

**THIS LEAFLET MUST NOT
FALL INTO ENEMY HANDS**

D. OF A. (INDIA)

JAPANESE AMMUNITION LEAFLETS

SECTION G

LEAFLET G 1

INTRODUCTION

There is very little information available on pyrotechnic stores, in spite of the fact that the Japanese make much use of such signals. One reason for the very meagre information is that only small quantities have been captured; this is possibly because little importance is attached to this branch of ammunition in view of its comparatively non-destructive nature. Nevertheless all pyrotechnics are a potential fire hazard and must be treated as such.

2. This Section is intended to cover Army pyrotechnic stores not included under other headings; for instance 50-mm. flares which are fired from the Type '89 Grenade Discharger are discussed in Leaflet D. 8. Readers are therefore advised, if the item they are looking for is not in this Section, to look for it in another. The following division of this Section has been arranged provisionally and J.A.Ls. will be issued as below :—

- G 1 — Introduction.
- G 2 — Rocket, Signal, Modification I.
- G 3 — 35-mm. Signal Cartridge.
- G 4 — Ground flares.
- G 5 — Type '93 4-cm. Signal flare.
- G 6 — Type 100 Self-Projecting illuminating flare.
- G 7 — Reserved.

STANDARDIZATION AND TYPES

3. Although much Japanese ammunition is characterised by a lack of standardization, there is, however, a good measure of standardization in pyrotechnic stores. The flares and signal cartridges are of conventional design and do not show any originality.

Flares :—The 50-mm. flares fired from the Type '89 discharger appear to be the most widely used and might be regarded as the standard flare, on the design of which all other types are based.

Signal Cartridges :—Only two calibres of signal cartridges are known to exist, 25-mm. and 35-mm. They are similar in details of construction etc. Two samples of 35-mm. signal cartridge were examined at Kirkee in 1944, the 35-mm. yellow dragon with parachute and the 35-mm. three red star. They are believed to be fired from the 10 year Type 35-mm. Pyrotechnic Pistol, and are mainly used by aircraft personnel. Further details of this cartridge will be given in Leaflet G. 3. The 25-mm. cartridge will be discussed in a subsequent paragraph.

4. In addition to the items detailed above, other types of flares and signal cartridges are known to have been used by the Japanese, but in view of the very scanty information available, they have not been allotted separate Sections. These will be briefly discussed here.

- (i) **25-mm. Signal Cartridges.** Five different types of Signal Cartridges have been reported from Australian sources, three for daylight signalling giving black, white or yellow smokes and two for either day or night with red or green flares respectively. The cartridges are fired from the Type '94 Very Pistol, Type '97 Signal Pistol and the Type '97 Triple barrel Pistol. In design and, construction the cartridges follow the normal British Service pattern and except for a wooden block at the mouth of the case, have no unusual features.

The calibre 25-mm. is not strictly correct as the bore diameter is reported to be 26.5. However, it is convenient to refer to these as 1" or 25-mm. cartridges.

- (ii) **Parachute Signal Ball** :—This has only recently been reported from American sources, and is believed to have been used by the Japanese in Okinawa. The signal ball is a cardboard sphere of $4\frac{1}{2}$ inches diameter covered by green paper. It contains a piece of safety fuze, a small bursting charge, sand ballast, and a red or white paper parachute. This parachute, with a small paper package of sand attached to the base of its shrouds, is protected from the force of the explosive charge by paper wadding. A cord 2 feet long, is secured to the sphere diametrically opposite the fuze. Presumably the purpose of this cord is to facilitate lowering of the ball into a tube or barrel with the fuze pointing downwards.

A bag containing $\frac{3}{4}$ -ozs. of propellant charge and a length of safety fuze are provided with each signal ball but the weapon from which the signal is discharged is not yet known. It has been reported, however, that sheet metal cylinders about 4 feet long and closed at one end have been found near the store of signal balls. A small hole in the closed end provided access for a fuze. The manner in which the ball is discharged will be easy to follow.

- (iii) **Signalling Shell** :—This shell was very recently recovered by American Units in Ie shima. In shape it resembles an electric light bulb, weighs 6 ozs. and is made in two pieces. The lower portion is made of a thin sheet of brass which is formed into an inverted truncated cone, and soldered longitudinally. There is a percussion cap at the narrow end. Above the cap is a small amount of propellant and around the circumference of the base are nine gas ports. The top of the shell is a hollow sphere of compressed paper $2\frac{1}{2}$ inches in diameter which contains the main charge. The sphere is pressed into the open end of the inverted cone, and is secured in position by a gummed paper strip. A piece of safety fuze is attached to the sphere and connects it to the propellant charge.

The main charge, 2-ozs. in weight, occupies more than half the sphere and is made of a number of small irregular pieces of powder, and a finer granulated black powder. Above this is a paper containing $1\frac{1}{2}$ ozs. of iron filings. Separating the iron filings and the main charge is a thin layer of cotton seed hulls. A thin red paper is pasted over the cardboard sphere and a black paper covers the brass cone. A label pasted on the side of the shell gives the date and place of manufacture. The method of discharge of this shell is not known but presumably it is fired from a metal cylinder, in the same way as the parachute signal ball.

5. A number of Air and Naval flares are also used by the Japanese but they do not fall within the scope of this Section. No sketches or tabular charts have been included in this Introduction, as it is hoped to issue the detailed leaflets shortly. Section G7 has been kept in reserve, in case it is desired to issue a leaflet on some other pyrotechnic store at a later date.

HANDLING AND TRANSPORT

(Of captured ammunition by Ordnance)

Pyrotechnic stores, being generally regarded as fireworks, and not usually having an H.E. filling, are often neglected, although in handling and transport, reasonable care must be exercised as they too are live stores and may contain a large amount of explosive charge. All pyrotechnics are a potential fire hazard and must be treated with care. In fact, some explode quite violently if they are fired after being subjected to adverse storage conditions or if they burn in a confined space.

If misfired or unserviceable flares or signal cartridges are found, no immediate danger is envisaged but it is advisable that these should be disposed of by burning or by dumping in deep water. The procedure laid down in R.A.O.S. Part 8 Pamphlet No. 12 should be followed.

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**D. OF A. (INDIA)
JAPANESE AMMUNITION LEAFLETS**

**SECTION G
LEAFLET G 2**

ROCKET, SIGNAL, MODIFICATION 1.

GENERAL

So far as is known this rocket has not been encountered in the Burma theatre, and no sample has been received for examination at Kirkee. This Leaflet is based on Munitions Supply Laboratories Report No. 130, issued by the Ministry of Munitions, Australia.

DESCRIPTION

2. The general construction of the rocket will be clear from the sketch at the end of this Leaflet. It will be seen that it is very similar to the British Rocket Signal, 1-Lb., Mk. 3, and is probably used for the same purpose, that is day and night signalling.

For purposes of description it will be convenient to divide the rocket into 2 main parts :—

(i) The Cardboard Case containing the propellant charge.

(ii) The Rocket Head containing 16 stars.

3. **The Cardboard Case :—**This consists of a rolled paper tube, choked at the lower end to form a vent. The propellant, which consists of G.P., is pressed into it so as to form a conical cavity in the centre. A piece of quickmatch is attached to the inside of the case below the vent and a short length of it protrudes through the vent into the cavity. The remainder is coiled up loosely between the vent and the removable plug and, when uncoiled, serves as a wick igniter. Above the propellant charge is a primed paper disc, to

which is attached a piece of quickmatch, the ends of which pass through two channels in the cardboard wad to a small charge of G.P., which acts as an ejection charge. A stick (missing), which fits into a metal socket lashed and glued to the case, is provided for stabilizing the rocket during flight.

4. **Rocket Head :—**This is cardboard tube with an outer layer of paper and is filled with 16 stars, the spare space being occupied by 9 cardboard discs. The upper end is closed by a circular wooden block covered with a paper cone. The other end is attached to the case, the joints being sealed with white paper strips.

5. The 16 stars are arranged in the cylinder in layers of four and are heavily primed with G.P. to ensure rapid ignition. The average burning time is 5 seconds, during which they emit a brilliant white light.

The composition of the stars is as follows :—

Potassium Nitrate	..	..	..	63.1%
Sulphur	..	..	..	20.8%
Antimony powder	..	..	..	14.7%
Resinous material	..	..	..	1.1%

IDENTIFICATION

6. The rocket is painted brown and has two labels on the side which are translated as follows :—

Label on head	..	“ Signal Rocket Modification 1 ”.
Label on case	..	“ Manufactured November 1942 Lot A, Nippon Fireworks Company.

SUMMARY OF DATA

7. Length of rocket	..	..	..	14.9-ins.
Mean diameter on body	..	..	..	1.71-ins. (approx)
Weight of rocket	..	..	..	1½-lb.
Weight of propellant	..	..	..	not known.
Weight of ejection charge	..	..	..	124 grains.
Weight of one star	..	..	..	124 grains.

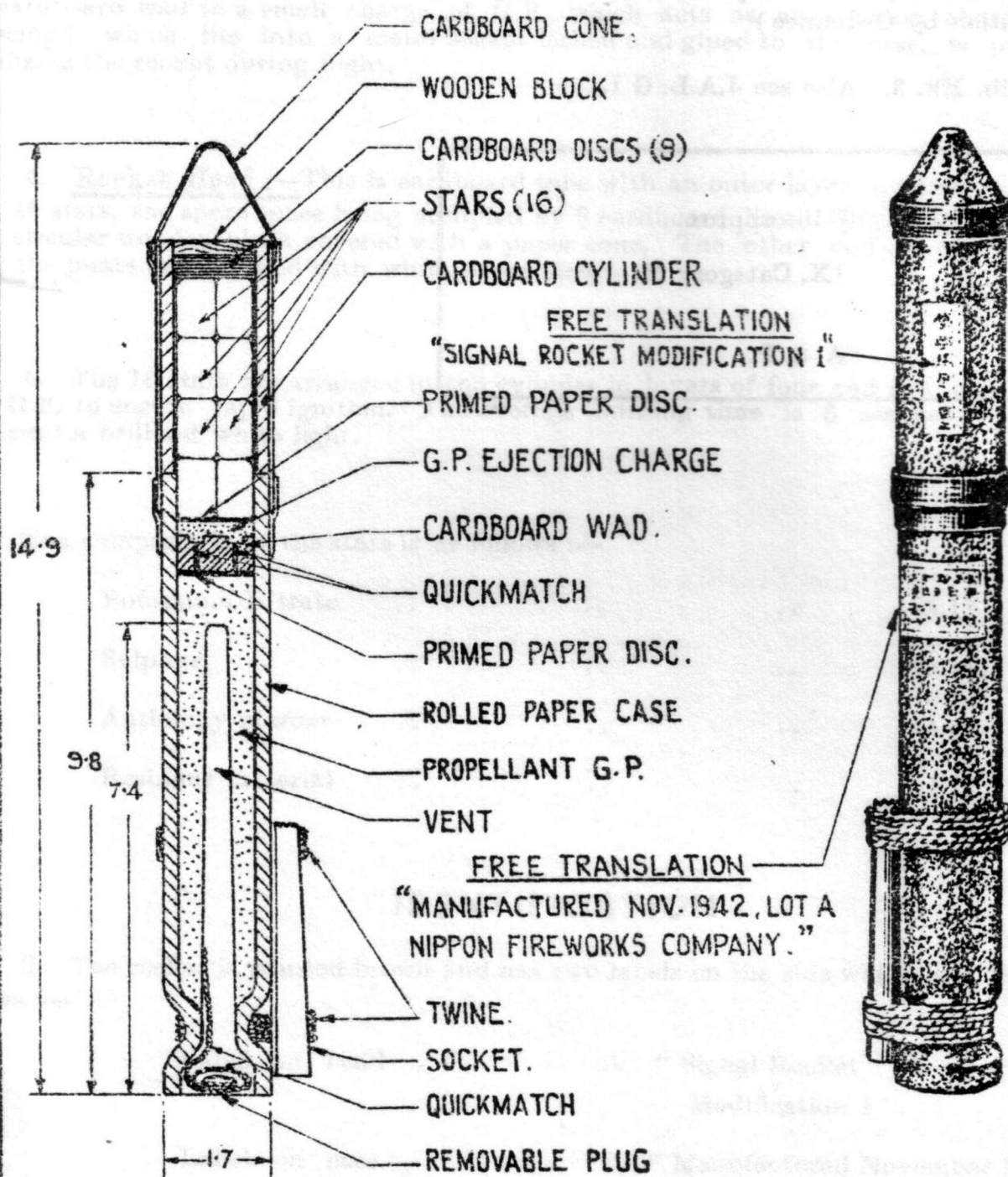
HANDLING AND TRANSPORT

(Of captured ammunition by Ordnance)

8. Treat as for British Rocket Signal 1-lb. Mk. 3. Also see J.A.L. G 1.

EXPLOSION / FIRE RISK	..	½-lb. approx.
GROUP CLASSIFICATION	..	IX, Category Y.
CLASSIFICATION FOR SEA TRANSPORT	..	A. S. P.

RESTRICTED.



PAINTED BROWN OVERALL

WEIGHT OF ROCKET ----- 1 1/4 LB.

JAPANESE ROCKET SIGNAL, MODIFICATION I.

DIMENSIONS IN INCHES.

C.I. AMN. S/1427
KIRKEE, MAR. 46

G.P.F.P. POONA, 1946.

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JAPANESE AMMUNITION LEAFLETS

SECTION G
LEAFLET G 3

CARTRIDGES, SIGNAL, 35-mm.

GENERAL

In this Leaflet it is proposed to discuss two types of signal cartridge, which were received for examination at Kirkee at the beginning of 1944. These cartridges were reported to have been recovered by Army personnel at the scene of the crash of a Japanese Type '100 2 ER Dineh aircraft which crashed near Jessore (Bengal) in December 1943. The cartridges are believed to be used mainly by aircraft personnel in the Ten Year Type 35-mm. Pyrotechnic Pistol. They may also be used as distress signals by crews of grounded aircraft.

35-mm. YELLOW DRAGON WITH PARACHUTE

DESCRIPTION

2. The general arrangement and make-up of this cartridge will be seen from the sketch at the end of this Leaflet, and a detailed description is not necessary. It consists of the following main parts:—

- (i) Brass cartridge case.
- (ii) Percussion cap.
- (iii) Main ejection charge.
- (iv) Inner paper container.
- (v) Delay fitment.
- (vi) Second ejection charge.
- (vii) Smoke composition in a steel container.

An analysis of the smoke composition gave the following results:—

Sulphides of arsenic	..	51.6 per cent	} Gives yellow smoke on burning
Potassium Nitrate	..	32.8 „	
Sulphur	..	15.6 „	

- (viii) Paper Parachute.

ACTION

3. On firing, the flash from the cap ignites the main ejection charge which expels the inner container, simultaneously igniting the safety fuze. After a given period of time, which is not known, the safety fuze burns through and ignites the second ejection charge contained in the wooden block. This ignites the smoke composition and ejects the smoke container together with the parachute. The parachute then opens out and the container falls to earth, emitting a yellow smoke. This cartridge is presumably used only for daylight signalling.

IDENTIFICATION

4. This round can be identified by its cartridge case which is made of brass throughout and the markings on the base which are stamped with a die and the depression filled in with yellow paint. A paper label having Japanese characters denoting "Yellow dragon", date and place of manufacture etc. is pasted on the top of the cork disc.

SUMMARY OF DATA

Length of cartridge case	..	..	..	..	4.75-ins.
Diameter of body	..	..	..	..	1.38-ins.
Diameter over rim	..	..	..	..	1.5-ins.
Weight filled	..	..	..	..	6.56-ozs.
Length of smoke container	..	..	..	..	1.2-ins.
Diameter of smoke container	..	..	..	..	1.2-ins.
Weight of smoke container	..	..	..	..	1.96-ozs.
Weight of empty cartridge	..	..	..	..	3.58-ozs.
Weight of main ejection charge	..	..	..	..	354-grs.
Weight of second ejection charge	..	..	..	..	9-grs.

35-mm. TRIPLE RED STAR

DESCRIPTION

5. This cartridge is similar to the 35-mm. Yellow Dragon described above, but the most important difference is that instead of the smoke container and the parachute, this cartridge contains three stars.

6. The sketch at the end of the Leaflet gives a good idea of the general make up of the cartridge, which consists of the following main parts:—

- (i) Brass cartridge case.
- (ii) Percussion cap.
- (iii) Main ejection charge.
- (iv) Inner paper container.
- (v) Delay fitment.
- (vi) Second ejection charge.
- (vii) Three stars.

7. **Three Stars.** The arrangement of the stars with the felt wads in between is clearly shown in the sketch. Over each star is a felt wad containing 6.2 grains of gunpowder (size G. 20) covered by a perforated cardboard disc. Through the felt wads, cardboard discs and stars are threaded three cords of quickmatch, as shown in the sketch. All the three stars are identical in dimensions and have the same composition. An analysis of the stars carried out here gave the following results:—

Potassium Perchlorate	..	55.6 per cent	} Gives red flare on burning.
Strontium Carbonate	..	24.6 "	
Sulphur	..	16.8 "	
Resinous matter	..	3.0 "	

ACTION

8. On firing, the flash from the cap ignites the main ejection charge which expels the inner container, simultaneously igniting the safety fuze. After a given period of time, the safety fuze burns through and ignites the second ejection charge contained in the wooden block. It will be seen that the wooden block is only loosely attached to the inner container and not secured by three nails as in the case of the Yellow Dragon Signal Cartridge. It is therefore thought that when the second ejection charge burns, it throws out the wooden block, at the same time igniting the quickmatch cords which convey the flash almost simultaneously to all the three stars and to the gunpowder in the felt wads. Each star is then ejected from the base of the container, being forced out by the explosion of the gunpowder contained in these wads.

There is however some doubt as to whether the stars are ejected from the base or from the mouth of the container. As only one round of this cartridge was received at Kirkee this cannot be ascertained, but it is very likely that this is a base ejection cartridge.

IDENTIFICATION

9. In this case the stamping at the base of the cartridge, indicating three red stars, is filled with maroon coloured paint. The base of the case is also partly milled to facilitate identification. In the case of the cartridge examined at Kirkee, there was no paper label on the cork disc, but this may have been removed in handling.

SUMMARY OF DATA

Length of the cartridge case	..	..	..	4.75-ins.
Diameter of body	..	..	..	1.38-ins.
Diameter over rim	..	..	..	1.5-ins.
Weight filled	..	..	..	7.13-ozs.
Length of star	..	..	..	.77-ins.
Diameter of star	..	..	..	1.15-ins.
Weight of star	..	..	..	358-grains.
Weight of empty cartridge	..	..	..	3.58-ozs.
Weight of main ejection charge	..	..	..	30-grains.
Weight of second ejection charge	..	..	..	9-grains.
Weight of G. P. in each felt wad	..	..	..	6.2-grains.

HANDLING AND TRANSPORT

(Of captured ammunition by Ordnance)

10. Both the types of signal cartridges may be handled in the same way as British 1½-in. signal cartridges.

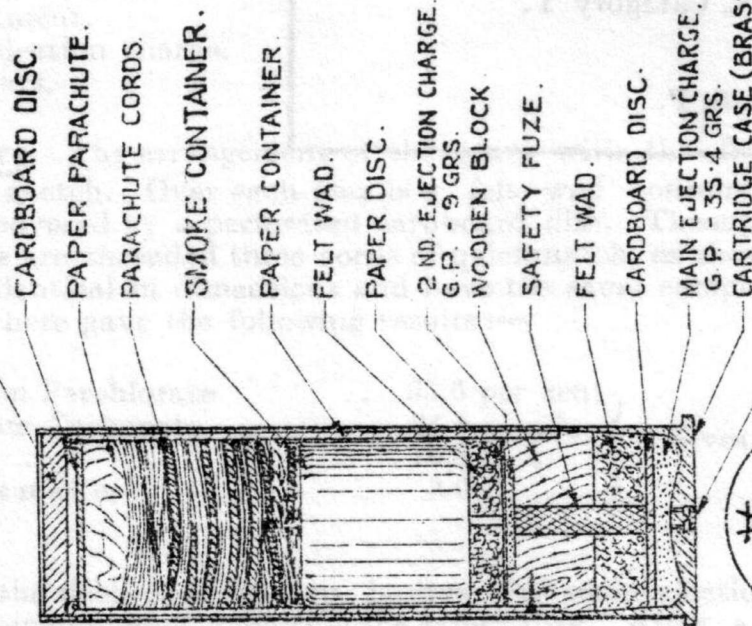
EXPLOSION / FIRE RISK	..	Yellow Dragon 1 1/2-ozs.	Triple Red Star 2 1/2-ozs.
GROUP CLASSIFICATION	..	IX, Category Y.	
CLASSIFICATION FOR SEA TRANSPORT	..	A. S. P.	

RESTRICTED.

AIRCRAFT
USE



YELLOW DRAGON.
SEPT. 1937.
TOKYO ARSENAL.
CORK DISC.

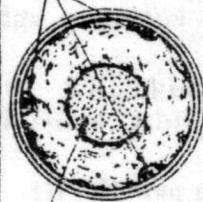


CARDBOARD DISC.
PAPER PARACHUTE.
PARACHUTE CORDS.
SMOKE CONTAINER.
PAPER CONTAINER.
FELT WAD.
PAPER DISC.
2 ND. EJECTION CHARGE.
G.P. - 9 GRs.
WOODEN BLOCK.
SAFETY FUZE.
FELT WAD.
CARDBOARD DISC.
MAIN EJECTION CHARGE.
G.P. - 35.4 GRs.
CARTRIDGE CASE (BRASS)



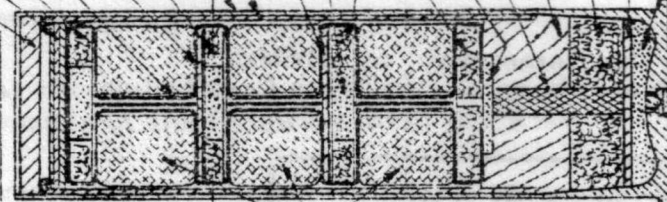
PERCUSSION CAP.
YELLOW DRAGON.

YELLOW DRAGON
WITH PARACHUTE



3 QUICKMATCH CORDS.
CORK DISC.
THREE CARDBOARD DISCS.
FELT WAD.
QUICKMATCH CORDS.
CARDBOARD DISC.
FELT WAD.
CARTRIDGE CASE (BRASS)
PAPER CONTAINER
CARDBOARD DISC
G.P. - 6.2 GRs.
FELT WAD.
2 ND. EJECTION CHARGE.
G.P. - 9 GRs.
SAFETY FUZE.
WOODEN BLOCK.
FELT WAD.
CARDBOARD DISC.
MAIN EJECTION CHARGE
G.P. - 30 GRs.
PERCUSSION CAP.
THREE RED STARS.

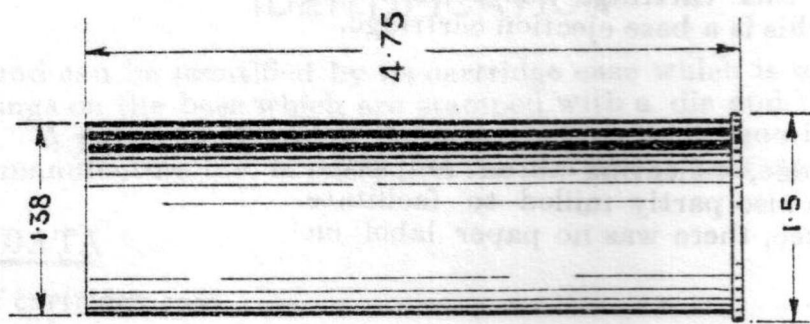
SECTION ON AA.



3 STARS



TRIPLE RED STAR



EXTERNAL APPEARANCE
TYPICAL

JAPANESE

CARTRIDGES SIGNAL 35 MM.

DIMENSIONS IN INCHES.

C.I.A.M.S./1402
KIRKEE, FEB. 46

G.P. 2. P. P. 99 N.A. 1246.

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JAPANESE AMMUNITION LEAFLETS

SECTION G

LEAFLET G 5

FLARE, SIGNAL, 4-cm., TYPE '93, SELF-PROPELLING

GENERAL

Two types of signal flares have been reported in this calibre, though none has been examined at Kirkee. This Leaflet is based on 2/1 Australian C.W. Laboratory R.A.E. report dated 10th July 1944. It is proposed to discuss the Triple White Shooting Star first, and then deal with the Green Parachute Star on which information is rather scanty. The sketch at the end of this Leaflet gives details of both the flares and the projector.

TRIPLE WHITE SHOOTING STAR

DESCRIPTION

2. **The Projector** :—This consists of a tinned iron cylinder which serves both as a container and a projector. It is coated externally and internally with a clear, golden varnish, and has a white paper label outside. The top is closed by a white cardboard disc which is retained in position by a strip of brown paper. In the upper end of the metal container is a 1.2" wide piece of cardboard folded to form a prismatic distance piece. Separating the distance piece from the top of the flare is a white cardboard disc.

The lower portion of the projector is closed by a tinned iron cover, which is held in position by a cotton tape and brown paper band. Above the cover are a U-Shaped length of safety fuze wrapped in brown paper along one arm, a wad of cotton and an octagonal striker block wrapped in brown paper. Four sides of this are covered with a mixture of red phosphorus and an abrasive.

3. A turned wooden block with a central hole to accommodate a length of safety fuze is held in the lower end of the projector by 6 tacks. The top of the block has a cavity to hold the propellant charge. Across the base of the wooden block is a radial groove, in which is housed a portion of the safety fuze. The upper end of the safety fuze is in contact with the propellant charge. A thin brass tube, containing match composition in one end, is crimped to the lower end of the fuze.

Above the block are two cardboard washers and a brown felt washer, on which the flare rests.

4. **The Flare Body** :—This is cylindrical in shape, is made up of several layers of paper compressed together and is closed by a number of paper discs at the top. A wooden block with a hole in the middle to accommodate the safety fuze is glued into the lower end of the flare, and is held in position by 5 tacks. The safety fuze passes through the central axis of the block and projects below the base. The top of the block is recessed to hold the ejection charge and is closed by a circular waxed paper glued to it. Resting on the top of the wooden block are a thin white cardboard disc and a brown felt wad. Above these are the three stars, each separated by brown felt wads.

Glued longitudinally inside the body of the flare are two tight rolls of brown paper approximately .2" in diameter and 2.25" long, one on each side of the channel in the top of the wooden block.

5. **The Stars** :—The three stars were almost equal in dimensions and weight, being .65" long, 1.1" in diameter and weighing 287 grains. They consisted of a dark grey powder of the following composition :—

Potassium Nitrate	..	..	..	..	63%
Antimony Trisulphide	..	..	..	..	12%
Charcoal	..	..	..	..	5%
Sulphur and Resinous matter	..	..	..	..	20%

The flare is closed by a thick cardboard disc and the remaining space is filled with a thin disc and a thick cotton wad.

ACTION

6. The base cover, cotton pad and striker block are removed and the bent safety fuze is straightened out from the radial groove in the base of the turned wooden block and through the hole in the metal container. The projector is then fixed in the desired position in the ground by means of the teeth in the base cover.

The match head is ignited with the friction igniter and the flash is transmitted through the safety fuze to the propellant charge. This ejects the flare, simultaneously igniting the safety fuze in the wooden block. After a given period of time, which is not known, the safety fuze burns through and ignites the ejection charge, thus expelling and igniting the three stars.

7. The function of the two paper rolls within the projectile would appear to be to prevent the stars from resting on top of the channel in the wooden block. A passage is thus kept clear through the channel and between the rolls for the flash from the ejection charge to ignite the pellets from the side.

IDENTIFICATION

8. The container, which is also the projector, is coated with a clear golden varnish and has a white paper label with Japanese characters enclosed in four single black lines. The following is a free translation of the label :—

"Trailing star. Three white stars.
Type '93 4-cm. Manoeuvre Signal Flare.
For short distance night use.
Colour of flare : white.
Altitude : 80 metres.
Visible in daytime 1500 metres away
Visible in night time 5000 metres away.
Effective for two years. Made in 1937".

SUMMARY OF DATA

9.	Total weight	..	..	..	..	9.24 ozs.
	Weight of flare	..	..	..	..	3.52 ozs.
	Weight of each star	..	..	..	..	0.65 ozs.
	Length overall	..	..	..	..	7.16 ins.
	Length of flare	..	..	..	..	3.7 ins.
	Diameter over container	..	..	..	..	1.74 ins.
	Diameter of flare	..	..	..	..	1.6 ins.

GREEN PARACHUTE STAR

DESCRIPTION

10. **The Projector** :— The projector is practically identical with the one described in paras. 2 and 3, hence a separate sketch of this is not included. There are, however, minor differences, e.g. in the shape of the cardboard distance piece etc., but these are not appreciable.

The Australian Report states that the flare was in a dilapidated condition and already been interfered with before examination, therefore certain components shown in the sketch may not be quite correct.

12. The Parachute and Star :— The parachute consists of green tissue paper, octagonal in shape, each side being 6.7" long. It has eight silk shroud lines approximately 23½ inches long, and joined to a cord 15½ inches long. Around the lower 5 inches of this cotton cord is a twisted piece of asbestos cord.

The star is approximately 1.33" long and 1.2" in diameter, and has a thick brown cardboard disc glued on the top. It is wrapped in brown paper, but the base is uncovered. The star is blackish in colour and appears to have a layer of black powder over the base. The following is the result of chemical analysis :—

Barium Chlorate	..	..	..	81%
Charcoal.	..	..	..	11%
Resinous matter.	..	..	..	8%

13. The action is the same as for the Triple White Shooting star, except that in this case the star is ignited from the base instead of laterally.

14. The colour on the container was rubbed off and gave a silvery appearance. The label was partly torn off but appeared to have Japanese characters enclosed in four double lines. The following is a free translation:—

For long distance night use.

Colour of flare : Green with Green parachute.

Altitude 81 metres.

Visible in daytime 3000 metres away

Visible in night time 8000 metres away.

Effective for two years. Made in 1939"

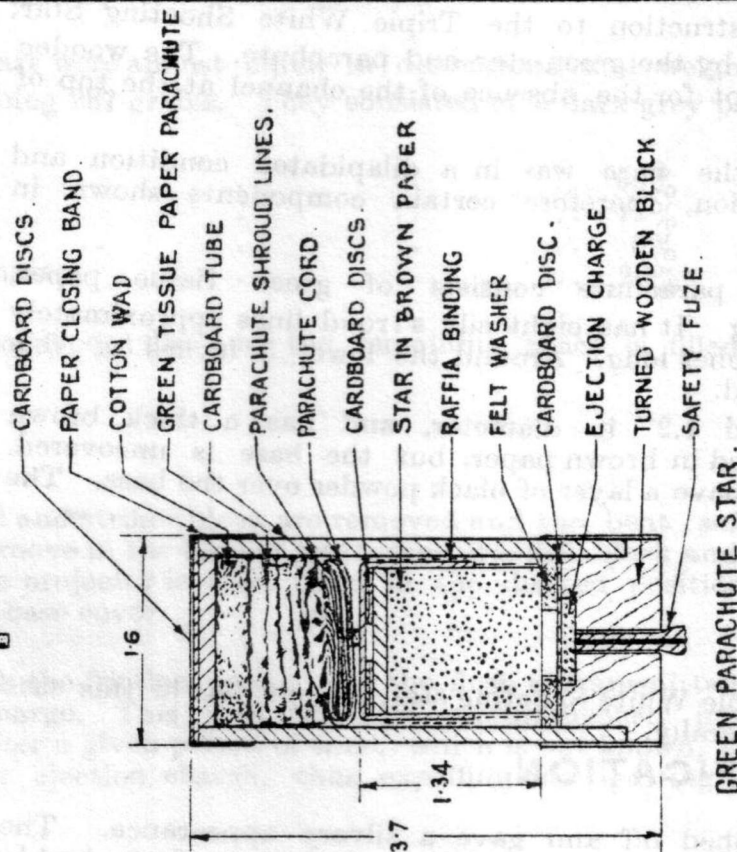
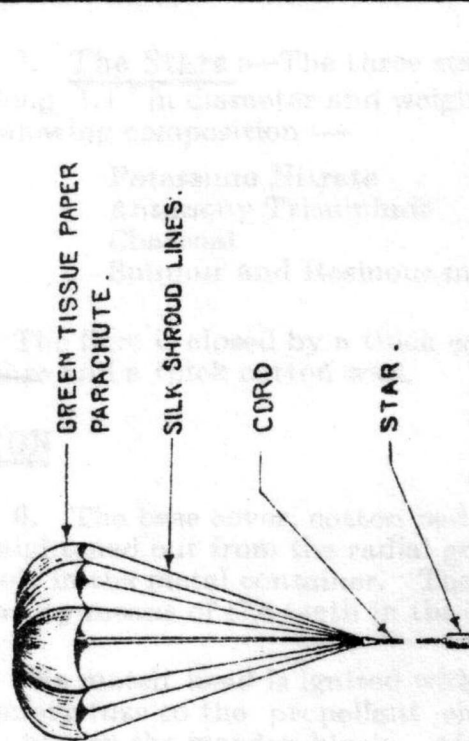
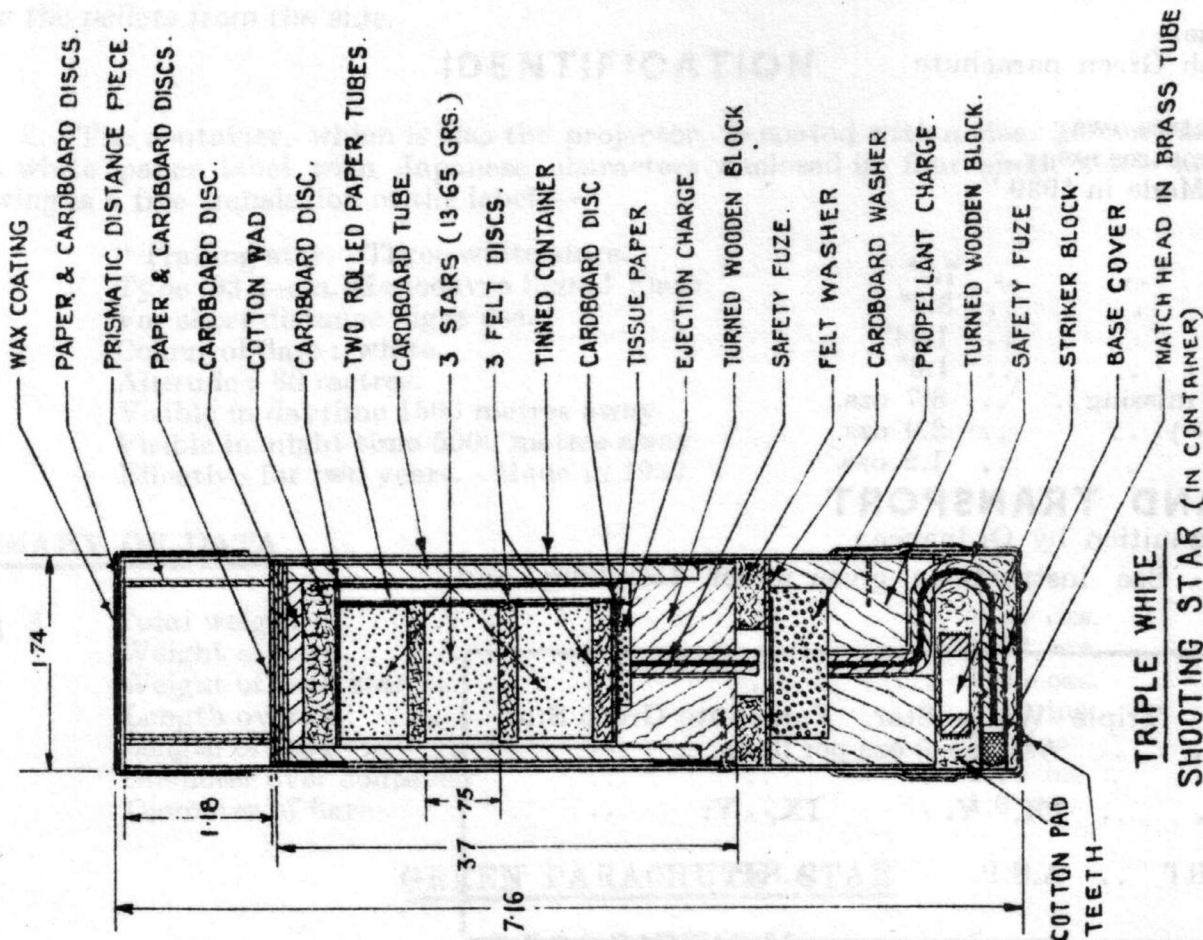
15.	Length overall	..	..	..	7.2"
	Length of flare	..	..	..	3.7"
	Diameter of container	..	..	..	1.74"
	Diameter of flare.	..	..	..	1.6"
	Total weight (some items missing).	..	..	..	8.7 ozs.
	Wt. of projectile (- do -)	..	..	..	2.9 ozs.
	Wt. of star.	..	..	..	1.2 ozs.

(Of captured ammunition by Ordnance)

16. This applies to both the flares. See instructions given under Handling and Transport in J. A. L. Gl.

EXPLOSION / FIRE RISK	Triple White Star. Parachute Green Star
	Assume 3 ozs per flare.
GROUP CLASSIFICATION	IX, Y. IX, Y.
CLASSIFICATION FOR SEA TRANSPORT ..	A.S.P. A.S.P.

RESTRICTED.



JAPANESE, FLARE, SIGNAL, 4 CM., TYPE '93, SELF-PROPELLING.

DIMENSIONS IN INCHES.

C.I. AMN S/1467
KIRKKE, MAY 45
G. P. Z. P. O. C. N. 1946

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D. OF A. (INDIA)

JAPANESE AMMUNITION LEAFLETS

SECTION G

LEAFLET G 6

JAPANESE, TYPE 100,
SELF-PROPELLING ILLUMINATING FLARE
WITH
PARACHUTE

GENERAL

A sample of this type of flare has been recently received at Kirkee and this Leaflet is a report on the examination. Outwardly this candle resembles the normal types of Self Propelling Smoke Candles and could be easily confused with the Type '99A Self Propelling Screening Smoke Candle.

DESCRIPTION

2. The flare is cylindrical in shape and consists of an outer container closed by two lids, top and bottom, and an inner steel container holding the star and the two parachutes. Propellant details are similar to those of the normal smoke self-propelling candles. The inner container is manufactured from steel and holds, from top to bottom, a paper parachute, a silk parachute, the star and the star ejection charge. In the base of this container is a hole closed with a tin foil diaphragm, which opens upwards on to the delay composition which ignites the star ejection charge having itself been initiated by the main propellant flash.

3. Filling. The star dimensions are 2.5"x1.75" and the composition of the star is Barium Nitrate, Aluminium powder and Magnesium powder with a stiffener of Wax and Shellac.

4. **Method of use.** The candle is set up in the same way as the self-propelling smoke candles, the spike which holds the candle being driven into the ground at the angle which will give the required trajectory. The burning of the ejection charge of G.P. throws out the star container, the initial flash igniting the delay in the base of the star container.

This delay burns to the star ejection charge of G.P. which expells the star and parachutes. The flash from the ejection charge ignites the priming composition in the base of the star and the star composition begins to burn. The time of burning of the star is approximately one minute and it can reach a height of 250 feet.

PACKING

5. This store was not delivered at Kirkee in its standard packing. It is not possible, therefore, to comment on the method of packing.

IDENTIFICATION

6. The outer container is painted olive drab and bears white Japanese characters reading from top to bottom, stencilled on the side. The translation of these characters will be found on Fig. 3 of the Plate included with this Leaflet. A white vertical is also found on the side of the container. The significance of this marking has already been discussed in J.A.L. J4 where it was suggested that this marking can be used as a means of night identification as it lies directly over the match head aperture. It is also thought that this marking is used in laying for line.

7. SUMMARY OF DATA

Weight	..	..	..	1 lb. 15½ ozs.
Over all length	..	..	..	8.18"
Diameter	..	..	..	2.09"
Diameter of paper parachute (Spread on ground)	..	..	..	40"
Silk parasheet (square)	..	..	..	5'x5"

HANDLING AND TRANSPORT

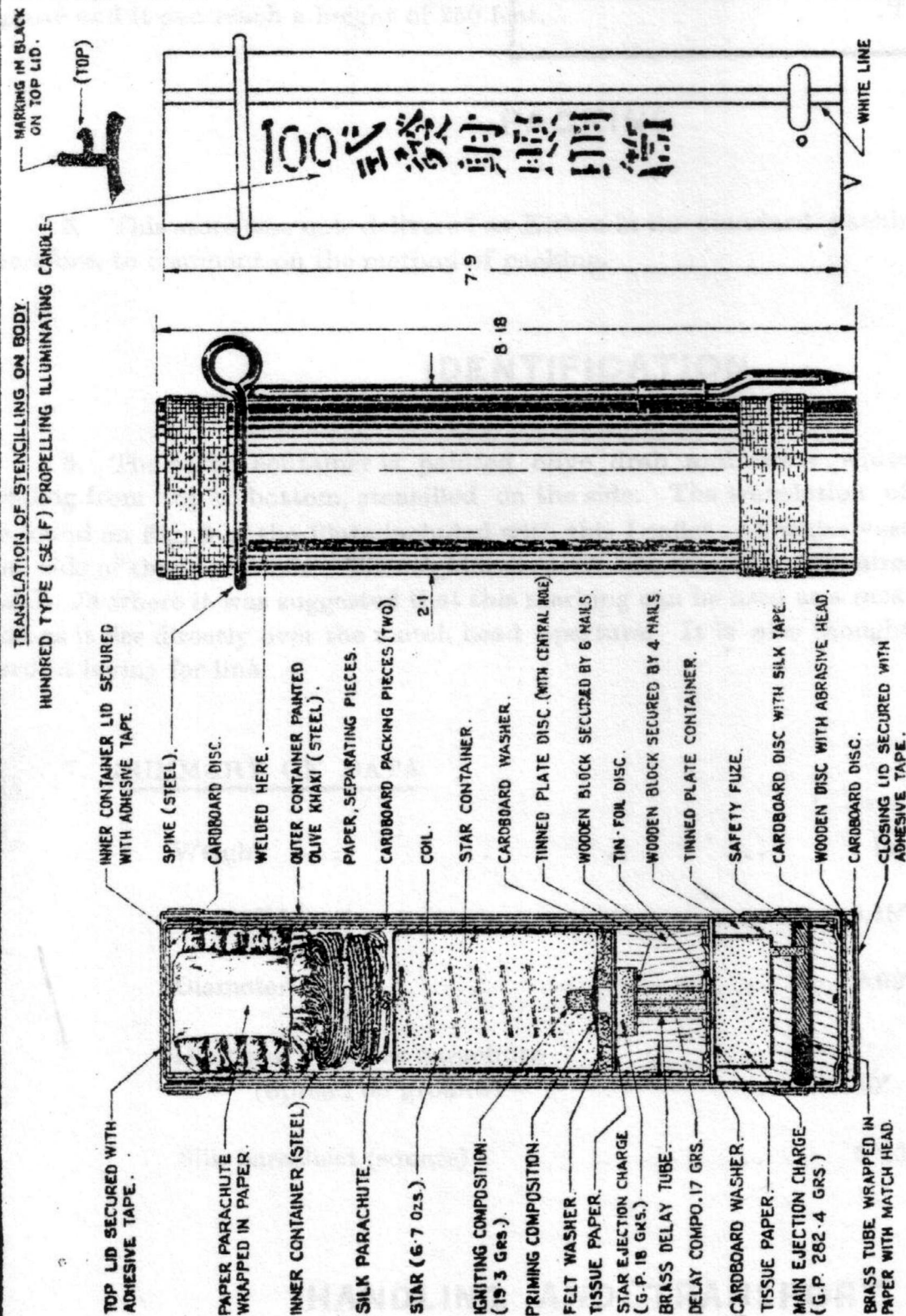
(Of captured ammunition by Ordnance)

8. The principles which apply to equivalent stores in the British Service may be safely adopted in the case of this Japanese store. The store is well made and the lids, secured

by shellaced adhesive tape, provide adequate protection in storage. It should be remembered that such stores should always be kept in a cool dry place during storage.

EXPLOSIVE/FIRE RISK	.. Approximately 7.2 ozs. per Flare
GROUP CLASSIFICATION	.. Group IX Category "Y"
CLASSIFICATION FOR SEA TRANSPORT	.. A. S. P.

RESTRICTED



COMPLETE WT.-1 LB. 15.5 OZS.

MARKINGS IN WHITE ON OUTER CONTAINER.

PARACHUTE ARRANGEMENT

JAPANESE
TYPE 100 SELF PROPELLING, ILLUMINATING FLARE
WITH PARACHUTE

DIMENSIONS IN INCHES

CLAIM. S/451
KIRKEE, APRIL 45