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Regulations for Army Ordnance Services

Volume 4—Ammunition

Pamphlet No. 1

NOMENCLATURE and MARKINGS

By Command of the Army Council,

G. W. F. [Signature]

THE WAR OFFICE,
16th November, 1954.

RESTRICTED

**REGULATIONS FOR ARMY ORDNANCE SERVICES
VOLUME 4—AMMUNITION
PAMPHLET No. 1
NOMENCLATURE AND MARKINGS**

**Part 1
NOMENCLATURE**

PAMPHLET No. 1—NOMENCLATURE and MARKINGS

PART 1—NOMENCLATURE

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PART 1—NOMENCLATURE

SECTION 1—THE REVISED SYSTEM OF NOMENCLATURE FOR LAND SERVICE AMMUNITION

Introduction

1. In 1952, the Organization and Weapons Policy Committee approved the adoption of a new system of nomenclature for all future Land Service weapons and ammunition, generally based on and similar to the American system.

2. The application of the new system is subject to the following conditions:—

- (a) *It applies only to new models of ammunition or to old models when modifications of operational significance are carried out.*
- (b) No retrospective nomenclature or marking is intended on older models of ammunition in the Service.
- (c) The definition of “ammunition” for the purpose of applying the new nomenclature is that given in Ammunition and Explosives Regulations (Land Service), Part 1, 1953, (W.O. Code No. 10504), Introduction, para. 7.

Naming of Ammunition

3. As before, the nomenclature will consist of two parts, viz:—

- (a) *The ‘primary’ heading*—which will be used for cataloguing and will contain most of the vital information of the store.
- (b) *The ‘detail’*—which will consist of any additional explanatory matter necessary.

4. The features to be shown and the layout of nomenclature will be:—

(a) *Primary Heading*

- (i) NATURE—Class of store, e.g. Shell, fuze, cartridge, round.

Calibre, e.g. 120 mm.

Role, e.g. B.A.T.

- (ii) TYPE—Filling, purpose or action, e.g. H.E., Practice, Percussion.

- (iii) MODEL No. (*See para. 7*)—e.g. L1A1

(b) *Detail*

- (i) As required—e.g. Fuze particulars, (in respect of fuzed ammunition); Model number of parent equipment.

PART 1—NOMENCLATURE

SECTION 1—THE REVISED SYSTEM OF NOMENCLATURE FOR LAND SERVICE AMMUNITION

Introduction

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2. The application of the new system is subject to the following conditions:—

Amdt. 3/May/58.

- (d) When AMERICAN designed ammunition is manufactured in BRITAIN for BRITISH use in AMERICAN designed weapons (e.g. B.L. 155-mm. Gun or How.) such ammunition will be marked in accordance with the recognized AMERICAN marking system.

(W.O. Code No. 10504), Introduction, para. 7.

Naming of Ammunition

3. As before, the nomenclature will consist of two parts, viz:—

- (a) *The 'primary' heading*—which will be used for cataloguing and will contain most of the vital information of the store.
(b) *The 'detail'*—which will consist of any additional explanatory matter necessary.

4. The features to be shown and the layout of nomenclature will be:—

(a) *Primary Heading*

(i) NATURE—Class of store, e.g. Shell, fuze, cartridge, round.

Calibre, e.g. 120 mm.

Role, e.g. B.A.T.

(ii) TYPE—Filling, purpose or action, e.g. H.E., Practice, Percussion.

(iii) MODEL No. (*See para. 7*)—e.g. L1A1

(b) *Detail*

(i) As required—e.g. Fuze particulars, (in respect of fuzed ammunition); Model number of parent equipment.

5. The following are *hypothetical* examples:—

- (a) Cartridge, 200 mm., Tk., L2A3; 42 lb. 10 oz. N.Q. for Gun 200 mm., L1.
- (b) Grenade, A/Tk., Practice, L23A1; with Fuze, Practice, L16A4.*
- (c) Bomb, 115 mm., Mor., L14A1; fuzed L61A7.†

6. With the introduction of the new system, opportunity will be taken to remove certain anomalous and obsolete expressions from official nomenclature, e.g:—

- (a) The calibre will always be designated in millimetres (mm.) and not as hitherto, variously described in inches, or projectile weight.
- (b) The expressions Q.F., B.L., O.B.L., R.C.L., S.B., M.L., S.A. will no longer be used, except when it is essential to distinguish certain components from others, e.g. Igniter, R.C.L. Cartridge, L1A1.
- (c) The complete round class of ammunition (i.e. ammunition where the projectile/bullet is fixed into the cartridge case, e.g. 20 pr.) will in future be designated 'Round'.

The word 'Cartridge' will be restricted to separate propelling charges (whether bagged or in a metal casing) and additionally to illuminating, signal, blank and such items, *which are not fitted with a projectile*.

- (d) Subsidiary names (e.g. "Patchett" or "Sten") will not be used in official nomenclature.

Model Numbering

7. In the past there has been no consistency in applying model numbers. Thus some items such as fuzes were serially numbered, e.g. Fuzes 208, 209, 210, while other items were allocated a mark only, e.g. Cartridges, S.A., .303-in. Ball, Mk. 7.

8. All new ammunition will be allotted a model number in an "L" series (indicating Land Service), with supplementary suffix letters and figures to indicate minor modifications. This method of numbering supersedes the old method of "No. and/or Mark, Sub-Mark, Star".

9. As a general principle, separate model numbers in the "L" series will be allotted consecutively *within each calibre and type*, except for components such as fuzes, primers and igniters, each of which will be numbered consecutively in one series irrespective of type.

*Fuze in same package but grenade not actually fuzed.

†Bomb actually fuzed.

Pam. 1, Part 1, Section 1

10. (a) The "L" number is advanced only when a modification is made which is of operational and logistical significance.

(b) The "A" suffix designates modifications, primarily of design, which are logistically but not operationally significant.

(c) The "B" suffix designates minor changes of design, alternative material, or method, or other similar concessions in manufacture. These changes have no operational or logistical significance but require a distinct identification to facilitate location should they prove unsatisfactory in service.

(d) In certain complex cases, e.g. to indicate the circuit used in a V.T. fuze, it may be necessary to use a third suffix letter. The need for this will be rare and the following letters *will not be used* in this connection.—

A, B, E, I, L, M, N, O, T, or X.

11. The first model of a store will be numbered L1A1. The following *hypothetical* examples show the application of the numbering principles enunciated in **para. 10**:—

(a) (i) Fuze Time Mechanical L35A1 —Original model of fuze made of brass.

(ii) Fuze Time Mechanical L35A1B1—Identical to the L35A1 but body made of *steel*.

(iii) Fuze Time Mechanical L39A1 —A new wheel train is fitted to the L35A1 type. (As this modification affects running time and fuze setting, the modification is of operational significance.)

(iv) Fuze Time Mechanical L39A1B1—The L39A1 fuze fitted with a new type of striker. (Not operationally or logistically significant).

(b) Fuze C.V.T. L11A1C
Fuze C.V.T. L11A1D
Fuze C.V.T. L11A1F }

The suffixes C, D, and F designate the frequency ranges.

Ammunition under Development

12. (a) In the past there was no general rule for numbering ammunition under development. Under the new system all such items will be numbered in an "X" series, with "E" suffixes, which will be applied in a similar manner to the "L" and "A" numbers described in para. 10.

(b) A detailed nomenclature need not be used at this stage, but sufficient information to allow identification without reference to other documents will be given, e.g:—

Cartridge, 125 mm. X1E1.

Where, however, security considerations dictate, a code name may be used, e.g:—

Black Mamba.

13. The "X" model number will be retained throughout the development stages until approval for full manufacture is given, i.e. until the design is sealed. Stores should not normally enter the Service under this series but may be encountered where ammunition is received under advance action approval. Such rounds will not be considered as restricted in use or issue unless specially ordered.

Part Numbers

14. The model number is an integral part of nomenclature and is in addition to, and quite distinct from, the part number.

15. A part number will be given to each component of a store. Thus the complete store, and those components designed for ready replacement in the field by non-technical personnel, will be given a model number but each subsidiary component will be given a part number by which it may be identified. For example, the following numbers will be present on "Round, 80 mm, H.E. L1A1, fuzed L4A3":—

Shell, H.E. — Part No. only

Cartridge case — Part No. only

Primer — Model No.

Fuze — Model No.

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REGULATIONS FOR ARMY ORDNANCE SERVICES

VOLUME 4 AMMUNITION

PAMPHLET No. 1.

NOMENCLATURE AND MARKINGS

PART 2

WEIGHT MARKINGS ON FILLED SHELL

PAMPHLET No. 1—NOMENCLATURE AND MARKINGS

PART 2

WEIGHT MARKINGS ON FILLED SHELL

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PART 2—WEIGHT MARKINGS ON FILLED SHELL

SECTION 1—PURPOSE AND APPLICATION OF WEIGHT MARKINGS

Purpose of Weight Markings

1. To assist the user to obtain greater accuracy on firing, weight markings are applied to certain calibres of filled shell. Variations in weight from the standard shell are thus indicated and corrections given in the range tables to compensate for these.

2. Weight markings are required for all filled shell of the following ing calibres:—

- (a) Field branch artillery — 5.5-in. and above
(b) Coast artillery — 5.25-in. and above
(except 5.25-in. H.E.)

Types of Weight Markings

3. Before 29th March 1950, the only types of weight markings were:—

(a) *Ammunition for use in fixed armaments*—marked as follows:—

(i) Shell whose weight filled and fuze with the standard fuze was within ± 0.1 per cent of the mean weight were stencilled “DEAD WT”.

(ii) Those shell which varied from the dead weight limits were stencilled with their actual weight as follows:—

9.2-in.	To the nearest 1-lb.
Under 9.2-in. to 6-in.	To the nearest $\frac{1}{2}$ -lb.
Under 6-in.	To the nearest $\frac{1}{4}$ -lb.

(b) *Ammunition for use in field service*—marked on the “unit” system in which variations from mean weight were shown by symbols consisting of a whole number prefixed by a plus or minus sign as applicable.

4. From 29th March 1950, all shell requiring weight markings have been marked in accordance with the “unit” system. Details of this system are given in the tables of weights in Section 2, Tables 1 to 3 inclusive. The symbols, their sizes and positioning are illustrated in Section 2, Plates 1 to 4 inclusive.

Components

5. *Standard fuzes.* The dead weight limits for any filled shell are calculated on the assumption that the shell is fitted with its standard fuze, details of which are given in Section 2, Tables 1 to 3 inclusive. Where a shell fitted with a plug or a fuze other than the standard fuze is to be weighed, allowance must be made for the resultant weight differences.

6. The weights to be allowed for fuzes, plugs, adapters and exploders are detailed in **Section 2, Tables 4 and 5.**

7. Shell issued fuzed will be weight marked in accordance with the weight markings required for the prescribed standard fuze, irrespective of the fuze actually in position.

Notes on Weighing Shell

8. When shell are weighed plugged, a corresponding plug should be placed in the weight pan of the scales. The weight shown by the scale will thus be that of the shell without fuze or plug and it will only be necessary to add the weight of the standard fuze to ascertain the weight marking necessary.

9. Where fuzed shell are weighed and the fuze in position is *not* the standard fuze, a fuze, identical to that in the shell should be placed in the weight pan of the scales. Addition of the weight of the standard fuze will then indicate the weight marking necessary.

10. Whenever possible shell are to be weighed without grummetts. Where this is not convenient a spare grummet of the same type is to be placed in the weight pan of the scales.

TABLE 1

TABLE OF WEIGHTS
FOR
FIELD BRANCH ARTILLERY H.E. SHELL

(In conformity with range table weights
of normal standard projectile and fuze)

CALIBRE		4.5-in. GUN STREAM- LINE	5.5-in. 100-lb.	5.5-in. 80-lb.	7.2-in. HOW.
STANDARD FUZE		117 WITH EXPLODER "B"	117 WITH EXPLODER "B"	117 WITH EXPLODER "B"	117 WITH EXPLODER "B"
UNIT OF WEIGHT		1-lb.	1-lb.	1-lb.	2-lb.
		lb. oz.	lb. oz.	lb. oz.	lb. oz.
+ 3	Above	56 12 56 4	103 8 102 8	85 8 84 8	207 — 205 —
+ 2	Above	56 4 55 12	102 8 101 8	84 8 83 8	205 — 203 —
+ 1	Above	55 12 55 4	101 8 100 8	83 8 82 8	203 — 201 —
0		55 4 54 12	100 8 99 8	82 8 81 8	201 — 199 —
- 1	Below	54 12 54 4	99 8 98 8	81 8 80 8	199 — 197 —
- 2	Below	54 4 53 12	98 8 97 8	80 8 79 8	197 — 195 —
- 3	Below	53 12 53 4	97 8 96 8	79 8 78 8	195 — 193 —

Notes:— 1. Shell whose weight is outside the range shown in this table will be marked with a "+" or "-" figure according to the number of appropriate units by which the weight is above or below the mean weight at the centre of the "O" range for the calibre, e.g:—

5.5-in. 80 lb. Shell (weight unit 1-lb.)

Filled weight 86-lb. would be + 4

Filled weight 76-lb. would be - 6.

2. The weights in any square are inclusive, the words "above" and "below" applying throughout the respective lines.

TABLE 2
TABLE OF WEIGHTS
FOR
FIELD BRANCH ARTILLERY SMOKE, FLARE AND CHEMICAL
SHELL

(In conformity with range table weights
of normal standard projectile and fuze)

CALIBRE		5.5-in. GUN COL.SMK. B.E., FLARE T.R., B.E.,		5.5-in. GUN SCREEN- ING SMK. B.E.		5.5-in. GUN CHEM., B.E., MK. 1.		5.5-in. GUN CHEM., B.E., MK. 2.		5.5-in. GUN CHEM., B.E., MKS. 3 and 4.	
		lb.	oz.	lb.	oz.	lb.	oz.	lb.	oz.	lb.	oz.
STANDARD FUZE		221		221		221		221		221	
UNIT OF WEIGHT		1-lb.		1-lb.		1-lb.		1-lb.		1-lb.	
+ 3		105	0	105	0	94	0	101	0	97	0
	Above	104	0	104	0	93	0	100	0	96	0
+ 2		104	0	104	0	93	0	100	0	96	0
	Above	103	0	103	0	92	0	99	0	95	0
+ 1		103	0	103	0	92	0	99	0	95	0
	Above	102	0	102	0	91	0	98	0	94	0
0		102	0	102	0	91	0	98	0	94	0
		101	0	101	0	90	0	97	0	93	0
- 1	Below	101	0	101	0	90	0	97	0	93	0
		100	0	100	0	89	0	96	0	92	0
- 2	Below	100	0	100	0	89	0	96	0	92	0
		99	0	99	0	88	0	95	0	91	0
- 3	Below	99	0	99	0	88	0	95	0	91	0
		98	0	98	0	87	0	94	0	90	0

Notes:— 1. Shell whose weight is outside the range shown in this table will be marked with a “+” or “-” figure according to the number of appropriate units by which the weight is above or below the mean weight at the centre of the “0” range for the calibre, e.g:—

5.5-in. Screening Smoke, B.E. (weight unit 1-lb.)

Filled weight 106-lb. 8 oz. would be + 5

Filled weight 95-lb. 8 oz. would be - 6.

2. The weights in any square are inclusive, the words “above” and “below” applying throughout the respective lines.

TABLE 3

TABLE OF WEIGHTS

FOR

COAST ARTILLERY H.E., A.P./C., S.A.P. or S.A.P./B.C. SHELL

(In conformity with range table weights
of normal standard projectile and fuze)

CALIBRE		5.25-in. GUN S.A.P.		6-in. GUN H.E., MK. 20B		6in. GUN H.E., MK. 26/20B		6-in. GUN H.E., MK. 29B		6-in. GUN S.A.P./B.C.	
STANDARD FUZE		—		45 or 45P		230		230		—	
UNIT OF WEIGHT		$\frac{1}{2}$ -lb.		$\frac{1}{2}$ -lb.		$\frac{1}{2}$ -lb.		$\frac{1}{2}$ -lb.		$\frac{1}{2}$ -lb.	
		lb.	oz.	lb.	oz.	lb.	oz.	lb.	oz.	lb.	oz.
+ 3	Above	81	12	101	0	103	12	101	12	101	12
		81	4	100	8	103	4	101	4	101	4
+ 2	Above	81	4	100	8	103	4	101	4	101	4
		80	12	100	0	102	12	100	12	100	12
+ 1	Above	80	12	100	0	102	12	100	12	100	12
		80	4	99	8	102	4	100	4	100	4
0		80	4	99	8	102	4	100	4	100	4
		79	12	99	0	101	12	99	12	99	12
— 1	Below	79	12	99	0	101	12	99	12	99	12
		79	4	98	8	101	4	99	4	99	4
— 2	Below	79	4	98	8	101	4	99	4	99	4
		78	12	98	0	100	12	98	12	98	12
— 3	Below	78	12	98	0	100	12	98	12	98	12
		78	4	97	8	100	4	98	4	98	4

Notes;— 1. Shell whose weight is outside the range shown in this table will be marked with a “+” or “—” figure according to the number of appropriate units by which the weight is above or below the mean weight at the centre of the “0” range for the calibre:—

6-in. Gun H.E. Mk. 26/20B (Weight unit $\frac{1}{2}$ -lb.)

Filled weight 105-lb. would be + 6

Filled weight 98-lb. would be — 7.

2. The weights in any square are inclusive, the words “above” and “below” applying throughout the respective lines.

TABLE 3 (Continued)

TABLE OF WEIGHTS

FOR

COAST ARTILLERY H.E., A.P./C., S.A.P. or S.A.P./B.C. SHELL

(In conformity with range table weights
of normal standard projectile and fuze)

CALIBRE		9.2-in. Gun H.E.		9.2-in. Gun A.P.C.		15-in. Gun A.P.C.	
		117 or 119		—		—	
UNIT OF WEIGHT		1-lb.		1-lb.		5-lb.	
		lb.	oz.	lb.	oz.	lb.	oz.
+ 3	Above	383	8	383	8	1955	8
		382	8	382	8	1950	8
+ 2	Above	382	8	382	8	1950	8
		381	8	381	8	1945	8
+ 1	Above	381	8	381	8	1945	8
		380	8	380	8	1940	8
0		380	8	380	8	1940	8
		379	8	379	8	1935	8
- 1	Below	379	8	379	8	1935	8
		378	8	378	8	1930	8
- 2	Below	378	8	378	8	1930	8
		377	8	377	8	1925	8
- 3	Below	377	8	377	8	1925	8
		376	8	376	8	1920	8

TABLE 4

WEIGHTS TO BE ALLOWED FOR FUZES AND COMPONENTS

Item	lb.	oz.
Fuze No. 45 or 45P	—	11
„ No. 106E (Without cap)	2	—
„ No. 117	2	8
„ No. 119	2	6
„ No. 210	2	5
„ No. 213	2	2
„ No. 221	2	2
„ No. 221B	2	—
„ No. 230 or 230P	2	5
„ No. T97	2	14
„ No. T98	2	12
„ No. T100	2	13
Cap for fuze No. 106E (To be allowed for when weighing fuzed shell)	—	3
Exploder Shell “ B ” (Must be allowed for in H.E. shell for which No. 106E or 117 is the standard fuze)	—	1
Gain No. 9	1	5
Gain No. 10	1	5

TABLE 5

WEIGHTS TO BE ALLOWED FOR ADAPTERS AND PLUGS

ITEM	DIE-CAST		METAL		STEEL		CAST-IRON	
	lb.	oz.	lb.	oz.	lb.	oz.	lb.	oz.
Adapter, 2-in. F.H., No. 2, Mk. 2			1	—	1	—	—	14
Mk. 3			1	4	1	2	1	1
Plug, F.H., 2-in. No. 1, Mk. 3			—	10				
Mk. 4							—	8
No. 13 Mk. 5							1	6
Mk. 5/1			1	10				
Mk. 5/2					1	9		
No. 15, Mk. 1					1	5		
No. 29, Mk. 1Z or 1F (Solid)	1	11					3	4
Mk. 1F (Cored)							2	3
Plug, F.H., Special No. 3, Mk. 1			—	11				

PLATE 1

SIZE OF SYMBOLS—6-in. SHELL AND ABOVE

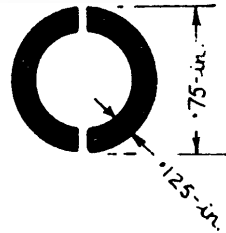
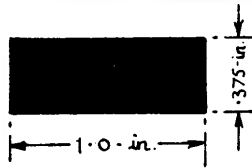
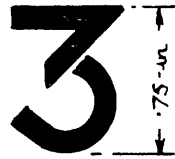
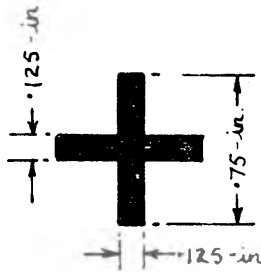


PLATE 2

POSITIONING OF SYMBOLS—6-in. SHELL AND ABOVE

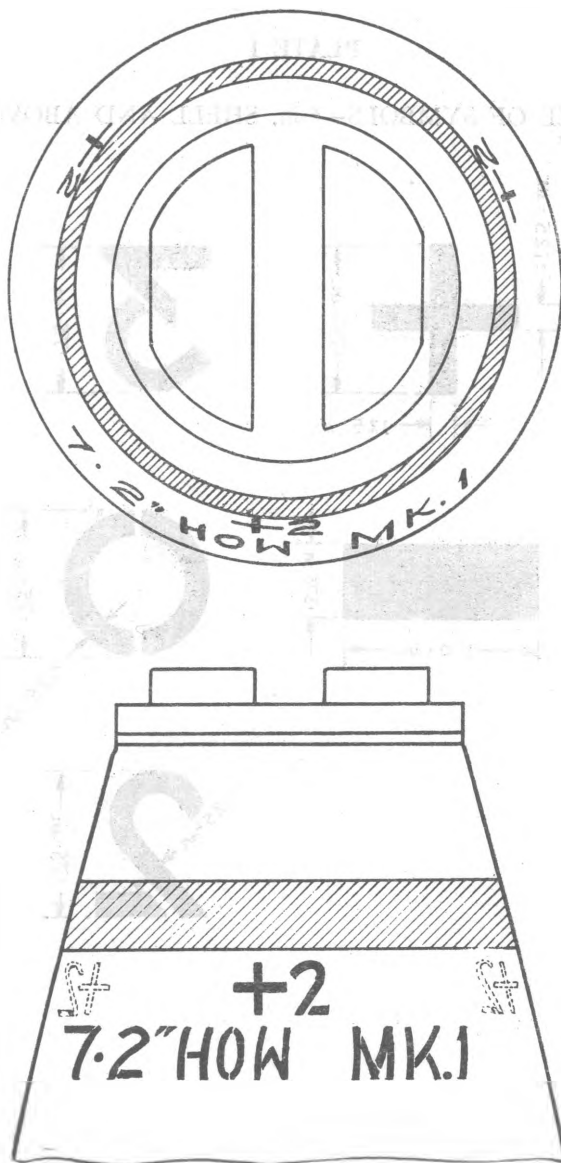


PLATE 3

SIZE OF SYMBOLS—SHELL BELOW 6-in.

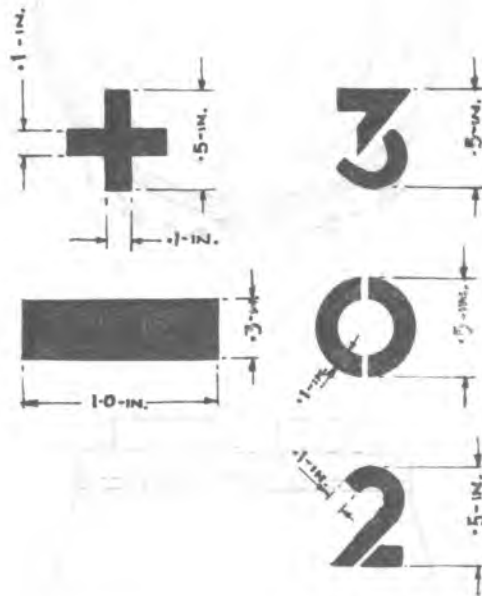
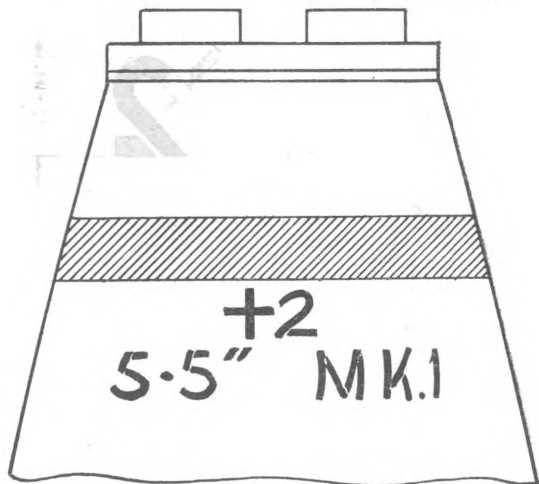
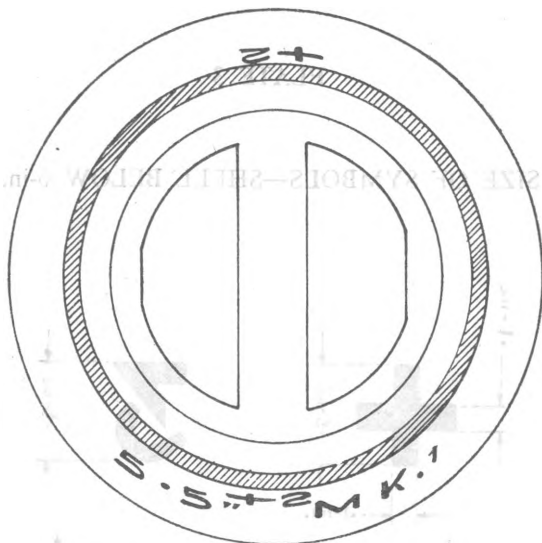


PLATE 4

POSITIONING OF SYMBOLS—SHELL BELOW 6-in.



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**REGULATIONS FOR ARMY ORDNANCE SERVICES
VOLUME 4—AMMUNITION**

**PAMPHLET No. 1
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AND MARKINGS**

AMENDMENTS No. 1

**PART 3
MARKINGS ON ARTILLERY
AND
MORTAR PROJECTILES**

By Command of the Army Council,

E. W. Playfair

**THE WAR OFFICE,
19th November, 1956**

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REGULATIONS FOR ARMY ORDNANCE SERVICES

VOLUME 4—AMMUNITION

PAMPHLET No. 1

NOMENCLATURE AND MARKINGS

AMENDMENTS No. 1

PART 3

**MARKINGS ON ARTILLERY
AND
MORTAR PROJECTILES**

PAMPHLET No. 1—NOMENCLATURE AND MARKINGS

PART 3—MARKINGS ON ARTILLERY AND MORTAR PROJECTILES

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**PART 3—MARKINGS ON ARTILLERY AND
MORTAR PROJECTILES**

SECTION 1—INTRODUCTION AND GENERAL PRINCIPLES

Introduction

1. Three methods of marking are used for projectiles. viz:—
 - (a) Stamping
 - (b) Painting
 - (c) Stencilling
2. Stamping is employed to indicate facts concerning the empty projectile and its inspection.
3. Projectiles are painted and stencilled for the following reasons:—
 - (a) To provide protection against corrosion.
 - (b) To facilitate ready identification.
 - (c) To assist technical personnel in their duties of inspection, repair, etc.
 - (d) To facilitate sorting by unskilled labour.
 - (e) To enable swift withdrawal to be made of any projectile which has proved to be faulty.

Stamping

4. Projectiles are stamped in the positions shown below:—
 - (a) Separate loading artillery projectiles:—
 - (i) Smoke and Pyrotechnic shell — on the body above the driving band.
 - (ii) Other projectiles — on the base.
 - (b) Fixed artillery projectiles:—

On the body above the driving band or on the rear part of the driving band.
 - (c) 2-in. mortar bombs:—

On the body near the nose.
 - (d) Cylindrical 3-in. and 4.2-in. mortar bombs:—

On the body between the guide bands.
 - (e) Streamlined 3-in. and 4.2-in. mortar bombs:—

On the body below the guide band.
5. Some streamlined mortar bombs may be found with the empty details embossed during casting instead of being stamped or rolled in the normal way. Where separately manufactured components (e.g. screwed baseplates for shell, tail units for mortar bombs), are fitted to the projectile they may be stamped with their own manufacturing details.

6. The following details may be stamped on the projectiles as shown. All of these details need not necessarily be present on every projectile:

(a) *Artillery projectiles*

- * $\overline{A}$ — on annealed projectiles.
Calibre.
- † Contract number.
Contractor's mark.
Date of manufacture.
- ‡ Distinguishing number.
Empty lot number.
Equipment with which projectile is used.
- § Forgemaster's code letters.
- || "I" — on cover plate of base fuze shell.
Part number.
Projectile mark and c.r.h. letter.
Steel maker's code letter and cast number.
Type of metal of which projectile is made:—
 - BS — Bar steel
 - CI — Cast iron
 - CS — Cast steel
 - FS — Forged steel
 - SS — Semi-steel
 - TS — Steel tube
- Type of projectile.

NOTES

- * Used on 6-pr. sub-calibre ammunition only.
- † For naval ammunition only.
- ‡ Used on piercing projectiles until 1942 so that details of heat treatment could be recorded.
- § Where the forgemaster is not the steelmaker.
- || Used to signify that the fuze intrusion is correct. Naval projectiles stamped "I*" have the fuze intrusion reduced.

(b) *Mortar projectiles*

- Calibre.
- Contractor's mark.
- Date of manufacture.
- Type of metal of which projectile is made:—
 - CI — Cast iron
 - CS — Cast steel
 - F7 — Ford No. 7 steel
 - MCI — Malleable cast iron.
- Type of projectile.
- Weight (3-in. mortar ammunition only).

Painting and Stencilling

7. Ammunition in the Land Service may be painted and stencilled in accordance with any of four main marking systems, these being:—

- (a) Pre-1945.
- (b) 1945 to 1948.
- (c) 1948 to 1951.
- (d) 1951 and thereafter.

8. Due to certain Royal Ordnance Factories failing to change their markings wholly or partly on the appointed dates, ammunition may be found which bears a combination of two consecutive systems. This should not, however, prevent the correct interpretation of any markings encountered on projectiles.

9. The reasons for the changes in the marking systems are as follows:—

- (a) During the 1939 to 1945 war years a multiplicity of types and natures of ammunition and explosives was introduced and the marking system then current was found to be totally inadequate.
- (b) After the 1945 to 1948 system had been in operation for some time it was found that much duplication had occurred; a revised system (1948 to 1951) was thus deemed necessary.
- (c) Progressive development of explosives brought into the service various mixtures which differed only in the proportions in which the ingredients were mixed, and as the range of coloured rings was limited it was necessary to over stencil the type of filling rings with details of the filling in the form of a code. The use of coloured rings thus became superfluous and these, together with "method of functioning rings" were abandoned in 1951. With other minor changes these formed the basis of the 1951 system.

10. Details of the first three systems in relation to artillery and mortar projectiles are given in this part. No attempt is made to illustrate the 1951 system (i.e. the current system) as this is detailed in the current pamphlet "Joint Services Ammunition and Ammunition Package Markings" (W.O. Code No. 1803).

11. Painting on projectiles takes the form of basic body colours and coloured tips, rings and strips. The differing basic body colours are used to indicate the type of projectile. Other forms of painting may show the type of projectile, its filling, method of functioning or any special features.

12. Details of the basic body colours on artillery and mortar projectiles are given in **Section 3, para. 2**. The remaining forms of painting are illustrated in **Section 2**, in combination with the appropriate basic body colours.

13. Stencilling is used to convey the necessary degree of detail of the projectile and its associated components. These details may be shown by being stencilled in full, by abbreviations, by code letters or numbers or by discs, stars or other symbols. The following details may be stencilled on projectiles but need not necessarily all be present on every projectile:—

(a) *Artillery projectiles*

- * Calibre.
- * C.r.h. letter.
- † Date of filling.
- † Design drawing number or code.
- § Exploder details.
- † Filler's monogram.
- Filled series lot number.
- || Fuze details.
- ¶ Gaine details.
- * Mark of projectile.
- Tracer markings.
- * Type of equipment.
- * Type of projectile.
- Weight markings.
- Fraction above or below the type of filling ring to indicate the H.E. mixture in the filling.
- Code letters and numbers on the type of filling ring.
- Composition number (or code letters) and colour for smoke and pyrotechnic projectiles.
- Special markings (e.g. "explodered for V.T. fuze," "smoke box," "economy driving band," etc.).

NOTES

- * May not be present in Q.F. fixed ammunition.
- † Not required for Q.F. fixed ammunition under the pre-1945 system, if shell were filled and assembled into complete rounds at the same factory within one month.
- ‡ See para. 14 of this section.
- § See para. 15 of this section.
- || See para. 16 of this section.
- ¶ See para. 17 of this section.

(b) *Mortar projectiles*

- Calibre.
- Date of filling.
- * Design drawing number or code.
- Filler's monogram.
- Filled series lot number.
- Mark of projectile.
- Type of equipment.
- Type of projectile.

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Fraction above, below or on the type of filling ring to indicate the H.E. mixture in the filling.

Code letters and numbers on the type of filling ring.
Composition number (or code letters) and colour for smoke and pyrotechnic projectiles.

NOTE

* See para. 14 of this section.

14. Additional changes in projectile markings were introduced in 1945, the major items being:—

- (a) The numerals to be used for the “mark” became arabic instead of roman, i.e. “XIII” became “Mk. 13.”
- (b) The use of the c.r.h. letter was discontinued.
- (c) The method of filling design number and the filler and date were incorporated into a “one line code” viz. L10CY646, where the filling code is L10 and the projectile was filled at **Chorley in June 1946**. The filling code number may be the same for several different designs used in different equipments, e.g.:—

Code L7 covers D2(L)501/GF/210 for 5.5-in. H.E.

D2(L)554/GF/229 for 25-pr. H.E.

D2(L)555/GF/230 for 3.7-in. H.E.

15. Exploder details

- (a) *Nose-fuzed shell*:— Up to 1936, Land Service shell fitted with T.N.T. exploders were marked with a green ring above the red filling ring but later were stencilled “EXPR TNT” with the relevant filling details. Shell fitted with C.E. exploders were stencilled “EXPR CE.” Where shell were fitted with picric powder exploders, the lot number of the picric powder was stencilled on the shell. The use of markings relating to exploders was discontinued in May 1940, but on the introduction of R.D.X./Beeswax exploders, the following stencillings were reinstated:—

(i) “EXPR CE” on shell fitted with C.E. exploders.

(ii) “EXPR R.D.X./B.W.X. 91/9” on shell fitted with R.D.X./B.W.X. exploders. (The fraction 91/9 refers to the proportions of R.D.X. and Beeswax).

Markings for T.N.T. exploders were not reinstated.

- (b) *Base-fuzed shell*:— Land Service shell do not bear any markings relating to the exploders. There are, however, certain Naval Service shell used in the Land Service bearing the following details:—

“EXPL PEL” together with the type of exploder and its lot number are stencilled on the ballistic cap of S.A.P. and A.P.C. shell.

“EXPL PELS” together with the types of exploders are stencilled above the driving band on 15-in. H.E., B.N.F. shell.

16. Fuze details

- (a) Fuze details are not shown on nose-fuzed shell in the Land Service (except for certain directions concerning the fuze to be used).
- (b) The following fuze details are shown on Land Service base-fuzed shell:—
 - (i) B.L. shell — “FZD LOT” together with the filled lot number of the fuze.
 - (ii) Q.F. shell — “FZD” together with:—
 - Serial number of fuze.
 - Date of filling of fuze.
 - Manufacturer of fuze.
 - Mark of fuze.
- (c) Naval Service shell used in the Land Service are stencilled as follows:—
 - (i) S.A.P. and A.P.C. — “FZD” together with:—
 - Filled lot number.
 - Serial number of fuze.
 - Date of filling.
 - Manufacturer of fuze.
 - Mark of fuze.

These markings are positioned on the ballistic cap and on the base of the shell.

- (ii) H.E., B.N.F. — “FZD” together with details of both fuzes are stencilled on the shoulder and on the base of the shell.

17. Gaine details

Gaine details may be found on shell although they are no longer a requirement. The letter “G” is followed by the serial number, mark and lot number of the gaine.

Red Filling Rings

18. Originally the presence of a red ring around the nose of a projectile indicated that it contained some kind of explosive substance, e.g. H.E., smoke composition, tracer composition, etc. The subsequent introduction into the service of certain high explosives, not always suitable for universal use, made necessary a marking to indicate suitability for use in various climates. It was decided that this could best be shown by varying the form of the red filling ring and eventually three variants were used. The plain red ring was restricted, in H.E. projectiles, to those suitable for temperate climates only and a ring of plain red crosses was used to indicate H.E. projectiles suitable for universal issue. A ring of alternate red crosses and dashes indicated that the use of the projectile was limited in hot climates to one year from its date of receipt. All projectiles containing any explosive substance other than H.E. were marked with a plain red ring.

19. Because of intense war-time production, large stocks of H.E. projectiles entered the service bearing a plain red ring although they

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were fit for universal issue. The following H.E. projectiles were marked with a plain red ring prior to 1945 although fit for universal issue:—

- (a) Base-fuzed projectiles.
- (b) Lyddite filled shell.
- (c) 6-pr., 10-cwt. H.E. shell filled T.N.T.
- (d) 2-pr., H.E. shell (Mks. 9A and 10A guns) filled T.N.T.
- (e) Field Branch Artillery shell with pellet exploders.
- (f) Mortar bombs.

It was clearly impracticable to restencil these shell to conform with the system described in **para. 18** and it was therefore decided in 1945 to revise the system in such a way that the minimum number of shell were affected.

20. The new system brought into use in 1945, altered the universal issue marking to a plain red ring and the temperate climates marking to a hatched red ring, the other marking remaining unaltered. This new system remained unchanged during the ensuing marking changes and is, in fact, current today.

Interpretation of Markings

21. Correct interpretation of projectile markings will be facilitated by remembering the following rules:—

- (a) Projectile bearing a design number in full will have a red filling ring in accordance with the pre-1945 system (except for those items listed in **para. 19** of this section).
- (b) Projectiles bearing a filling code number (as part of the one line code) will have a red filling ring in accordance with the new system.

Miscellaneous Markings

22. Certain markings may be found on projectiles to indicate that they have been inspected or repaired or converted. These are generally in the form of letters "INSP", "REPD" or "CONV" followed by the depot monogram and date.

23. Some artillery projectiles bear unofficial work marks applied by R.O.F., Glascoed. These are stencilled in red and consist of letters or figures inside a dotted frame and are located on the ogive. Where found these work marks will be obliterated.

Wartime Marking Concessions

24. In order to speed up ammunition production during the 1939 to 1945 war, certain relaxations in projectile markings were permitted. Projectiles may be found, therefore, in which the following markings are absent:—

- (a) *Shell*

Filler and date
Exploder details
Gaine details

- (b) *2-in. Mortar H.E. bombs*

All filling details (From 1939 to 1942 only).

SECTION 2 — MARKINGS, ILLUSTRATIONS AND SUPPLEMENTARY NOTES

Introductory Notes

1. The markings to be found on C.W. projectiles are not shown in this section. ~~They are illustrated in R.A.O.S. Volume 4 — Ammunition, Pamphlet No. 25.~~ (A4)
2. Only those projectiles and their markings still in service are illustrated. Any other markings which may have been detailed previously in other publications now have no further service significance or currency.
3. Throughout the illustrations in this section (except for **Plates 4 and 5**), a plain red ring has been used to signify the red filling ring. Any form of the red filling ring where applicable (shown in **Plate 4**) may, however, be found on projectiles in combination with any other necessary markings.
4. With the exception of red filling rings, markings are shown separately and not in combination. Any suitable combination of markings may be met in practice and some attempt has been made to indicate probable combinations in those plates showing "typical markings."
5. Individual markings are shown in combination with the appropriate basic body colour for the projectile concerned. Where the colour of the marking changes with a change in basic body colour, this is detailed in the supplementary notes.
6. It is not anticipated that projectiles will be repainted using any of the marking systems illustrated, no dimensions have, therefore, been given in this part. Dimensions for the current markings system are given in the pamphlet "Joint Services Ammunition and Ammunition Packing Markings" (W.O. Code No. 1803). Although an effort has been made to maintain a common proportion between the markings in any one figure, this has not always been possible. Neither has any common related proportion been maintained between figures or plates, since legibility of all the markings illustrated has been the primary consideration. It is, therefore, not wise to attempt any size estimation from the figures in this part by proportion.
7. Those parts of the illustrations where the colour has no markings significance are coloured champagne.
8. On some illustrations the stencilling has been enlarged and may not be contained within the projectile outline. In these instances the stencilling outside the projectile outline is superimposed on patches of the basic body colour.

PLATE 1

Notes

Note No.	Figure	Remarks
1	1 (a)	Fraction above the type of filling ring to show filling proportion, except for Amatol 80/20 where the fraction is omitted.
2	1 (b) 1 (c)	Filling code No. may be "1", "2", "3", "4", "5" or "6".
3	2 (a) 2 (b)	No type of filling ring or filling code.
4	2 (c)	No type of filling ring.
5	3 (a)	"PEN/D1" may be in black on lower green ring or in white on black ring.
6	3 (b)	Filling Code No. "2" on black ring.
7	3 (c)	"PEN/D1" in black on upper green ring.

PLATE I H.E. SHELL

PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
1. AMATOL		
2. LYDDITE		
3. PENTOLITE		

PLATE 2

Notes

Note No.	Figure	Remarks
1	1 (a)	Not applicable to this system.
2	1 (b)	Filling code No. "4" on type of filling ring.
3	1 (c)	Filling code No. "3" on type of filling ring.
4	2 (a)	"RDX/BWX" on type of filling ring.
5	2 (b)	Filling code No. "1" on type of filling ring.
6	2 (c)	Filling code No. may be "1" or "2".
7	3 (a)	Not applicable to this system.
8	3 (b)	Filling code No. "5" on type of filling ring.
9	3 (c)	Filling code No. may be "1" or "2".

PLATE 2 H.E. SHELL

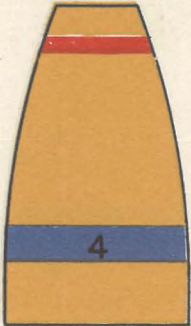
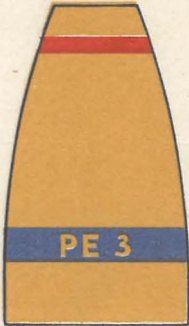
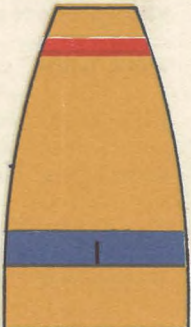
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
NOT APPLICABLE TO THIS SYSTEM		
1. PLASTIC EXPLOSIVE (P.E.)		
		
2. R.D.X./BEESWAX		
NOT APPLICABLE TO THIS SYSTEM		
3. R.D.X./ WAX/AL		

PLATE 3

Notes

Note No.	Figure	Remarks
1	1 (a)	"RDX/TNT" with fraction on type of filling ring.
2	1 (b)	Filling code No. may be "1", "2", "3", "4", "5", "6", "7", "8", "9", or "10".
3	1 (c)	Filling code No. may be "1", "2", "3", "4", "5", "6", "7" or "8".
4	2 (a)	"60/40" or "70/30" stencilled on green ogive in two places diametrically opposite.
5	2 (b) 2 (c)	Filling code No. may be "1" or "2".
6	3 (a)	"TNT" or "TROTYL" on type of filling ring.
7	3 (b)	Filling code No. may be "2" or there may be none at all. Not used on base fuzed projectiles.
8	3 (c)	Filling code No. may be "1", "2" or "3".

PLATE 3 H.E. SHELL

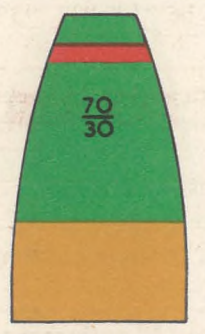
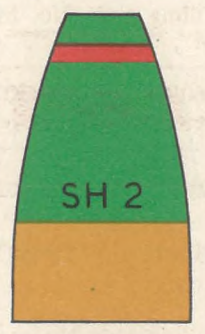
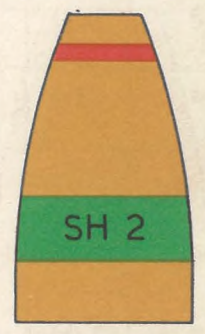
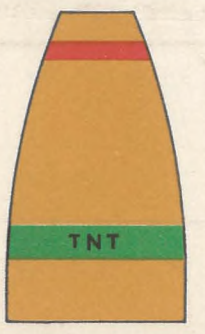
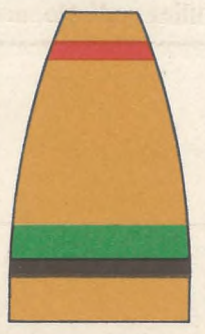
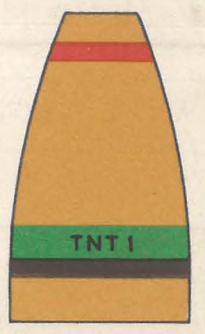
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. R.D.X./T.N.T.		
		
2. SHELLITE		
		
3. T.N.T.		

PLATE 4

Notes

Note No.	Figure	Remarks
1	1 (a)	Fraction "93/7" below type of filling ring.
2	1 (b)	Previous marking remained unaltered.
3	1 (c)	Filling code No. "1" on type of filling ring.
4	2 (a)	<i>See Sec. 1, para. 20.</i>

PLATE 4 H.E. SHELL

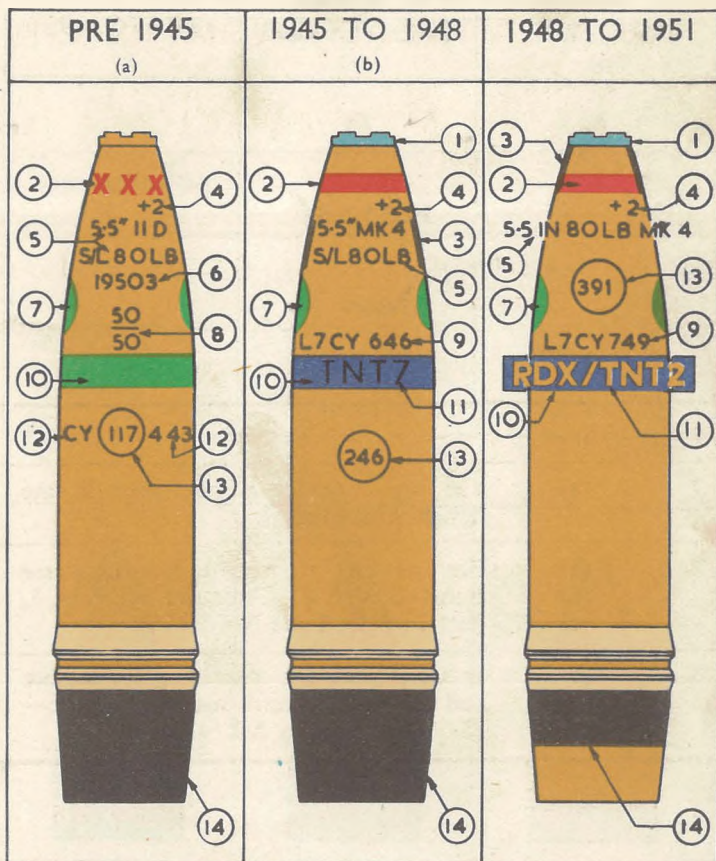
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
1. T.N.T./BEESWAX		
2. SUITABLE FOR ALL CLIMATIC CONDITIONS		
3. LIMITED LIFE IN HOT CLIMATES		
4. TEMPERATE CLIMATES ONLY		

PLATE 5

Notes

Note No.	Figure	Remarks
1	(a)	The top exploder is not fitted in the design illustrated.
2	(a) (b) (c)	} For details of weight markings <i>see</i> } R.A.O.S. Vol. 4 — Ammunition, Pam. 1, } Part 2 (W.O. Code No. 10035).
3	(c)	In Oct. 1950, the stencilling for calibre and mark of projectile was changed to:— “5.5” G HE 80-lb. Mk. 4”.

PLATE 5 H.E. SHELL



TYPICAL MARKINGS

1. FITTED TOP EXPLODER
2. RED FILLING RING
3. UNIVERSAL CAVITY
4. WEIGHT MARKING
5. CALIBRE, MARK AND WEIGHT OF PROJECTILE
6. FILLING DESIGN NO.
7. SMOKE BOX FITTED
8. FRACTION DENOTING AMATOL PROPORTION
9. ONE LINE CODE (METHOD OF FILLING)
10. TYPE OF FILLING RING
11. CODE DENOTING FILLING
12. FILLER AND DATE OF FILLING
13. FILLED SERIES LOT
14. 80 LB. SHELL

PLATE 6

Notes

Note No.	Figure	Remarks	
1	1 (a)	Red filling ring below the cap.	
2	1 (b)	Red filling ring below the cap for Land Service, on lower edge of cap for Naval Service.	
3	1 (c)	Not applicable to this system.	
4	2 (a)	Both rings below cap.	The 5-25-in. S.A.P. shell is the only one in the Land Service under that nomenclature. It is, however, capped, and is so illustrated.
5	2 (b)	Both rings on cap.	
6	2 (c)	Red filling ring on body.	
7	3 (a)	Both rings below cap.	
8	3 (b)	Both rings on cap.	
9	3 (c)	Red filling ring on body.	

PLATE 6 PIERCING H.E. SHELL

PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		NOT APPLICABLE TO THIS SYSTEM
1. C.P.B.C.		
		
2. S.A.P.		
		
3. S.A.P.B.C.		

PLATE 7

Notes

Note No.	Figure	Remarks
1	1 (a) 1 (b) 1 (c)	} Now appears only on 2-pr. Mks. 9A and 10A guns ammunition.
2	2 (a)	All rings below cap.
3	2 (b)	All rings on cap.
4	2 (c)	Red filling ring on body.

PLATE 7 PIERCING H.E. SHELL

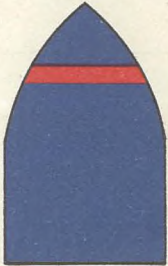
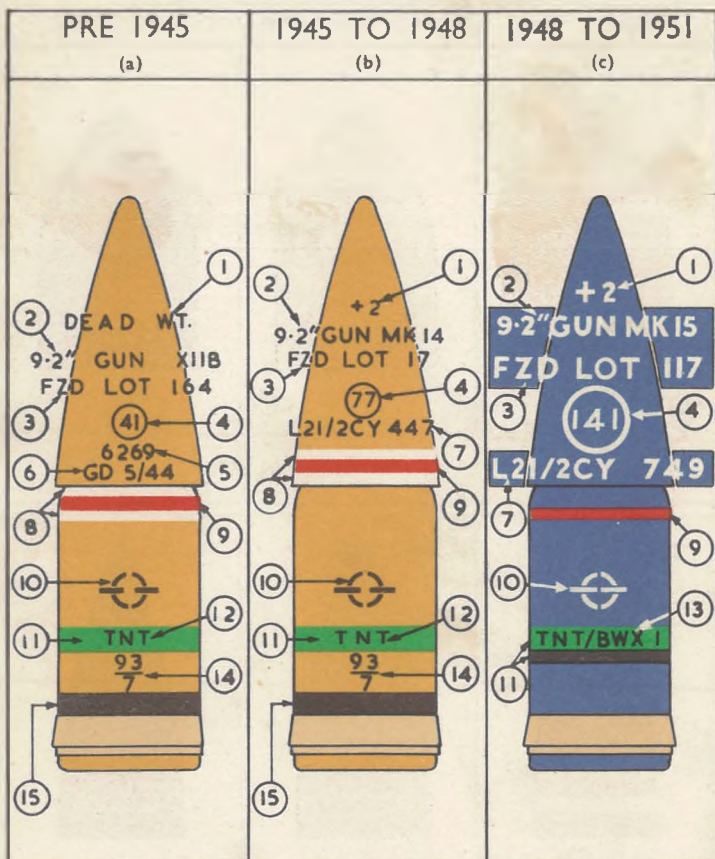
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. A.P.		
		
2. A.P. WITH CAP		

PLATE 8

Notes

Note No.	Figure	Remarks
1	(a) (b) (c)	} For details of weight markings <i>see</i> R.A.O.S. Vol. 4 — Ammunition, Pam. 1, Part 2.
2	(b)	The previous type of filling ring remained unaltered for base fuzed shell.

PLATE 8 PIERCING H.E. SHELL



TYPICAL MARKINGS

1. WEIGHT MARKING
2. CALIBRE AND MARK OF PROJECTILE
3. FUZE LOT NO.
4. FILLED SERIES LOT
5. FILLING DESIGN NO.
6. FILLER AND DATE OF FILLING
7. ONE LINE CODE (METHOD OF FILLING)
8. DENOTING A.P.
9. RED FILLING RING
10. CENTRE OF GRAVITY SYMBOL
11. TYPE OF FILLING RING
12. TYPE OF FILLING
13. CODE DENOTING FILLING
14. FRACTION DENOTING T.N.T./BEESWAX
15. GUN PROJECTILE WHERE HOWITZER OF SAME CALIBRE EXISTS

PLATE 9

Notes

Note No.	Figure	Remarks
1	1 (a) 1 (b)	{ White tip indicating piercing shot, red } filling ring denoting tracer.
2	1 (c)	Red filling ring indicating tracer. On separate shot the portion below the driving band is also painted dark blue.
3	2 (a)	White tip indicating piercing shot, red filling ring denoting tracer. All rings below cap.
4	2 (b)	White tip indicating piercing shot, red filling ring denoting tracer. All rings on cap.
5	2 (c)	Red filling ring indicating tracer. On separate shot the portion below the driving band is also painted dark blue.
6	3 (a)	White tip indicating piercing shot, red filling ring denoting tracer. All rings below cap.
7	3 (b)	White tip indicating piercing shot, red filling ring denoting tracer. All rings on cap.
8	3 (c)	Red filling ring indicating tracer. On separate shot the portion below the driving band is also painted dark blue.

PLATE 9 PIERCING SHOT

PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. A.P./T		
		
2. A.P.C./T		
		
3. A.P.C.B.C./T		

PLATE 10

Notes

Note No.	Figure	Remarks
1	1 (a) 1 (b)	} White tip indicating piercing shot, red filling ring denoting tracer.
2	1 (c)	Red filling ring denoting tracer. On separate shot, the portion below the driving band is also painted light blue.
3	2 (a) 2 (b) 2 (c)	} Red filling ring denotes tracer.
4	3 (a) 3 (b) 3 (c)	} Red filling ring denotes tracer.

PLATE 10 PIERCING SHOT

PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. S.A.P./T		
		
2. A.P.S.V./T		
		
3. A.P.D.S./T		

PLATE 11

Notes

Note No.	Figure	Remarks
1	(a) (b)	} White tip indicating piercing shot, red } filling ring denoting tracer.
2	(c)	Red filling ring denotes tracer. The portion below the driving band is painted dark blue on separate shot only.

PLATE II PIERCING SHOT

PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)

TYPICAL MARKINGS

1. DENOTING A.P.
2. RED FILLING RING
3. CALIBRE AND MARK OF PROJECTILE
4. FILLER AND DATE OF FILLING
5. FILLED SERIES LOT
6. TRACER SYMBOL
7. FILLING DESIGN NO.
8. ONE LINE CODE (METHOD OF FILLING)

PLATE 12

Notes

Note No.	Figure	Remarks
1	1 (a)	Smoke composition No. stencilled in two white rectangles diametrically opposite.
2	1 (b)	Smoke composition code letters (which may be "D", "FE" or "GE") stencilled above black ring which signifies B.E. projectile.
3	1 (c)	Smoke composition code letters (which may be "D", "FE" or "GE") stencilled on black ring which signifies B.E. projectile. Earlier production may have the code letters stencilled above the black ring.
4	2 (a)	Smoke colour may be shown either by a coloured ring or by the colour being stencilled in white. Smoke composition No. stencilled above the ring.
5	2 (b)	Smoke colour stencilled in white followed by the smoke composition code letters which may be "PA", "QA", "RA", "UA", "LK", "NK", "OK", "PK" or "RK". Black ring signifies B.E. projectile.
6	2 (c)	Smoke colour stencilled in white above black band on which are stencilled smoke composition code letters which may be "PA", "QA", "RA", "UA", "LK", "NK", "OK", "PK", "PK" or "RK". Black ring signifies B.E. projectile. Earlier production may have the code letters stencilled above the black ring.
7	3 (a)	"PHOS" stencilled in black.
8	3 (c)	"WP" may be stencilled on ring.

PLATE 12 SMOKE SHELL

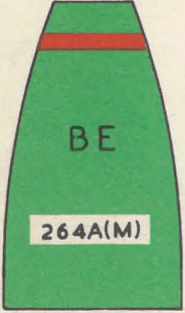
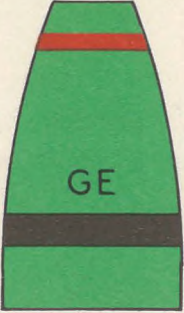
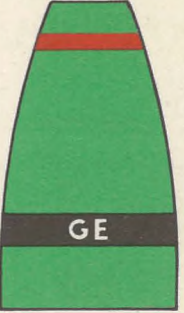
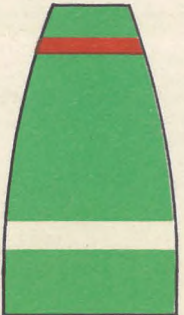
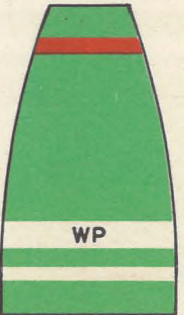
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. B.E. SCREENING		
		
2. B.E. COLOURED		
		
3. W.P. BURSTING		

PLATE 13

Notes

Note No.	Figure	Remarks
1	(a)	Alternatively the smoke colour may be stencilled in white and the coloured ring omitted.
2	(a) (b) (c)	Plugs may be found painted in the basic body colour, varnished or in natural colour.
3	(c)	Earlier production may have the code letters stencilled above the black ring.

PLATE 14

Notes

Note No.	Figure	Remarks
1	1 (a)	Flare composition No. and colour stencilled above black ring which signifies B.E. projectile.
2	1 (b)	Flare composition code letters and colour stencilled above black ring which signifies B.E. projectile.
3	1 (c)	Flare composition colour stencilled above black ring (which signifies B.E.) and composition code letters stencilled on this ring. These code letters may be "TB", "RC" or "OK" and may alternatively be above the black ring.
4	2 (a)	Incendiary composition No. stencilled in two white rectangles diametrically opposite. Black rings on either side of red filling ring denote B.E. projectile.
5	2 (b)	Incendiary composition code letters stencilled on ogive may be "CA" or "MA". Black rings on either side of red filling ring denote B.E. projectile.
6	2 (c)	Incendiary composition code letters (these may be "CA" or "MA") on black ring which denotes B.E. projectile and may alternatively be above the black ring.
7	3 (a)	Star composition No. stencilled in black on star.
8	3 (b)	Star composition code letters stencilled above star — "GA" only.
9	3 (c)	Star composition code letters ("GA" only) stencilled above star and "P" with a code No. under the star to signify the type of parachute fitted. Black ring signifies B.E. projectile.

PLATE 14 PYROTECHNIC SHELL

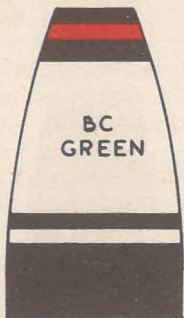
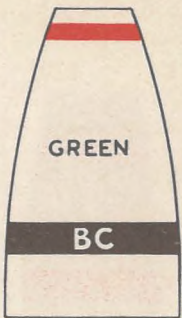
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
 SR 427 GREEN	 BC GREEN	 GREEN BC
1. FLARE T.R.B.E.		
 BE 375	 MA	 MA
2. INCENDIARY B.E.		
	 GA	 P GA
3. STAR		

PLATE 15

Notes

Note No.	Figure	Remarks
1	1 (a)	Type of inert filling stencilled on yellow ring.
	1 (b)	
	1 (c)	
2	2 (a)	White portion extends down to the driving band. Alternatively the projectile may be black with a yellow band. "RED" is then stencilled in black on the yellow band.
3	3 (a)	Yellow ring to signify practice. Aluminium disc to signify that flash-producer is fitted. Type of filling may be stencilled on the yellow ring.
	3 (b)	
	3 (c)	

PLATE 15 PRACTICE SHELL AND SHOT

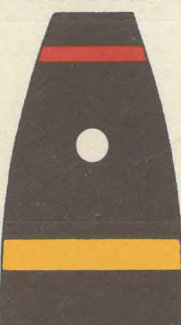
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. SHELL INERT		
		
2. REDUCED CHARGE		
		
3. SHELL FITTED WITH FLASH PRODUCER		

PLATE 16

Notes

Note No.	Figure	Remarks
1	1 (a) 1 (b) 1 (c)	40 mm. break-up shot do not bear any coloured rings, the mean design weight being stencilled around the shot in yellow.
2	2 (a) 2 (b)	"FM" may be stencilled below the yellow ring which denotes practice.
3	2 (c)	"FM" may be stencilled on the red ring. Yellow ring denotes practice.
4	3 (a) 3 (b)	Original type of filling ring partly obliterated by two black rings which reproduce the yellow practice ring.
5	3 (c)	Not applicable to this system.

PLATE 16 PRACTICE SHELL AND SHOT

PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. BREAK-UP SHOT		
		
2. SHELL, SMOKE, F.M.		
		NOT APPLICABLE TO THIS SYSTEM
3. SHELL, PRACTICE, H.E.		

PLATE 17

Notes

Note No.	Figure	Remarks
1	1 (a) 1 (b)	} White tip indicating pointed practice shot, } red filling ring denoting tracer.
2	1 (c)	Red filling ring denotes tracer.
3	2 (a)	Brown ring indicating cast iron shot. Red filling ring denotes tracer. Some shot were produced during the 1939/45 war which were incorrectly marked with a white tip.
4	2 (b) 2 (c)	} Brown ring indicating cast iron shot, red } filling ring denoting tracer.
5	3 (a)	Red filling ring denotes tracer.
6	3 (b)	When applicable, tracer symbol (<i>see Sec. 2, Plate 18</i>) is stencilled on sabot.
7	3 (c)	Red filling ring denotes tracer.

PLATE 17 PRACTICE SHELL AND SHOT

PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. SHOT, PRACTICE/T		
		
2. SHOT, PRACTICE, FLATHEADED/T		
		
3. SHOT, PRACTICE, D.S./T		

PLATE 18

Notes

Note No.	Figure	Remarks
1	1 (a) 1 (b) 1 (c) 2 (a) 2 (b) 2 (c)	Alternatively, projectiles whose basic body colour is not black may bear the tracer markings in black.
2	3 (a)	Earlier production H.E. shell may bear the tracer markings in black.
3	3 (b) 3 (c)	Not applicable to these systems.
4	4 (a)	This marking is used on 40-mm. projectiles and may, as an alternative, be in black on H.E. shell. On 2-pr. H.E. shell the marking shown in Fig. 4 (b) is used and may also be in black.
5	4 (b) 4 (c)	Alternatively this marking may be in black on H.E. shell.
6	5 (a)	This marking is used on 40-mm. projectiles and, alternatively, may be in black on H.E. shell. The time to self-destruction (in seconds) is shown in the circle. On 2-pr. H.E. shell the marking shown in Fig. 5 (b) is used with the No. of the tracer igniter under the semi-circle instead of the "T".
7	5 (b) 5 (c)	The markings illustrated are used on 40-mm. projectiles. The time to self-destruction (in seconds) is shown under the oblique strokes. On 2-pr. H.E. shell, the "T" is replaced by the serial No. of the tracer igniter. On both 2-pr. and 40-mm. H.E. shell the marking may be in black.

PLATE 18 TRACER MARKINGS

PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. PREPARED FOR TRACER		
		
2. TRACER FITTED		
	NOT APPLICABLE TO THIS SYSTEM	NOT APPLICABLE TO THIS SYSTEM
3. TRACER FUZE FITTED		
		
4. PREPARED FOR SELF-DESTROYING TRACER		
		
5. SELF-DESTROYING TRACER FITTED		

PLATE 19

Notes

Note No.	Figure	Remarks
1	1 2	This marking is used only when the shell was originally designed to incorporate a smoke composition.
2	3	Shell fitted with picric powder exploders for use with igniferous fuzes. Since all lyddite filled H.E. shell in Land Service are designed with picric powder exploders this marking is always associated with these shell.
3	4	Cast iron or semi-steel projectile is signified by a brown ring.
4	5	Use of this marking (i.e. green ring) was discontinued from 1934.
5	6	Used for field branch artillery shell only.
6	7	"A" for aluminium, "B" for bakelite and no letter for steel smoke box.
7	8	Date of filling enclosed in a black rectangle.
8	9	Symbol is stencilled at three places equally spaced around the projectile. It is stencilled in white on black or dark blue projectiles. Found on 9.2-in. projectiles only.
9	10 11	On black or dark blue projectiles the patch is white. See Sec. 3, paras. 15 to 17 for associated markings.
10	12	Stencilling is diametrically opposite to the similar body stamping. Found on 6-pr. sub-calibre only.

PLATE 19 MISCELLANEOUS MARKINGS

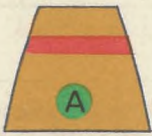
1 PRE 1945 AND 1945 TO 1948	2 1948 TO 1951	3 ALL SYSTEMS
		
ABSENCE OF SMOKE COMPOSITION		EXPLODERED READY FOR IGNIFEROUS FUZE
4 ALL SYSTEMS	5 PRE 1945	6 ALL SYSTEMS
		
CAST IRON PROJECTILE	T.N.T. EXPLODERS	TOP EXPLODER IN POSITION
7 ALL SYSTEMS	8 ALL SYSTEMS	9 ALL SYSTEMS
		
SMOKE BOX FITTED	LIFE LIMITED TO ONE YEAR FROM DATE OF FILLING	CENTRE OF GRAVITY SYMBOL
10 1945 TO 1948	11 1948 TO 1951	12 ALL SYSTEMS
		
EXPLODER CAVITY SUITABLE FOR V.T. FUZE		ANNEALED STEEL SHELL

PLATE 20

Notes

Note No.	Figure	Remarks
1	1	"LIM" stencilled on yellow band for practice ammunition, in the centre of the body for other projectiles. It is stencilled in two places diametrically opposite and on the base of the projectile.
2	4	The base of the projectile is also painted black. Now found on 5.5-in. H.E. 80-lb. shell only.
3	5	Now found on 5.5-in. H.E. 80-lb. shell only.
4	6	The marking is illustrated on an H.E. projectile. On practice projectiles the stencilling is on the yellow practice ring.
5	7	Although this marking will still be found, there is no longer any requirement for it since there are no longer any guns or howitzers of the same calibre. Found on separate loading shell only.
6	10	Two vertical stripes are painted from the driving band to the shoulder in places diametrically opposite. On black or dark blue projectiles these stripes are white.

PLATE 20 MISCELLANEOUS MARKINGS

1 PRE 1945  PROJECTILE LIMITED FOR USE WITH CERTAIN FULL CHARGES	2 PRE 1945 AND 1945 TO 1948  EMPTY H.E. SHELL USED FOR DRILL	3 PRE 1945  AMATOL SHELL FITTED WITH BRASS NOSE BUSH
4 PRE 1945 AND 1945 TO 1948  PROJECTILES OF SAME NATURE BUT DIFFERENT NOMINAL WEIGHT FROM NORMAL WHEN FIRED FROM SAME GUN	5 1948 TO 1951 	6 PRE 1945   PROJECTILES USED WITH REDUCED CHARGE AND NOT TO BE FIRED OVER CROWDED WATERWAYS
7 ALL SYSTEMS  GUN PROJECTILE WHERE HOWITZER OF SAME CALIBRE EXISTS	8 ALL SYSTEMS  CUPRO-NICKEL DRIVING BAND	11 PRE 1945 AND 1945 TO 1948 
PRE 1945  STAR SHELL SUITABLE FOR USE WITH FULL CHARGES	10 PRE 1945 AND 1945 TO 1948  ECONOMY	 H.E. SHELL WITH SEPARATE HEAD OR BASE ADAPTER RELEGATED FOR WEIGHTED PRACTICE

PLATE 21

Notes

Note No.	Figure	Remarks
1	1	These markings are found on 15-in. H.E., B.N.F. shell.
2	2	These markings are found on 15-in. A.P.C. (and A.P.C., K) shell.
3	3	Letter "S" stencilled on lower edge of cap.
4	5	The symbol is stencilled in three places equally spaced around the projectile and joined by a white line. On black or dark blue projectiles, the symbols are also white. This marking is found in the Land Service, only on 15-in. projectiles.

PLATE 21 NAVAL AMMUNITION IN LAND SERVICE

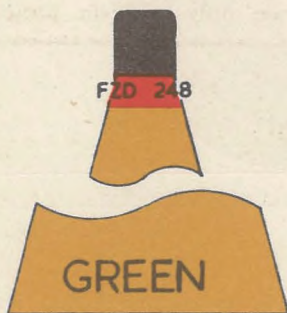


1. H.E. SHELL

1. RED FILLING RING

2. T.N.T. FILLING

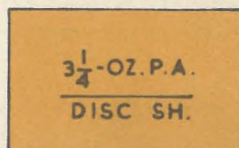
3. EXPLODER FITTED WITH
LIFTING BAND



4. SHELL A.P. WITH
CAP, K

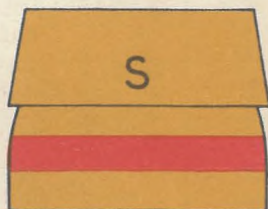
1. FUZE DETAILS FOR 'K' DEVICE

2. COLOUR OF DYE IN 'K' DEVICE



2. SHELL A.P. WITH
CAP

SHELL FITTED WITH DISCS,
ADJUSTING EXPLODER CAVITY
(SHELLITE) IN ADDITION
TO EXPLODERS



3 SHELL A.P. WITH
CAP

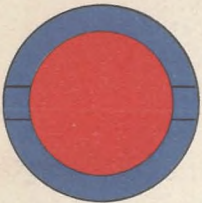
CAP ADDITIONALLY
SECURED BY
SWEATING



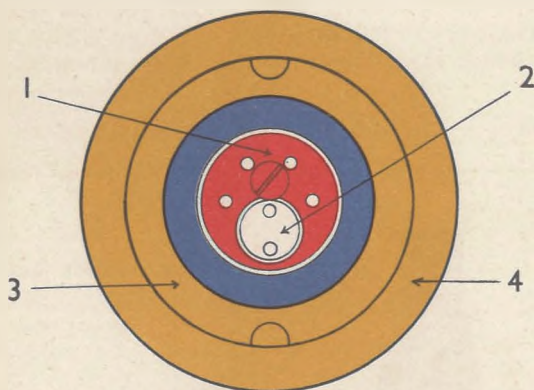
5. CENTRE OF
GRAVITY

PLATE 22 MARKINGS FOR BASE FUZED SHELL

1945 TO 1948 AND 1948 TO 1951

		
1. FUZES NO. 158A, 159, 346 & 480	2. FUZE No. 501	3. FUZE No. 551

NOTE—THE ABOVE FIGS. ARE DIAGRAMMATIC ONLY



4. VIEW OF BASE OF SHELL

1. COVER PLATE (PERFORATED) OR TRACER SHELL
2. DELAY SETTING PLUG OR NON-DELAY SET
SCREW (LEFT UNPAINTED)
3. SCREWED RING
4. BASE OF SHELL, ADAPTER, ETC. (PAINTED IN
BASIC COLOUR APPROPRIATE TO SHELL)

PLATE 22

Notes

Note No.	Figure	Remarks
1	1	All shell now fitted with these fuzes are, in the Land Service, closed with a base cover plate giving optional delay. No markings are therefore shown for shell fitted with fixed delay or non-delay fuzes.
2	2 3	} These are non-delay fuzes.

PLATE 23

Notes

Note No.	Figure	Remarks
1	1 (a)	Fraction may be in white below the green band. No fraction is used for Amadol 80/20.
2	1 (b) 1 (c)	} Filling code No. may be "2" or "6".
3	2 (b) 2 (c)	} Filling code No. "2" only.
4	3 (b)	Old type of filling ring remained unchanged.
5	3 (c)	Not applicable to this system.

PLATE 23 H.E. BOMBS—2 IN. MORTAR

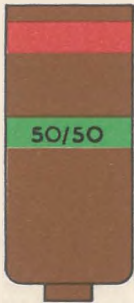
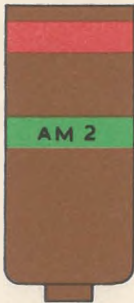
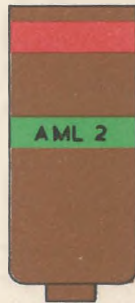
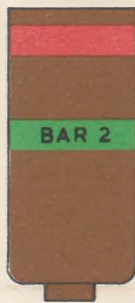
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. AMATOL		
		
2. BARATOL		
		NOT APPLICABLE TO THIS SYSTEM
3. T.N.T.		

PLATE 24

Notes

Note No.	Figure	Remarks
1	1 (a)	A small quantity of training bombs were produced which were painted white.
2	1 (c)	"WP" may be stencilled on white ring.
3	2 (b)	Smoke composition code letters may be "FE" "JE" or "M", and are stencilled above lower red ring which signifies base emission.
4	2 (c)	Smoke composition code letters may be "FE" "JE" or "M" and may be stencilled above lower red ring which signifies smoke emission.
5	3 (a) 3 (b)	} Top cap of bomb is embossed with letter } "P"
6	3 (c)	Top cap of bomb is embossed with letter "P". Filling code letters may be "JB" or "OA".

PLATE 24 SMOKE AND ILLUMINATING BOMBS—2 IN. MORTAR

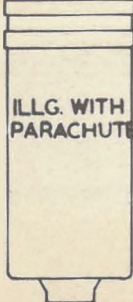
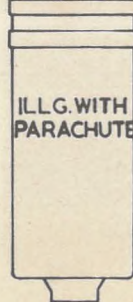
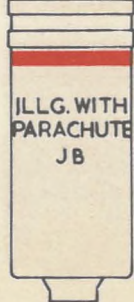
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. SMOKE, BURSTING W.P.		
		
2. SMOKE EMISSION		
		
3. ILLUMINATING WITH PARACHUTE		

PLATE 25

Notes

Note No.	Figure	Remarks
1	1 (a)	No fraction is used for Amatol 80/20.
2	1 (b) 1 (c)	} Filling code No. may be "2", "3", "4" } or "6".
3	2 (b)	Old type of filling ring remained unchanged.
4	2 (c)	Filling code No. may be "1" or "2".
5	3 (c)	"WP" may be stencilled on type of filling ring.

PLATE 25
H.E. AND SMOKE BOMBS—3 IN. AND
4.2 IN. MORTAR

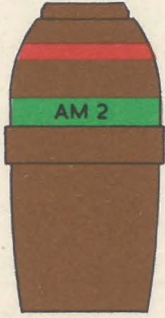
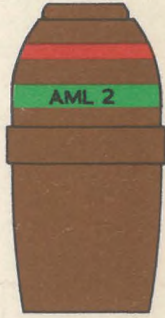
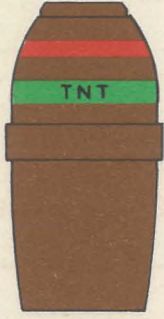
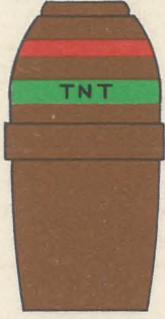
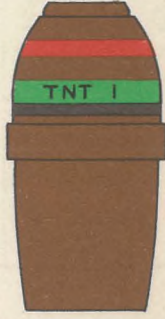
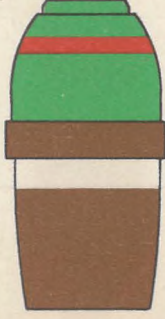
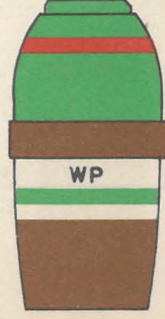
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. AMATOL		
		
2. T.N.T.		
		
3. SMOKE, BURSTING W.P.		

PLATE 26

Notes

Note No.	Figure	Remarks
1	1 (a)	Instead of red and white rings bombs may be found bearing a yellow ring above the guide band. The letters "FM" or "TTC" are then stencilled on the body below the guide band.
2	1 (c)	"FM" may be stencilled on type of filling ring.
3	2 (c)	"CSAM" may be stencilled on type of filling ring.
4	3 (c)	"WP" may be stencilled on type of filling ring.

PLATE 26
SMOKE BOMBS—3 IN. AND 4.2 IN. MORTAR

PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. SMOKE, BURSTING F.M.		
		
2. SMOKE, BURSTING C.S.A.M.		
		
3. SMOKE, BURSTING W.P. (CYLINDRICAL)		

PLATE 27

Notes

Note No.	Figure	Remarks
1	1 (b)	Smoke composition code letters "GE" only.
2	1 (c)	Smoke composition code letters "GE" only and may be above black ring.
3	2 (b)	Smoke composition code letters may be "PA", "QA", "RA", "UA", "LK", "NK", "OK", "PK", "QK" or "RK".
4	2 (c)	Smoke composition code letters may be "PA", "QA", "RA", "UA", "LK", "NK", "OK", "PK", "QK" or "RK" and may be above black ring.
5	3 (a)	Not applicable to this system.
6	3 (b)	Filling code letters may be "HK", "SK", "TK", "UK", "VK" or "XK".
7	3 (c)	Smoke composition code letters may be "HK", "SK", "TK", "UK", "VK" or "XK" and may be above black ring.

PLATE 27 SMOKE BOMBS—3 IN. AND 4.2 IN. MORTAR

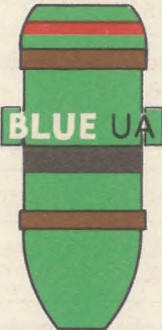
PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. SMOKE B.E. SCREENING		
		
2. SMOKE B.E. COLOURED		
NOT APPLICABLE TO THIS SYSTEM		
3. SMOKE B.E. SKYTRAIL		

PLATE 28

Notes

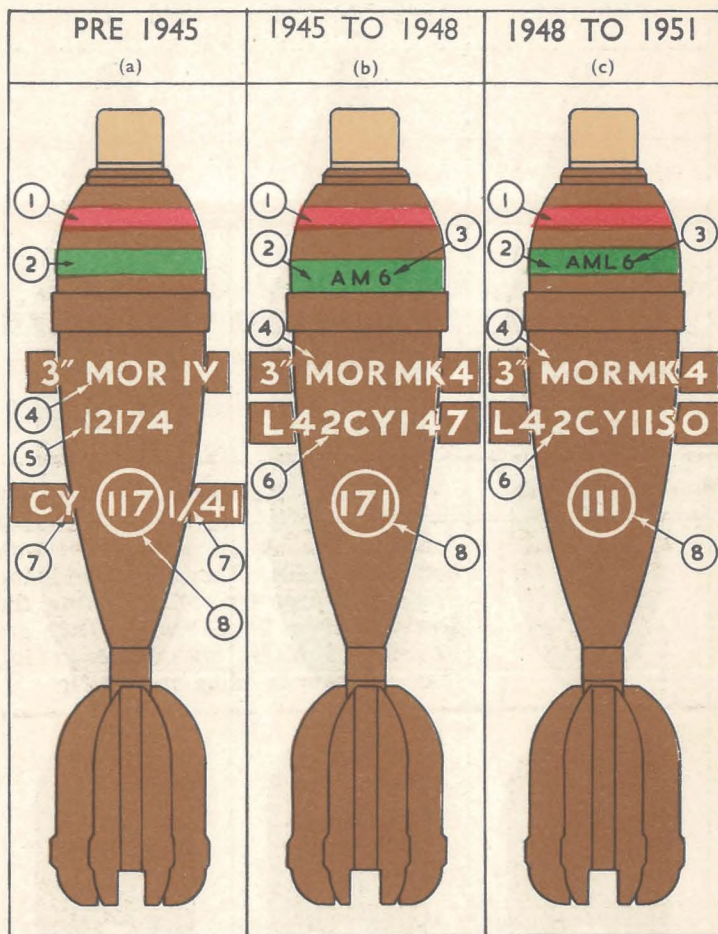
Note No.	Figure	Remarks
1	1 (b) 1 (c)	} Smoke composition code letters "GE" only.
2	2 (a) 2 (b)	} Not applicable to this system.
3	2 (c)	Below the zigzag ring two white hair lines are painted around the bomb body to indicate, between them, the black B.E. ring.

PLATE 29

Notes

Note No.	Figure	Remarks
1	1 (a)	American bombs are painted buff with buff painted tails. They bear a red filling ring and a green type of filling ring, the nose container being black. They are stencilled "3" MOR" with the design No., filler and date of filling and lot No.

PLATE 29 H.E. BOMBS—3 IN. AND 4.2 IN. MORTAR



TYPICAL MARKINGS

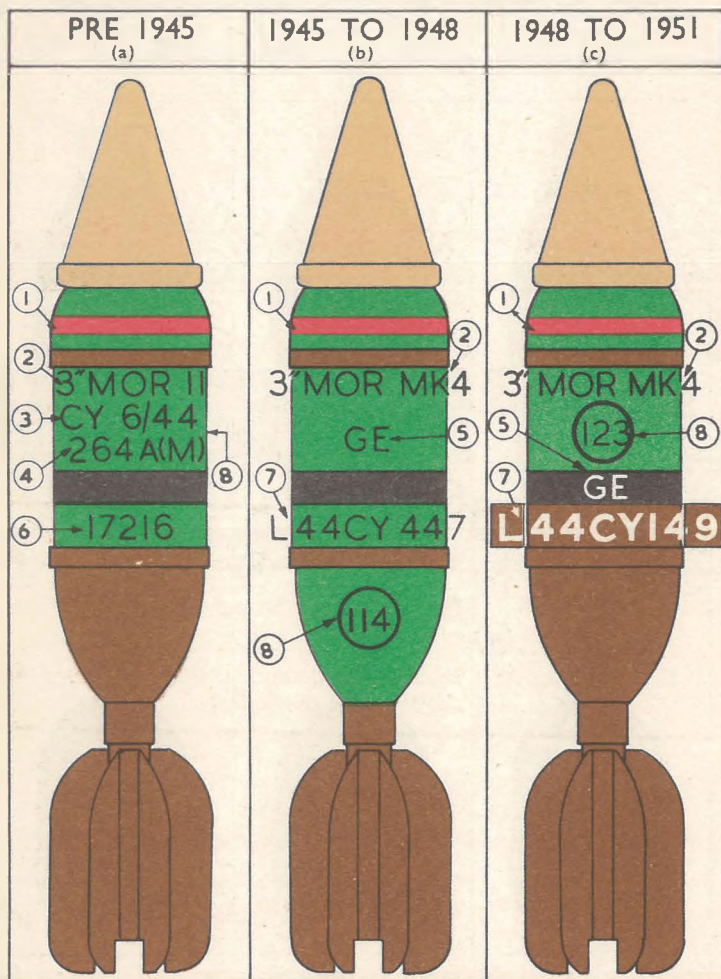
1. RED FILLING RING
2. TYPE OF FILLING RING
3. CODE DENOTING FILLING
4. CALIBRE AND MARK OF BOMB
5. FILLING DESIGN NO.
6. ONE LINE CODE (METHOD OF FILLING)
7. FILLER AND DATE OF FILLING
8. FILLED SERIES LOT

PLATE 30

Notes

Note No.	Figure	Remarks
1	1 (b) 1 (c)	} The bomb may bear a part No.
2	1 (c)	Smoke composition code No. may be above or on black ring.

PLATE 30 SMOKE BOMBS—3 IN. AND 4.2 IN. MORTAR



TYPICAL MARKINGS

1. RED FILLING RING
2. CALIBRE AND MARK OF BOMB
3. FILLER AND DATE OF FILLING
4. SMOKE COMPOSITION NO.
5. CODE DENOTING FILLING
6. FILLING DESIGN NO.
7. ONE LINE CODE (METHOD OF FILLING)
8. FILLED SERIES LOT (ON REVERSE OF BOMB FOR PRE 1945 SYSTEM)

PLATE 31

Notes

Note No.	Figure	Remarks
1	1 (a) 1 (b) 1 (c)	The bomb will bear a red filling ring when it is fitted with a live cartridge.
2	2 (a)	The bomb body is painted white. The bomb will bear a red filling ring when it is fitted with a live cartridge.
3	2 (b) 2 (c)	The bomb will bear a red filling ring when it is fitted with a live cartridge.
4	3	The yellow ring may be found above the guide band. The bomb will bear a red filling ring when it is fitted with a live cartridge.
5	4	The bomb will bear a red filling ring when it is fitted with a live cartridge.

PLATE 31 PRACTICE BOMBS—2 IN., 3 IN. AND 4.2 IN. MORTAR

PRE 1945 (a)	1945 TO 1948 (b)	1948 TO 1951 (c)
		
1. 2 IN. MORTAR MK. 1		
		
2. 2 IN. MORTAR MK. 2		
		
3 PRE 1945 AND 1945 TO 1948	4 1948 TO 1951	5 4.2 IN. MORTAR

SECTION 3—GENERAL NOTES AND TABLES

Introduction

1. The notes in this section are required to assist in the correct interpretation of the markings illustrated in **Section 2** of this part. They are, in the main, explanatory but some are additional to those in **Section 2** and have not been illustrated therein. They should be read in conjunction with **Sections 1 and 2** of this part and are in no way a self-contained solution to the marking problem.

Basic Body Colours

2. Basic body colours are employed on artillery and mortar projectiles to indicate their type. These colours remained unaltered during the pre-1945 and 1945 to 1948 systems but certain changes were made under the 1948 to 1951 system as follows:—

Type of projectile	Pre-1945 and 1945 to 1948	1948 to 1951
Flare	Black	White
*H.E.	Buff	Buff
H.E., A.P.	Buff	Dark blue
H.E., S.A.P.	Buff	Light blue
Illuminating	Unpainted	White
Incendiary	Dull red	Dull red
Practice	Black	Black
Radar echo	—	Black
Shot	Black	Black
Smoke	Green	Green
Star	Black	White

* For all H.E. mortar bombs, the varnish is considered as the basic body colour.

Coloured Rings

3. Coloured rings around the body of the projectile are used to show:—

- (a) The type of filling.
- (b) The method of functioning

4. *Type of filling rings* are illustrated in the plates in **Section 2** of this part.

5. *Functioning rings* are applied over the basic body colour and are in addition to the type of filling ring. They are used to indicate the

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method of functioning of carrier type smoke and pyrotechnic projectiles and the colours used are as follows:—

- White ring — Bursting
- Black ring — Base ejection
- Red ring — Emission

The use of these rings is illustrated in **Section 2, Plates 12, 13, 14, 24, 25, 26, 27, 28 and 30.**

6. *Combination rings* are used under the 1948 to 1951 system to indicate a combination of the type of filling and the method of functioning. **Section 2, Plates, 12, 13, 16, 24, 25 and 28** illustrate combination rings.

Coloured Tips

7. In the early part of the pre-1945 system, a white tip was used to indicate practice shot (other than flatheaded) and was later extended to indicate piercing shot. The use of this white tip was continued under the 1945 to 1948 system. It is illustrated in **Section 2, Plates 9, 10, 11 and 17.**

8. With the introduction of the 1948 to 1951 system, practice shot were no longer indicated by a white tip, but the piercing quality of armour piercing shot was denoted by a coloured tip as follows:—

- Dark blue — A.P.
- Light blue — S.A.P.

9. On separate-loading piercing shot the portion below the driving band is painted in the same colour as the tip. Shot with coloured tips are illustrated in **Section 2, Plates 9, 10 and 11.**

Colours of Letters and Figures

10. Letters and figures on projectiles are stencilled in the following colours:—

(a) Pre-1945

- Black or varnished surfaces — white
- Other coloured surfaces — black

(b) 1945 to 1948

- Black or varnished surfaces — white
- Other coloured surfaces — black

(c) 1948 to 1951

- Dark surfaces — red or white
- Varnished surfaces — white
- Other coloured surfaces — black

11. Exceptions to the above rules are:—

- (a) All systems — The colour of smoke produced by the projectile is stencilled in white (*see Section 2, Plates 12, 13, 27 and 30*).

- (b) 1945 to 1948 and 1948 to 1951 — on dark or varnished surfaces yellow may be used as an alternative to white.
- (c) 1945 to 1948 and 1948 to 1951 — on dark type of filling rings the buff basic colour may be permitted to show through as an alternative to black stencilling (see Section 2, Plates 2, 3 and 5).

Tracer Markings

12. Where the red filling ring is used to indicate the presence of a tracer, (see Section 2, Plates 9, 10, 11 and 17), it is also accompanied by the appropriate tracer symbol stencilled on the projectile body (see Section 2, Plate 18).

Fuze Markings

13. *Base fuze markings.* Prior to 1945, when shells were fitted with optional delay fuzes the base cover plate (except for the delay setting plug or non-delay set screw) was painted red.

14. *Projectiles designed for use with specific fuzes.* When a projectile which is issued plugged can be used with one type of fuze only, the following details are stencilled:—

“USE NO...*.FUZE”

(The number of the appropriate fuze to be used is inserted here *)

15. *Universal cavity projectiles.* Where projectiles bear the universal cavity marking (see Section 2, Plates 5 and 19) other markings on the projectile must be consulted to obtain the complete picture.

16. On field branch artillery projectiles, the presence of a blue painted plug together with the universal cavity marking indicates that the projectile is suitable for use with either V.T. or normal type fuzes, without additional exploding. If the projectile is not fitted with a blue painted plug it will bear a stencilled instruction such as:—

“PLUGGED FOR T...*.FUZE”

(* Here the fuze to be used is inserted).

In this case only, a V.T. fuze can be used with the projectile and additional exploding is necessary to permit the use of a normal fuze.

17. Since blue painted plugs are not used with A.A. projectiles, study of the stencilled instructions is necessary to reveal the use to which the projectile may be put. If there are no instructions, or if the instruction “OPT T...*.FUZE” is present (here again the fuze to be used is inserted at *), the projectiles can be used with either V.T. or ordinary fuzes without additional exploding. Where the following instructions are stencilled on the projectile, it can only be used with V.T. fuzes without additional exploding:—

“PLUGGED FOR T...*.FUZE” or

“USE T...*.FUZE”

(The fuze to be used is inserted at *).

Painting of Plugs

18. Plugs fitted into projectiles may be either varnished or painted to the basic body colour of the projectile. The only exception to this rule is the use of a plug painted light blue to indicate the presence of a top exploder (*see* **Section 2, Plate 19**).

Tail Markings on Mortar Projectiles

19. From time to time markings have been used on the fins of mortar tail units; details of those which may be found are as follows. These markings are not illustrated.

- (a) 2-in. mortar — One fin is painted red on tail units made of mazak. This marking was introduced to facilitate identification between these tails and those made of aluminium.
- (b) 3-in. mortar — One fin on the No. 12 tail unit may be painted green and one on the No. 13 tail unit may be painted blue. These markings have no service significance.
- (c) 4.2-in. mortar — Where one fin is painted red the significance is that the central tube is made of normalised steel and the fins are slotted.
- (d) 4.2-in. mortar — Sub-standard bombs have a dab of red paint applied on the tail adapter.

Filling Codes and Design Numbers

20. Details of the code numbers for H.E. fillings are given in **Table 1** of this section and the code letters used with smoke and pyrotechnic projectiles are given in **Table 2**. These code letters and numbers were introduced under the 1945 to 1948 system and continued in use during the 1948 to 1951 system. The positions in which they are applied to projectiles are shown in the relevant plates in **Section 2** of this part.

21. Smoke bursting projectiles may be found which bear two method of filling design numbers or one method of filling design number and a one line code. In this case the details nearest to the fuze relate to the head filling and those nearest to the tail are in respect of the body charging.

TABLE 1

**Interpretation of Code Nos. to be found on type of filling rings on
H.E. projectiles**

H.E. Filling			Code No.	
Type	Proportion		1945 to 1948	1948 to 1951
Amatol	40% Am. Nit. 60% T.N.T. (40/60)		1	1
	50% Am. Nit. 50% T.N.T. (50/50)		2	2
	60% Am. Nit. 40% T.N.T. (60/40)		3	3
	70% Am. Nit. 30% T.N.T. (70/30)		4	4
	72% Am. Nit. 28% T.N.T. (72/28)		5	5
	80% Am. Nit. 20% T.N.T. (80/20)		6	6
Baratol	20% Bar. Nit. 80% T.N.T. (20/80)		2	2
Pentolite	46% P.E.T.N. 46% T.N.T. 8% Desensitiser (PEN/D1)		2	PEN/D1
P.E. (P.E.3)	87.7% R.D.X. 10.5% Shell mex oil 0.6% Lecithin 1.2% Carbon black		4	3
R.D.X./BW X	91% R.D.X. 9% Beeswax (91/9)		1	—
	91% R.D.X. (Grade 1) 9% Beeswax (91/9)		—	1
	91% R.D.X. (Grade 2) 9% Beeswax (91/9)		—	2
R.D.X./T.N.T.	55% R.D.X. (Grade 1) 45% T.N.T. (Grade 1 or 2) (55/45)		1	—
	60% R.D.X. (Grade 1) 40% T.N.T. (Grade 1 or 2) (60/40)		2	—
	50% R.D.X. (Grade 1) 50% T.N.T. (Grade 1 or 2) (50/50)		3	—
	40% R.D.X. (Grade 1) 60% T.N.T. (Grade 1 or 2) (40/60)		4	—
	55% R.D.X. (Grade 2) 45% T.N.T. (Grade 1 or 2) (55/45)		5	—
	60% R.D.X. (Grade 2) 40% T.N.T. (Grade 1 or 2) (60/40)		6	—
	55% R.D.X.(B)(Grade 1) 45% T.N.T. (Grade 1 or 2) (55/45)		7	—

TABLE 1 (continued)

H.E. Filling		Code No.	
Type	Proportion	1945 to 1948	1948 to 1951
R.D.X./T.N.T. (Continued)	55% R.D.X.(B)(Grade 2) 45% T.N.T. (Grade 1 or 2) (55/45)	8	—
	60% R.D.X.(B)(Grade 1) 40% T.N.T. (Grade 1 or 2) (60/40)	9	—
	60% R.D.X.(B)(Grade 2) 40% T.N.T. (Grade 1 or 2) (60/40)	10	—
	60% R.D.X. (Grade 1 or 1A) or R.D.X.(B) (Grade 1 or 1A) 40% T.N.T. (60/40)	—	1
	60% R.D.X. (Grade 2) or R.D.X.(B) (Grade 2) 40% T.N.T. (60/40)	—	2
	55% R.D.X. (Grade 1 or 1A) or R.D.X.(B) (Grade 1 or 1A) 45% T.N.T. (55/45)	—	3
	55% R.D.X. (Grade 2) or R.D.X.(B) (Grade 2) 45% T.N.T. (55/45)	—	4
	50% R.D.X. (Grade 1 or 1A) or R.D.X.(B) (Grade 1 or 1A) 50% T.N.T. (50/50)	—	5
	50% R.D.X. (Grade 2) or R.D.X.(B) (Grade 2) 50% T.N.T. (50/50)	—	6
	40% R.D.X. (Grade 1 or 1A) or R.D.X.(B) (Grade 1 or 1A) 60% T.N.T. (40/60)	—	7
	40% R.D.X. (Grade 2) or R.D.X.(B) (Grade 2) 60% T.N.T. (40/60)	—	8
R.D.X./WAX/AL	67.5% R.D.X. 12.5% Paraffin wax 20% Aluminium (67.5/12.5/20)	5	1
	68% R.D.X. 12% Paraffin wax 20% Aluminium (68/12/20)		2
Shellite	60% Picric Acid 40% D.N.P. (60/40)	1	1
	70% Picric Acid 30% D.N.P. (70/30)	2	2
T.N.T.	Grade 1	—	1
	Grade 2	—	2
	Contaminated with up to 1% R.D.X.	2	3
T.N.T./BWx	93% T.N.T. 7% Beeswax (93/7)	—	1

Abbreviations:— Am. Nit. — Ammonium Nitrate. Bar. Nit. — Barium Nitrate.
D.N.P. — Dinitrophenol. P.E.T.N. — Pentaerythritol-tetranitrate.

TABLE 2

Interpretation of Code Nos. to be found on Flare, Incendiary, Smoke and Star Projectiles marked under the 1945 to 1948 and 1948 to 1951 systems

Composition	Code	Type of filling	Composition	Code	Type of filling
PN 83(M)	JE	Smoke	PN 509	UK	Skytrail
PN 303	M	Smoke	PN 646	HK	Skytrail
PN 407	UA	Coloured smoke	PN 726	SK	Skytrail
PN 431A	QA	Coloured smoke	SR 237	TB	Flare
PN 435	RA	Coloured smoke	SR 264A	D	Smoke
PN 443	PA	Coloured smoke	SR 264A(M)	GE	Smoke
PN 470	LK	Coloured smoke	SR 269(M)	FE	Smoke
PN 471	NK	Coloured smoke	SR 306	CA	Incendiary
PN 472	OK	Coloured smoke	SR 375	MA	Incendiary
PN 474	PK	Coloured smoke	SR 427	BC	Flare
PN 490	QK	Coloured smoke	SR 562	OA	Illuminating
PN 491	RK	Coloured smoke	SR 563	GA	Star
PN 493	VK	Skytrail	SR 565	JB	Illuminating
PN 507	XK	Skytrail	SR 582	RC	Flare
PN 508	TK	Skytrail			

RESTRICTED