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# JAPANESE AMMUNITION

C.I.AMM. TECHNICAL REPORT

**No. 43**

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**IGNITER CARTRIDGES  
FOR  
TYPE '93 (SMALL) PORTABLE  
FLAME THROWER**

IGNITER CARTRIDGES FOR TYPE '93  
(SMALL) PORTABLE FLAME THROWERG E N E R A L

Although these cartridges are not strictly ammunition they are very similar to blank pistol cartridges and a description of them is therefore being included in the C. I. Amm. Technical Report Series.

2. This igniter cartridge is located close to the fuel emission nozzle of the Type '93 Portable Flame Thrower and is fired by means of a striker to ignite the fuel when required. Ten cartridges are located in a revolving cylinder which rotates as each cartridge is fired. The user has, therefore, with one loading, ten shots of flame at his disposal, ignoring misfires and miss-ignitions, etc. A full description, if required, of the Flame Thrower is given in General Headquarters, India, Military Intelligence Directorate, Periodical Technical Summary No. 28 of May 1944 and preceding Summaries.

D E S C R I P T I O N

3. The general appearance and details of construction of the igniter cartridge will be clear from the attached Plate. The cartridge is very similar externally to the normal pistol cartridge except that it is not fitted with a rim or other means for extraction. Extraction is specially arranged for in the revolving cylinder of the Flame Thrower.

4. The case is a solid drawn brass cylinder screw-threaded internally at the base to take a brass axial chamber and has a slightly enlarged internal diameter at the mouth to facilitate the fitting of a cardboard closing disc flush with the mouth of the case. A hole is formed in the base through which passes the striker of the firing mechanism. The axial chamber is a machined brass tube with an increased diameter at the base which is screw-threaded externally to screw into the base of the cartridge case. Tommy holes are provided for screwing the axial chamber into the base of the cartridge case. An anvil and cap chamber is formed at the base of the axial chamber, with four flash holes spaced equidistant round the anvil. A percussion cap (Berdan Type) is a press fit in the cap chamber. The mouth of the axial chamber is closed by a tightly fitting thin tissue paper cup. The cartridge case round the axial chamber, is filled up to the full length of the latter with pressed mealed gunpowder. The remainder of the case over the mouth of the axial chamber is finally filled with loose mealed gunpowder. From the external appearance of the case it would seem that it is painted or dipped in varnish.

5. The mean charge weight of five cartridges examined was 18.8-grs. The charge weight varied between 19.4-grs. and 18.3-grs. The mouth of the case is closed by a cardboard disc which is held in position by varnish.

6. From an Australian report of December 1944 on the examination of similar cartridges (repeated in General Headquarters, India, Military Intelligence Directorate, Periodical Technical Summary No.36 of March 1945, para. 10) the following differences are noticed:-

- (a) The Australian report refers to lengths of quickmatch in the axial chamber and that the mouth of the cartridge case has a tin foil disc under the cardboard closing disc.
- (b) The charge is reported as about 12.3-grs.

A number of cartridges have, however, been carefully examined at Kirkee for these differences but nothing has been found to confirm the Australian report. It must be presumed that the Australian report refers to a cartridge of a slightly different type.

### Action

7. The cartridge is fired by a striker in the same way as a blank pistol cartridge. The presence of the axial chamber, however, causes forward ignition of the charge. This is a device sometimes employed to prolong the time of burning. In this case, in view of the pressed mealed powder, it is thought that the time of burning will be comparatively long. This is very desirable to compensate for any lack of co-ordination between fuel emission and the ignition of the cartridge.

### P A C K I N G

8. Each cartridge is wrapped in thin waxed tissue paper and the cap end of the cartridge is varnished a red colour for a length of about 1/4-in. The box is made of white wood throughout and holds 100 cartridges each in a recess formed in the packing block inside. The lid is hinged at the back and closed at the front by two brass hooks. These details will be clear from the Plate. A thin felt sheet is secured to the underside to ensure snug packing of the cartridges. Japanese characters stencilled on the exterior of the lid with their literal translation are shown in the Plate.

### CHEMICAL ANALYSIS

(Chief Inspector of Military Explosives, Kirkee)

9.	Percussion Cap	- -	Mercury Fulminate	33.9%
			Antimony Sulphide	22.3%
			Potassium Chlorate	45.8%
	Ignition Charge	• -	Mealed gunpowder consisting of:-	
			Sulphur	9.3%
			Potassium Nitrate	73.7%
			Charcoal	17.0%

### A P P R E C I A T I O N

(Economic, manufacture and development aspects)

10. There is nothing outstanding in this cartridge except the method employed to prolong the duration of the flash is of interest.

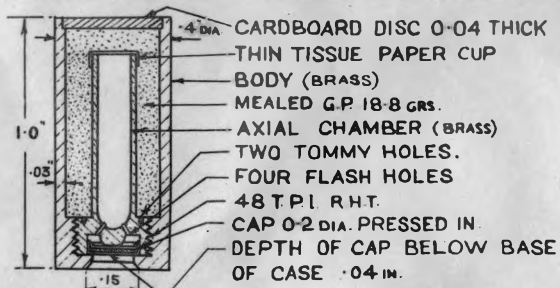
SUMMARY OF DATA

11.	Overall length	1.0-in.
	Maximum diameter	0.432-in.
	Weight (filled)	125-grs.
	Ignition charge	Mealed gunpowder 18.8-grs.
	Percussion cap (filled)	3.08-grs.
	Cap composition	0.6-grs.

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AXIAL CHAMBER



SECTION OF IGNITER CARTRIDGE

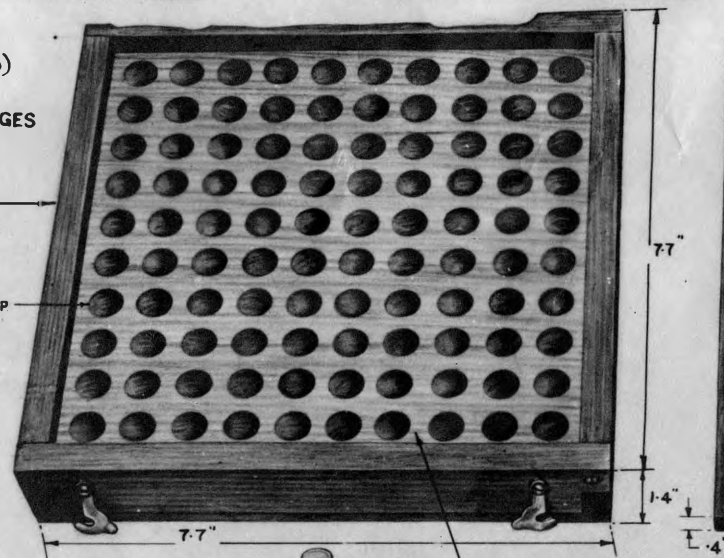
管火點機射發焰火小式三九

TUBE IGNITER FLAME THROWER SMALL TYPE 3 9

筒 百  
PIECES 100

BOX (WHITE WOOD)  
HOLDING 100  
IGNITER CARTRIDGES  
EACH WRAPPED  
IN THIN WAXED  
PAPER.

.5 DIA. .85 DEEP



RECESSED  
WOODEN BLOCK

IGNITER CARTRIDGES  
WRAPPED IN PAPER &  
CAP END VARNISHED  
RED FOR 1/4"



LID WITH FELT  
PACKING PIECE.  
SECURED TO  
UNDERSIDE, TO  
SECURE SNUG  
PACKING OF  
CARTRIDGES.



JAPANESE IGNITER CARTRIDGES

— FOR —

TYPE '83 PORTABLE FLAME THROWER (& SIMILAR TYPES.)