 6 pr, 7 cwt. cartridges (except decoppering rounds) will be 14.0-in. long by 1.0-in. wide in lieu of 7.0-in. long by 1.0-in. wide.

Decoppering rounds will have double the quantity of foil, i.e., 28 sq. inches.

975. FUZE, SAFETY, NO.20.

This safety fuze is for use in the make up of the No. 36M grenade, Detonator Set Mk.VI. It is white in colour and has the usual safety fuze appearance. External dimensions are H. .197" L. .190". Time of burning is 68 to 83 seconds per yard. The fuze is not issued to the Service in bulk.

976. CORDITE AN - NOMENCLATURE.

The nomenclature "Cordite AN" has been approved for Cordite AN without potassium nitrate.

977. GENERATOR, SMOKE, NO.24 MK.I

Reference Bulletin No.33, Item 726. The abovementioned generator has been declared "Obsolescent".

978. CARTRIDGE, Q.F. 2 pr. S.V. MK.XB GUN. CORDITE W.M.T./124-040

A nominal charge of 1 oz. 11 dr. cordite W.M.T. 124-040 with the S.V.,A.P. Shot Mk.II T, in the above gun, has been approved.

979. FUZES - OBSOLETE AND OBSOLESCENT.

Reference Bulletin No. 38, Item 926.

1. The following fuzes have been declared "Obsolete" :-

No.80	All marks I to VIII.
" 80B	" " I to IV.
" 80/44	" " " "
" 83	" " I to V.
" 88	Marks I & III.
" 101E	" II, IIC, IIIM, IIM, III and IIIC.

2. The following fuzes have been declared "Obsolescent" :-

No.80	Mk.XI
" 83	" VI
" 101E	" IV

98C. GRENADE, HAND, NO.83, SMOKE, MK.I (FIG.386).

This smoke grenade is cylindrical in shape and contains a perforated canister charged with Blue, Green, Red or Yellow smoke composition. The igniting arrangements are carried in the head. The grenade body is of tinned orterne plate, all other empty components are of blackplate.

A flanged top is secured to one end of the body by a folded joint, the top being recessed to accommodate the match head. Four equispaced smoke emission holes are prepared around the top and sealed by shellacked adhesive tape. Match composition P.M.196 is filled into the hole of a cylindrical cork match head, the composition being built up on the outside to give a good striking medium. A striker, in the form of a strawboard washer primed with striker composition P.N.288 on one half of one side only is carried on top of the body, primed side uppermost.

The canister body with its perforations covered by a wrapping of paper coated with glue or other adhesive, is fitted at one end with a flanged top folded over on to the body, the top is shaped to seat the recessed top of the grenade body containing the match head and has a 1 inch square, or disc, of primed cambric or muslin shellacked to its underside with the primed surface adjacent to about 3 drms. of composition stemmed in the neck of the canister. The remainder of the canister is charged with P.N. composition according to the following table :-

<u>Colour of smoke</u>	<u>Composition</u>	<u>Amount</u>
Red	P.N. 443	5 oz.
Yellow	P.N. 431A	5 oz. 4 dr.
Green	P.N. 435	4 oz. 9 dr.
Blue	P.N. 429	6 oz. 12 dr.

The canister is closed by a cap and retained in the grenade body by a bottom plate. Cardboard discs, as required, are interposed between the canister and bottom plate.

A lid fits over the body for transit purposes, the junction of lid and body being sealed with a strip of adhesive tape formed with a tag to facilitate removal. To prevent accidental functioning of the match composition a pad of tissue paper is interposed between lid and igniter.

To ignite the grenade the sealing tape, lid and striker are removed and the primed surface of the latter drawn sharply across the match composition. Smoke is emitted about 4 seconds after ignition and continues for 20-40 seconds.

Dimensions, Painting and Marking.

Stowage dimensions are 4.45 x 2.55 inches.

The exterior of the lid is laquered green and bears a printed descriptive and instructional legend on the top. The grenade body is painted green. All printed markings are in black and details are shown in Fig:386.

Packing.

The packing of this grenade is not yet clear.

F. 40 mm. PRACTICE PROJECTILES - NOMENCLATURE.

The following table of Q.F. 40 mm. Practice Projectiles is published for information:-

Design No.	Practice Mark of Shell	Filling	Tracer and Igniter No.	Colour of body.	Band	Sten-cilling on band.	Red filling Ring	Service H.E. Shell Mark
DD(L) 10787	I T	Powder	Ig. 40 m.m.	Black	Yellow	No	Yes	I T
DD(L) 12409	II T	Powder	12	Black	Yellow	No	Yes	II T or IV T
DD(L) 13568	III T	Powder	11	Black	Yellow	No	Yes	II T or IV T
DD(L) 14107	IV T	Inert	11 or 12	Black	Yellow	H.E.S.	No	II T or IV T
DD(L) 14479	VI T	Powder	11	Black	Yellow	No	Yes	II T or IV T
DD(L) 17062	IX T	Powder	14	Black	Yellow	No	Yes	II T or IV T

* Obsolete

SHELL, Q.F., H.E., 95 m.m. INF. AND S.P. HOW

Reference Bulletin No. 35, Item 826. The use of T.N.T., instead of Amatol has been approved as a filling for the abovementioned shell.

PROJECTILES - PAINTING AND STENCILLING.

Projectiles are painted and stencilled for the following reasons :-

- To provide a means of readily identifying different natures.
- To facilitate sorting by unskilled labour.
- The painting of projectile bodies provides a protection against rust or corrosion.
- In case of failures the stencilled details facilitate identification and enable sorting and withdrawal to be readily effected.

The following paragraphs give details of painting and stencilling to be found on projectiles in accordance with present practice :-

1. BASIC COLOURS

BUFF	H.E. Shell (Uncapped shell filled Shellite are painted green from tip to shoulder. Capped shell with this filling have a green cap only.)
GREEN	Smoke Shell.
GRAY	Chemical Shell.
DULL RED	Incendiary Shell.
BLACK	Other projectiles.

Projectiles used with reduced or burst short charges in fixed Q.F. are painted white from the shoulder (or, on H.E. Shell, from below the green band) to the driving band.

2. TIPS.

RED On shrapnel shell.

BLACK Denotes absence of smoke producing mixture in shell filled Amatol.

WHITE On shot.

3. RINGS ON NOSE.

RED On all shell and practice projectiles containing explosives. Also on shot fitted with tracer. (H.E. filled shell, other than Lyddite or Shellite, suitable for hot climates have a ring of red crosses or, if with limited life in hot climates, a ring of red crosses and bars arranged alternately, instead of the plain red ring).

BLACK..... On incendiary shell, one above and one below red ring.
" On certain H.E. shell, immediately above red ring, to denote that an igniferous fuze should be used.

LIGHT BROWN .. On cast iron or semi-steel projectiles.

WHITE One above and one below red ring:- On A.P. and A.P.C. shell or A.P.C. and A.P.C.B.C. shot.
One above red ring:- On S.A.P. shell
One below red ring:- On A.P. shot.

4. BANDS.

- (a) GREEN On shell filled H.E., other than Lyddite.
- YELLOW On practice projectiles, except H.E. Also on Target shell filled phosphorus.
- BLACK Two, on H.E. practice projectiles.
" One, on gun projectiles, immediately in front of driving band, where a gun and howitzer of the same calibre exist.
- (b) Chemical shell bear a coloured band on which is stencilled a code letter and number to indicate nature of chemical charging, as under :-

	<u>Colour of band</u>	<u>Code letter</u>	<u>Type</u>
BLACK	Tear gas	B	Tear Gas
GREEN	Choking gas	G	Choking Gas
YELLOW	Blister gas	Y	Blister gas

- (c) Certain H.E. shell fitted with base adapters may still be found. The following markings are used on these shell to indicate the method of sealing :-

- (i) When fitted with base adapter inserted with glue the shell is painted black between the driving band and base.

- (ii) Base adapter shell with the bottom of the cavity coated with glue are chequered behind the driving band, two sections black and two sections yellow, alternately,
- (iii) Base adapter shell having a pad of sealing composition at the bottom of the cavity have a black band midway between the driving band and the base.

5. VERTICAL STRIPES.

WHITE on black Two stripes, diametrically opposite, or
BLACK on other shell fitted with economy type driving band. coloured projectiles. This marking may be found on 4.5 in., 6 in., 8 in. and 9.2 in. How., also on 60 pr. projectiles.

6. SYMBOLS.

TWO GREEN discs, diametrically opposite.

On H.E. shell fitted with smoke box, "A" or "B" stencilled on discs indicates that smoke box is of aluminium or bakelite, respectively. Plain discs indicate that smoke box is of steel,

TWO ALUMINIUM paint discs, diametrically opposite.

Denotes that filling incorporates a flash producing composition.

TWO WHITE rectangular patches, diametrically opposite.

On smoke emission (fuzeless) shell and base ejection types of smoke or incendiary shell. The number of the composition is stencilled on the patch.

TWO WHITE discs, diametrically opposite, with a RED star superimposed on the discs.

On star shell. The number of the S.R. composition, when applicable is stencilled on the star.

Tracer symbols.

() On projectiles prepared for tracer, but having no tracer fitted.

(T) " " fitted with tracer.

(TF) " " fitted with combined tracer fuze.

Q.F. 40 mm. shell fitted with self destroying tracers will in future be marked with a figure inside a complete circle, e.g. 12 to indicate time to self destruction, in lieu of the tracer symbol.

The above symbols are stencilled in RED on black shell or BLACK on other coloured shell.

Centre of gravity symbol.

⊙ Stencilled on 9.2 in. and 15 in. gun projectiles in three places, equally spaced round the body, at the centre of gravity of the filled shell.

Colour of symbol is WHITE on black shell and BLACK on other coloured shell.

7. STENCILLED PARTICULARS.

Stencilled particulars on projectiles are normally WHITE on black and BLACK on other colours. As far as possible the position of the stencilling is arranged, in the case of boxed projectiles, so that they are not placed on parts of projectiles which are liable to come in

contact with internal box fittings and, in the case of unboxed projectiles, are mostly confined to the ogive, care being taken to avoid the shoulder where most rubbing is likely to occur.

- (i) Projectiles which are limited to the full charge with which they may be fired will be stencilled "LIM" in two places, diametrically opposite, as under :-

Practice projectiles - On yellow band
Other projectiles - On centre of body } and on the base.

- (ii) Practice projectiles for restricted use are stencilled with the following markings, as applicable, on the yellow band and on the base :-

"RED" Denoting that reduced charge must be used.

"RED/M.C.W." ... Denoting that reduced charge must be used and projectile not to be fired over crowded waterways, houses, etc.

- (iii) Fixed Q.F. projectiles used with reduced or burst short charges will be stencilled "RED" or "IS", as applicable, on the white painted portion near the shoulder.

- (iv) Anatol filled shell with rusty fixed containers which have been authorised for firing at practice are marked immediately above the green band as under :-

"R.F.C."
B.M. 1934 (Station and year, as applicable).

- (v) Unboxed shrapnel shell with the central tube affected by rust are stencilled on the base, in red, as follows:-

"R.PRAC.1936" (Year as applicable) when powder is caked.
or
"R" when powder is free.

- (vi) H.E. filled shell, other than Lyddite and Anatol, are stencilled with letters denoting nature of filling, e.g., "T.N.T." "RDX/BMX". A stencilled fraction (except for Anatol 80/20) denotes the proportions of H.E. filling.

- (vii) The letters "B.E." on base ejection type smoke, chemical and incendiary shell.

- (viii) The letters "U.V." are stencilled on the coloured band of chemical shell in two places, diametrically opposite, to denote shell with unvarnished interiors.

- (ix) The letters "PHOS" when charged with phosphorus.

- (x) General.

- (a) Calibre and Mark of projectile (separate loading only).
(b) "GUN" or "HOW", or "GUN & HOW" after the calibre, as applicable; where a gun and howitzer of the same calibre exist.

- (c) Monogram of filling factory and date of filling on:-
All separate loading shell.
All fixed Q.F. shell filled by a different factory to that which assembles the complete round.
All fixed Q.F. shell which are stored in the filling factory for more than one month before assembly into complete rounds.

- (d) Series No. in a ring to distinguish the filled lot.
 - (e) Design No. of method of filling,
 - (f) Weight marking, as applicable (See para, 8).
 - (g) "USE.....FUZE" on certain shell issued plugged, for coast defence equipments.
 - (h) Chemical shell.
 - Date of chemical charging (month and year)
 - Monogram of station which carried out charging
- } Below shoulder
on 25 pr. and
above shoulder
on larger calibres.
-dq-
- Design No. of method of head filling.
Series No. in a ring to distinguish the head filling lot
stencilled on the Black, Green or Yellow band.

WEIGHT MARKING.

Stencilled markings indicating variations above and below the standard weight of a filled and fuze shell, according to the calibre, are made on all shell for Coast Defence equipments and on Field service shell (except shrapnel) 3.7 in. and above.

This marking is at present under revision and an up to date table of weight markings will be published in a later Bulletin.

ENEMY AMMUNITION.

984.

GERMAN 2.7 cm. PISTOL, H.E. CARTRIDGE
(Sprengpatrone für Kampfpistole)

Fig. 387.

The cartridge is used with the 2.7 cm "Kampfpistole", a rifled pistol which also fires signal and smoke cartridges.

The complete round is 5.1 inches in length and consists of an unpainted aluminium projectile with five pre-engraved rifling grooves, a nose fuze of magnesium or browned steel with a protruding striker and a short rimmed case of aluminium with a brass bush in the base carrying a percussion cap. The red stencilling "Spreng Z." appears on the base.

The weight of the complete round is 5 oz. 2 dr.

Fuze and gaine

The fuze is of the direct action type with an igniferous detonator and is fitted with a gaine at the base. The body of the fuze, which screws into the shell, is fitted with an ogival cover which forms the head of the projectile and from which the striker protrudes at the nose. The cover is provided with key flats and is secured to the body by a locking screw. The body is recessed and screwthreaded at the base for the insertion of the gaine above which is a paper washer and a ring shaped holder carrying the detonator. The upper part of the body is reduced in diameter to receive a retaining collar and to form a platform for three pins supporting the collar. A channel accommodates the striker with its supporting spring. The steel striker is retained in a cylindrical head by a screw inserted at the top of the head. The head is flanged near its lower end to retain it in the cover and is reduced in diameter below the flange to form a shoulder. Six steel balls are held between the shoulder and the top of the body by the retaining collar.

The gaine contains a 6.8 grain filling of P.E.T.N. with a 5.9 grain initiator of lead azide and lead styphnate.

Action of Fuze.

On acceleration the supporting pins of the retaining collar collapse and the collar sets back clear of the balls. At this stage the balls are held by the set back of the striker head. During flight the balls are thrown clear by centrifugal force, leaving the striker supported only by the spring. On impact the striker is driven into the detonator. The flash from the detonator initiates the gaine which detonates and thus brings about the detonation of the bursting charge.

The combination of igniferous detonator, the gaine and the gap below the gaine in the shell is probably intended to result in a slight delay. Steel fuzes and fuzes largely of magnesium have been met with. The magnesium fuzes may be intended to produce a flash on impact to assist observation or to obtain incendiary effect.

Shell

The shell consists of an aluminium body, pre-engraved for most of its length at a right hand twist of approximately 1 in 9 to correspond with the rifling in the pistol, and fitted with a steel liner which holds the bursting charge and is screwthreaded to receive the fuze. The liner is secured to the body by indentations and knurling near the base.

The bursting charge consists of approximately 340 grains of P.E.T.N./Wax, 90/10; in two increments. A cardboard disc is inserted between the two increments and at the base of the lower increment. The upper increment is some distance below the gaine and has a tapering cavity. A cardboard washer carrying a thin paper disc is placed on the top of the increment.

The weight of the shell is approximately 3.5 oz.

Cartridge

The case, with its percussion cap carried in a brass bush, is the same as that described for the signal cartridge. The weight of the propellant charge of gunpowder is 12.3 grains.

985. GERMAN 2.7 cm. PISTOL SIGNAL CARTRIDGE
(Deutpatrone für Kampfpistole)

Fig. 388.

The cartridge is used with the 2.7 cm "Kampfpistole", a rifled pistol which also fires H.E. and smoke cartridges. The projectile emits a puff of reddish brown smoke approximately 1.8 seconds after firing.

The complete round is 5.08 inches in length and consists of an unpainted aluminium projectile, with a tapering rounded head and five pre-engraved rifling grooves, which is secured to a short cartridge case of aluminium. A percussion cap is held in a brass bush in the base of the case. The base is stencilled "DEUT Z."

The weight of the complete round is approximately 4 oz. 6 dr.

Projectile.

The projectile, weighing approximately 3 oz. 4 dr, consists of an aluminium envelope containing the signal composition, pre-engraved for most of its length at a right hand twist of approximately 1 in 9 to correspond with the rifling in the pistol. Two increments of the signal composition are pressed into the head and below this is a light alloy cylinder which forms a liner to the envelope and contains eight further heavily pressed increments of signal composition. A hole through the centre of the cylinder filling contains three strands of quickmatch. Two additional strands are inserted laterally between the base of the filling and a light alloy distance piece below the filling. The distance piece is of light alloy and is in the form of a washer with a tubular projection at the base in which there are nine holes. Below the distance piece the projectile is closed by a screwed base plug with a left hand thread. The plug may be of light alloy or of plastic and has eight longitudinal holes arranged in a circle and closed at the base by a single cardboard washer. An additional hole in the centre of the plug is enlarged and screwthreaded at the top to receive a delay pellet. The delay pellet consists of a brass tube threaded internally to hold a pressing of delay composition and externally for insertion in the plug and to receive a brass fixing nut which is also glued.

The signal composition consists of:- Sodium Chlorate, 25 per cent, a carbohydrate, 38 per cent and a dye, 37 per cent.

Cartridge.

The aluminium case is 1.33 inches in length and is rimmed. The propellant charge, consisting of 11.6 grains of gunpowder, is contained in a recess in the solid base from which nine flash holes lead into the upper portion where the projectile is secured. The holes are closed by a paper disc. The recess containing the propellant charge is closed at the base by a brass bush in which is carried a percussion cap. The bush is shaped to form a cap chamber with anvil and flash holes and is secured in the base by ringing.

Action.

When the percussion cap is struck the flash passes through the holes to the propellant charge which ignites the delay composition through the central flash hole and at the same time projects the projectile by gas pressure through the other eight holes. After approximately 1.8 seconds the quickmatch is ignited by the delay composition and this, in turn, ignites the signal composition. The pressure set up blows the cardboard washer from the bottom of the base plug and a reddish brown smoke is emitted through the holes in the distance piece and thence through the holes in the base plug.

986. GERMAN 2.8 cm. Pz. B.41 CARTRIDGE, Q.F.,H.E.

Fig. 389.

This fixed Q.F. round is fired from the cone bored 2.8 cm anti-tank gun Pz.B.41. The shell is of the type commonly known as "arrowhead" and is fitted with a small nose fuze. Only the head and upper flange of the shell protruded from the neck of the case. The junction between the upper flange and the mouth of the case is painted red. The shell is painted black. The length of the complete round is 8.7 inches and the weight, 1 lb.4 oz.6 dr. The base of the case is stencilled "Sprgr Patr", in white.

The complete round consists of the following components:-

Fuze A.Z. 5072

Flanged H.E. shell filled P.E.T.N./Wax

Brass case (without model number)

Propellant charge of nitrocellulose powder in tubular granules.

Percussion primer C/13nSt.

Fuze.

A description of the fuze is included in this Bulletin.

Shell.

The steel body is apparently machined from bar with two integral sloping flanges. The upper flange, formed at the shoulder, is 1.11 inches in diameter and has five equally spaced holes of .1 inch diameter for the escape of air when the flange is pressed down during the travel up the bore. Below this flange the body is grooved to accommodate the pressed back flange. The lower flange is formed near the base and is 1.125 inches in diameter. Below the flange the body is reduced in diameter from .75 inch to .47 inch but increases to .5 inch at the base. An internal screwthread for the fuze is formed at the head. The cavity for the bursting charge is cylindrical with a reduction in diameter in the lower part. The weight of the empty shell is 2 oz. 8 dr. The bursting charge consists of a 79.7 grain pressed pellet of P.E.T.N./Wax which, in accordance with the German practice, is dyed pink. The weight of the shell, filled and fuze, is approximately 3 oz. (1321.4 grains).

Case.

The brass case is 8.7 inches in length, has the normal rim at the base and has a marked increase in taper below the neck. The shell is held in the necked portion of the case by three indentations below the base of the neck and by the mouth of the case being turned in to overlap the upper flange on the shell. The primer hole in the base of the case is screwthreaded for the insertion of the C/13 primer. Black stencilling on the side of the case indicates the weight, nature, shape, size, place of manufacture and year of the propellant, also the place and date of the filling of the cartridge.

Propellant Charge.

The weight of the propellant charge, as indicated by the stencilling on the case varies, probably according to the proof results of the propellant lot. Weights varying between 137 and 150 grams have been met with. The propellant, "Mz.R.P. (3. 3/0,5)" is a nitrocellulose powder in the form of short tubular grains. The dimensions of the grains, in inches, are:- length .118, external diameter .118, internal diameter .02.

Primer.

The percussion primer C/13 nA.St differs from the C/13 nA described in Bulletin No.32 in that it is made of steel instead of brass.

987. GERMAN HOLLOW CHARGE RIFLE GRENADE
(Gewhr Panzergranate)

Fig. 390.

The grenade is fired from the 3 cm rifled discharger cup which can be fitted to the 7.92 mm. Mauser rifle. The propellant cartridge is crimped at the mouth.

The rustproofed steel body of the grenade is cylindrical in shape with a parabolic steel impact cap at the head and a tail unit, of the same diameter, screwed on at the base. The tail unit is of unpainted aluminium and has a pre-engraved band near the base with eight grooves. The overall length of the grenade is 6.4 inches and the diameter of the body, 1.175 inches. The total weight is 8 oz. 5 drs.

The body contains a 1 oz. 12 dr. bursting charge of T.N.T. with a cone shaped "hollow" in which there is a steel cavity liner. The liner is coned at 19.5 degrees and has the apex cut away. The top of the liner is cylindrical for assembly in the body and has three equally spaced holes, presumably for the escape of air during filling. The thickness of the wall of the liner tapers from .047 inch at the top to .015 inch at the base. A 3 dram P.E.T.N./Wax exploder is contained in a cavity in the base of the bursting charge. The steel impact cap is secured above the cavity liner by the spun body. At the base end of the body a screwthreaded tube is fitted for the assembly of the tail unit.

The tail unit with its gaine and fuze is the same as that used with the large grenade.

Cartridge.

The cartridge consists of a 7.92 mm. S.A. case of steel, coated with gilding metal or varnished, containing a 13 grain propellant charge of nitrocellulose powder. The mouth of the case is crimped and waxed over a fibre wad. The propellant is the same as that described for the large hollow charge rifle grenade.

Perforation of Armour.

Perforation of 38.5 mm. homogeneous hard armour has been obtained at 30 degrees to the normal. The main dimensions of the hole were $\frac{1}{2} \times \frac{5}{8}$ inch.

988. GERMAN LARGE HOLLOW CHARGE RIFLE GRENADE.
(Gross Gewhr Panzergranate)

Fig. 391.

The grenade is fired from the 3 cm. rifled discharger cup which can be fitted to the 7.92 mm. Mauser rifle and also to a modified version of the 7.92/13 mm. A/Tk. rifle (Pz.B.39). The propellant cartridge contains a wooden bullet.

The rustproofed steel body of the grenade tapers slightly towards the head (1.8 to 1.5 inches) and is fitted with a parabolic impact cap, also of steel. At the base of the body a cylindrical tail unit is fitted. This is 2.9 inches in length and 1.2 inches in diameter with a pre-engraved 3 cm. band near its base. The tail unit may be of aluminium alloy or may be of black or brown plastic with a steel connecting shank and contains a graze fuze and a gaine. The overall length of the grenade is 7.15 inches and the weight, 13 oz. 5 drs.

The body contains a 4 oz. 6 dr. bursting charge of cast T.N.T. in which the "hollow" is in the form of a conical cavity with a steel liner. The liner is coned at 19.5 degrees, has the apex cut away and the hole sealed by solder. At the top it is shaped to engage a supporting cannellure in the body and is fitted

with a steel disc which has a small central hole. The impact cap is supported on the disc and the assembly is secured by the spun top of the body. At the base the body is reduced in diameter to match the tail unit and contains a 2.75 dram exploder pellet of P.E.T.N./Wax. The base is closed by two cardboard washers.

The plastic tail unit is connected to the body by a steel shank which is screwed to the body and secured to the plastic by the latter being extruded into perforations in the shank. Eight rifling grooves are formed in the band near the base of the unit. The interior is recessed from the top to accommodate the small cylindrical gaine and from the base to receive the fuze with its steel screwed base plug. The diaphragm between the upper and lower recess is drilled to provide a passage for the needle and to receive a flash pellet which is secured by a perforated screwed plug.

The gaine, Kl. Zdlg. C/34, is described as a separate item in this Bulletin.

Fuze.

The fuze consists of an inertia pellet carrying a needle which is held away from the flash pellet by a coiled spring strip supported on a washer secured to the head of the pellet. The coil is held within an arming sleeve which is supported by a spiral spring held in compression between an external flange on the sleeve and a collar at the base of the inertia pellet. The sleeve is prevented from rising, under the pressure of the spring, by a retaining spring which is secured to the head of the pellet and has four arms which engage a circular groove inside the sleeve. A second internal groove is formed near the top of the sleeve to engage with the arms when the fuze is armed.

Cartridges.

The 7.92 mm. and 7.92/13 mm. S.A. cases are of varnished steel and are fitted with short hollow bullets of wood. The 7.92 mm. case is extended in length at the mouth and is coned into a cannellure in the bullet. The propellant charge consists of 19.6 grains of nitrocellulose powder in the form of square flake with a ridge across the centre of one side of the flake. The flakes are .055 inch square, .01 inch thick and the ridge protrudes .01 inch. The ridge is probably intended to prevent the flakes packing tightly together. The composition of the propellant includes 98.36% of nitrocellulose (nitrogen content 13.12%) and .88 per cent of diphenylamine. The 7.92/13 mm. propellant charge consists of 51 grains of nitrocellulose powder in the form of granular tubes. The dimensions of the tubes in inches are :- length .050, external diameter .084, internal diameter .04.

Action.

On acceleration the arming sleeve sets back, compressing its spring, and is prevented from rebounding by the arms of the retaining spring entering the internal groove near its head. The coiled steel strip is then free to expand so that on graze the pellet passes through the coil and the needle pierces the flash pellet. The flash enters the detonator in the gaine which brings about the detonation of the bursting charge with the assistance of the exploder. The functioning of the fuze, as the result of the strike of the impact cap, brings about the detonation at the effective point relative to the surface struck and the hollow in the head of the charge results in the concentration of the effect of the detonation to obtain perforation. The steel disc under the cap is probably intended to prevent debris from the cap entering the liner.

Perforation of Armour Plate.

Perforation of 50 mm. homogeneous hard armour has been obtained at 30 degrees to the normal. The main dimensions of the hole were $\frac{5}{8} \times \frac{3}{8}$ inch.

989. GERMAN SHELL P.E.T.N. GAINE NO. 34
(Kl. Zdlg 34 Np)

Fig. 392.

The gaine is used in the hollow charge 3 cm. pre-engraved rifle grenades, the 5 cm mortar H.E. bomb and the 3.7 cm. Pak muzzle stick bomb.

The construction of the gaine is similar to that of the other types described in Bulletin No. 32, that is, an aluminium cylindrical body with an aperture at one end which contains the detonator. The length is .995 inch, the diameter .735 inch and the weight, 6 drams. The exterior is stencilled "Kl. Zdlg 34 Np".

The main filling, as indicated by the marking "Np", consists of P.E.T.N./Wax and weighs approximately 4 drams. The detonator assembly, which closes the head end of the body and enters a cavity in the main filling, consists of a flanged container holding approximately 4.6 grains of lead azide and lead styphnate over 6 grains of P.E.T.N. This initiator filling is covered by a perforated disc. The container is closed at the top by a paper disc held between a cardboard washer and the overturned top of the body.

990. GERMAN FUZE A.Z. 5072

Fig. 393.

This small direct action detonating nose fuze has been found in H.E. shell of the "Arrowhead" type for the 2.8 cm Pz.B.41 and 4.2 cm Pak 41 anti tank guns.

The aluminium ogival body and flat tapped head of the fuze protrudes approximately .6 inch from the shell. The designation, "A.Z.5072" is stamped in the body above the flange.

The weight of the fuze is 5.4 drams.

The body of the fuze is recessed at the top to receive the striker assembly and screwthreaded internally for the insertion of the head. At the base it is recessed and screwthreaded for the insertion of the magazine. The diaphragm between the two recesses has a hole at the centre for the striker.

The aluminium head of the fuze is recessed from the underside to fit over the striker assembly and has a thin diaphragm at the top.

The striker is supported by two centrifugal half collars which are retained in position under a collar on the striker by an expanding spring ring and a steel retaining ring. A circular projection on the base of the steel ring engages in corresponding semi-circular grooves in the top of the half collars.

The magazine contains P.E.T.N. in powder form with a detonator of lead azide, calcium silicide and P.E.T.N. at the top.

Action.

During deceleration in flight the retaining ring moves forward and disengages from the groove in the half collars. The coil of the expanding spring ring is enlarged and the half collars thrown clear of the striker by centrifugal force. The striker is then held off the detonator by "creep" action. On impact the head of the fuze is crushed and the striker driven in to pierce the detonator.

991. GERMAN NAVAL CARTRIDGE, Q.F. 10.5 cm. H.E.
(10.5 cm. Sprenggranate - Patrone C/32 L/4,4 (Kz))

1. The cartridge is used with the 10.5 cm. Ubts and Lbts Flak L/45 guns. The round is approximately 41.5 inches in length and 52.3 lb. in weight. The shell is painted yellow and has a black tip.

The complete round consists of the following components :-

H.E. Shell filled T.N.T.

Gaine, Zdlg "A".

Percussion fuze with combined direct and graze action, E.K. Zünder C/28.

Brass case or steel case coated with brass.

Propellant charge of a double base type with a nitrocellulose igniter.

Percussion primer C/12 NA or C/12 NA St.

2. Shell (Fig. 394)

The shell has a filled weight of 32 lb. 11 oz, is fitted with two driving bands of the iron and copper type and is closed at the base with a screwed base plug. Two cannelures are formed behind the driving bands for the attachment of the case. A screwthread is formed below the fuze-hole, at the nose, for the insertion of a steel container, which holds the gaine. The T.N.T. bursting charge is approximately 2.8 lb. in weight and is of the block type, inserted from the base.

The filling consists of four T.N.T. pellets inserted with wax in a varnished cardboard carton and a fifth T.N.T. annular pellet in an aluminium container which fits round the exploder container. The uppermost pellet in the cardboard carton has a cavity to receive the base end of the exploder container. The fitting of the carton to the shell cavity is adjusted by means of a wrapping of paper.

3. Gaine.

Details of the gaine used (Zundladung "A") are given in Bulletin No. 32, Item 669.

4. Fuze.

Details of the E.K. Zünder C/28 are included in this Bulletin.

5. Case and Propellant Charge.

The case is approximately 26 inches in length and a slight variation in the taper forms a not very prominent shoulder.

The propellant charge is in the form of dark green tubular cords, 21.63 inches in length, partly enclosed from the base in a bag which carries an igniter. The igniter is attached to the base of the charge bag and consists of a flat circular bag stitched to form three compartments which contain a light greenish grey nitrocellulose powder in cylindrical grains.

The weight of the propellant charge, as indicated by the markings on the bag, is 8 lb. 11 oz. 11 dr. The basic composition is 67% of nitrocellulose (Nitrogen content 12.5%) and 28.7% of diethylene-glycoldinitrate with akardite. Graphite and sodium sulphate are included.

The weight of the igniter charge is approximately 12 drams. The nitrocellulose has a nitrogen content of 13.3% and constitutes 94.11% of the composition. The stabilizer is diphenylamine. Graphite and potassium nitrate are also included in the composition.

6. Primer

The percussion primer C/12 is described in Bulletin No. 26, Item 460.

GERMAN FUZE PERCUSSION C/28.

(E.K. ZÜNDER C/28)

Fig. 395.

The fuze is used over a gaine (Zdlg "A" in the 10.5 cm A.A. gun) and is designed on the combined direct and graze action principles for sensitivity and instantaneous functioning.

The hollow ogival aluminium head of the fuze is screwed on the body and secured by a grub screw. The hole formed in the nose of the head to receive the outer end of the wooden hammer is closed by a brass disc. The disc is secured by a brass ring.

The aluminium body has a hollow cylindrical projection on its front face in which the base end of the wooden hammer is housed in contact with a needle holder. The needle holder carries a steel needle, secured by a screwed plug, and is supported by a brass shearing wire. The body is recessed and screw-threaded from the underside to receive the pellet holder.

The pellet holder is of steel and is recessed to carry the inertia pellet. A flash hole is formed in the base of the recess for the passage of the flash from the detonator to the gaine. Five centrifugal segments of brass with steel pivot pins are fitted on the front face of the holder and are positioned to overlap the inertia pellet by an expanding spring ring.

The inertia pellet carries an igniferous detonator secured by a perforated screwed plug and has a creep spring positioned between it and the needle holder.

Action.

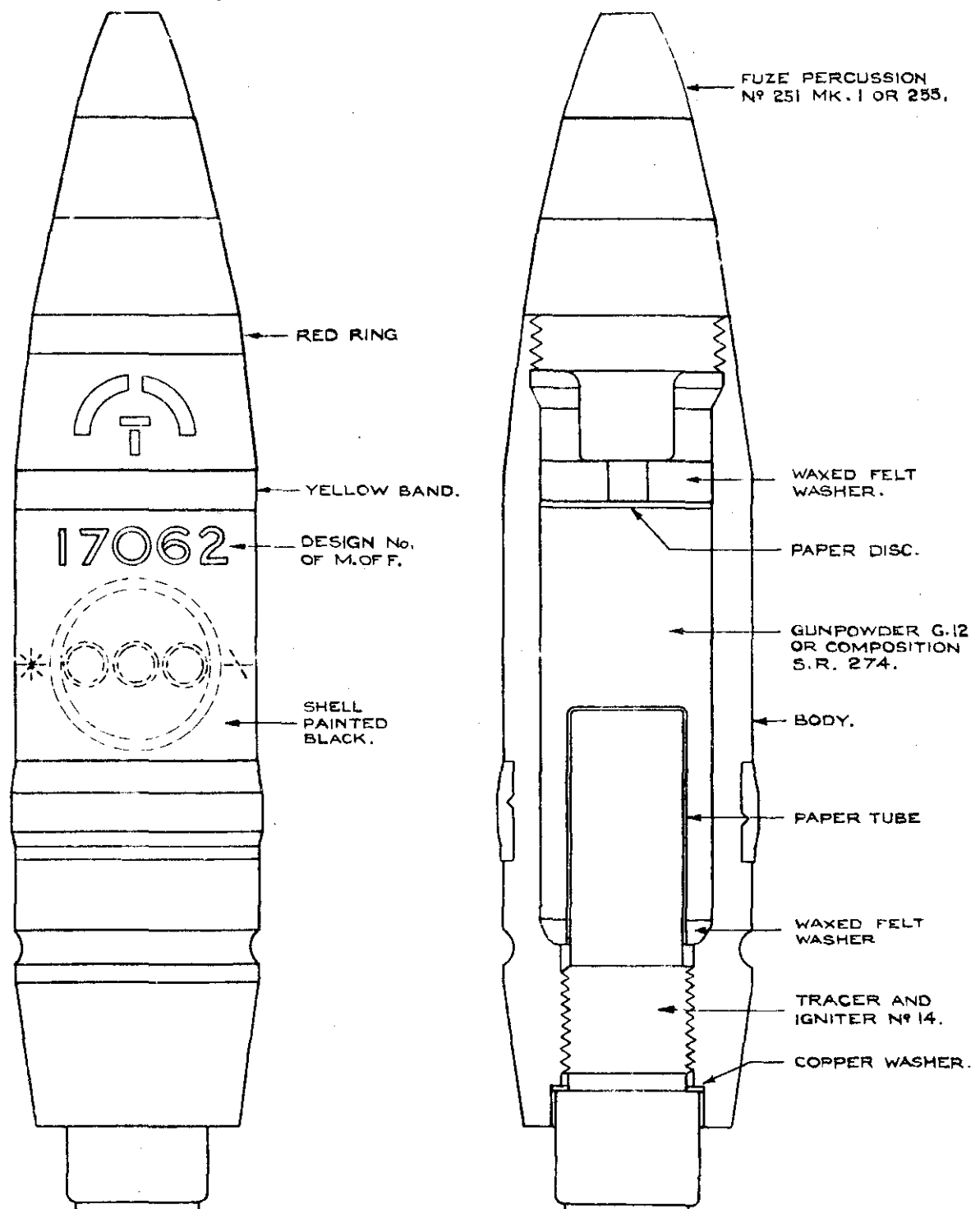
During flight the expanding spring ring is opened and the segments rotated clear of the inertia pellet by centrifugal force. The needle and the pellet are then held apart by the shearing wire and creep spring only. On impact, or graze, the needle is driven in by the wooden hammer and the wire sheared, whilst the inertia pellet overcomes the creep spring and carries the detonator forward. The flash produced by the piercing of the detonator passes through the hole in the base of the pellet holder to the gaine in the exploder container of the shell.

993. GERMAN NAVAL CARTRIDGE, Q.F., 10.5 CM., H.E. WITH INCENDIARY UNIT. (FIG.396)
(10.5 cm Sprenggranate - Patrone C/32 L4,4 (Kz.) Lh. 31 rot 9/40)

The cartridge is used with the 10.5 cm G.R.C/32, the Umts. and Lbts. Flak L/45 and differs from the normal H.E. cartridge C/32 in the shell filling and the markings. The colour of the shell is deeper and is more orange than yellow. The shell is marked with a red band above the leading driving band and above this is stamped the letters "Br". The stampings "Lh 31 Nr 9/40" and "Sgl a + b Br" appear around the body between the band and the shoulder.

The bursting charge is of the block type and consists of four pellets of pressed T.N.T. in a cardboard carton (without wax) and an annular pellet, also of T.N.T., in an aluminium container which fits round the exploder container. The two pellets in the lower portion of the carton are in annular form and the cavity thus formed contains an incendiary unit filled with thermite (Aluminium/hammerscale 19/81) without any priming composition.

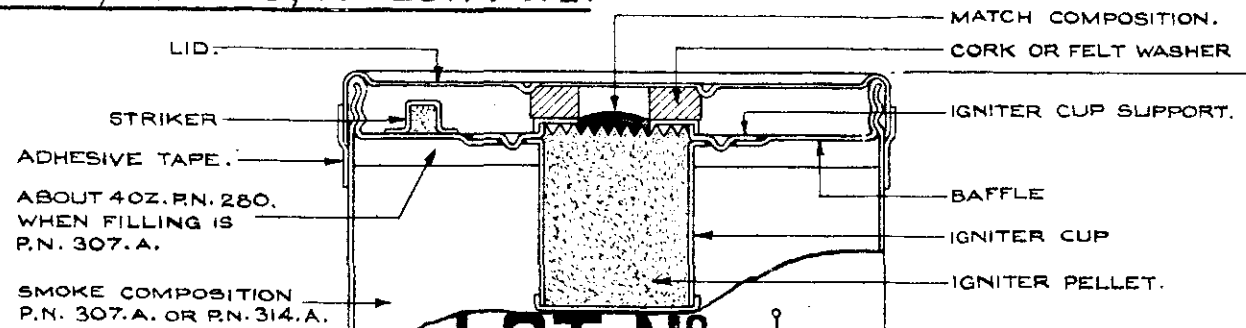
FIG. 382 (ITEM.959.)
PROJECTILE, PRACTICE, Q.F. 40 mm. MK IX T.



 INITIALS OR MONOGRAM OF FIRM OR STATION FILLING
 DATE OF FILLING (MONTH AND YEAR.)
 SERIES NUMBER IN RING, DISTINGUISHING FILLED LOT.

THIS MARKING IS OMITTED ONLY WHEN PROJECTILES ARE ASSEMBLED INTO CARTRIDGE ROUNDS WITHIN ONE MONTH AT THE SAME FACTORY AFTER FILLING.

FIG. 383 (ITEM.970.)
GENERATOR, SMOKE, N° 28.MK.I.



LOT N° +

COMP. N° *

FILLED BY: +

DATE -/-

BODY LAQUERED OR PAINTED GREEN.

- + LOT N°
- * COMPOSITION N° AS APPLICABLE
- + INITIALS OR RECOGNISED TRADE MARK OF CONTRACTOR FILLING.
- /- MONTH AND YEAR OF FILLING.

7.96"

EMPTY MARKING ON BOTTOM.

CONTRACTOR'S INITIALS OR RECOGNISED TRADE MARK.
 MONTH AND YEAR OF MANUFACTURE.

" GEN. SMOKE, N° 28
 I."

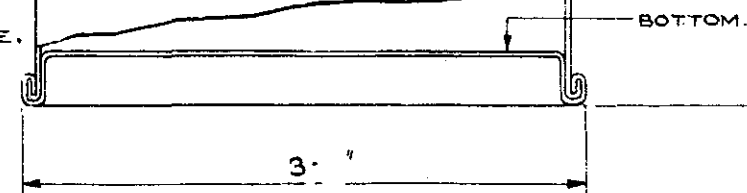


FIG. 384.(ITEM.971.)
FLARE, DISTRESS, MARINE, RED. MK. I.

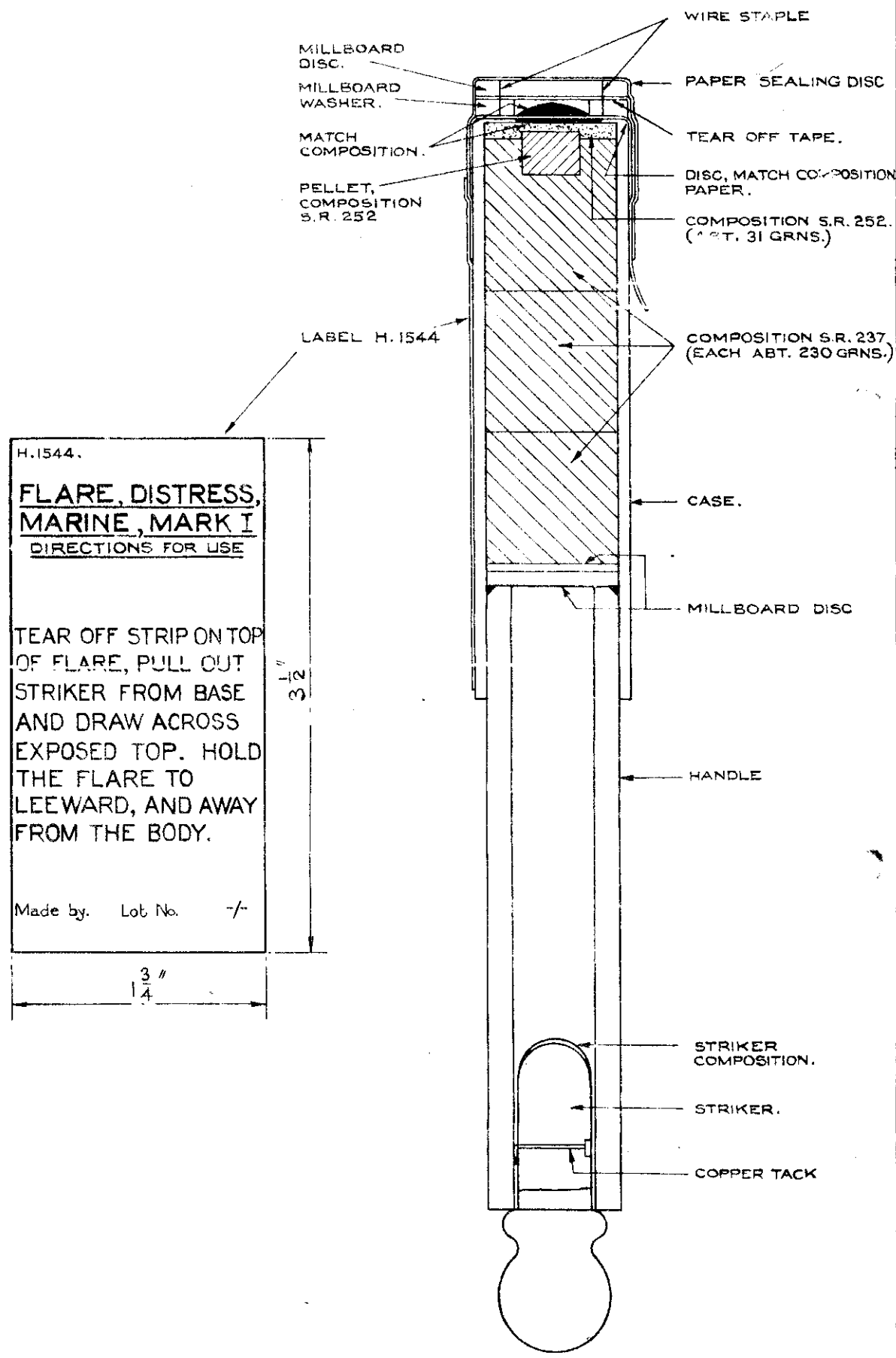
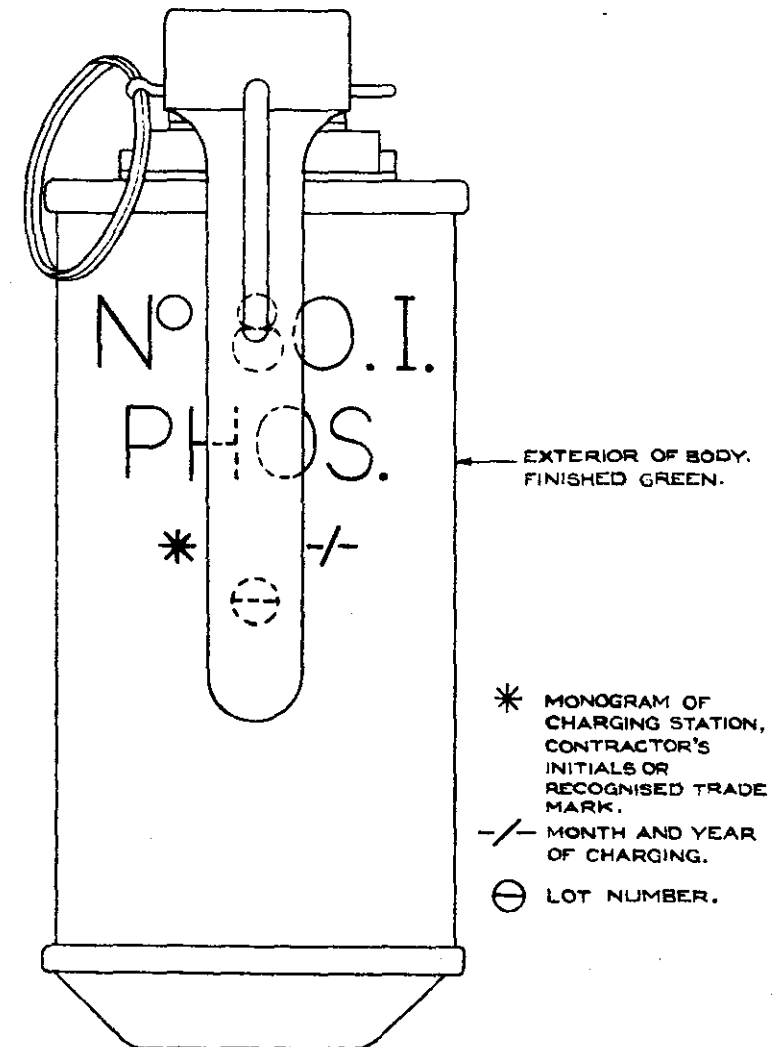
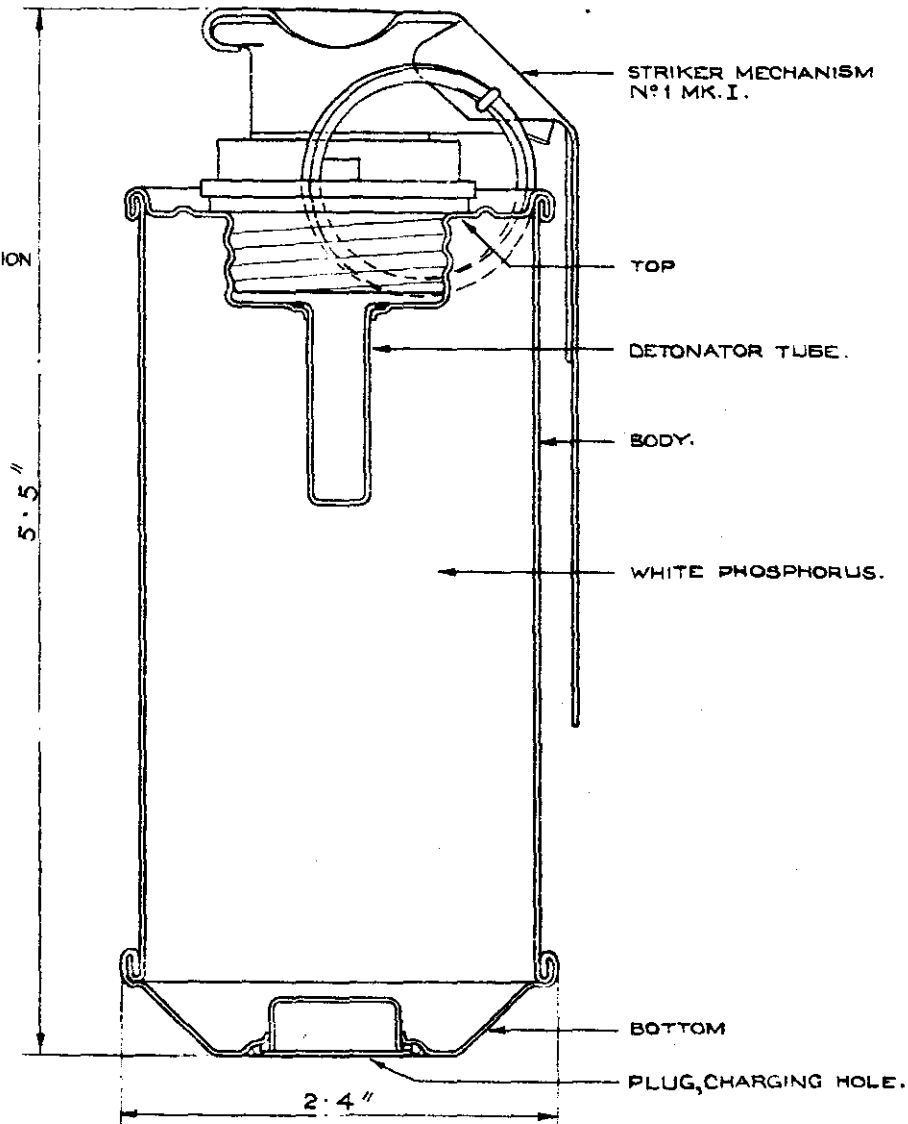
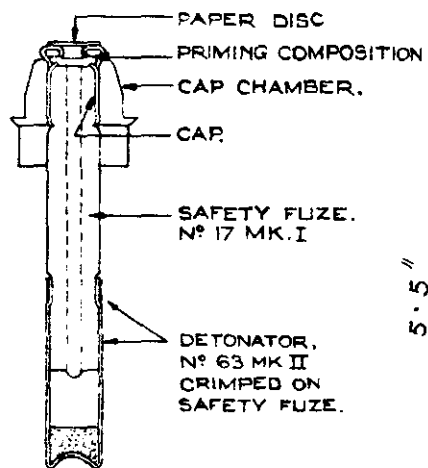


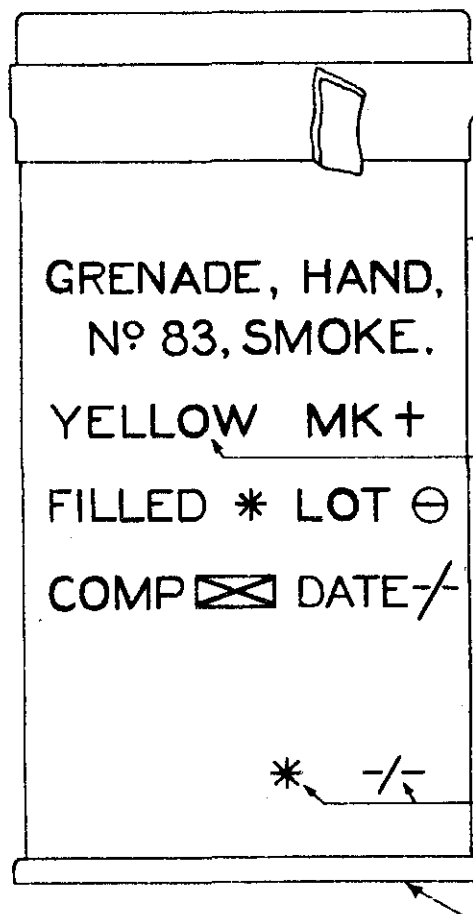
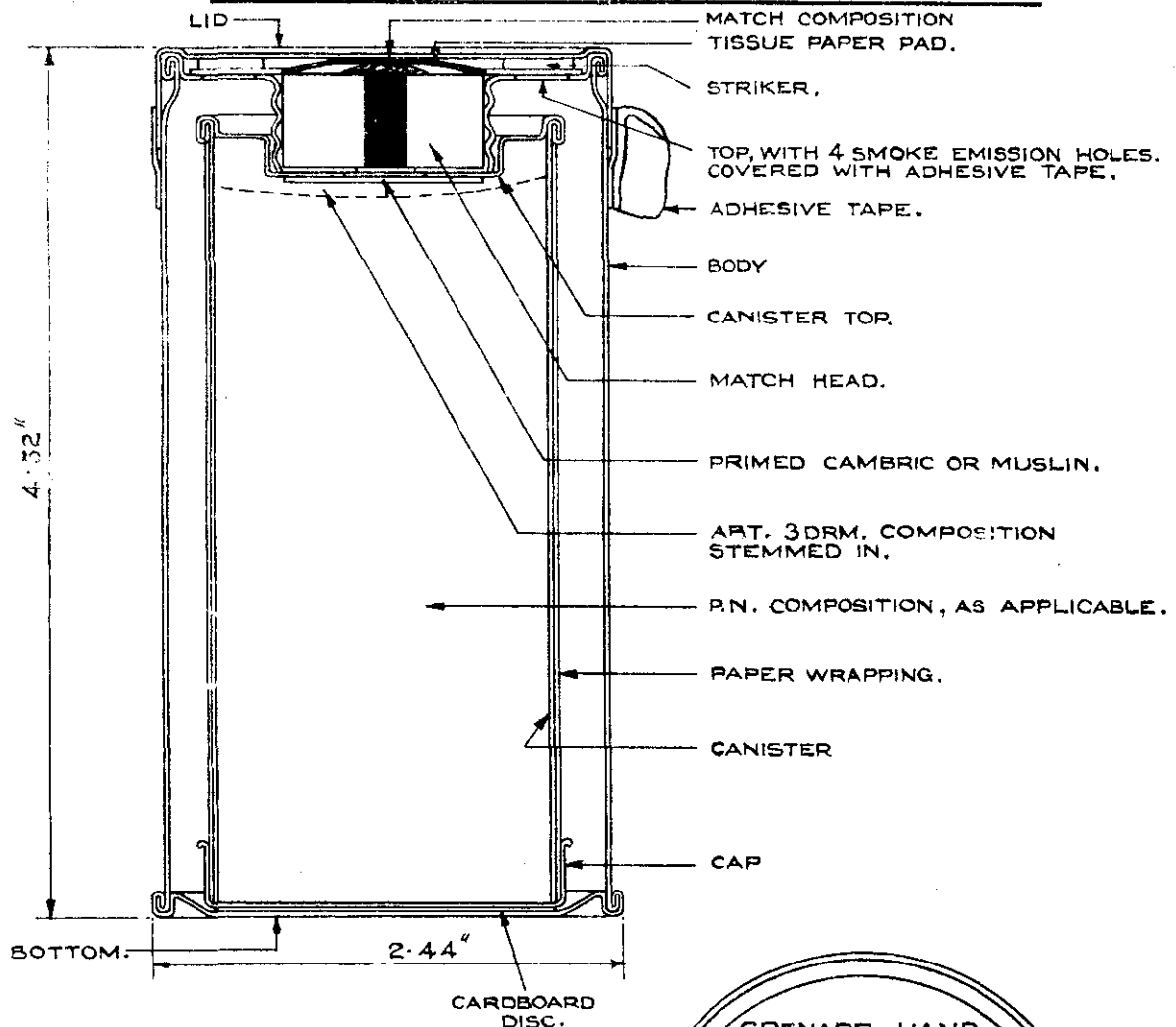
FIG. 385.(ITEM.972.)
GRENADE , HAND, No. 80. W.P. MK.I.

DETONATOR, N° D.75, MK.I.



- * MONOGRAM OF CHARGING STATION, CONTRACTOR'S INITIALS OR RECOGNISED TRADE MARK.
- / MONTH AND YEAR OF CHARGING.
- ⊕ LOT NUMBER.

FIG. 386. (ITEM.980.)
GRENADE, HAND, Nº 83, SMOKE, MK.I.



GRENADE, HAND,
 Nº 83, SMOKE.

YELLOW MK +

FILLED * LOT ⊖

COMP  DATE -/-

* -/-

FILLED MARKING:-

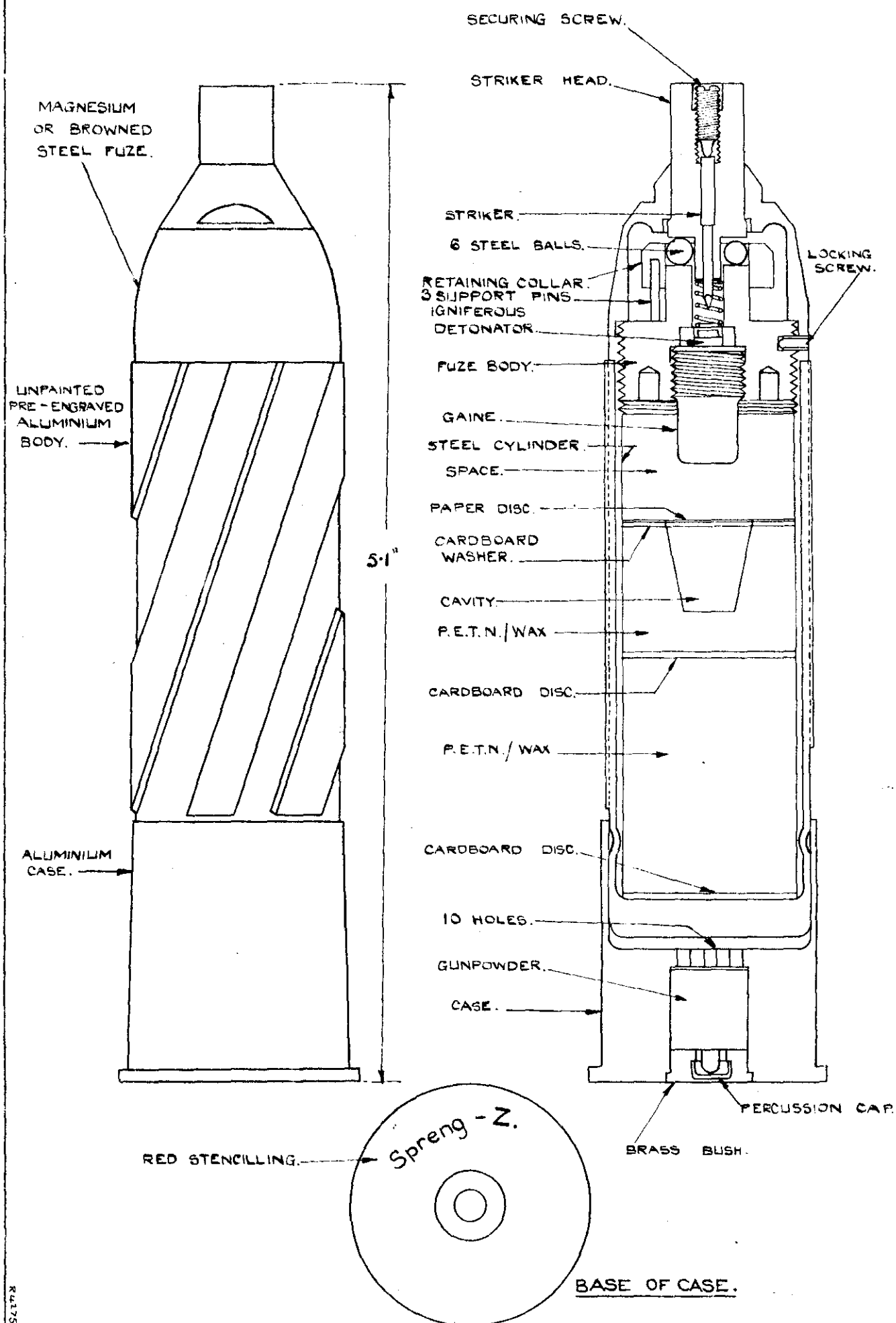
- + MARK
- * MONOGRAM OF FILLING STATION, CONTRACTOR'S INITIALS OR RECOGNISED TRADE MARK.
- ⊖ LOT. Nº
-  NUMBER OF COMPOSITION.
- /- MONTH AND YEAR OF FILLING.

EMPTY MARKING. (ON SIDE AND BOTTOM.)

- * CONTRACTOR'S INITIALS OR RECOGNISED TRADE MARK.
- /- MONTH AND YEAR OF MANUFACTURE.

GERMAN 2.7 cm PISTOL M.E. CARTRIDGE.
(SPRENGPATRONE FÜR KAMPFPISTOLE.)

FIG. 387. (ITEM 984.)



GERMAN 2.7 cm. PISTOL SIGNAL CARTRIDGE.
(DEUTPATRONE FÜR KAMFPFISTOLE.)

FIG. 388 (ITEM 985.)

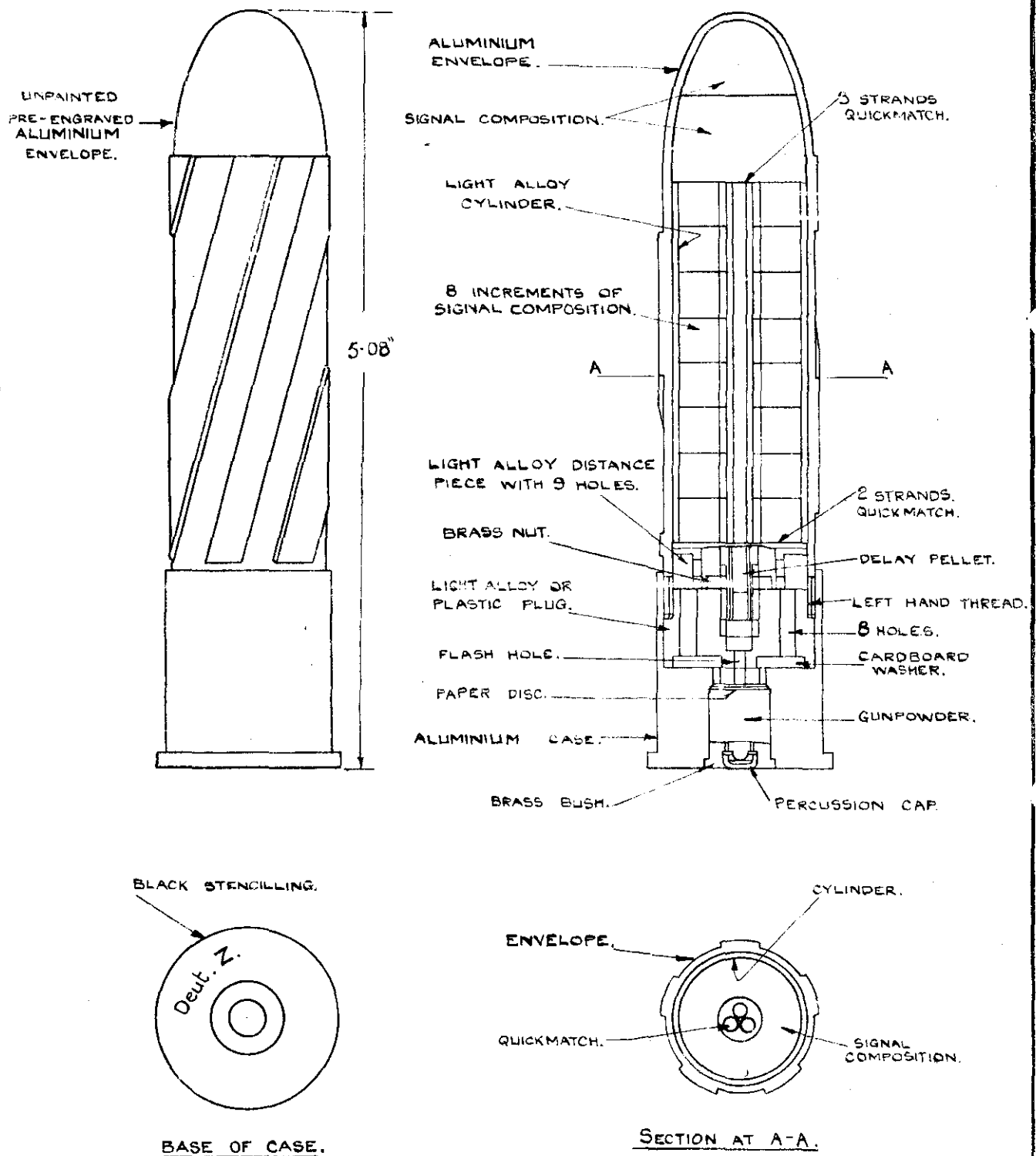


FIG. 389 (ITEM. 986.)
GERMAN 2.8 Cm. Pz.B.41. CARTRIDGE Q.F. H.E.

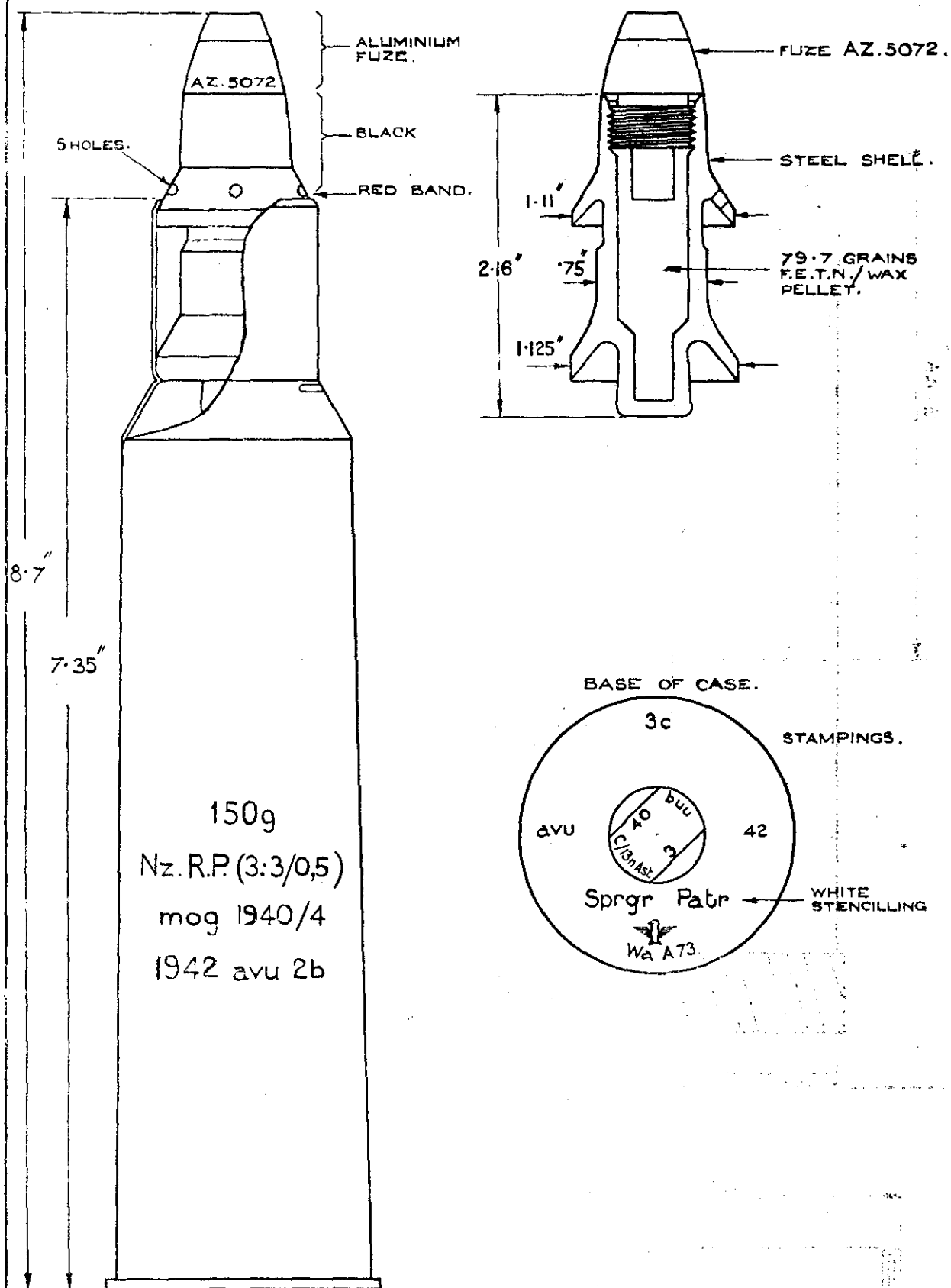
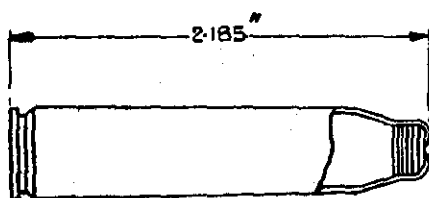
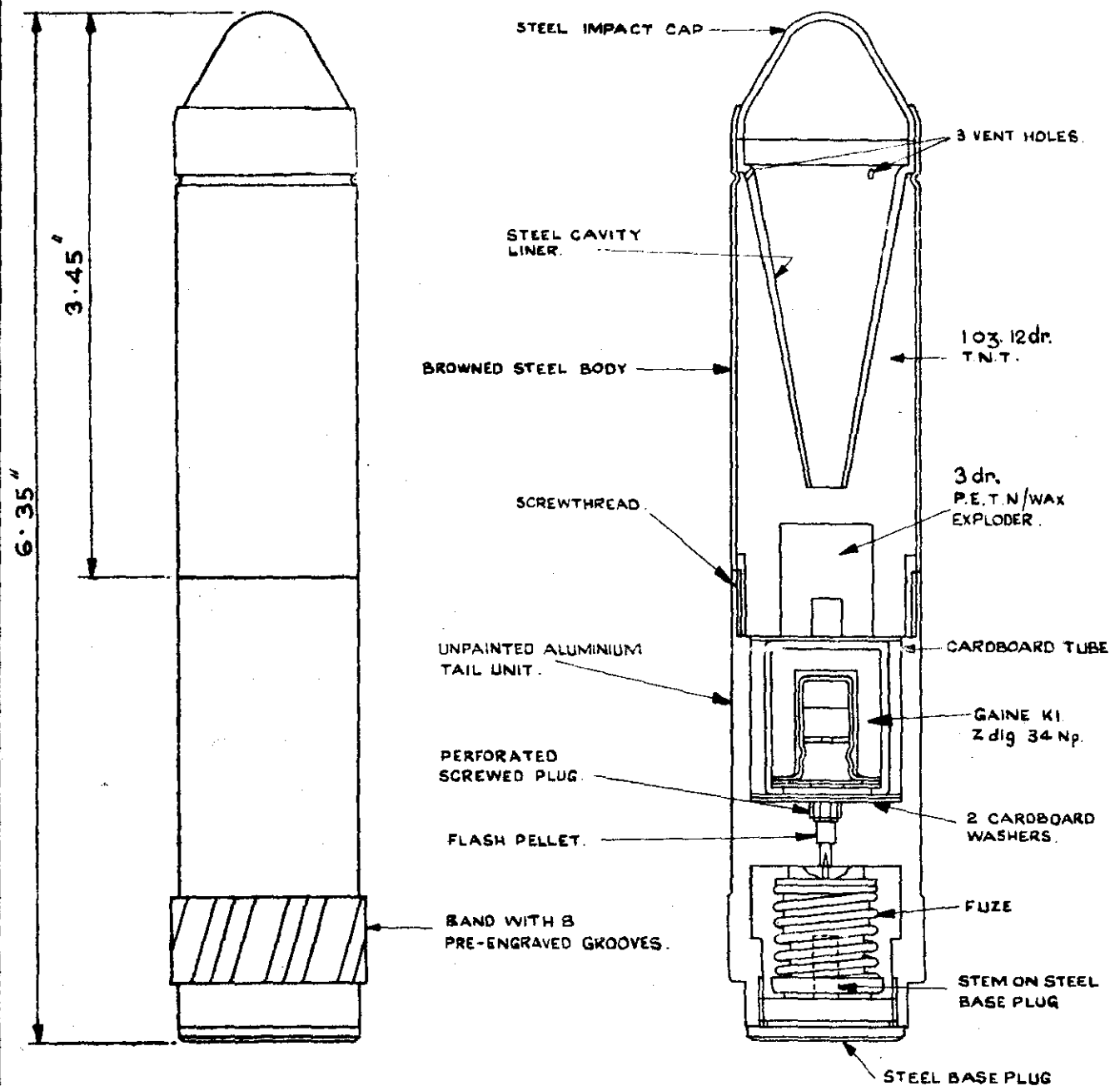
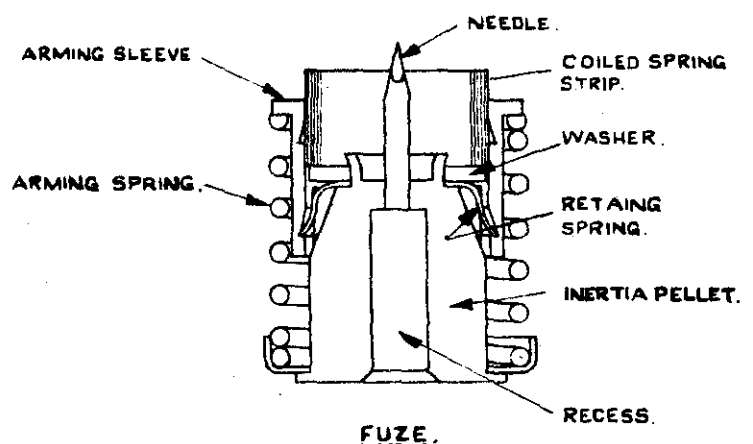


FIG. 390. (ITEM 987.)
GERMAN HOLLOW CHARGE RIFLE GRENADE.
 (GEHWR PANZERGRANATE)



7.92mm. CARTRIDGE.



GERMAN LARGE HOLLOW CHARGE RIFLE GRENADE.
(GROSS GEWHR. PANZERGRANATE)

FIG. 391 (ITEM 988.)

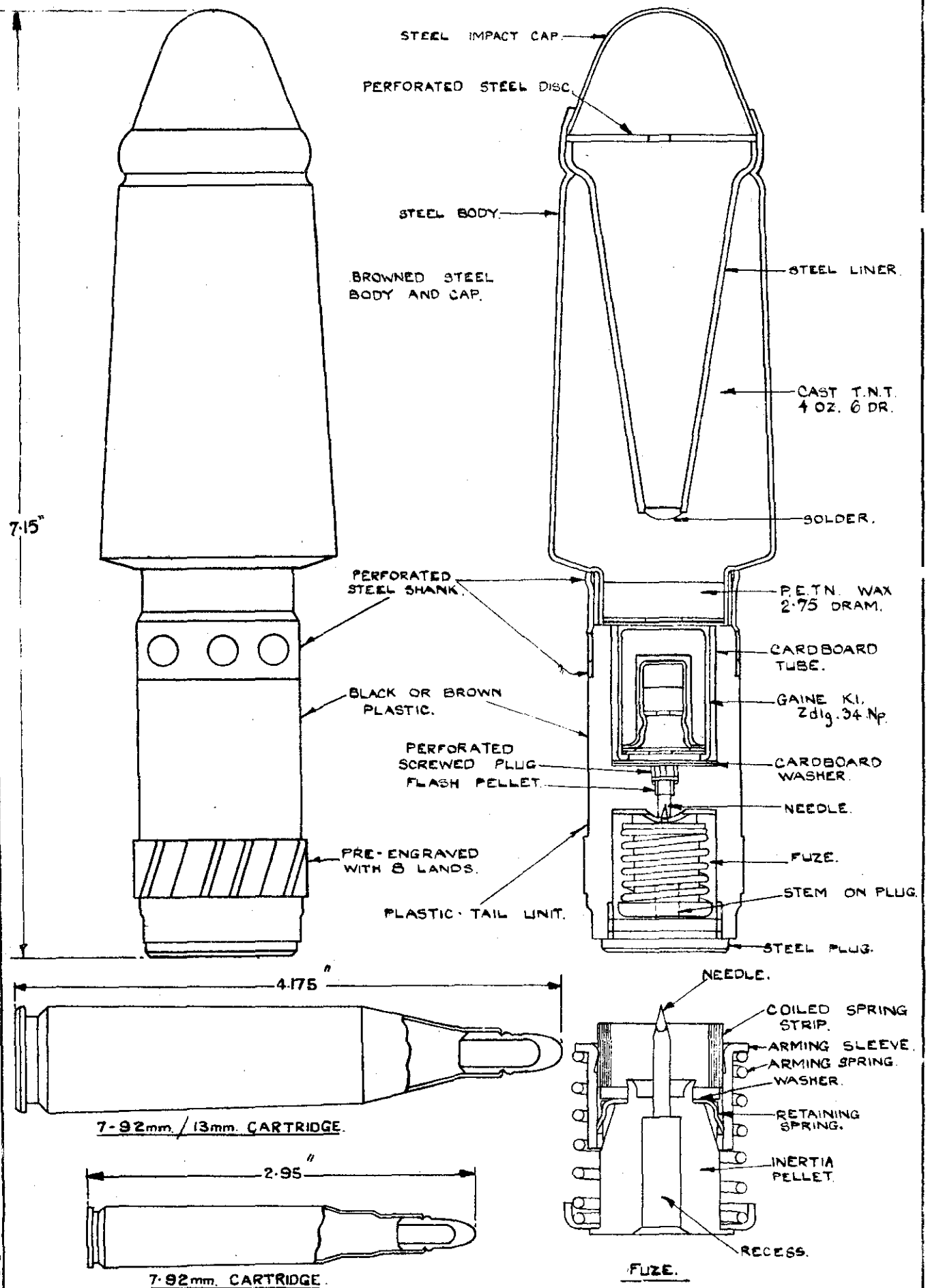
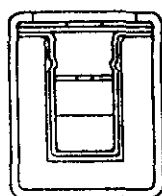
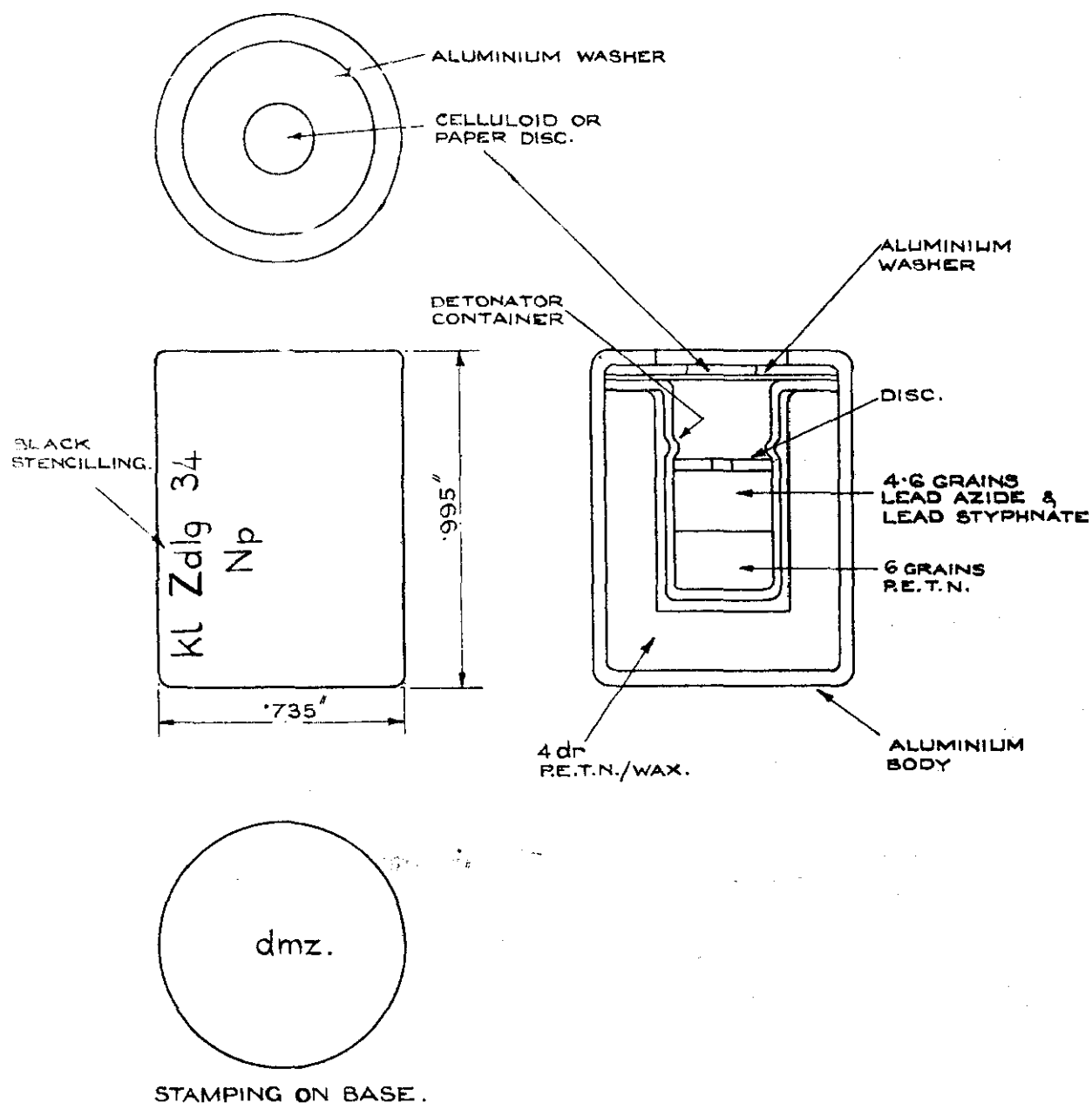


FIG. 392. (ITEM. 989.)
GERMAN SMALL P.E.T.N. GAINE 34.

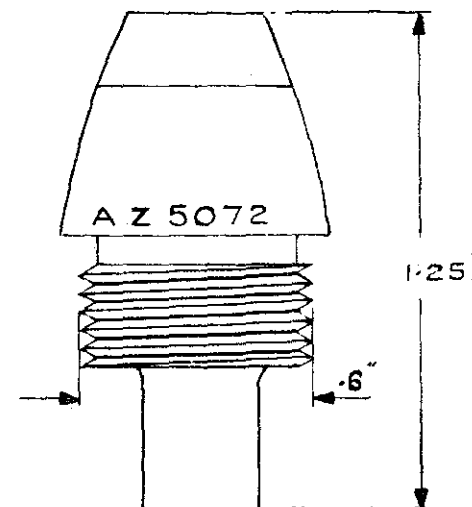
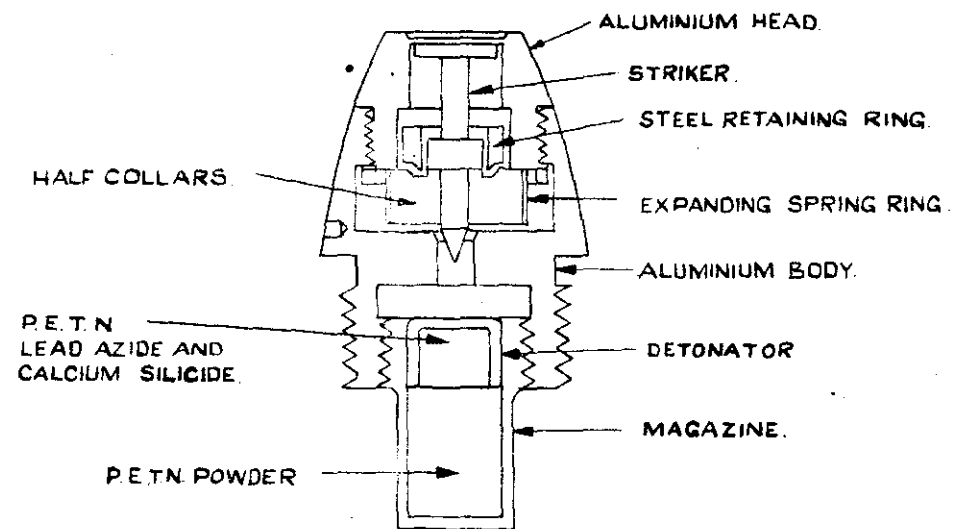
(Kl. Zdlg 34 Np)

Weight 6 drs.



Full size.

FIG. 393 (ITEM. 990.)
GERMAN FUZE A.Z. 5072



E.A.
 FUZES
 SK. N°36
 CIA/A.

FIG. 394. (ITEM 991.)
GERMAN SHELL, Q.F., 10.5 Cm, FLAK, H.E.

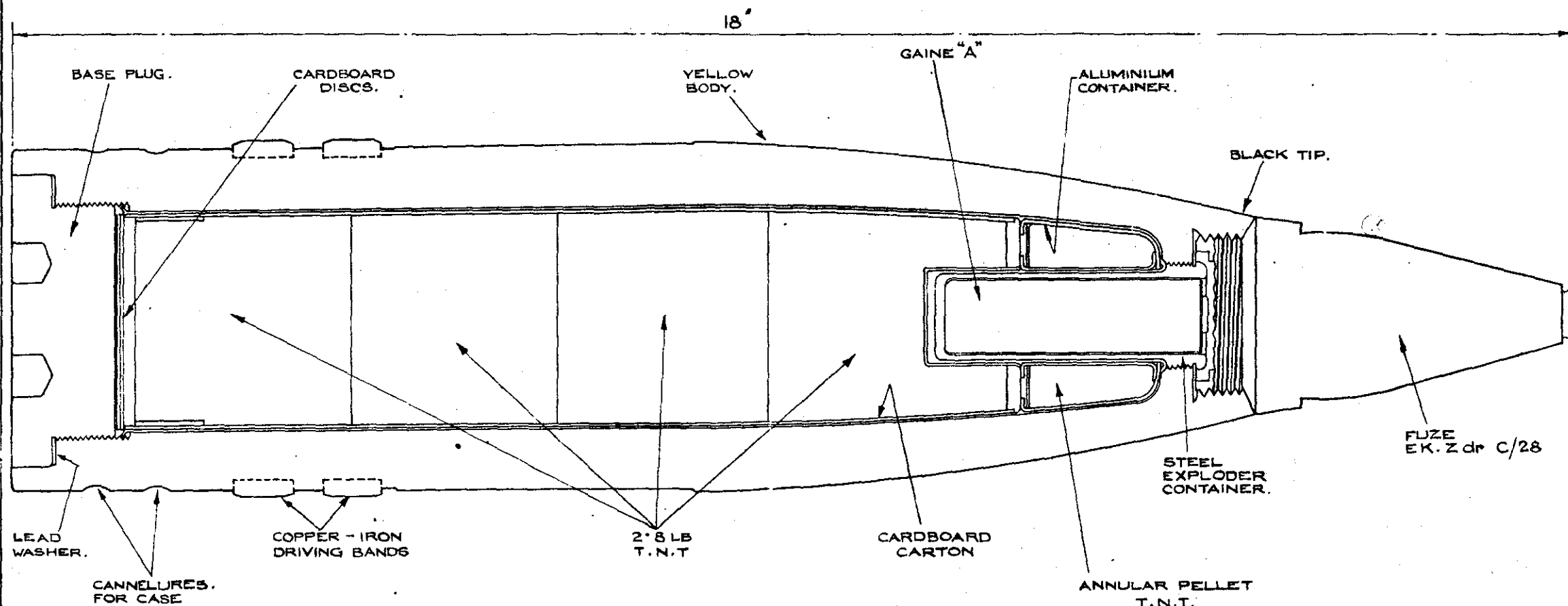
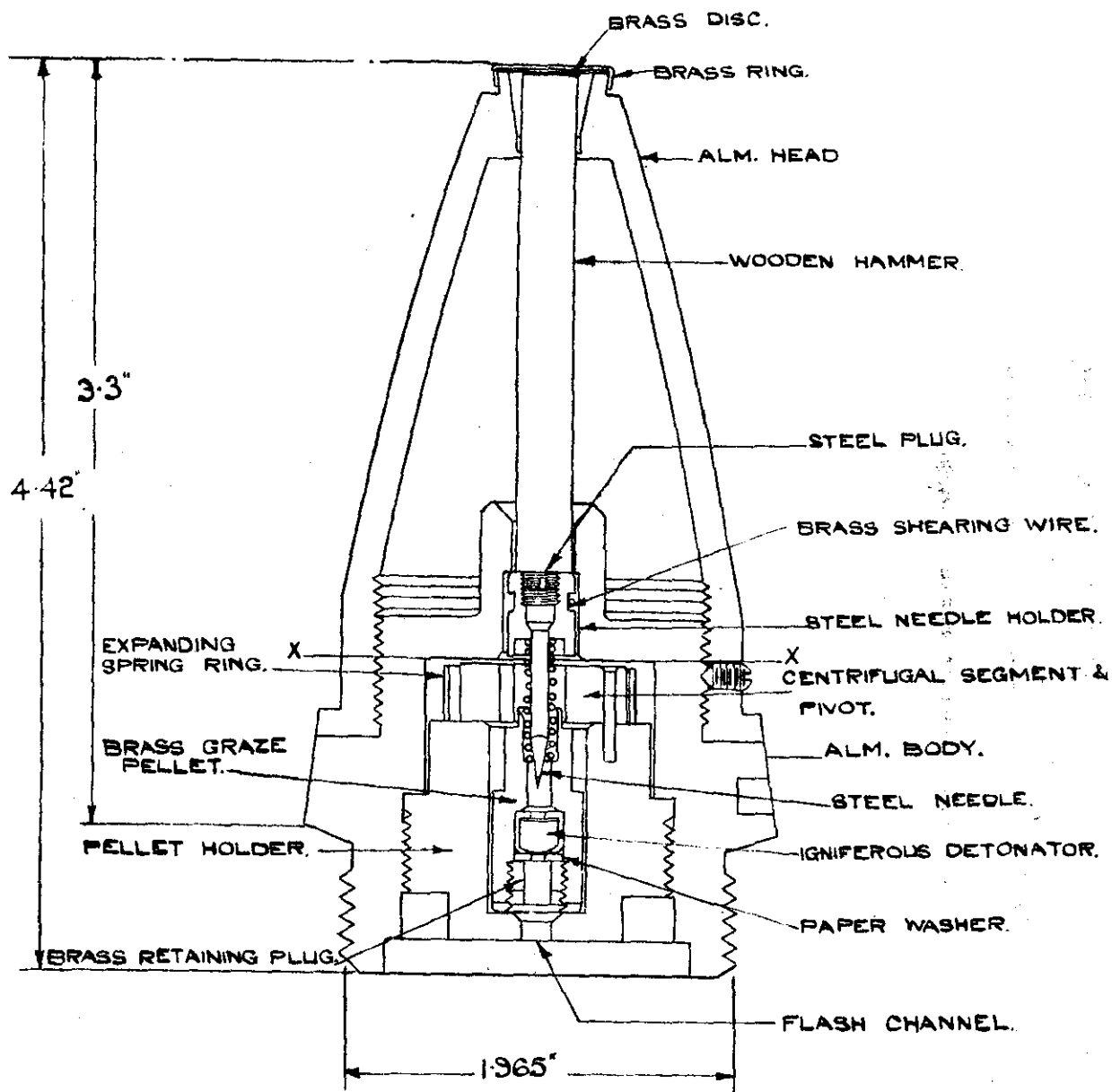
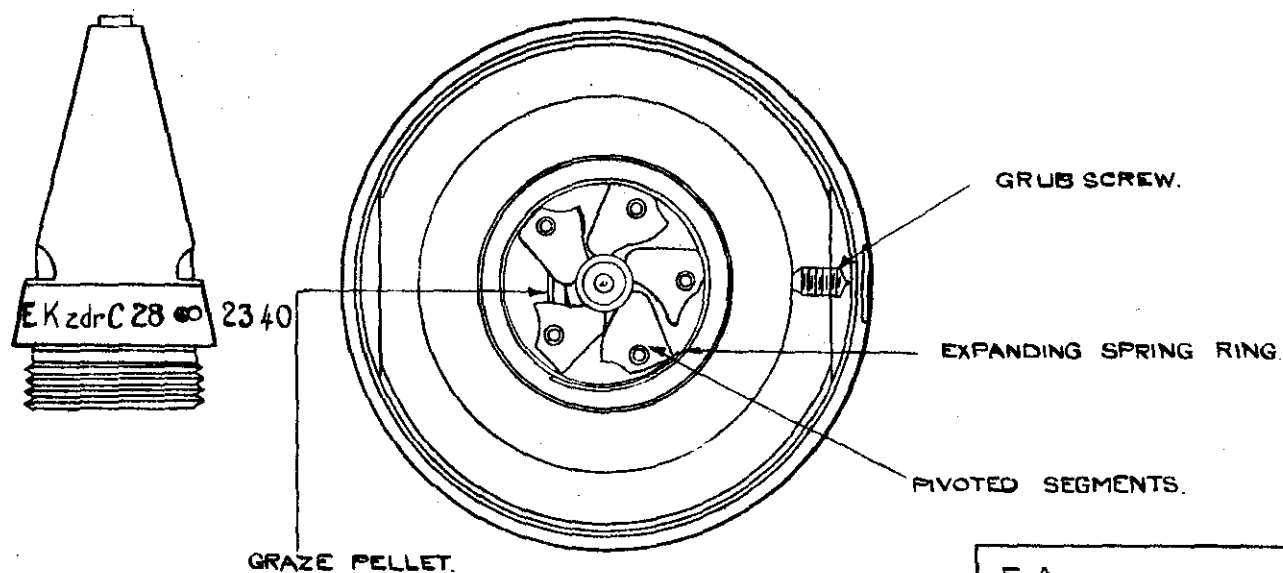


FIG. 395. (ITEM 992)
GERMAN FUZE E.K. zdr. C. / 28.



SECTION X-X



E.A.
FUZES.
SK. N° 24.
C.I.A./A. 20-7-43.

FIG. 396. (ITEM 993.)

GERMAN, SHELL, Q.F., 10.5cm, FLAK, H.E. WITH INCENDIARY UNIT.

