

AMMUNITION BULLETIN Nº 37

ITEMS 889-919

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THE CHIEF INSPECTOR OF ARMAMENTS

MINISTRY OF SUPPLY
AMMUNITION BULLETIN NO. 37.

Issued by :-

Chief Inspector of Armaments.

Item No.

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|-----|--|
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Item No.

- 893 Shell, H.E. over 6 in. Calibre - Reduced Cavity.
910 Shell, B.L., A.P.C. 9.2 in. Gun, Mk.XIIB - Conversion of
912 Shell, B.L., H.E. 9.2 in. and 6 in. T.N.T. or Lyddite.
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891 Slab, G.C. 1 lb. and Primer, Field, 1 oz. - Dummy.

ENEMY AMMUNITION.

- 918 Italian 77 mm. Ammunition.
919 Italian 75 mm. Ammunition.

AMENDMENTS.

Bulletin No. 36. Item 878. Page 19, Line 3. Delete "belt" and
Substitute "bolt"

Line 7. Delete "spring" and
Substitute "detents"

" " " Item 879. Line 4. Delete "6 gr." and Substitute "5 gr."

" " " Item 880. Lines 3 and 4. Delete "gram" and
Substitute "grain"

Line 25 Delete "may" and Substitute "will"

Line 26 Delete "arming" and Substitute "striker"

Page 22, Line 7. Delete "arming" and
Substitute "striker"

" " " Item 884. Line 6. Delete "pentagonal" and Substitute
"hexagonal."

" " " Item 886. Page 27, sub para (d). Delete "7 dram" and
Substitute "5 oz 5½ dr."

Page 28, para. head "Propellant Charge", line 5.
Delete "(4 oz.5 dr.)" and
Substitute "(5 oz.5½ dr.)"

Line 11. Delete "5 oz 13 dr." and
Substitute "26 grains"

389. CARTRIDGE, Q.F. 3.7 in. A.A. - PACKAGE MARKINGS.

The letter "Q" will, in future, be omitted from the stencilling on packages containing Cartridges, 3.7 in. A.A. fitted with "Q" primers in order to bring the package markings into line with Canadian production. (See Bulletin No.32, Item 655).

890. GENERATOR, SMOKE, NO.8 Mk.V.

Approval has been given for the abovementioned generator to be limited to tail smoke emission only.

891. SLAB, G.C. 1 lb. AND PRIMER, FIELD, 1 oz. - DUMMY.

The above dummy stores have been approved. Both are made of hardwood. The 1 lb. dummy slab is rectangular in shape and is prepared centrally with a conical perforation for the 1 oz. dummy primer. Dimensions are approx. 6 x 3 x 1½ inches and the slab is stamped with the following markings:- "DUMMY G.C. 1 lb."; Contractor's initials or recognised trade mark; Year of manufacture.

The 1 oz. dummy primer is conical in shape and is prepared with one central perforation. Dimensions are approx. 1.35 to 1.15 inches x 1.25 inches. Its larger diameter surface is stamped with the following markings:- "DUMMY"; Contractor's initials or recognised trade mark; Year of manufacture.

892. FUZE, TIME, NO.188.

Fuze, time, No.188 has been declared "OBSOLETE".

893. SHELL, H.E., OVER 6 in. CALIBRE - REDUCED CAVITY.

Reference Bulletin No.33, Item 691 and Bulletin No.34, Item 750.

Approval has been given for relevant designs of H.E. Shell over 6 in. calibre to be amended to provide for a reduced depth of cavity, the additional exploder to fill the space formerly occupied by the smoke box being omitted.

Fig. 352 this Bulletin shows particulars of cavity etc., applicable to Amatol filled shell over 6 inch, to design DD(L)16817.

894. FUZE, TIME, NO.199. FUZE FACTOR CORRECTION MARKING.

In future, the F.F.C. will be marked on the cover of the abovementioned fuze, but will not appear on the fuze body. The marking on the cover will be with a rubber stamp in BLUE for 3.7 in. Gun on the left, and in RED for 3 in. 20 cwt. Gun on the right.

The F.F.C. will be marked on fuze packages in Blue and Red, and on ammunition boxes in Yellow.

895. SHELL, Q.F., H.E. 40 m.m. - MARKING OF SHELL FILLED PENTOLITE.

Reference Bulletin No.35, Item 817. The amendment to M. of F. design No. DD(L)14279 has been extended to include M. of F. Design DD(L)11606.

A further amendment to these Designs provides for the fraction 91/9 to be deleted and for "PEN/D1" to be stencilled on Pentolite filled shell in White on the black band or, alternatively, in Black below the coloured bands.

896. CARRIER, AMMUNITION, INFANTRY PROJECTOR, A/T.NO.8 MK.II - PACKING.

Approval has been given for the abovementioned carrier to be packed in Box B.166. Stowage dimensions of box are 19.7 x 9 x 13.2 inches.

897. FUZE, PERCUSSION, D.A. NO.250.

Ref. Bulletin No.36, Item 875. The Mark I of this fuze has been declared "Obsolete" and the Mark II "Obsolescent." The M. of F. design for the Mark II has also been declared "Obsolete" to prevent further filling of this Mark.

898. FUZE, PERCUSSION, BASE, MEDIUM, NO.502, Mk.I. DISTINCTIVE MARKING.

Approval has been given for the Fuze, percussion, base, medium, No.501, when fitted with a weaker creep spring, to be re-numbered No.502 and for the base of the fuze to be painted yellow. The No.502 fuze is for use with 4.5 in. S.A.P., 5.25 in. S.A.P. in Mks.II & III Guns and B.L. 6 in. C.P. Shell.

The No. 501 fuze with existing creep spring is retained for Q.F. 4.7 in. S.A.P. shell in Mks.III and IV guns.

899. BOMBS, 4.2 in. MORTAR - TIGHTENING OF TAILS WITH SHAKEPROOF LOCK WASHER.

To facilitate the tightening up of tails to 4.2 in. Mortar bombs the following assembly method has been adopted.

The assembly consists of a sliding jig which holds the tail and which slides horizontally on a base plate on which is mounted a revolving support for the mortar bomb body, and a stop.

The tail is inserted in the jig, the shakeproof lock washer is pushed on the tail adapter, the bomb is rotated by hand and the jig carrying the tail pushed forward so that the tail engages with the adapter.

Final tightening is completed by the use of a spanner on the tail.

900. CARTRIDGE, B.L. 7.2 in. HOW., 13 lb. 11 oz. CORDITE N.045 MK.I. CHARGE 3.

Reference Bulletin No.34, Item 793, Table of Cartridges, B.L. 7.2 in. Howitzer.

The above cartridge, to M. of F. design DD(L)16276, has been approved. It is cylindrical in shape and consists of 3 sections tied together:-

No. 1 Section.	6 lb. 10 oz. 8 dr.	(fitted with Igniter 7.2 in. "A")
" 2 "	2 lb. 2 oz.	
" 3 "	4 lb. 14 oz. 8 dr.	

Dimensions are Length 18.75 inches. Diameter 5.4 inches. Packing is not yet clear.

901. CARTRIDGE, B.L. 7.2 in. HOW., 24 lb. CORDITE N/S 198-054 CHARGE 4.

Reference Bulletin No.35, Item 810, The abovementioned cartridge is packed in Container, Ctge. No.60 with Liner No.2, packing disc and distance pieces, to hold 1, in Box Ctge. C.238 Mk.I. Stowage dimensions of Box C.238 are given in Item 810.

902. IMPLEMENTS, AMMUNITION, KEY NO.86, MK.I.

The introduction of the abovementioned primer key into Land Service has been approved. It is suitable for inserting or removing the following primers used in Land Service:- Nos. 1, 2, 5, 9, 11, 12, 15, 16 and 17.

903. CLIP, Q.F. CARTRIDGE, NO.37.

Reference Bulletin No.34, Item 792. The use of the No.37 Cartridge clip has been extended to include rounds for the Q.F. 3.7 in. Mks.I to III guns when packed in Container, C.268.

904. CONTAINER, CARTRIDGE, NO.23 MK.I.

The packing of Q.F. 3.7 in Cartridges in No.23 container in Box C.235 has been discontinued and the design of the abovementioned container has, in consequence, been endorsed "Obsolescent - not to be repaired."

905. GRENADE, HAND, NO.79 SMOKE.

Reference Bulletin No.32, Item 637. To ensure satisfactory ignition the igniter system in this grenade has been modified by the insertion into the flash hole of the fuze of a 1 in. length of quickmatch folded into four and fixed in position with a paper disc, perforated in the centre, and shellacked to the base of the fuze.

906. SIMULATORS, GUN FLASH, CAPSULES, TEMPORARY PACKAGE.

Reference Bulletin No.32, Item 638 and Bulletin No.34, Item 762. Pending a decision on the Service package the 5 c.c. and 35 c.c. capsules for use with the Nos. 3, 4 and 5 Simulators have, as a temporary measure, been packed as follows:-

Capsule, 5 c.cs Mk.I. For use with Simulator, Gun Flash, No.4
Mk.I or II.

100 capsules packed egg box fashion in a tin or terne plate box in 2 layers, with cardboard separator, and the box sealed with adhesive tape. 8 of these boxes are packed in a P.59 Mk.II box. Each capsule bears a descriptive label H.1556 (black type on white paper).

Capsule, 35 c.cs. Mk.I. For use with Simulators, Gun Flash,
No. 3 Mk.I or No. 5 Mk.I.

18 capsules packed egg box fashion in a tin or terne plate box sealed with adhesive tape. 8 of these boxes (144 capsules) are packed in a P.59 Mk.II box. Each capsule bears a descriptive label H.1557 (black type on white paper).

The stowage dimensions of box P.59 Mk.II are 19.15 x 8.35 x 7.85 inches.

907. CARTRIDGE, B.L. 5.5 in. 4 lb. 12 oz. CORDITE N.Q. 050. CHARGE 2.

The abovementioned B.L. Cartridge has been approved. It is cylindrical in shape and comprises 2 sections tied together :-

Charge 1 : 2 lb. 15 oz. N.Q.050 and fitted with a gunpowder igniter at each end.

Increment. $\frac{1 \text{ lb. } 13 \text{ oz. N.Q.050.}}{4 \text{ lb. } 12 \text{ oz.}}$

The abutting end of the increment is marked "NOT TO BE FIRED SEPARATELY." Dimensions of cartridge are Length 13.9 inches, Diameter 3.8 inches.

908. FUZE, PERCUSSION, D.A.NO.231. REMOVAL OF BODY SIDE PLATE.

The closing plate on the side of the body of Fuze No.231 (for existing fuzes now being filled) will be replaced by a strip of adhesive tape, thus improving the functioning of the fuze. It has been found that the plate limits the travel of the centrifugal bolt and so the clearance between it and the inertia pellet is unduly small and may be a source of blinks.

909. FUZE, DRILL, TIME, NOS. 207 AND 208.

Approval has been given for future production of the above Drill fuzes to be modified as follows:- An extra set of figures to be included on the body $\frac{1}{8}$ inch below the existing ones, figures 22 and 24, which would come in the pawl slots, being omitted. The graduations on the fuze body will remain as at present shown.

The above modification, whilst prolonging the life of the drill fuze by avoiding the knife cuts when setting in the No. 11 M.F.S., also enables drill to be satisfactorily carried out with the fuze key.

Plastic caps, as an alternative to aluminium, have also been approved for these fuzes.

910. SHELL, B.L., A.P.C. 9.2 in. GUN, MK.XIIB. - CONVERSION OF.

The conversion of the abovementioned shell to approximate the Mk.XIVB (DD(L)13227), has been approved.

Mk.XIIB shall converted to this design will have the existing driving band removed, the width of groove increased and the shell rebanded to DD(L)10475/1. The existing gascheck cover plate fitments will be replaced by the Mk.XIVB.

Converted shell will have two stars added to the Mark and will be identified as Mk.XIIIB.

911. PROJECTILE, B.L., STREAMLINE, 5.5 in. 80 lb.

This projectile will be manufactured to a standard weight of 82 lb., and weight marked accordingly.

For descriptive purposes the term "80 lb. Shell" will be used.

912. SHELL, B.L., H.E., 9.2 in. AND 6 in. T.N.T. OR LYDDITE.

Nomenclature of M. of F. design DD(L)4052 (1) has been amended and now provides for the following:-

Shell, B.L., H.E., 9.2 Gun, Heavy, Mks. XIII A, XVIIB and XIXB.
Filled T.N.T. or Lyddite for Fuze 199, 230 or 230 P. Gaine No.9 or 10 and Pellet, Explr. 26 drs.

Shell, B.L., H.E., 6 in. Gun, Mks. XXVI/XXB, XXVII A.Q. and XXIXB.
Filled T.N.T. or Lyddite, for Fuze 199, 230 or 230 P. Gaine No.9 or 10. Adapter No.23 and Pellet, Explr. 26 drs.

NOTE:- The Gaine No. 9 Mk.III or No.10 (Naval origin) not being lead free, must not be used in shell filled Lyddite.

913. H.E. FILLED SHELL (FIELD SERVICE) (FIGS.352, 353 and 354).

In future, all Field Service shell filled H.E., with 2 in. fuze hole, except Q.F. 3.7 in.How., will be issued with the top exploder in position. When such shell are issued plugged, the head of the Plug, fuze-hole, No.13 will be painted bright blue.

Fuze packages will continue to be marked "WITH EXPR" or "W/O EXPR" as applicable.

M. of F. design DD(L)16879 is applicable to Amatol filled shell up to 6 in. (incl.) and details are shown in Fig. 352. The following shell may be filled to this design:-

Calibre	Marks	Fraction of Amatol	Smoke Producer	Fuzes	Remarks
95 mm.	I	50/50 Poured 80/20 Hot mixed	1¼ oz. or 1½ oz. smoke box.	119	
4.5 in How.	IX and above.	50/50 Poured 80/20 Hot mixed	-do-	106E, 117, 117C or 119	
		60/40 Cold Pressed	-do-	-do-	For India

Calibre	Marks	Fraction of Amatol	Smoke Producer	Fuzes	Remarks
4.5 in B.L. Gun	ID	50/50 Poured 70/30 Hot mixed 80/20 Hot mixed 80/20 Cold pressed	1½ oz. or 1½ oz. smoke box.	119	
60 pr.	All marks	50/50 Poured 80/20 Hot mixed	-do-	106E, 117, 117C or 119.	
5.5 in. 80 lb.	ID.	50/50 Poured	-do-	117, 119, 213 or 222	
5.5 in. 100 lb.	ID.	50/50 Poured 70/30 Hot mixed 80/20 Hot mixed 80/20 Cold pressed	-do-	119 or 231	
		60/40 Cold pressed	-do-	-do-	For India
6 in. How.	All marks except S/L	50/50 Poured 80/20 Hot mixed	-do-	106E, 119, or 231	
6 in. How S/L. 100 lb.	ID.	50/50 Poured 70/30 Hot mixed 72/28 Hot mixed	-do-	117, 117C, 119 or 231	
6 in. Gun	XXVI/XXB and XXVIII	50/50 Poured 80/20 Hot mixed 80/20 Cold pressed	-do-	106E, 119 or 231.	

M. of F. design DD(L)16817 is applicable to Amatol filled shell above 6 in. and details are also shown in Fig. 352. The following shell may be filled to this design:-

Calibre	Marks	Fraction of Amatol	Smoke Producer	Fuzes	Remarks
7.2 in. How.	I.D, IID	50/50 Poured 72/28 Hot mixed 80/20 Hot mixed 80/20 Cold pressed	Nil	117, 117C, 119 or 231	
8 in. How.	All marks	50/50 Poured 80/20 Hot mixed 80/20 Cold pressed	Nil	106E, 119, or 231	
9.2 in. How.	All marks (except ID 315 lb.)	50/50 Poured 50/50 Hot mixed 80/20 Cold pressed	Nil	106E, 119 or 231.	
	ID (315 lb)	72/28 Hot mixed	Nil	117 or 231.	
9.2 in. Gun	All marks except XVIIIIC.	50/50 Poured 80/20 Hot mixed 80/20 Cold pressed	Nil	117, 117C, 119, 210, 222 or 231.	
	XVIIIIC only	50/50 Poured 72/28 Hot mixed 80/20 Cold pressed	Nil		
12 in. How.	All marks	50/50 Poured 80/20 Hot mixed 80/20 Cold pressed	Nil	117, 117C, 119 or 231	

PAINTING AND MARKING.

Details of painting and marking of shell filled to the above Designs are shown in Figs. 353 and 354.

914. AMMUNITION PACKAGES (OTHER THAN S.A.A.) - NOTES ON PACKING AND MARKING. (FIGS. 355-363)

1. Packages for Service ammunition are necessary for the following reasons:-
 1. To protect the contents from damage during handling and transport.
 2. To preserve the contents in satisfactory condition during storage.
 3. To facilitate handling of stores by making up packages of convenient bulk and weight.
 4. In certain cases to enable issues to be made of balanced quantities of related stores.
 5. In some instances to guard against the stores causing contamination or damage to other stores, or to personnel handling them.
2. The packing of Service stores, especially of ammunition, is a matter of considerable magnitude due to the great variety of stores to be provided for, the large quantities involved, the complex nature of some stores and the sensitiveness of others.
3. Among considerations affecting the design of packages are the following:-

The availability of adequate storage capacity under satisfactory conditions and the probable necessity of storing a great deal of ammunition in makeshift storage places.

The long distance which ammunition may have to be transported and the varied methods employed.

Widely varying climatic conditions at different stations.

The uncertainty as to the length of time the package may be required to house its contents.

4. As a rule it is not possible to provide special packages for particular purposes, especially in war time when the needs of supply may require stores to be sent to any destination at short notice. It therefore follows that almost all designs must be suitable for service anywhere, and under any conditions. It may be taken as an essential feature of any package that the contents are securely positioned inside it to prevent damage by movement either to the contents or the package, with the consequent possibility of stores reaching their destination in an unserviceable condition or deteriorating during storage, unless repacked.
5. In recent years steel packages, instead of wood, have been widely adopted for two main reasons - less volume occupied per package for the same amount of ammunition, and lessened fire risk. Wood and steel packages of corresponding strength do not differ much in weight. As wood packages can be put into production more quickly than steel ones it frequently happens that first supplies of package for a new requirement are made of wood, until a design in steel can be prepared and brought into production. For the same reason, for small quantities and to meet urgent requirements it is still necessary to make wood packages in considerable numbers.
6. Primary packages, i.e. those into which stores are packed and are then placed into an outer package, fall into two categories - those which can be removed from the outer package and are required to be carried in equipments or in other packages, and those which are permanently kept in the outer package and usually called liners.

Many of these primary packages have, in the past, been made of tinned plate and closed by soldering. More recently substitutes, in the form of black plate suitably rustproofed, and terne plate (i.e. lead coated steel) have been introduced. Terne plate can be soldered but black plate is not easy to solder and other means of sealing the container, usually by adhesive tape, are employed. For some purposes it is not permissible to use steel (tinned or untinned) for inner containers, and tinned copper and zinc are used instead.

These inner containers are invariably painted or Brunswick black varnished externally and sometimes internally also.

Recently, the use of rolled brown paper as a material for making containers has been developed. Usually, where such containers are required to be closed, tinned plate ends are fitted and the container is waxed after forming. These containers, when sealed with adhesive tape, give good protection to their contents provided they are not immersed wholly or partly in water. Other containers of this type which are not intended to be closed, but only to afford protection against damage to such stores as Q.F. cartridges, are painted.

One special use of rolled paper containers is for carriers for light mortar ammunition. These consist of a number of tubes, each to contain one or two bombs, which are bound together and fitted with a carrying handle, the tubes being closed by tinned plate lids secured by a strap. They are packed in outer boxes for transport and storage.

7. MARKING.

(i) With the very large number of packages containing ammunition, some of them very similar in appearance to others, it is necessary to be able to identify the contents readily and with certainty. A system of marking to be applied to packages has been evolved and is standardised to a large extent. It is necessary to paint steel packages with a rust preventative and to colour wood boxes as a camouflage measure. Both these requirements afford a means of indicating their contents by the ground colour of their coating.

(ii) The number of colours which retain their distinctive appearance when exposed to sun and weather is small, so that only a few distinctions can be made by the ground colours. The following are now used:-

Steel or wood boxes to contain smoke producers	LIGHT GREEN
" " " " " " chemical stores	GREY
" " " " " " incendiary stores	DULL RED
Packages containing gunpowder and blank cartridges....	BRIGHT RED
" " bulk cordite	KHAKI BROWN (DARK STONE)
All steel packages except those mentioned above.	
(Certain wood packages may also still be found)	
	SERVICE COLOUR

NOTE:- Service colour was formerly dark bronze green but has recently been changed to No.2 Camouflage Brown.

Wood ammunition packages except those painted	
as above.....	VANDYKE BROWN STAIN
Metal containers for bulk ammonal, wet or dry	
gun cotton and other miscellaneous explosives, also	
metal liners in certain wood packages.....	BRUNSWICK BLACK VARNISH

Rolled paper containers are, in general, painted Service colour, except where it is necessary to impregnate them with wax for waterproofing.

(iii) COLOURED BANDS.

Distinctive coloured bands, as shown below are superimposed on the ground colour to indicate special features:-

- BROAD YELLOW - Packages containing ammunition made, or converted, for practice purposes.
- BROAD WHITE - Packages containing ammunition made up with charges giving lower velocities than Service charges (e.g. Burst short cartridges, the letters "BS" being stencilled on the band: Reduced charges, with "RED" stencilled on the band.)

NARROW WHITE -	Packages containing drill or instructional grenades and drill detonators.
NARROW YELLOW }	As applicable on packages containing chemical stores (on grey ground). The letter and figure denoting nature and number of chemical charge will be stencilled on the band in BLACK on the yellow or green band and in WHITE on the black band.
" GREEN }	
" BLACK }	
" BLUE	Horizontally on Box C.207 (Mk.I only) containing Q.F. 2 pr. H.V. rounds, with the letters "HV" stencilled on the band in yellow.

3 in. and 2 in. Mortar carriers bear coloured bands to denote filling as under, and the top cylinder is stencilled as indicated:-

<u>COLOUR OF BAND</u>	<u>NATURE</u>	<u>STENCILLING</u>
Yellow	H.E.	Batch particulars
Green	Smoke	-do-
"	Smoke Em.,	"SMK" and "EM" (either side of band)
Black	Practice	Batch particulars.
None	Star	"STAR"
None	Drill	"DRILL"

In addition to the green bands, coloured bands are painted round the carrier to agree with bands on smoke bombs.

(iv) COLOURED PATCHES AND STRIPES

<u>PATCHES.</u>	BLUE -	Boxes containing HIGH velocity rounds for Q.F. 2 pr Mks.IX and X guns and Q.F. 6 pr. 7 cwt. with the letters "H.V." stencilled on the patches. Certain mortar bomb boxes also have panels painted blue.
	KHAKI-BROWN- (DARK STONE)	Boxes containing SUPER velocity rounds for Q.F. 2 pr. Mk.XB gun with the letters "S.V." stencilled on the patches.
<u>STRIPES</u>	BLUE -	Painted at the vortical edges of Box C.167A containing Q.F. 2 pr. A.P.C.B.C. rounds.
	BLACK -	Painted on the sides of boxes containing 4.5 How. shell fitted with economy driving bands.

(v) SYMBOLS

GREEN DISC.- To indicate presence of smoke box in certain H.E. shell when packed. The letter "A" or "B" indicating material of smoke box - when of aluminium or bakelite respectively, stencilled in black on the disc.

ALUMINIUM - To indicate presence of flash producing composition in PAINT DISC. shell filling.

TRACER SYMBOL - To indicate that shell are fitted with tracer or tracer fuze, as applicable.

RED CROSSES- On ends of boxes containing shell which bear a similar or marking round the nose, indicating suitability for RED "X-X-". hot climates or limited life in hot climates, respectively.

YELLOW DIAMOND On the side of boxes and containers for ammonal.

(vi) STENCILLING.

In addition to the ground colours, coloured bands, patches and symbols on packages, details are given in lettering which is usually stencilled. This marking is done in yellow, except on grey packages where it is black. On certain wood packages that have been oil dressed, the letters "O.D." will be stencilled.

The following list gives particulars of typical stencilled markings to be found on various types of ammunition packages with a reference to the Fig. numbers showing the arrangement of the markings:-

(a) Boxes containing Fixed Q.F. Ammunition. (FIG. 355)

Number of cartridges packed, calibre and nature.
Batch letter and number, also sub-batch letter, if any.
Particulars of fuze (or "PLGD" if plugged rounds are packed).
Fuze factor correction (as applicable)
Propellant code letter, enclosed in a rectangle.
Letter "Q", enclosed in brackets, when primers contain Q.F.
composition (except, in future, 3.7 in. A.A. cartridges).
Packing serial number of box, stencilled in white.

(b) Boxes containing Q.F. separate loading cartridges. (FIG. 356).

Number of cartridges packed. Calibre and Mark.
Weight of charge, as applicable.
Lot No., nature and size of propellant, as applicable.
Propellant code letters, enclosed in a rectangle.
"FOIL" when applicable.
Initials or monogram of filling station and date of filling.
Primer Lot No. and date of filling.
Letter "Q", enclosed in brackets, when primers contain Q.F.
composition.
Packing serial number of box, stencilled in WHITE.

(c) Boxes containing separate loading shell. (FIG. 357).

Number of shell packed, calibre and nature.
Particulars of fuze (or "PLUGGED" if plugged rounds are packed). Filler & Lot No.
"T.N.T." if shell are so filled, or fraction denoting composition if shell are filled Amatol.
Green disc when H.E. shell contain smoke box. ('A' or 'B' stencilled on disc, as applicable, denoting type of smoke box.)
Design No. of M. of F. shell.
Mark of shell.
Place and date of filling.
Red "XXX" or "X-X-" when shell bear a similar marking round the nose.

(d) Boxes containing Q.F. Howitzer complete rounds. (FIG 358).

Number of shell, cartridges and fuzes packed.
Calibre. Nature of shell filling.
Design No. of M. of F. shell and date and place of filling.
Propellant code letter, enclosed in a rectangle.
Lot No. of propellant.
Letter "Q", enclosed in brackets, when primers contain Q.F.
composition.
No. and Mark of fuze and filled Lot No.
Monogram of station and date of packing.
Packing serial number of box, stencilled in white.

(e) Boxes containing B.L. Cartridges. (FIGS. 359, 360 and 361).

Number of cartridges packed.
Charge, as applicable.
Calibre, weight and mark of cartridge. ("FOIL" added, when applicable).
Nature of propellant, size and Lot No.
Propellant code letter enclosed in a rectangle.
Monogram or initials of filling station and date of filling.

(f) Cylinders containing B.L. Cartridges. (FIG. 362)

Number and nature of charges packed.
 ("SUPER CHARGE" or "H.V." charge, when applicable)
 Calibre, weight and mark of cartridge ("FOIL" added, when applicable)
 Nature of propellant, size and Lot No.
 Propellant code letter enclosed in a rectangle.
 Monogram or initials of filling station and date of filling.
On both ends of skeleton case :-
 Calibre
 Lot No. of propellant.

(g) Boxes containing Mortar Ammunition. (FIG. 363).

Number of bombs packed, Calibre and Mark.
 "FM", "CSAM" or "PHOS" as applicable, when smoke bombs are packed. ("PHOS" stencilled on lid in RED) or "H.E." when H.E. bombs are packed.
 Number of augmenting cartridges packed and weight.
 No. and mark of fuze (or "PLUG" if plugged rounds are packed).
 Batch letter and number, also sub.batch letter, if any.

(vii) LABELS

All packages containing explosives bear a Government Explosive label and, in the case of batched ammunition, a Batch label. Affixed inside the lid is a Packer's label. In addition, one or two sealing labels (according to type of package) are so placed that the seal must be torn before the package can be opened.

45. FILLING AND MARKING - SHELL U, 3 in., MORTAR AND PROJECTOR BOMBS.

The following details of the filling and marking, etc., of the Shell U, Mortar and Projector Bombs now in use are published for general information.

H.E. Shell are in Group VI Category Z for storage.
 H.E. Mortar and Projector bombs are in Group VIII category Z.
 Smoke Bombs filled White Phosphorus are in Group XII category X.
 Smoke Bombs not containing White Phosphorus are in Group XI category X.

For stowage on Board ship the White Phosphorus weapons also those charged FM or CSAM are an S.A.S. stowage, the others are O.A.S.

Shell, U. H.E. 3-inch No.1, Mk.I, Filled T.N.T.
Method of Filling Design DD/L/11014

Body:- Painted buff ammunition.

Marking: Ring of red crosses 0.5 inch wide round shell 1 inch from plugged end of shell. Green band 1 inch wide 4.5 inches from plugged end of shell with letters T.N.T. stencilled on band, in Black in 0.75 type.
 Between ring of red crosses and green band are the following markings:-
 U. 3" No.1, filled lot number and 11014, (the method of Filling Design number), all in black in 0.375 type.

Adapter, Fuze U - 3 inch.

Mark IS/L/Mild steel.

Mark IF/H/Cast Iron

Mark IZ/L/Die Cast

Exterior painted buff ammunition.

Marking: Stamped with the following marking on the exterior in $\frac{1}{4}$ " type.

U - 3" IS (or F or Z as applicable).

Fuze, Time, No. 700

Marking to be found on the fuze is as follows:-

Number and Mark of fuze.
Empty contractor's initials or recognised trade mark.
Year of manufacture.
Lot number.
Contractor's initials or monogram of filling station, date of filling (month and year).

This marking is usually found around the base of the nose cap.

Shell U. Drill, 3-inch No.1 Mk.I, Filled H.E.S.

Method of Weighting & Filling Design DD/L/12799.

Body: Painted black.

Marking: White band 1 inch wide 4.5 inches from plugged end of shell with the word DRILL stencilled on the band in black in 0.75 inch type. Between the white band and the plugged end of the shell are the following markings: U.3" No.1 I and 12799 the Method of Weighting and filling design number. Below the white band are the markings for the station filling and for the date of filling. All stencilling other than the word DRILL is in white in 0.375 type.

Shell, U. Proof of Fuzes, 3-inch No.1 Mk.I.

Method of Weighting and Filling Design DD/L/11179.

Body: Painted black.

Marking: A red ring 0.5 inch wide 1 inch from the plugged end of the shell, the words PROOF OF FUZE stencilled round the shell 4.0 inches from the plugged end of the shell. Between the red band and the words PROOF OF FUZE are the markings U.3" No.1 and filled lot number. All stencilling is in red in 0.375 inch Type.

Shell U. Proof of Fuze, 3-inch No.1 Mk.II

Method of Weighting & Filling Design DD/L/15791.

Body: Painted black.

Marking: A red ring 0.5 inch wide 1 inch from plugged end of the shell, the words PROOF OF FUZE stencilled round shell approx. 4.0 inches from the plugged end. Between the red band and the words PROOF OF FUZE are the markings U. No.1 3", filled lot number and DD/L/15791 the method of weighting and filling design number.

Bomb U. Smoke, 5-inch Mk.I

Charged with W.P., C.S.A.M. or F.H.

Method of Charging Design DD/L/14468

The body and nose fairing are painted light green. Four inches from the nose end of the Bomb (excluding fairing) are painted two 1/2" colour bands; these vary according to the charging and are as follows:-

W.P.	2 White
C.S.A.M.	1 White and 1 Yellow
F.H.	1 White and 1 Red.

Below these bands the following markings are stencilled:-

U. 5" I - nomen. and mark

* / - empty manufacture and date of assembly.

☐ - / - 0 - filled lot number, date of charging and monogram of firm or station charging.

All stencilling is in white in $\frac{1}{2}$ " type.

Head, Rocket, Flare, 2-inch Mk.I.

With Candle No.1 and Parachute No.17 Mk.II

Filled Design DD/L/13308A.

The round is painted Service Brown with the marking in white in $\frac{1}{2}$ inch type.

Stencilled along the body are the following markings:-

Head, Rocket, Flare, 2-inch Mk.I - nomenclature

* - / - - manufacturer's trade mark and date of manufacture.

+ ☐ △ - Contractor or station filling, date of filling, and filled lot number.

At the rear end of the round on the Socket Cover is painted a red band $\frac{1}{4}$ " wide. This signifies that the round is fitted with Ejector Contents, No.5 Mk.I (with 9 second delay) and will prevent any confusion with Naval round which are similarly marked in blue to signify that round is fitted with an Ejector with a 22 second delay.

The Head Rocket Flare contains a Candle, Flare, Rocket, 2-inch, No.1 ($8\frac{1}{2}$ x 2) Mk.I, and a No.17 Parachute Mk.II.

Bomb M.L.2-inch Mortar, Mk.I

Filled Baratol 20/80, for No.151 or 151A Fuze

Filled Design DD/L/8821.

The Bomb is coated with approved varnish and bears the following markings:-

$\frac{1}{4}$ inch from the point of the Fuze and Body is a $\frac{1}{2}$ inch red band painted round the bomb. 1 inch from the red band is a green band $\frac{1}{2}$ inch wide painted round the bomb. Between the red and green bands the nomenclature marking is stencilled thus: 2" MOR I. On the green band is stencilled the nature of the filling and proportion, thus BAR.20/80 in $\frac{3}{8}$ " black type, all other stencilling being in white.

Below the green band is stencilled * - / - - Station filling and date of filling.

8821 - Method of filling design number.

- Filled lot number.

Bomb L.L. H.E. 2-inch Mortar Mk.I

Filled Amatol 80/20 or 50/50

For Fuze No.151 or 151A and Exploder "F" or 5 dr.C.E. Pellet.

Filled Design DD/L/12021.

The bomb is coated with approved varnish and bears the following markings:-

$\frac{1}{4}$ inch from the joint of the Fuze and Body is a $\frac{1}{2}$ inch red band painted round the bomb. 1 inch from the red band is a green band $\frac{1}{2}$ inch

wide painted round the bomb. Between the red and green bands the nomenclature marking is stencilled as follows:-

2" MOR. I.

Below the green band is stencilled:

X Ø -/- Station filling, proportion of fillings and date of filling.

All stencilling is in white in $\frac{3}{8}$ -inch type.

Bomb M.L., Practice, 2-inch, Mortar Mk.I.

The Bomb is coated with approved varnish. Round the centre of the bomb is painted a yellow band $\frac{1}{2}$ inch wide. Stencilled above the yellow band is 2" MOR I; this marking is in white in $\frac{3}{8}$ -inch type.

The Contractor's trade mark and date of manufacture is stamped on the plug screwed into the nose of the bomb.

Bomb M.L., Proof of Fuzes, 2-inch Mortar Mk.I.

Method of Weighting Design DD/L/11497.

Bomb coated with approved varnish, and the following stencilled on in white in $\frac{3}{8}$ -inch type: 2" MOR. I and P. of F.

Bomb, Smoke, Bursting, 2-inch Mortar or Bomb Thrower Mk.II.

Filled White Phosphorus in Container

Filled Design DD/L/13791.

Bomb painted green. At $\frac{1}{4}$ inch from the joint of the Fuze and the Body is painted a red band round the bomb, one inch from the red band is painted a white band. Between the red and white bands is stencilled 2" MOR III. Below the white band is stencilled:

13791 - filled design number

-/- X - date of filling and station or firm filling.

Bomb M.L., Proof 2-inch Mortar Mk.I

Dummy for proving Mortars, DD/L/9183

The bomb is painted black. Stamped round the minor diameter of the body is:

2 lb. 15 ozs. - weight of round

2" MOR. I - nomenclature

X -/- - manufacturer's trade mark and date of manufacture.

Bomb, Spigot, H.E. A.T. 29 mm. Mortar, 20 lb. Mk.I.

Filled Nobels No. 808 or 809 Explosive for Fuze No. 283 with
Exploder 1 oz. 8 dr. Nobels No. 831 in Container.

Filled Design CIA(A) 581.

The fore part of the body is painted Service Brown and the tapered cone is painted yellow. 1 inch from the nose of the bomb is painted a ring of red crosses alternating with dashes $\frac{3}{4}$ " high. Above the ring of red crosses and dashes is stencilled the weight symbol. Below the ring of red crosses and dashes are:-

X -/- - Station or firm filling, filled lot number and date of filling.

Stencilled on the cone is the nature of filling as applicable.

The Tail is painted Service brown.

Bomb Spigot H.E. 29 m.m. Mortar 14 lb.Mk.I

Filled Amatol 80/20; Container fitted with
C.E. Exploder for Fuze No. 152 or 152A.
Filling design CIA(A) 656.

The nose of the bomb for a distance of 2.25 inches from the end container is painted yellow; the rest of the bomb and tail is painted Service Brown.

A $\frac{1}{2}$ inch from the end of the container a ring of red crosses $\frac{1}{2}$ inch wide is painted round the bomb, $\frac{1}{2}$ inch behind this is painted a green band $\frac{1}{2}$ inch wide.

On the brown part of the bomb, is stencilled the following:-

656	_____	- number of filling design and suffix A when C.E. pellet
	_____	is cast into nose container
0		- station filling
		- filled lot number
-/-		- date of filling.

Bomb, Spigot, Practice, Anti-Tank, 29 mm. 20 lb.
Inert, Mk.I.

Service Empty Bomb Body, weighted, with propelling
unit, fitted with live cartridge.
Method of weighting design CIA(A) 696.

The body is painted black and the tail and cup are painted service brown.

A 1 inch yellow band is painted round the tail tube immediately behind the adaptor and also round the body. The word SAND is stencilled on the bomb immediately above the yellow band in white in $\frac{3}{4}$ inch type.

Bomb Spigot Drill, A.T. 29 mm. Mortar 20 lb.Mk.I

Service Empty 20 lb. Bomb, weighted, with propelling
unit, dummy fuze, and dummy cartridge.
Design CIA(A) 695.

The complete bomb is painted black. The word DRILL is stencilled on the forward end of the tail tube in white in 1 inch type. The word SAND is stencilled in white in $\frac{3}{4}$ inch type on the bomb.

Bomb, Spigot, Practice, A.T. 29 mm. Mortar 20/15 lb.
Inert Mk.I.

Cast Iron Body, weighted, with propelling unit
Design CIA(A) 1332.

The tail tube and adaptor are painted service brown and the bomb is painted black. A 1 inch yellow band is painted round the tail tube immediately behind the adaptor and another round the bomb. On the tail tube is stencilled 20/15 LB in black in $\frac{3}{4}$ inch type. On the bomb below the yellow band is stencilled CEM. MIX. and 20/15 LB in white in $\frac{3}{4}$ inch type.

Bomb, Spigot, Practice, A.T. 29 mm. Mortar,
20/15 lb. Inert Mark II.

Cast Iron Body, weighted, with propelling unit.

Tail unit and adaptor painted service brown, bomb painted black. A 1 inch yellow band round tail tube immediately behind the adaptor and another yellow band round the bomb. Below the band on the bomb is stencilled in white in $\frac{3}{4}$ inch type: CEM. MIX. 20/15 LB. II.

Bomb H.E./A.T. Infantry Projector A.T.Mk.I.

Filled 808 Explosive; for Fuze No.425, Detonators No.66 with Cordtex in Central Tube, and Exploder 1 oz. C.E. Pellet in Container.

Method of Filling Design DD/L/14869

The bomb may be painted either service green or brown. A $\frac{1}{2}$ inch from the underside of the union is a green band $\frac{3}{8}$ inch wide. If the bomb is painted green, the green band will be edged with a yellow band $\frac{1}{8}$ inch wide on either side. Stencilled in white on the band is the number 808. Immediately below the band is stencilled the monogram of firm or station filling. On the reverse is stencilled filled lot number and date of filling. The Mark is stencilled midway between the body and the tail on the tail tube.

Bomb, Practice Inert/A.T. Infantry Projector A.T.Mk.I

Service Bomb weighted, with Propelling Unit.

Design DD/L/14871.

The bomb is painted black with a $\frac{1}{2}$ inch yellow band $\frac{3}{8}$ inch from the underside of the Union Ring. Stencilled in white $\frac{3}{8}$ inch below the yellow band is the word INERT in $\frac{3}{8}$ inch type.

Bomb Drill/A.T. Infantry Projector A.T. Mk.I.

Design DD/L/14938.

Service body weighted with propelling unit, fitted with dummy fuze in carrier.

The bomb is painted black with the word DRILL stencilled in white in $\frac{1}{2}$ inch type $\frac{3}{8}$ inch below the Union Ring.

Shot, Practice/A.T. Infantry Projector A.T.Mk.I

Comprising steel tube and head

Design DD/L/14873

This store is painted white with no other markings.

5. ROCKET U H.E. 3 INCH MK.I - MARKINGS AND WEIGHT DETAILS.

Tail Propelling Rocket U 3 inch. I/L/N.

The exterior of this store is painted white with the exception of nine inches at the venturi end, and three inches at the shell-ring end, those portions are left plain and coated with lanoline solution.

Markings

1st Row behind the locking pins.

This quotes the calibre and mark of tail (1 inch black type).

2nd Row.

Empty Assemblers initials or recognised trade mark.

Year of Manufacture ($\frac{1}{2}$ inch black type).

3rd Row.

Type of cordite with which the tail is filled, S.U. or S.U./D.

Some older tail may be marked S.C.R.K. or S.C.R.K./D. The /D indicates that the cordite charge has been drilled.

Filling contractor's initials or monogram of firm or station filling.

Lot of propellant including maker's initials ($\frac{1}{2}$ inch black type).

4th Row.

Date of filling (month and year) in $\frac{1}{2}$ inch black type.

Next marking is the upper temperature firing limit, which is 83°F in red type enclosed in a $2\frac{1}{2}$ inch diameter red circle. Some older tails may be marked with an upper temperature firing limit of 80°F.

The 1st Row of marking after the upper temperature firing limit

Type of igniter composition
Lot number of igniter composition

below this line is quoted the

Year of Manufacture of the Igniter Composition.

All in $\frac{1}{2}$ inch black type.

Special Markings.

Tails marked ~~EJECT~~ ^K indicates that they are suitable for use with Shell U Type K 3 inch Mark I fitted with Ejectors Shell Contents Mark I.

Other tails may be found with the marking "T.H." (in 2 inch red type) inside the red circle below the upper temperature firing limit, only tails so marked should be used with shells fitted with thermal fuzes.

Tail Propelling Rocket U 3 inch Mark II/L.

The exterior painting on this tail is the same as that on the Mark I, but the marking differs slightly.

Marking.

Rows (1) and (2). These are the same as for the Mark I.

3rd Row. Type of propellant with which the tail is filled S.U./K/X/12 $\frac{1}{2}$ denoting S.U. Cruciform flashless cordite ($\frac{1}{2}$ inch black type).

4th Row.

Filling contractors initials or monogram of firm or station filling.
Date of filling (month and year).

Lot of Propellant, including maker's initials.

(all in $\frac{1}{2}$ inch black type).

Next marking is the upper temperature firing limit, details of which are the same as on the Mark I except that 120°F is shown instead of 83°F.

Then follows the igniters markings which are the same as for the Mark I.

The Marking T.H. will not be found on Mark II tails, as no cruciform charges have yet been prepared for use with thermal fuses.

MARKINGS ON PACKAGES.

The Tail, Propelling Rocket U 3 inch Mk.I is packed in the steel box M.96 Mk.I, or the wooden box M.97, two tails per box.

The type and calibre of the tail is shown on both ends and both sides.

The upper temperature firing limit ($\frac{3}{4}$ " lettering), as on the tails packed, is shown in a $2\frac{1}{2}$ inch dia. circle on both sides and both ends.

On the sides of the box are quoted the lot number of the cordite charge and the initials or monogram of the station filling and date of filling (month and year).

Also shown on both sides of the box is the distinguishing letter of the propellant, a 1 inch letter "S" in a rectangle 2 inches by 2 inches.

If the tails packed contain drilled charges a $\frac{3}{4}$ inch letter "D" in a $1\frac{1}{2}$ inch diameter circle is shown next to the distinguishing letter of the propellant

thus S D

If the sides of the boxes are marked with a black St. Andrews' Cross 4 inches high by 8 inches long and with arms 1 inch wide, this indicates that the tails contained in the box are suitable for use with Mark I Type K Shell fitted with Mark I Ejectors and are marked K
EJEC. I.

If the tails packed are suitable for use with thermal fuzes, the letters "T.H." are shown inside the $2\frac{1}{2}$ inch diameter circle below the upper firing temperature limit.

All markings shown on C.I.A. Stencils No.667
and No.660

Tails Propelling Rocket Mark II are also packed in the M.96 steel box, and the packages for these tails are marked the same as those for the Mark I tails with the exception of the upper firing temperature limit which is 120°F in a $2\frac{1}{2}$ inch diameter circle, and the distinguishing letters of the propellant which is a 1 inch letter "S" in a rectangle 2 inches by 2 inches, followed by the letters K - X - 12 $\frac{1}{2}$ in 1 inch red letters

thus S K - X - 12 $\frac{1}{2}$

All markings for M.96 boxes packing Mark II tails shown on C.I.A. Stencil No.943.

Weights of Packages.

Box	Tail	Propelling	Rocket	U	3	inch	M.97	Mk.	I/N/ L
"	"	"	"	"	"	"	M.96	"	A.

M.96	(Filled Weight	102 lb.	M.97	(Filled Weight	94 lb.
	(Empty Weight	36 $\frac{1}{2}$ lb.		(Empty Weight	28 $\frac{1}{2}$ lb.

The Shell U H.E. 3 inch No. 1 Mk.I is packed in the Steel Box M.104 or the Wooden Box M.98, four plugged shell per box.

The type and calibre of the shell is shown on both ends and both sides.

The Method of Filling shell design number and the monogram or initials of filling station and date of filling, are shown on the sides.

On the ends of the box at the lower end of the handle cleat a row of red crosses is shown, providing that the shells contained in the box are so marked, denoting their suitability for use in hot climates.

The letters T.N.T. are stencilled across the row of red crosses in yellow.

Weights

Box, Shell U H.E. 3 inch M.98 Mark I/L/N/

Filled:- 84 $\frac{1}{2}$ lb.
Empty:- 12 $\frac{1}{2}$ lb.

Box, Shell U H.E. 3 inch M.104 Mark I/L/N/

Filled: 83 $\frac{1}{2}$ lb.
Empty: 11 $\frac{1}{2}$ lb.

All marking shown on C.I.A. Stencil No. 661.
C.I.A. Stencil No. 666.

The Fuze Time No. 700 (all marks) with Fuze Adapter No.13 Gaine, and Gaine Collar, assembled, are packed in the Cylinder No. 346 Mark I or II, which in turn is packed in the Box No. M101, 8 Cylinders per box.

This information plus the lot numbers and monogram or initials of the station filling the fuzes and the gaines, is stencilled on the side of the boxes.

The lot number and station filling and date of filling for the fuzes is shown in the first two lines of marking on both sides of the box.

The same date regarding the gaine is shown in the sixth line of the marking.

On the ends of the box is shown the type of fuze and gaine, their lot numbers and stations filling.

Weights

Cylinder No.346 Mark I/IV

Filled: 7 lb. approx.
Empty: 13½ ozs. "

Box, No. 700 M.101 Mark I/IV

Filled: 68 lb.
Empty: 12 lb.

All marking shown on C.I.A. Stencil No.677.

For storage and transport purposes the fuzes shell and tail propelling are classified in Group VI in Categories X, Z and Y respectively, for safety distance whilst for stowage on board ship they are all in A.O.S. stowage.

The storage site for the tails should, preferably, be traversed as in the event of fire there is a serious risk of the tails being projected for considerable distances. When the shell and tail are assembled to form a rocket the storage sites definitely require traversing as a fire may cause a serious dispersal of flying missiles.

Tails propelling although in Group VI are prohibited from being consigned by passenger train.

Further details of this ammunition are given in previous Bulletins.

Weight of Rocket U. 3-inch Components.

<u>Empty, Tail</u>	lb.	oz.	dr.
Tube & Venturi, Refractory Lining, Contact Screws and Nuts assembled.	15	5	3
Grid		6	1
Head Obturator			13
Tail "			7
Shell Ring, Assembly	1	6	15
4 Tail Pins, Mark I.	1	5	0
Weight of Empty Tail and Fins	18	8	7
<u>Filled Tail</u>			
Overall Length 55.19			
Empty Tail and Fins	18	8	7
* Charge, cordite S.C.R.K./D (mean weight)	12	11	0
Weight of Filled Tail Mk.I	31	3	7
* Cruciform Charge SU/K/X/12½ (mean weight)	13	0	0
Weight of Filled Tail Mark II	31	8	7

Rocket U. 3-inch H.E. Fuzed .D. 700 Overall Length 76.03

Filled Tail Mk.I
Filled Shell
Adapter
Fuze A.D. 700
Gaine No.13
Weight of Rocket, H.E.

lb.	oz.	dr.
31	3	7
17	12	0
3	2	0
2	5	6
	14	0
55	4	13
55	9	13

" " with Mark II Tail

Rocket U. 3-inch Type K. Mark I. Overall Length 115.27

Filled Tail
Shell Type K Mark I
Weight of Rocket Type K. Mark I

31	3	7
23	0	0
54	3	7

Rocket U. 3-inch Type K Mark II Overall Length 107.25

Filled Tail
Shell Type K. Mark II
Weight of Rocket Type K. Mark II

31	3	7
21	0	0
52	3	7

* The above quoted weights are of necessity ONLY APPROXIMATE and will vary with type of material and method of manufacture.

917. GRENADES.

The following paragraphs indicate the grenades now in the Service and contain details of weight, marking, etc.

High Explosive Grenades are in Group VIII, Category Z for storage and O.A.S. for stowage on board ship.

Smoke Grenades containing White Phosphorus, F.M. or C.S.A.M. are in Group XII Category X for storage and S.A.S. for stowage.

Other Smoke Grenades are in Group XI Category X for storage and O.A.S. for stowage.

M. of F

Grenade, Hand, or O.303 inch Rifle No.36, M. Mk.I/L.

Filled Baratol 20/80

Total filled weight 1 lb. 11½ drs. app

Drawing No. I.D.W.(T.W.) 359

Marking on grenade body.

½" rings of red crosses round body below lugs for fly off lever, and a ½" green band round middle of grenade body (denoting Baratol filling).

M. of F.

Grenade, Hand, No.69 Mark I/L

Filled Amatol 80/20 Lyddite, or Baratol 20/80

Total filled weight 10 ozs. 2 drams approx.

Drawing Number DD.(L)10918B.

Marking on Grenade Body

½" band of red crosses, ½ inch down from fuze end of the body ¼" green band round body below knurled portion, and as near as possible to it, when Grenade is filled Amatol 80/20. The letters "BAR 20/80" to be stencilled on band in ¼ inch black type if filled Baratol 20/80 or the letters "LYD" stencilled on Band in White ¼ inch type when filled Lyddite.

M. of F.
Grenade, Hand. No. 74, A.T. Mark II/L.
Filled Nobels Explosive No. 823
Total filled weight 2 lb. 4 ozs. app
Drawing Number M.D.1/7100

Marking on Grenade

The digits "823" are stencilled on both sides of the grenade in 5/16" black type, and the grenade will bear a 3/8" red ring round the body near the handle.

M. of F
Grenade, Hand. No. 75, A.T. Mk. I/L
Filled Nobels Explosive No. 704B, Ammonal or Burrowite.
Total filled weight 2 lb. 2 ozs. approx.
Drawing Number D.D. (L) 11835A.

Marking on Grenade

1/4" red ring placed around neck of Grenade when filled for use in temperate climates, and a ring of red crosses round neck when filled for hot climates. The letter "A" is stencilled on in 1/2" type black opposite side of grenade to bridge when filled ammonal "704B" stencilled on base in 1/4 inch type when filled 704B and "704B & 4 EXPRS" when filled 704B with 4 exploders. The letters "BUR" to be stencilled in 1/4 black type when filled Burrowite.

M. of F.
Grenade, Hand. No. 77, W.P. Mark I/L
Filled White Phosphorus
Drawing Number C.D. 4441

Marking on Grenades

The whole of the body is painted green and the letters "PHOS" are stencilled on the Body below the fuze holder.

Grenade, Hand. No. 77, F.M. Mark II/L.
Filled Titaniumtetrachloride (code letters F.M.)
Drawing Number C.D. 4481.

Marking on Grenade

The grenade is painted green all over the body and has two 1/4 inch bands, one above and one below, around it just below the fuze holder.

Grenade, Hand. No. 80, W.P. Mark I/L.
Filled White Phosphorus
Drawing Number C.D. 4480.

Markings on Grenade

Body is painted green and letters "PHOS" are stencilled on in black type below the fuze holder.

Grenade, Hand. No. 82, Mark I/L
Filled:- Field primed with plastic explosive.
Drawing Number DD/L/16429.

Grenade Markings.

This grenade has no filled markings as it is field primed and is not filled with plastic explosive until shortly before use. It is easily distinguishable however as it is the only grenade of its type to have a stockinette bag container. This grenade is also distinguishable by the fact that it is filled with a No. 247 fuze with a short fly-off tape and this type of fuze bears red distinguishing marking.

ENEMY AMMUNITION

918. ITALIAN 77 MM. AMMUNITION

The following tables give particulars of markings of Italian 77 mm. Ammunition available to date, and also details of the propellant charges and cartridge case: The methods of filling of the various types are shown diagrammatically in this bulletin and are referred to in the table.

TABLE I - ITALIAN 77 MM. SHELL.

Shell Markings		Shell Dimensions		Explosive System	Fuze	Gaine	Bulletin Fig. Reference	Remarks
Colour	Stencil	Weight	Length					
Red	Kg 6,200 TRITCIO	13 lb. 13 oz.	11.2"	Ballistite Flake	Graze type	2.3 gm. Ballistite gaine	Fig. 364	-
Light Blue	DAU M & L 1935							
Green Band	77 LUNGA							
Red	Kg 4,800 TRITOLO A.P.	10 lb. 9 oz.	9.6"	Ballistite Flake	Graze type	2.3 gm. Ballistite gaine	Fig. 365	-
Light Blue	DAU (CML) 1935							
Green Band	77 CORTEA							
Red	Kg 6,300 TRITOLO	13 lb. 12 oz.	11.2"	Ballistite Flake	Graze type	2.3 gm. Ballistite gaine	Fig. 366	Note MIGL or modified design of 63.
Light Blue	LCP 1936 77/28							
Green Band	6 MIGL.							
Red	Kg 5,600 77	12 lb. 7 oz.	10.4"	-	Time fuze graduated to 59	-	Fig. 367	typical of all Italian shrap- nel shell so far known.
Light Blue	F.M.							
Brown Band	D.A Vr IV 1935							

TABLE 2. PROPELLANT CHARGES.

Note. A typical cartridge case is illustrated at Fig. 368. It will be observed that this bears the designation 8 cm with an added 77/28. These cases are found with either the markings illustrated, or 8 cm alone, or 77/28 alone, with the usual factory marks etc.

ASSOCIATED SHELL	MARKINGS OF CHARGES.			NATURE OF PROPELLANT.
	1.	2.	3.	
77 LUNGA ETC.	ITEM. FONDAMENTI 224 gr. 1.5 x 15 x 15.	ITEM. AGGIUNTIVO 184 gr. 1.5 x 15 x 15	ITEM. AGGIUNTIVO 88 gr. 1.5 x 15 x 15.	Square flake Ballistite
77 CORTA only	ITEM. FONDAMENTI 224 gr. 1.5 x 15 x 15	ITEM. AGGIUNTIVO 184 gr. 1.5 x 15 x 15.	-	Two charges only square flake ballistite

919. ITALIAN 75 mm. AMMUNITION.

The following table gives details available to date of Italian 75 mm. shell. In reference to the table the following notes should be borne in mind.

- (a) Markings - The colour markings are set out in order from nose to base except that in the case of the 46 calibre A.A. shell the usual RED or ORANGE nose colouration was absent. Bands are in all cases immediately above the driving band.

There seems to be no consistency in the amount of stencilled markings which appear on this ammunition.

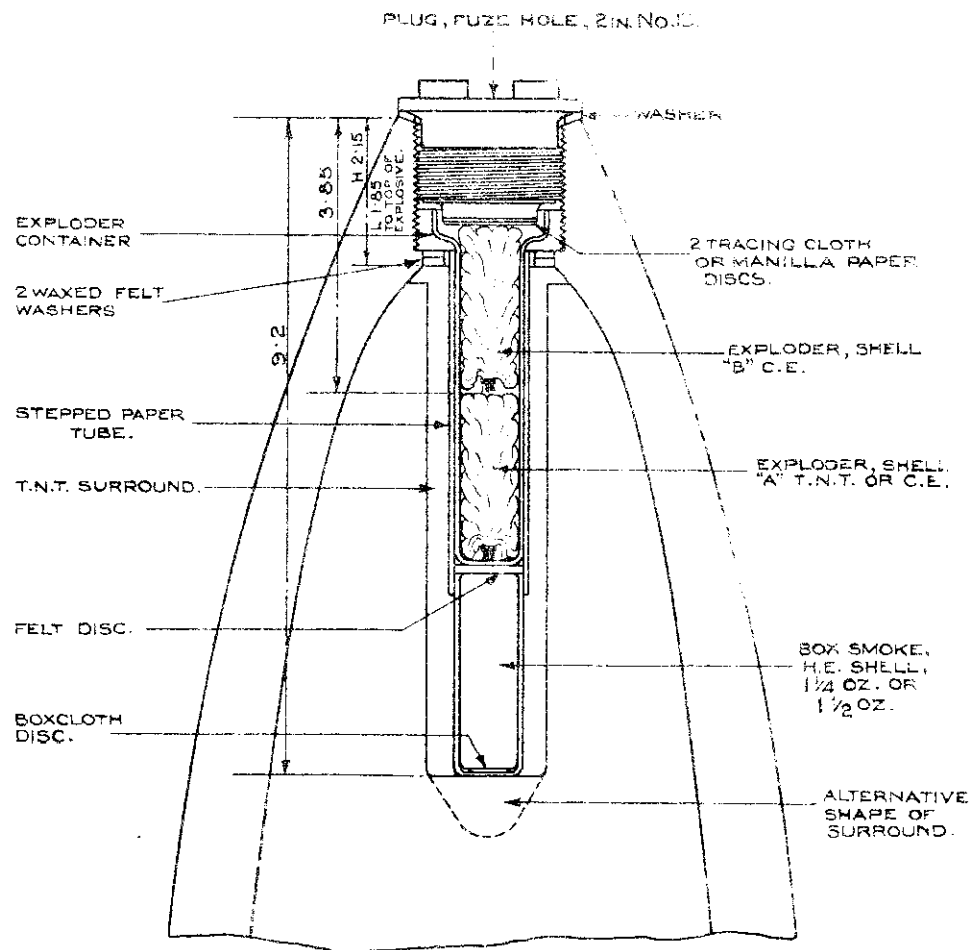
- (b) In transit the shell nose is usually closed by a plug which is replaced by the detonator plug of the fuze prior to firing, the main fuze assembly being screwed within the fuze adaptor of the shell.

TABLE OF ITALIAN 75 mm. AMMUNITION

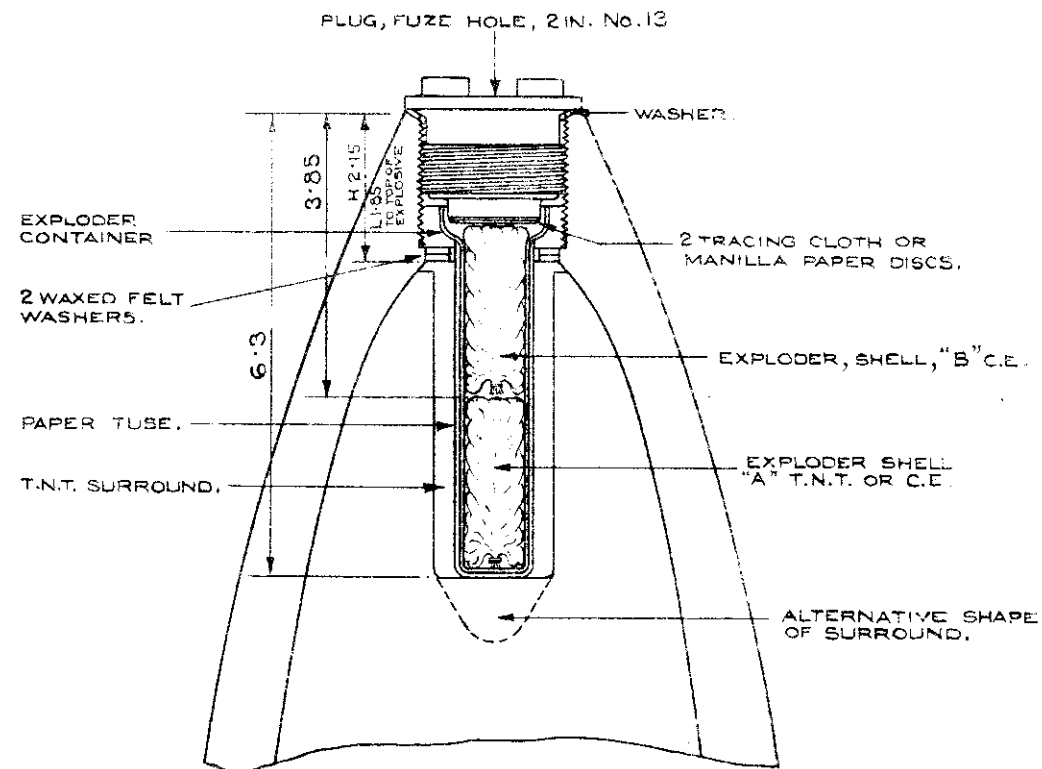
Gun.	Type of Round	Shell Markings		Type of Shell	Nature of Filling	Exploder System	Fuze and Gaine	Remarks and other detail.
		Colour	Stencil					
27 Cal. Gun. How.	Q.F. Separate M.L.	RED LIGHT BLUE GREEN BAND	TRITOLO 75/27	Forged steel Streamline	Cast T.M.T.	Pressed T.M.T. Pellets	Graze Fuze Cyclonite gaine	Exploder Container
27 Cal. Gun. How. & 13 Cal. How.	-do-	RED LIGHT BLUE GREEN BAND	TRITOLO 75/13/27	Machined from Bar.	Cast T.M.T.	Ballistite flake	Graze Fuze Ballistite gaine.	-

Gun	Type of Round	Shell Markings		Type of Shell	Nature of Filling	Explosive System	Fuze and Gaine	Remarks and other detail.
27 Cal. Gun. How.	J.F. Separate H.E.	RED	7/27	Forged Steel	Cast TNT/Wax	Cyclonite/ wax pellets	Base Fuze and gaine	Hollow charge H.E. Shell See Fig. 321 Bulletin 34.
27 Cal. Gun. How. 13 Cal. How.	-do-	LIGHT BLUE GREEN BAND ORANGE	Kg. 6.2 TRITOLO A.P. FM. Da Vr. XII 935 75/13/27.	Machined from Bar.	Cast T.N.T.	Ballistite Flake	Graze fuze Ballistite gaine.	This is similar to the second type in all respects except for details of the exploder system.
27 Cal. Gun. How.	-do-	ORANGE LIGHT BLUE GREEN BAND WHITE BAND	Kg. 6,100 TRITONO Da Vr. 935 75/27.	Machined from Bar.	Details not available	Details not available	Details not available	Similar to the second and fourth types. Full details of filling etc. are not yet available.
27 Cal. Gun. How.	J.F. Separate	ORANGE RED	Kg. 6.5 75/27	Forged Steel	Shrapnel similar to 77/28 shown in Fig.	Cf 77/28 fig.	Time fuze graduated to 59 Fig. 331. Bull. 35	Comparable in all respects with 77/28 shrap.
27 Cal. A.A.	J.F. Fixed H.E.	ORANGE BLUE DARK BLUE BAND	Variously Kg. 6.3, 6.2 TRITOLO or TRITOLO A.P.	Forged Steel Cast Iron fragmentation cylinder.	Carton packed cast T.N.T.	Ballistite Flake	Combustion time fuze	Fig. 351 Bull. 36 refers.
45 Cal. A.A.	-do-	LIGHT BLUE BLUE BAND GREEN BAND	Kg 6.550 TRITOLO COMPLESSO 75/46.	Forged steel. Double Driving Band.	Details not available	Known to be Exploder container system. Filling no detail available	Time fuze details not available.	-

FIG. 352. (ITEM. 913.)
PARTICULARS OF SHELL FILLED AMATOL AND FITTED WITH TOP EXPLODER.



D.D.(L) 16879
 (95 MM. TO 6 INCH)

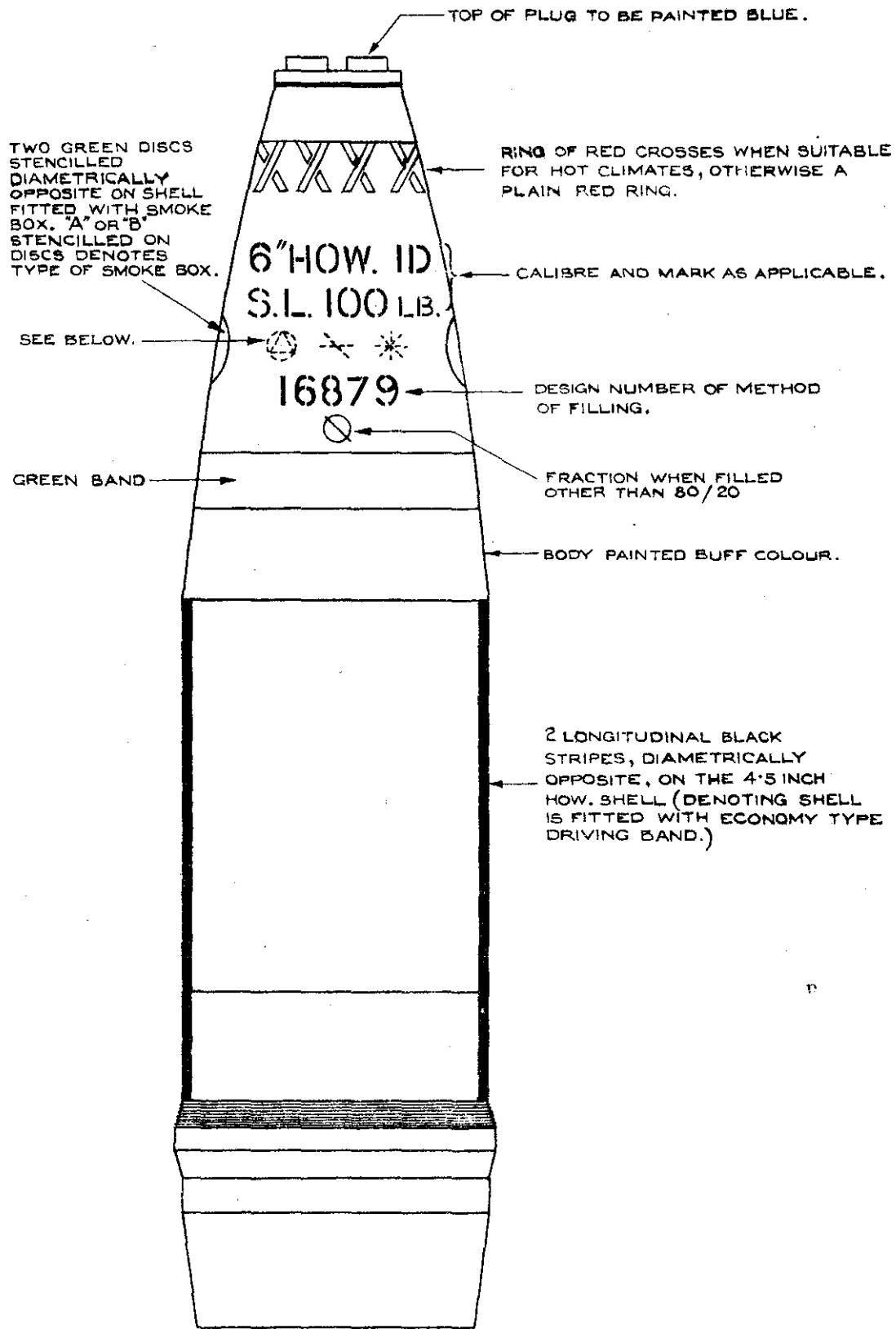


D.D.(L) 16817.
 (7.2 INCH TO 12 INCH.)

FIG.353. (ITEM.913.)

SHELL, B.L or Q.F, H.E., 95 MM. TO 6 INCH FILLED AMATOL TO DESIGN D.D.(L) 16879

Typical painting and marking details.

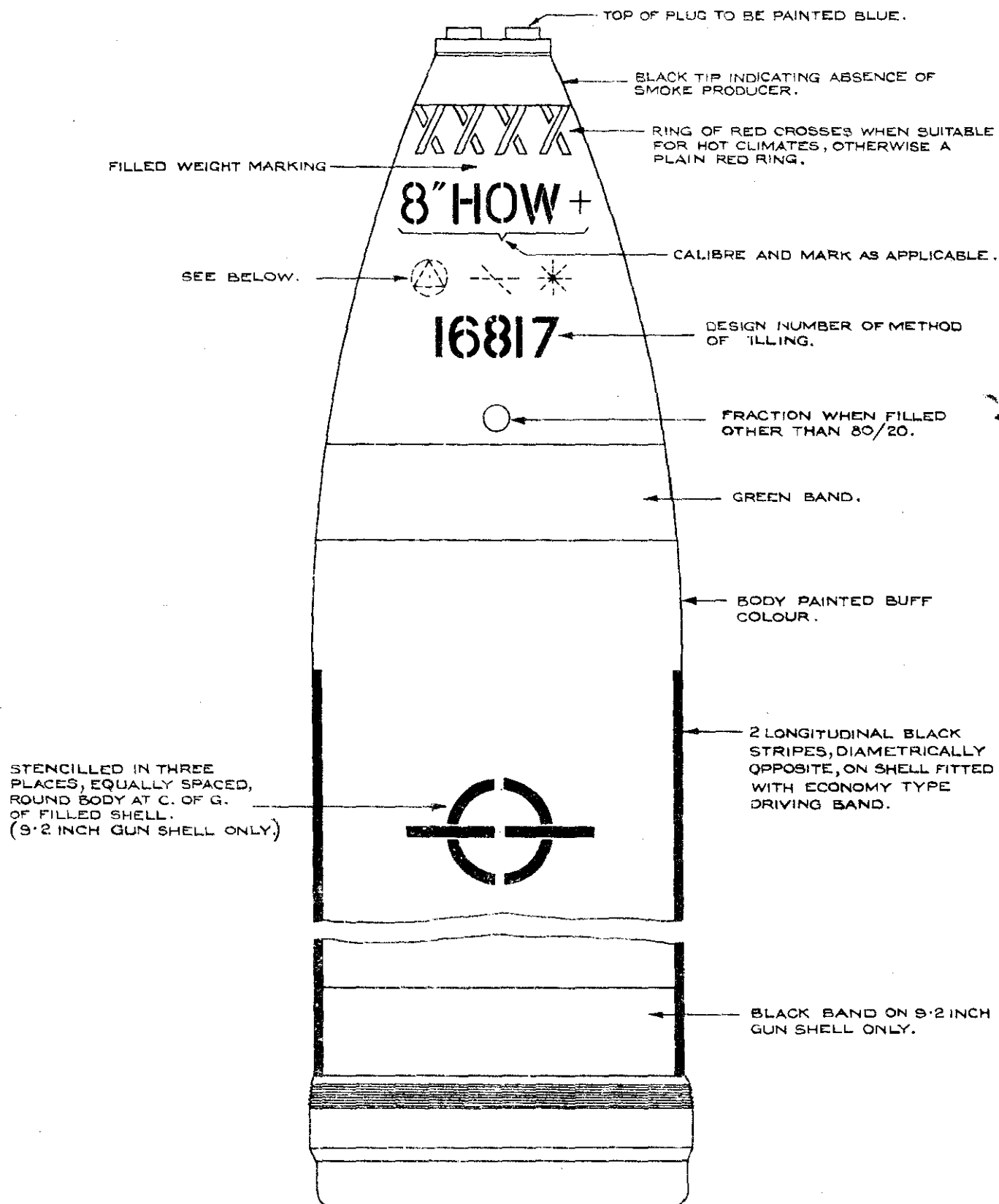


- | | | |
|--|--|--------------------------|
| | SERIES NUMBER IN RING DISTINGUISHING FILLED LOT. | } STENCILLED ON REVERSE. |
| | DATE OF FILLING (MONTH & YEAR.) | |
| | MONOGRAM OF FIRM OR STATION FILLING. | |

FIG. 354.(ITEM.913.).

SHELL , B.L., H.E., 7.2 INCH TO 12 INCH FILLED AMATOL TO DESIGN D.D.(L)16817.

Typical painting and marking details.



SERIES NUMBER IN RING DISTINGUISHING FILLED LOT.



DATE OF FILLING (MONTH & YEAR.)



MONOGRAM OF FIRM OR STATION FILLING.

STENCILLED ON REVERSE.

FIG. 355. (ITEM. 914.)
BOX, STEEL, CONTAINING Q.F. FIXED AMMUNITION.

TYPICAL MARKINGS.

(On both sides and both ends.)

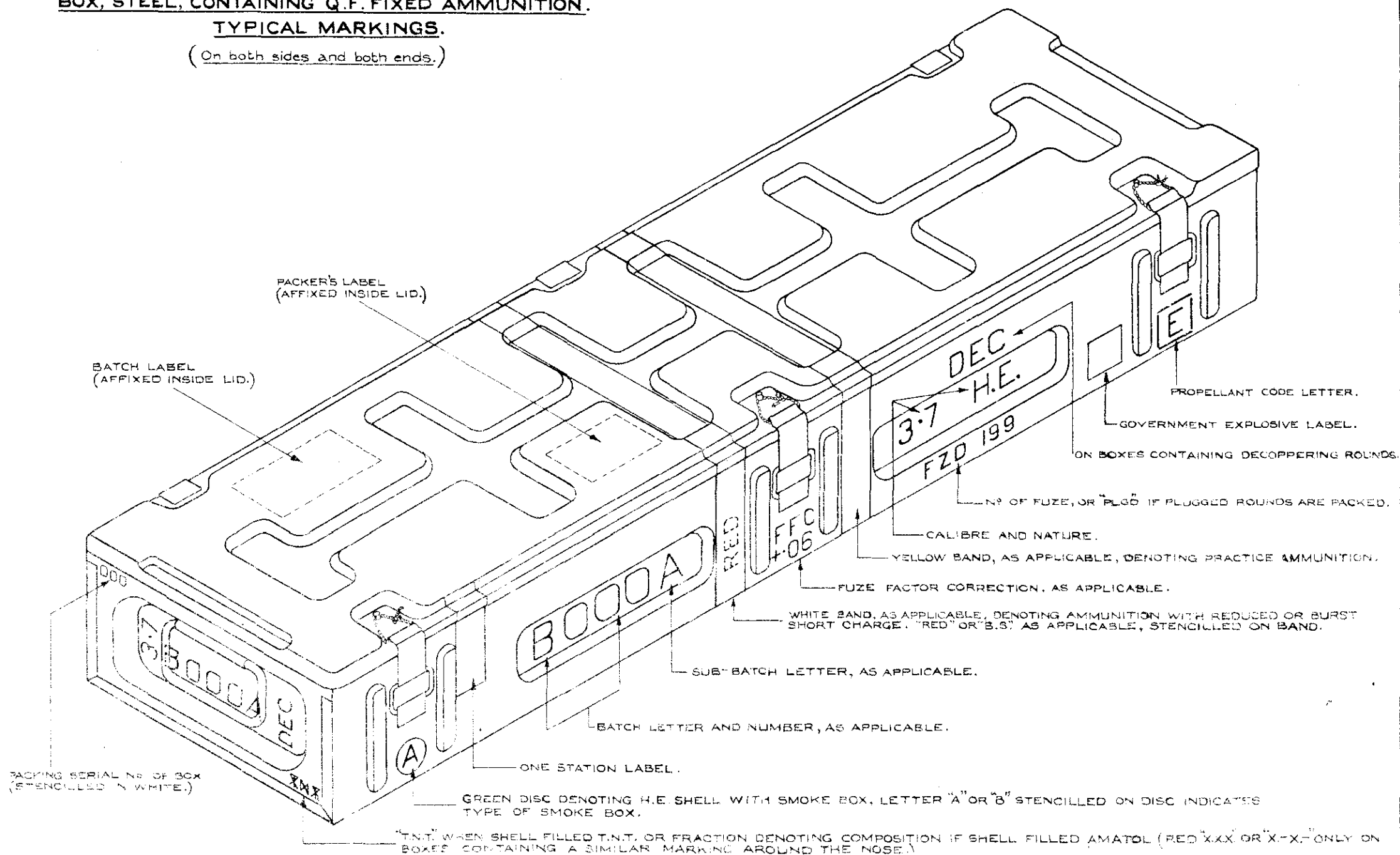


FIG. 356. (ITEM. 914.).

BOX, STEEL, CONTAINING Q.F. SEPARATE LOADING CARTRIDGES.

TYPICAL MARKINGS.

On both sides and both ends.

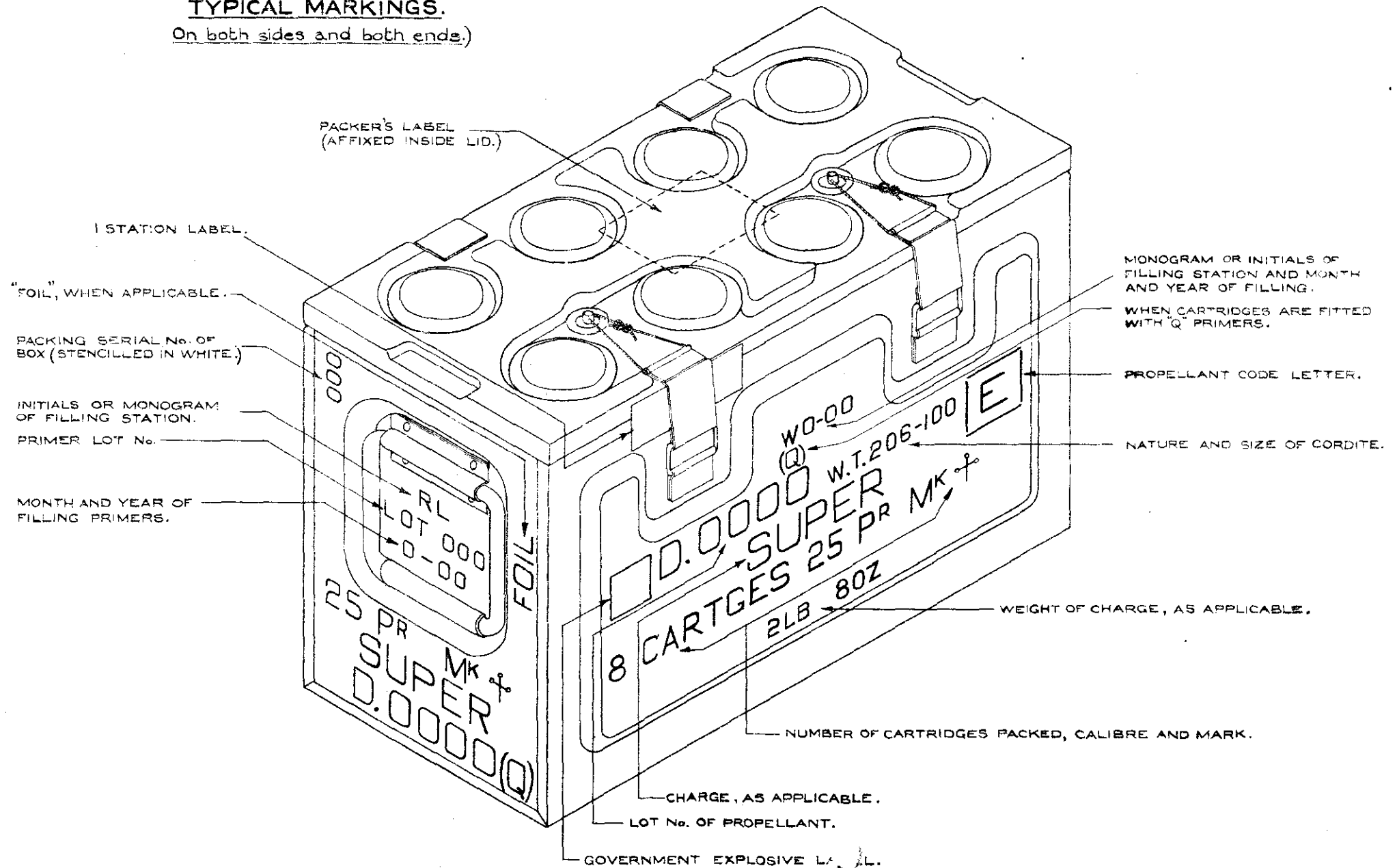


FIG. 357. (ITEM. 914.)
BOX, STEEL, CONTAINING PROJECTILES.
TYPICAL MARKINGS.

On both sides and both ends.

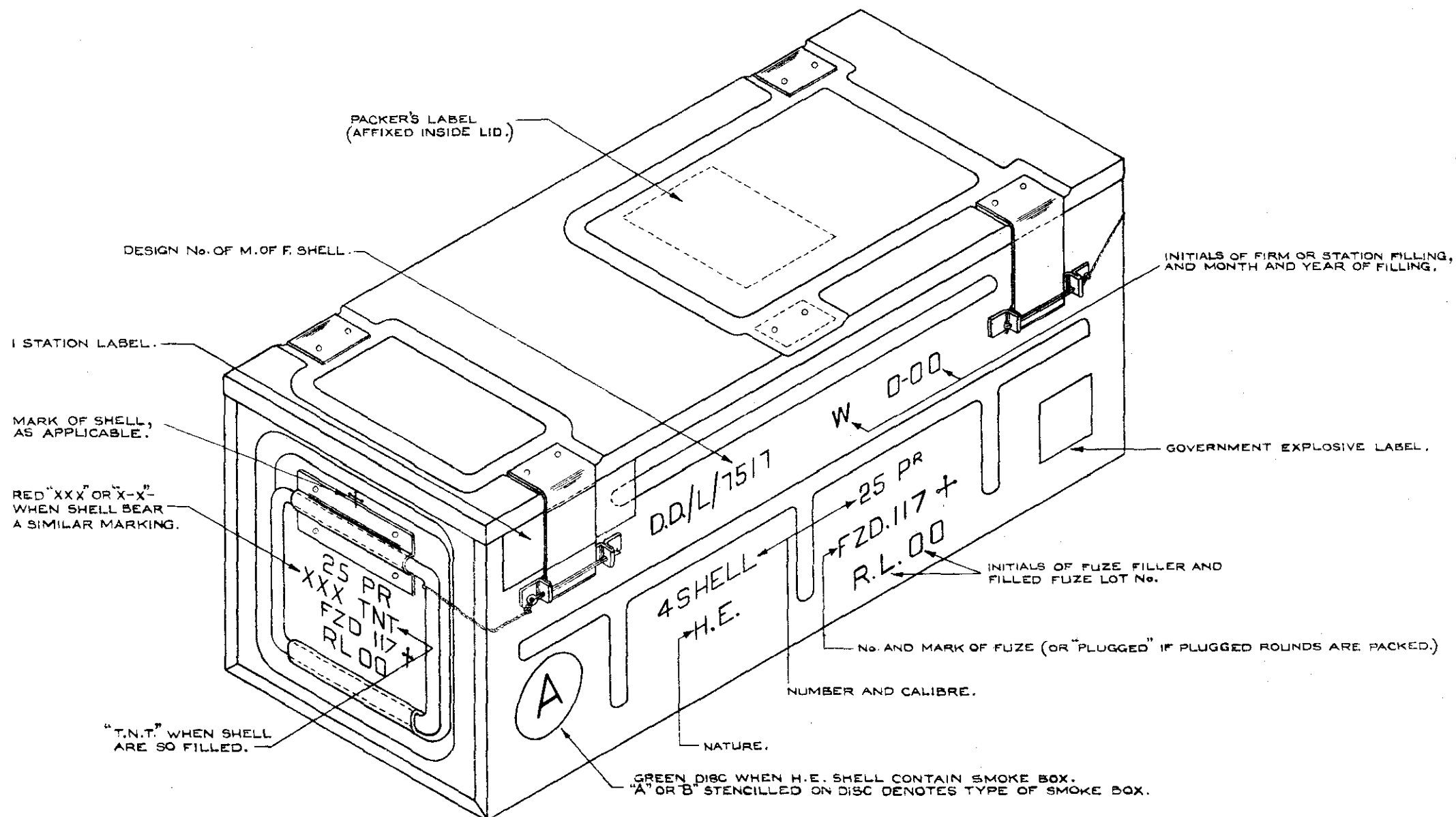


FIG. 358. (ITEM. 914.)
BOX, AMMUNITION, CONTAINING Q.F. HOWITZER COMPLETE ROUNDS.

TYPICAL MARKINGS.

(On both sides, lid, and both ends.)

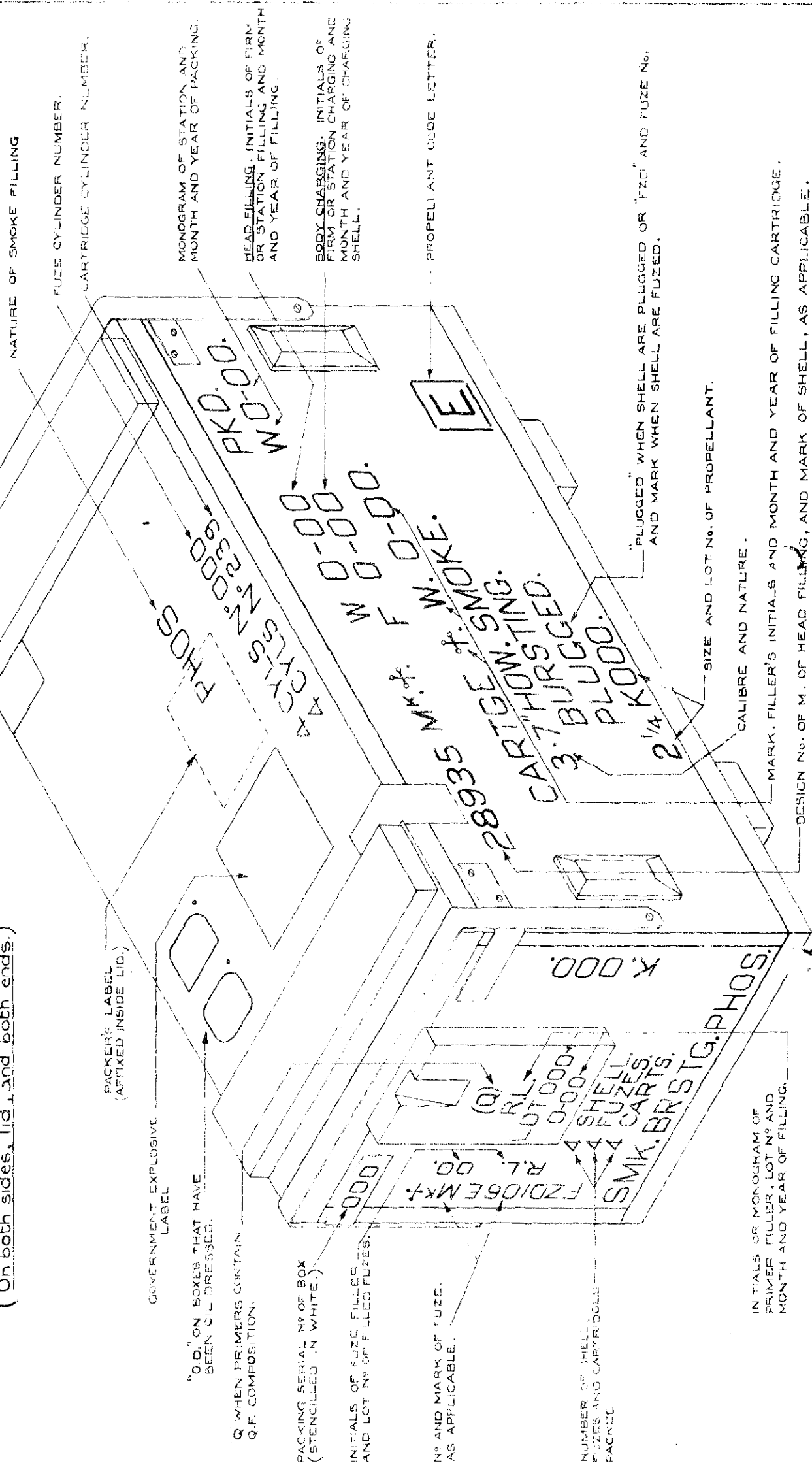


FIG. 359. (ITEM. 914.)
BOX, STEEL, CONTAINING B.L. CARTRIDGE
TYPICAL MARKINGS.

(Both sides and both ends.)

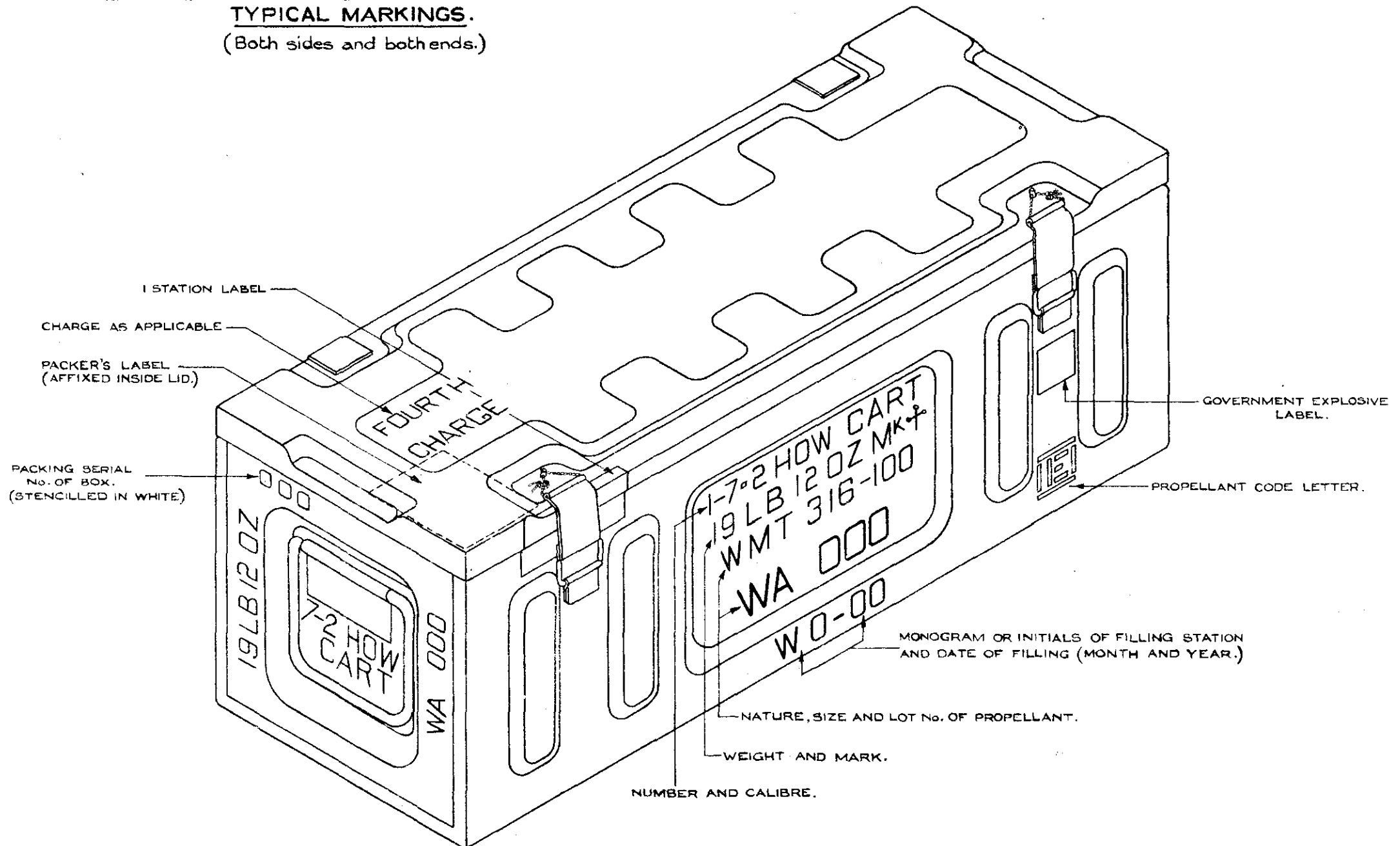


FIG. 360. (ITEM.914.)
BOX, WOOD, CONTAINING B.L. CARTRIDGES.
TYPICAL MARKINGS.

Hinged lid type, on one side and both ends.

MONOGRAM OR INITIALS OF
 FILLING STATION AND
 DATE OF FILLING.

"O.D." ON BOXES THAT HAVE
 BEEN OIL DRESSED.

NUMBER AND CALIBRE
 ("HOW" IF APPLICABLE.)

"SUPER" WHEN APPLICABLE
 WEIGHT AND MARK OF CARTRIDGE
 NATURE AND SIZE OF PROPELLANT.

LOT No. OF PROPELLANT.

PROPELLANT CODE LETTER.

PACKER'S LABEL
 (AFFIXED INSIDE LID.)

STATION LABEL.

GOVERNMENT EXPLOSIVE LABEL.

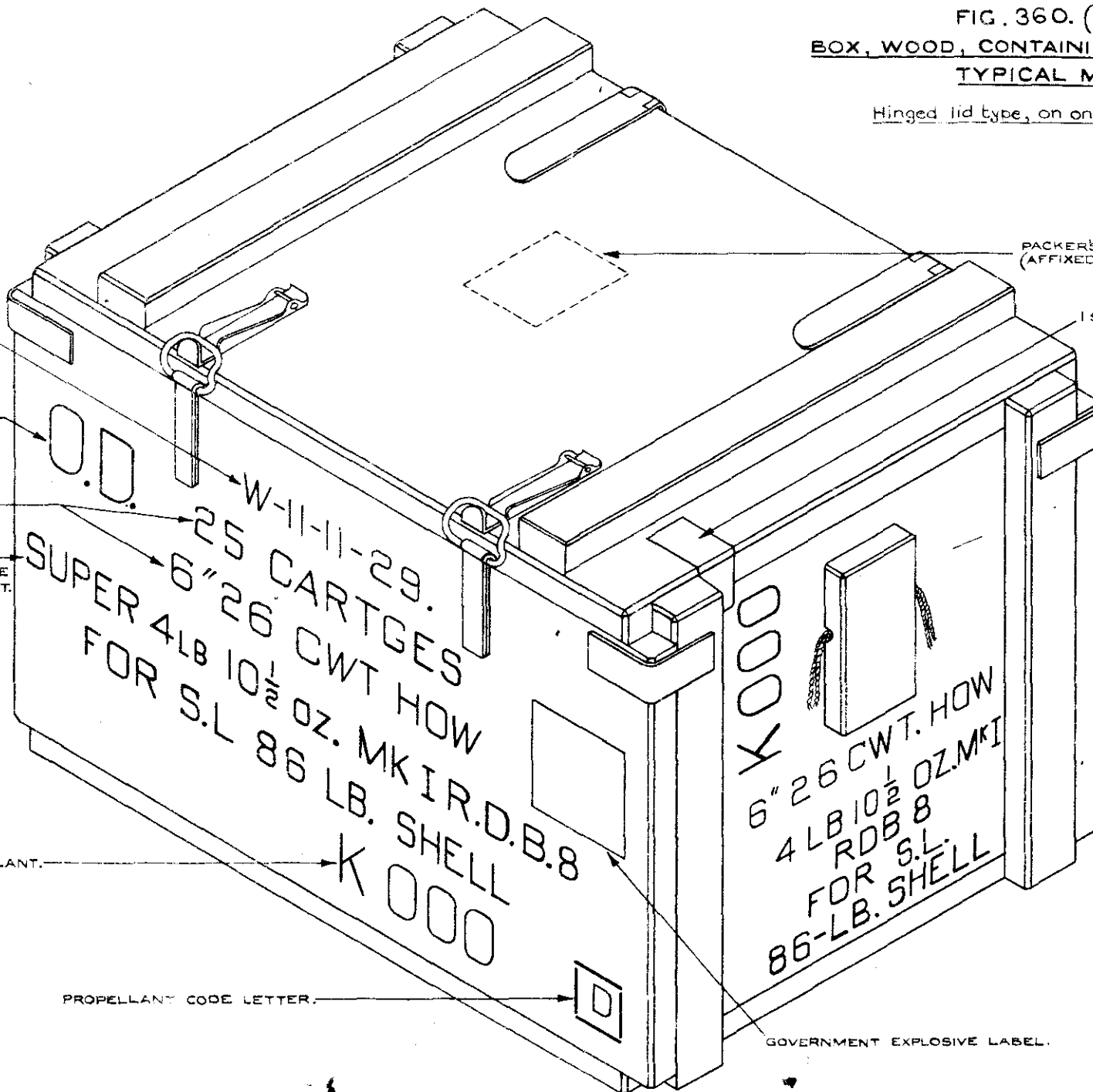


FIG. 361. (ITEM. 914.)
BOX, WOOD, CONTAINING B.L. CARTRIDGES.

TYPICAL MARKINGS.

Screwed on lid type, on lid and both ends.

PACKER'S LABEL
(AFFIXED INSIDE LID.)

NUMBER AND CALIBRE
(HOW IF APPLICABLE.)

WEIGHT AND MARK OF CARTRIDGE.
NATURE AND SIZE OF PROPELLANT.

MC GRAM OR INITIALS OF FILLING STATION AND DATE OF FILLING.

PROPELLANT CODE LETTER.

LOT No. OF PROPELLANT.

TWO STATION LABELS, (AFFIXED ON
OPPOSITE ENDS.)

GOVERNMENT EXPLOSIVE LABEL.

"O.D." ON BOXES, THAT HAVE
BEEN OIL DRESSED.

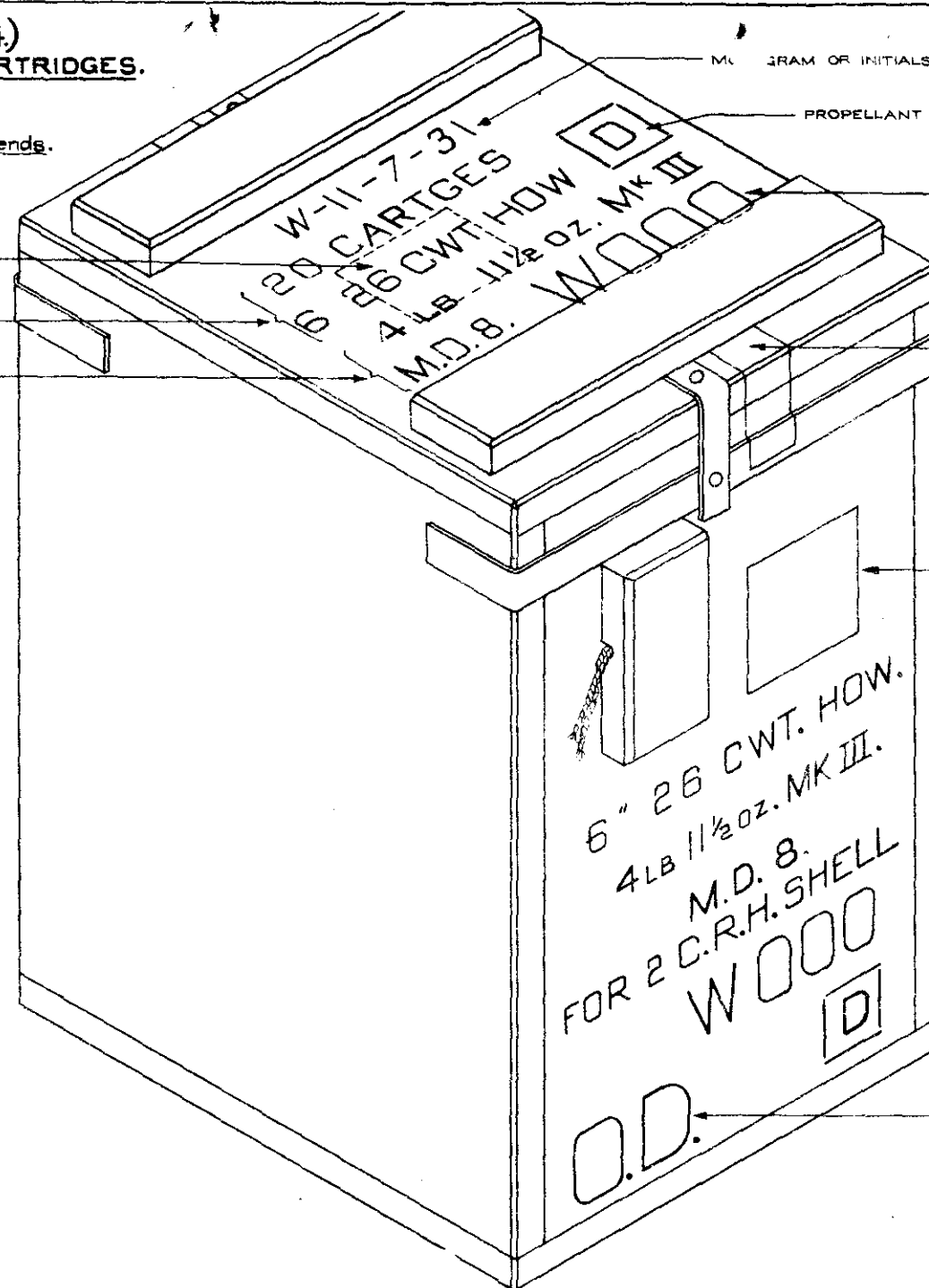
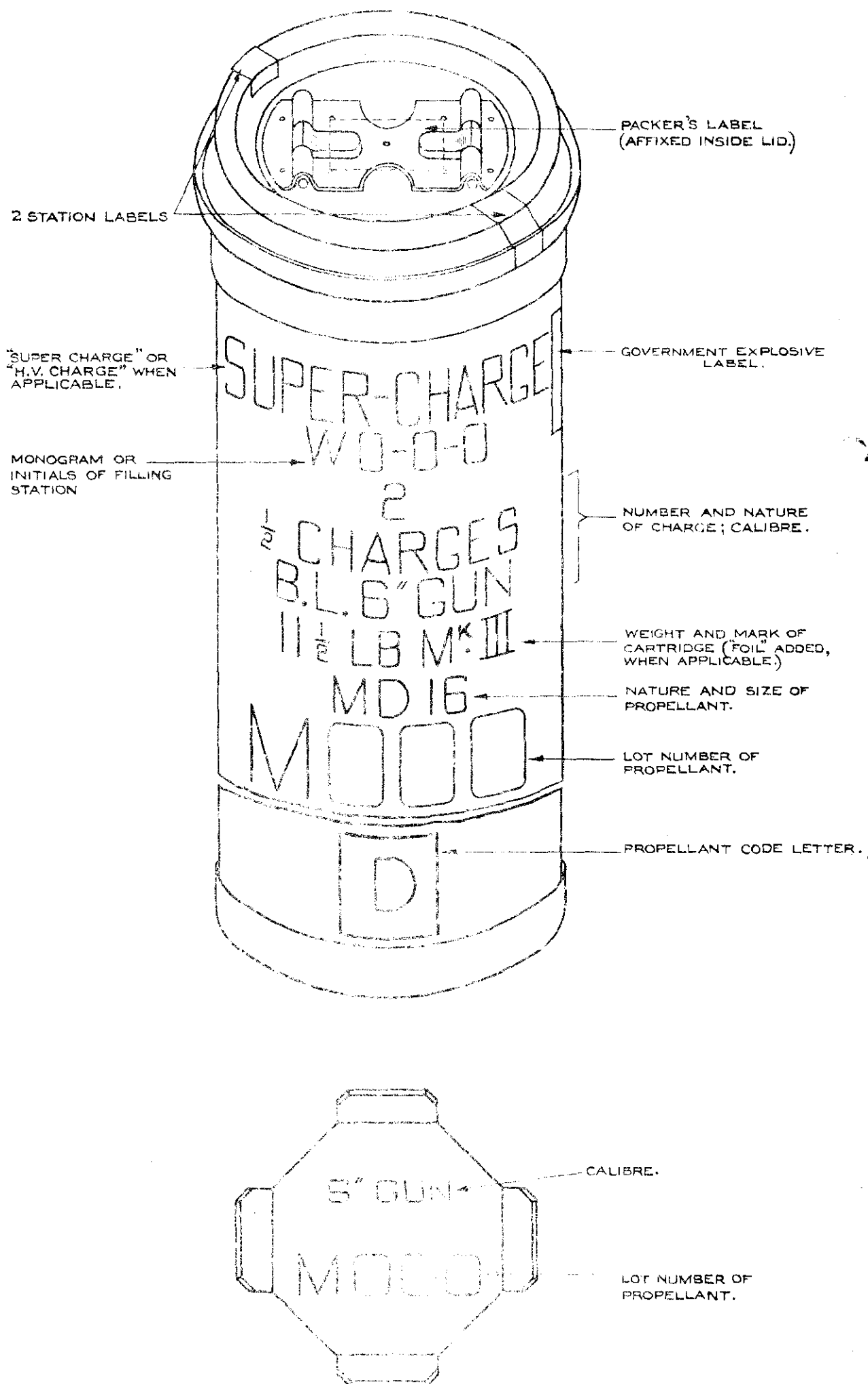


FIG. 952. (ITEM 914.)
CYLINDER CONTAINING B.L. CARTRIDGE.
TYPICAL MARKINGS.



ON BOTH ENDS OF SKELETON CASE.

FIG. 363. (ITEM 914.)
 BOX, STEEL, CONTAINING MORTAR AMMUNITION.
 TYPICAL MARKINGS.
 (On both sides and both ends.)

NOTE: PANELS SHOWN THUS  PAINTED BLUE (BOTH SIDES AND BOTH ENDS,) WHEN APPLICABLE. ABOVE BLUE PATCHES NOT PAINTED ON WHEN BOMBS ARE FITTED WITH 6 CARTRIDGES 88 GRAINS CORDITE OR 72 GRAINS M. 4 X OR 65 GRAINS HERCULES POWDER.

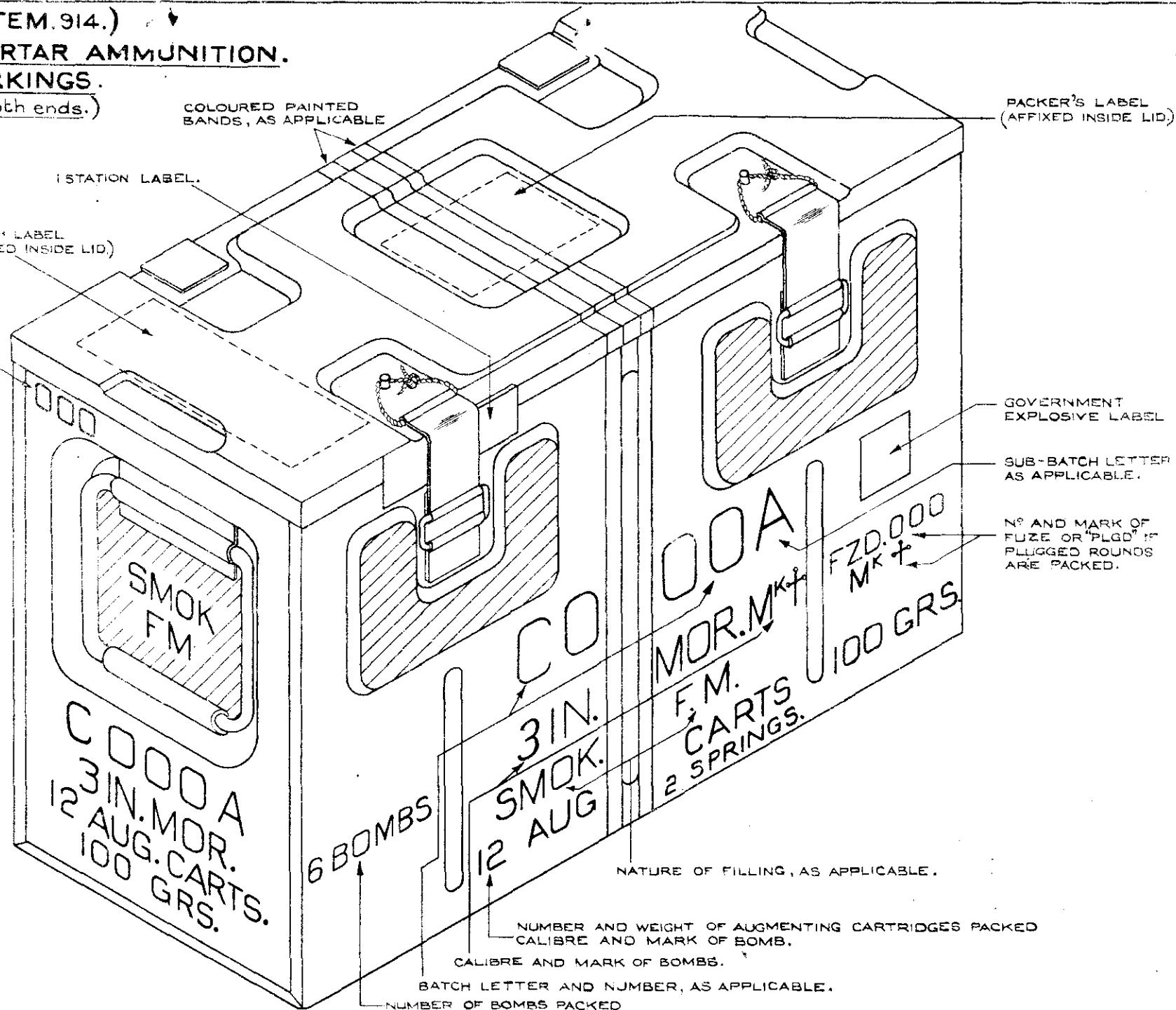
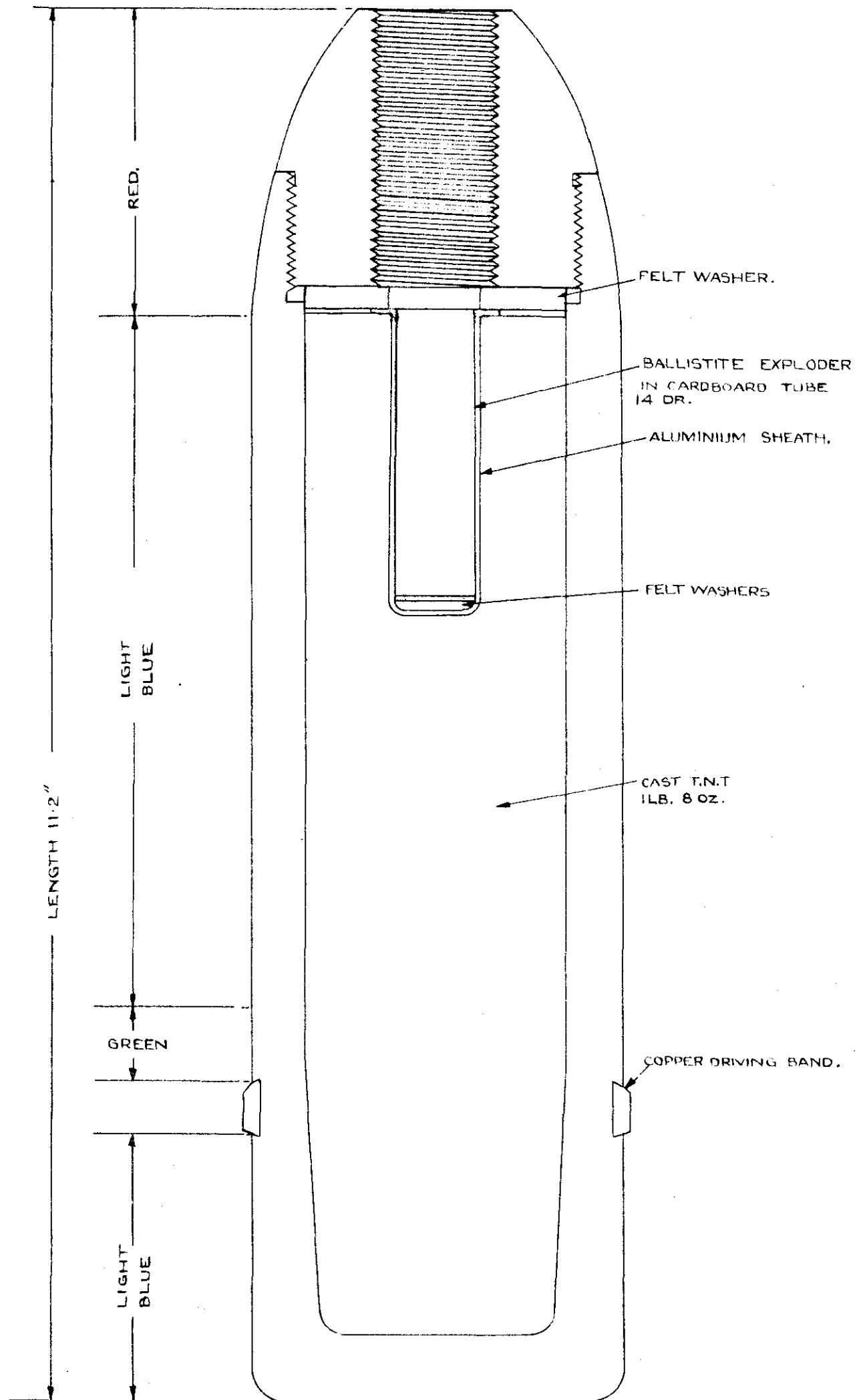


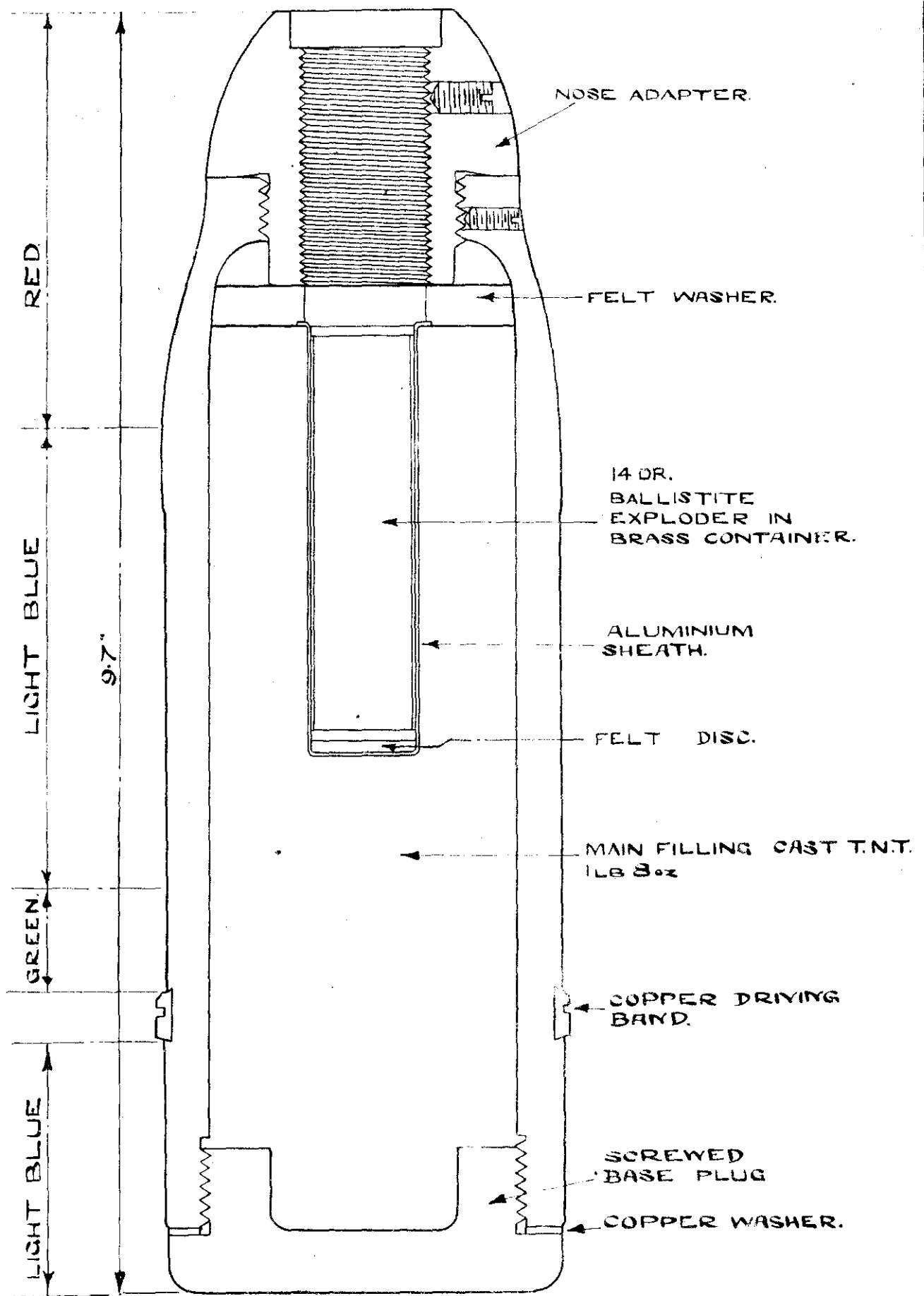
FIG. 364 (ITEM 918.)
ITALIAN 77/28 H.E. SHELL.

LUNGA TYPE METHOD OF FILLING.



ITALIAN 77/28 HE SHELL "CORTA", METHOD OF FILLING

FIG. 365 (ITEM. 918.)



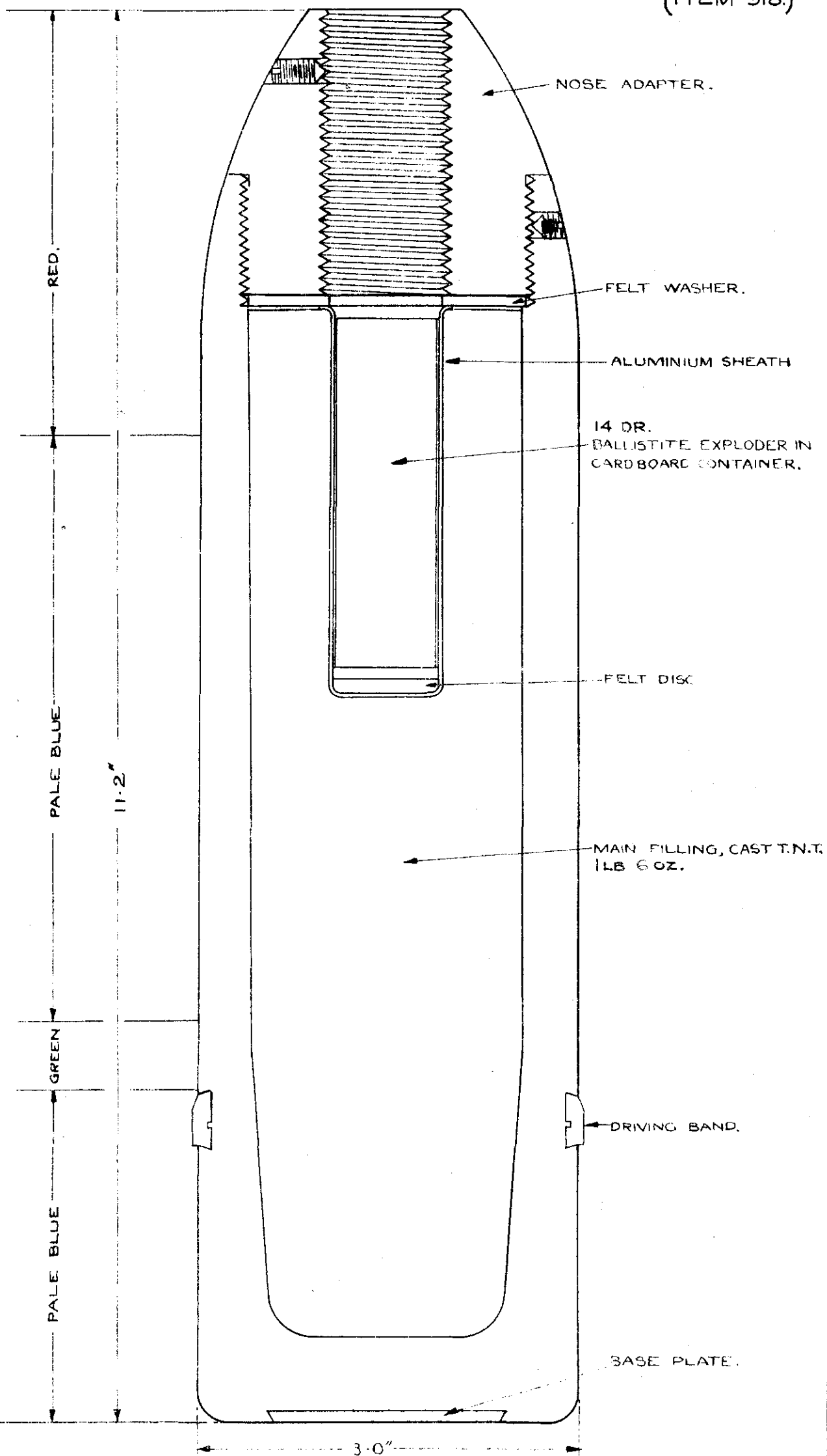
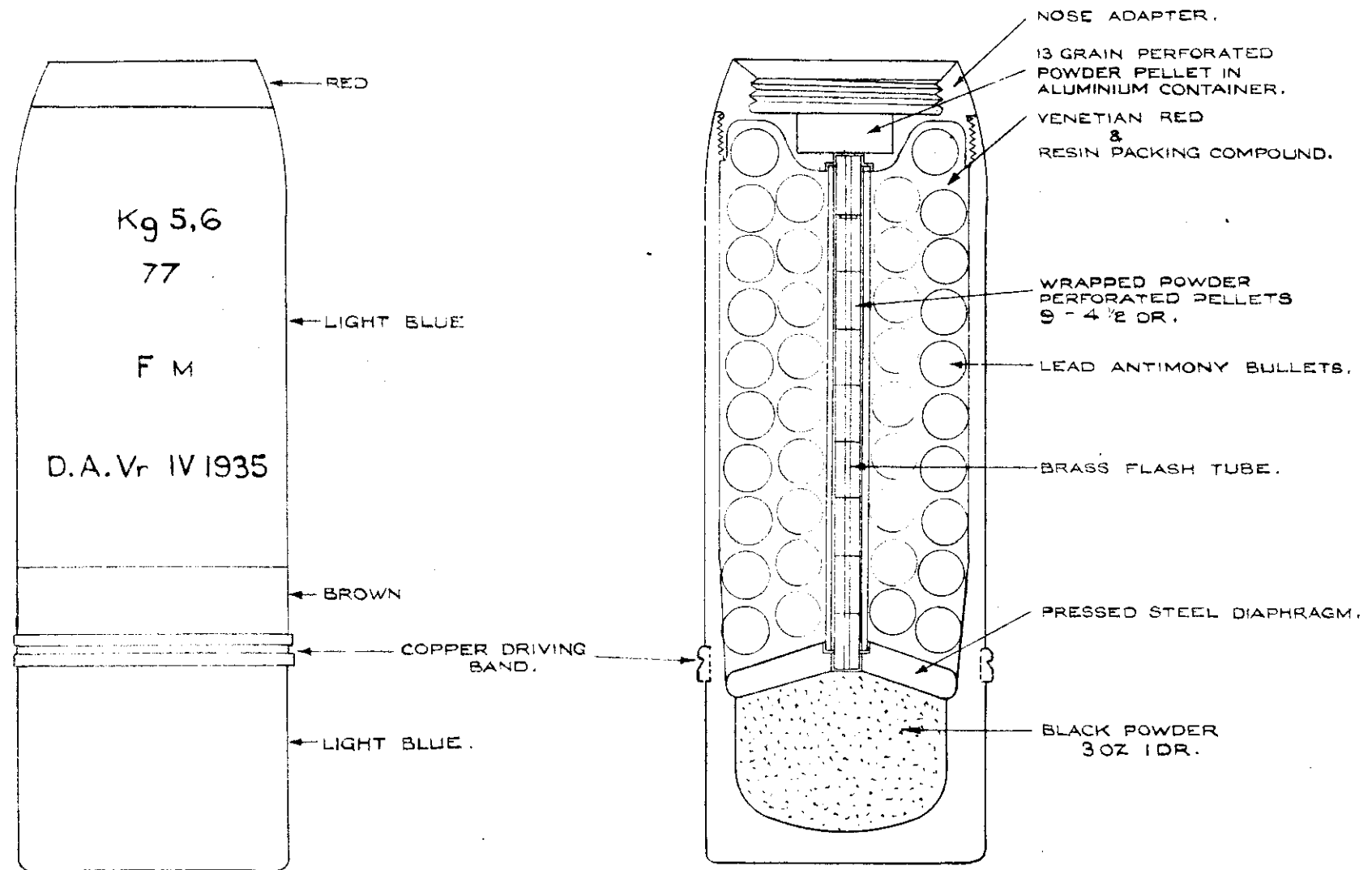
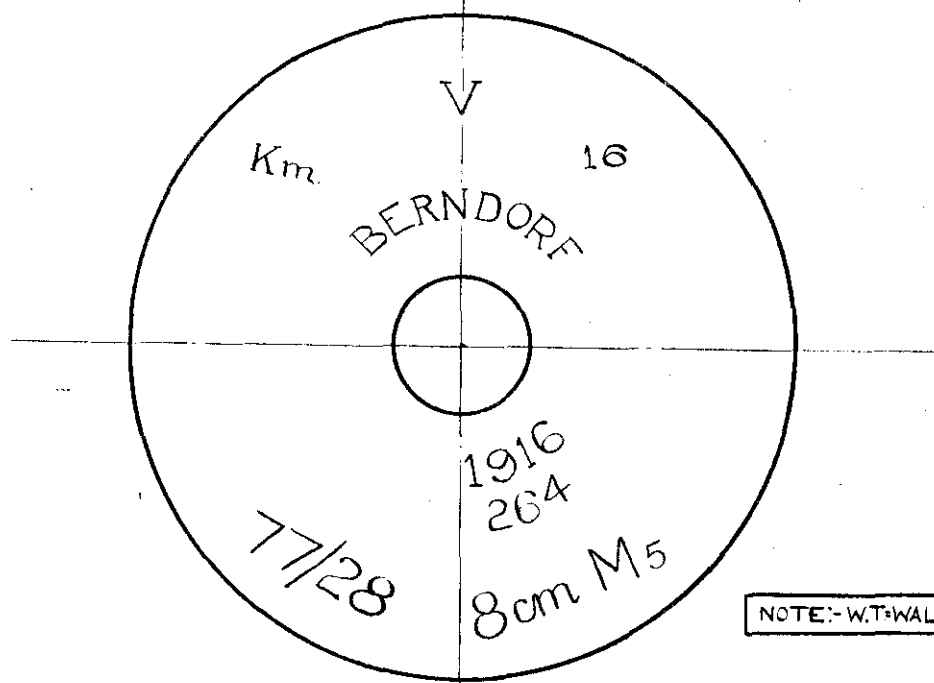
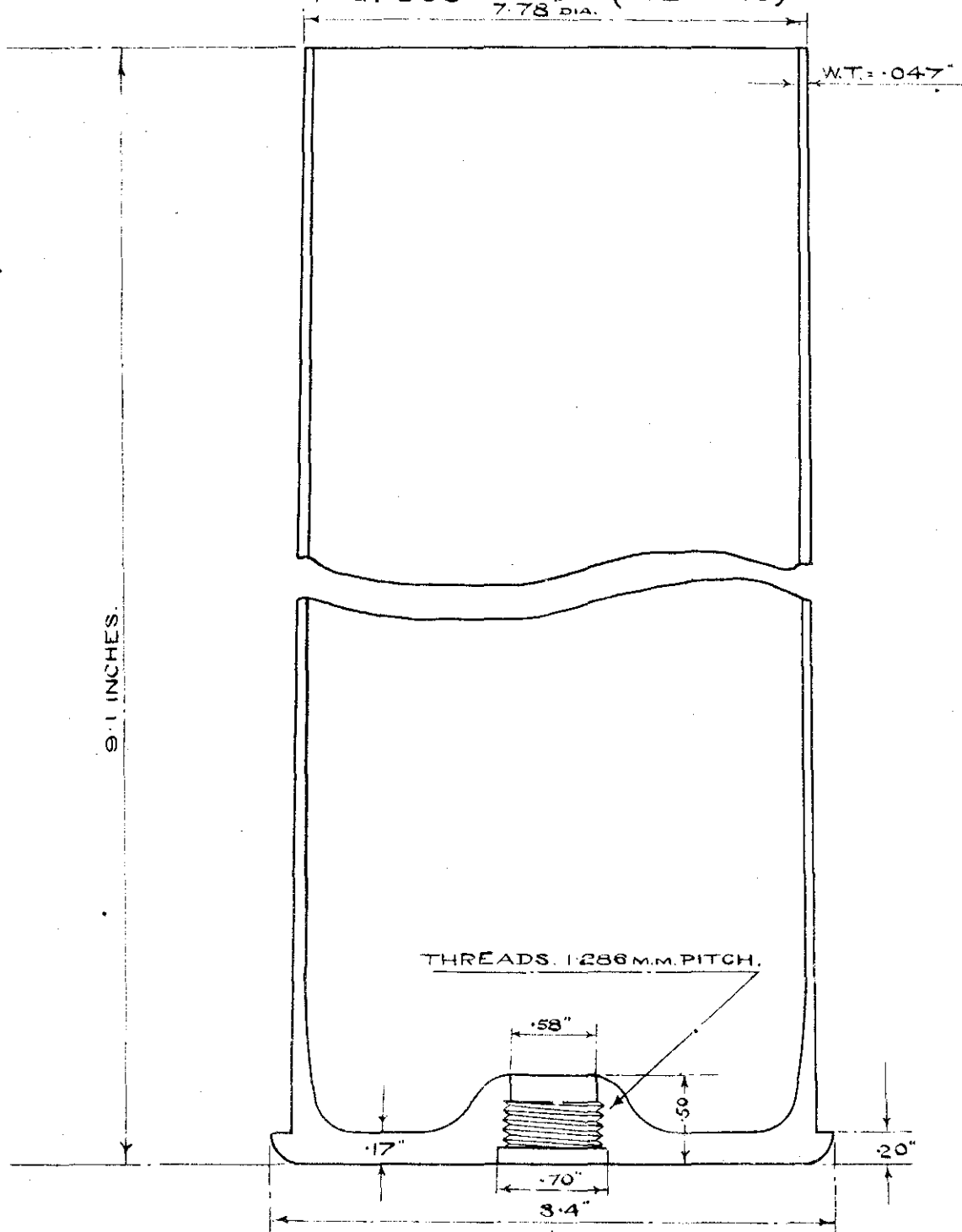


FIG. 367. (ITEM.918.)
ITALIAN 77 m.m. 28 CALIBRE SHRAPNEL SHELL.



ITALIAN CARTRIDGE CASE 77 MM./28 CALIBRE GUN.

FIG. 368 (ITEM 918)



NOTE: W.T. WALL THICKNESS

BASE MARKINGS.