

# Artillery Ammunition

## 105 MM HOW

ARTILLERY AMMUNITION

This ammunition is meant to be fired on the following gun:

M1, M2A1, M2A2, M101/101A1, M102 & M106 (USA), L10/A1, L-119 & M-119A1 (U.K.), L-5 (Italy), KH178 (South Korea), Type 75 (Japan), LG-1 & M101A1 modernised (France) and many others worldwide.

and is produced in the following three versions:

- (i) HE - Fired with normal bursting charge
- (ii) Smoke WP - Produces white smoke with incendiary effects
- (iii) Blank - Fired for ceremonial purposes and acclimatisation



### DATA COMPLETE ROUND

	Weight	Length
HE	19.07 kg.	788 mm.
Smoke WP	19.77 kg.	788 mm.
Blank	3.75 kg.	372 mm.

### PROJECTILE

Body material	Forged steel
Filling:	
HE	TNT, 2.23 kg.
Smoke	White Phosphorus, 1.8 kg. Tetryl Pellets, 105 gm.
Fuze (HE & Smoke)	PDM557

### CARTRIDGE CASE

Body material	Drawn brass 70/30
Propellant:	
HE & Smoke	Single base, flashless & smokeless M1
Blank	WM017 Triple base propellant 660 gm.
Primer (HE, Smoke & Blank)	P-1, MK3, percussion type

### PERFORMANCE

Charge	Qty. (gm.)	Velocity (m/sec.)	Max. range (metres)
Base No. 1	238.12	198	3400
+Increment No. 2	41.11	216	3900
+Increment No. 3	70.87	228	4600
+Increment No. 4	96.39	265	5700
+Increment No. 5	153.10	311	7300
+Increment No. 6	243.80	376	9000
+Increment No. 7	396.90	472	11286

Accuracy:

PE Horizontal	34.5 metres
PE Vertical	9.0 metres

### PACKING

Shells and cartridges packed in rolled paper/film board container, two containers in a wooden box/steel box:

Size of box	95 x 32.3 x 19 cm 85.5 x 30.5 x 15 cm (Steel Box)
Weight of box	55 kg. (HE & Smoke) 30 kg. (Blank)
Colour & marking	Service brown with yellow/white stenciling



# ARTILLERY AMMUNITION

## 122 MM HOW HE

This is a semi-fixed ammunition for 122mm. Howitzer, type Model 1954.



### TECHNICAL DATA

Weight of complete round	27 Kg
Weight of projectile	21.76 Kg
Shell body	Forged steel 15.575 Kg
Main charge	3.6 Kg TNT
Fuze	LIU-4 Percussion Type
Cartridge case	Drawn Brass 70/30
Propelling charge	This consists of nine charge system of single base propellant
Weight of propellant charge	2.10 Kg
Primer	P-304 Percussion type or D-9

### PERFORMANCE

Muzzle velocity at Full charge	515 Metres / Sec
Chamber pressure	2350 Kg/ cm <sup>2</sup>
Maximum range	11800 Metres
Accuracy:	
Longitudinal	1 / 150 of mean range
Lateral	15 Metres

### PACKING

Each round is packed in a steel box, fuze is packed separately and placed at one end of the box

Size of box	875 x 180 x 165 mm
Gross weight	38.70 Kg

# ARTILLERY AMMUNITION

## 130 MM HE

This is a long range separate loading variable charge ammunition to be fired through Soviet M46 and Chinese type 59 and 59-1 guns.

### DATA

Weight of filled projectile	33.4 kg. (as fired)
Projectile	Forged steel shell filled with 4 kg. TNT
Fuze	LIU-5
Cartridge case	Drawn brass 70/30
Propelling charge	This ammunition is fired using either a full or a reduced charge. The full variable charge has two charge zones, while the reduced variable charge has three zones
Charge weight:	
i) Reduced charge	6.7 kg.
ii) Full charge	12.90 kg.
Primer	DI-5

### PERFORMANCE

Muzzle velocity	930 metres/sec.
Pressure	3150 kg/sq.cm.
Max. range	27490 metres.
Chamber pressure for performance proof tests:	
Strength	3560 ± 50 kg/sq. cm.
Charge stability	3560 ± 50 kg/sq. cm.
Detonation	3150 kg/sq. cm.

### PACKING

Each round packed in a steel box:	
Size of box	93.5 x 37.5 x 22.5 cm.
Weight of box	78.42 kg.
Colour & marking	Service brown with yellow/white stenciling





# ARTILLERY AMMUNITION

## 203 MM HOW HE M 106

### DATA

Weight of shell	91 kg.
Weight of filling	16.5 kg. of TNT
Fuze	PDM 557 or MTSQ
Propelling charge	Single base, single perforated
Green bag	M1 (1-5)
White bag	M2 (5-7)
Primer	Percussion type M-82

### PERFORMANCE

Muzzle velocity	594.4 metres/sec.
Pressure	2658 kg/sq. cm.
Range	16,800 metres
Chamber pressures for performance proof tests:	
Strength	3040 ± 80 kg/Sq. cm.
Charge stability	3040 ± 80 kg/Sq. cm.
Detonation	2658 kg/Sq. cm.

### PACKING

6 shells packed in a pallet.  
Propellant charges supplied in steel container.

Colour & marking	Service brown with yellow/white stenciling
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# Artillery Ammunition

## QF 25 PDR MK 2/1

This ammunition is meant to be fired through 25 PDR field guns MK-4 and is produced in the following three types:

(i) HE (ii) Smoke (iii) Blank



### DATA

Cartridge case:

This is made of drawn brass 70/30 and is filled as below:

(i) HE and Smoke:

Primer	No.11 MK 4/3
Normal charge	Triple base flashless propellant NQ 018 & NQ 050, weight 852 gm.
Super charge	Triple base flashless propellant NQ/S 134-040, weight 1253 gm.

(ii) Blank:

Primer	No.1 MK2
Charge	Gun powder G 12, weight 454 gm.

Shell filling:

HE	TNT
Smoke	HC (Four different colours of smoke are also available).

Fuze:

HE	PDM 557 M
Smoke	221-B

Weight/Length (approx.)	HE	Smoke	Blank
Complete round weight (kg.)	14	9	3.5
Cartridge case length (mm.)	293	293	293
Projectile weight (kg.)	11.4	5.8	-
Projectile length (mm.)	435	445	-

### PERFORMANCE

Charge	Muzzle velocity (metre / second)	Range (metre)
Base charge 1	-	3300
Charge 2	307	6000
Charge 3	457	10000
Super charge	541	12000

### PACKING

#### Inner

Cartridges & shells sealed individually in polythene bags & plastic containers

#### Outer

i. 8 cartridge cases packed in a wooden box.

Size of box	60 x 32 x 38 cm.
Weight of box	30 kg.

ii. 4 shells packed in a wooden box.

Size of box	48 x 21 x 20 cm.
Weight of box	52 kg. for HE and 44 kg. for smoke
Colour & marking	Service brown with yellow/white stenciling