

Munitions India Limited

Accurate . Lethal. Reliable



Munitions India Limited [MIL] is a Defence Public Sector Undertaking [DPSU] under the Ministry of Defence, Government of India.

MIL, the India's biggest manufacturer and market leader is engaged in Production, Testing, Research & Development and Marketing of comprehensive range of ammunition & explosives for Army, Navy, Air force & Para-Military Forces.

With Corporate Office at Pune (India), MIL in its 12 manufacturing units located across the country employs skilled workforce of around 21,000. These factories have proven integrated base for production of Small, Medium & High calibre ammunition, Mortars, Rockets, Grenades etc. with in-house manufacturing of Initiatory Compositions, Propellants and High Explosives for over 150 years. Our primary objective is to provide competitive edge to the Armed Forces by equipping them with modern and quality battlefield ammunition.

Our foreign customers include countries located in North America, South America, Europe, Africa and Asia. The patronage we receive from our customers both in India and abroad reflects faith in quality of our products and services.

MIL with its 12 manufacturing units provide:

- A broad and versatile production base with multi-technology capabilities
- Large pool of skilled and professionally qualified manpower and managerial personnel
- Strict adherence to quality standards (all units are ISO-9000 certified)
- Original as well as adaptive Research & Development to make need-base refinement and modifications
- A strong base for industrial training & testing



CARTRIDGE

SA 5.56 x 45 mm

M-855

CARTRIDGE	Calibre	5.56mm
	Length	57.4 $\pm$ 0.5mm
	Mass	12.8 gm
	The shelf life of ammunition is 15 years	
CASE	Rimless, Brass 70:30, Bottle Necked	
BULLET	Guiding Metal envelope steel insert and lead core	
PROPELLANT	Ball Powder	
PRIMER	Boxer	

PERFORMANCE CHARACTERISTIC	
Projectile Weight	4.0 gm
Muzzle Velocity	910 $\pm$ 10m/s (at 25m from muzzle)
Consistency	165 mm (at 457 m)
Penetration	Max 3.45 mm mild steel plate at 700 m
Chamber Pressure Avrg.(Max)	342 Mpa
Operating Temp.	-52°C to 72°C



CARTRIDGE

SA 5.56 x 45 mm
M193

CARTRIDGE	Calibre	5.56mm
	Length	57.4±0.5mm
	Mass	12. 5 gm
	The shelf life of ammunition is 15 years	
CASE	Rimless, Brass 70:30, Bottle Necked	
BULLET	Guiding Metal envelope lead core	
PROPELLANT	Ball Powder	
PRIMER	Boxer	

PERFORMANCE CHARACTERISTIC	
Projectile Weight	3.62 gm (-0.12)
Muzzle Velocity	964 ± 10m/s (at 24m from muzzle)
Consistency	25 mm (at 100 m) and 51 mm at (182 m)
Chamber Pressure Avrg.(Max)	359 Mpa
Operating Temp.	-54° C to + 52° C



CARTRIDGE

SA 7.62 x 39 mm BALL

CARTRIDGE	Calibre	7.62 mm
	Length	56.00 mm
	Mass	18.60 gm
	The shelf life of ammunition is 15 years	
CASE	Rimless, Brass 70:30, Bottle Necked	
BULLET	Gilding Metal envelope steel insert and lead core	
PROPELLANT	Ball Powder	
PRIMER	Boxer	

PERFORMANCE CHARACTERISTIC	
Projectile Weight	7.95±0.1 gm
Muzzle Velocity	700 ± 20m/s (at 25m from muzzle)
Consistency	300 mm (at 300 m)
Penetration	Max 3.45 mm mild steel plate at 400 m
Chamber Pressure Avrg. (Max)	288 Mpa
Operating Temp.	-40°C to 52°C



CARTRIDGE

SA 7.62 x 51 mm

NATO M-80 BALL



CARTRIDGE	Calibre	7.62 mm
	Length	71.10 mm
	Mass	25.40 gm
	The shelf life of ammunition is 18 years	
CASE	Rimless, Brass 70:30, Bottle Necked	
BULLET	Gilding Metal envelope lead core	
PROPELLANT	Ball Powder	
PRIMER	Boxer	

PERFORMANCE CHARACTERISTIC	
Projectile weight	9.65 gm
Muzzle velocity	817 ± 9 m/s (at 23.7 m from muzzle)
Consistency	190 mm (at 550m)
Penetration	Max 3.45mm mild steel plate at 550m
Chamber Pressure Avg (Max)	348 MPa
Operating Temp.	-54° C to + 52° C



CARTRIDGE

SA 7.62 x 51 mm NATO TRACER M-62

CARTRIDGE	Calibre	7.62 mm
	Length	71.10 mm
	Mass	25.08 gm
	The shelf life of ammunition is 10 years	
CASE	Rimless, Brass 70:30, Bottle Necked	
BULLET	Gilding Metal envelope lead core	
PROPELLANT	Ball Powder	
PRIMER	Boxer	

PERFORMANCE CHARACTERISTIC	
Projectile weight	9.46 gm
Muzzle velocity	817 ± 9m/s (23.8m from muzzle)
Consistency	Max 38 cm at 550 m
Tracer	777.2 m bright crimson red trace
Chamber Pressure Avg.(Max)	348 Mpa
Operating Temp.	-40° C to +52° C



CARTRIDGE

SA 7.62 x 51 mm

LINKED AMMUNITION



Technical Details

For Technical details refer NATO Ball M-80 & NATO Tracer M-62 specification

The ammunition is available in following versions

- Ball M80: TCR M62 (4:1) Belt ammunition with M 13 Links
- Straight Belt Ball (M 80) ammunition with M 13 Links

PACKING DETAILS					
Mode of Packing	No. of Rds.	No. of Rds. Per box	No. of Rds. Per carrier	Box Type & Size (mm)	Carrier Type & Size (mm)
Cartg. 7.62mm BALL & TCR Sequence Belt	(188 Ball Rds+ 47 TCR Rds) 235/ Belt	235 (Links)	940	H5A (255 x 182 x 90)	7A/L (428 x 300 x 206)
Cartg. 7.62mm BALL Straight Belt	235/Belt	235 (Links)	940	H5A (255 x 182 x 90)	7A/L (428 x 300 x 206)



CARTRIDGE

SA 7.62 x 51 mm MARKSMAN

CARTRIDGE	Calibre	7.62 mm
	Length	71.1 mm
	Mass	26.276 gm
	The shelf life of ammunition is 18 years	
CASE	Rimless, Brass 70:30 Bottle Necked, Boxer	
BULLET	Gilding Metal envelope lead core	
PROPELLANT	Ball Powder	
PRIMER	Boxer	

PERFORMANCE CHARACTERISTIC	
Projectile weight	10.90 gm
Muzzle velocity	740±15 m/s (at 23.8 m from muzzle)
Consistency	max 3cm (at 100m)
Chamber Pressure Avg.(Max)	360 Mpa (Avg. Chamber pressure)
Operating Temp.	-52° C to +72°C



CARTRIDGE

SA 7.62 x 54 R mm

STEEL CORE



CARTRIDGE	Calibre	7.62 mm
	Length	77.16 mm
	Mass	25.40 gm
	The shelf life of ammunition is 18 years	
CASE	Rimless, Brass 70:30 Bottle Necked, Boxer	
BULLET	Gilding Metal envelope Steel insert and lead core	
PROPELLANT	Ball Powder	
PRIMER	Boxer	

PERFORMANCE CHARACTERISTIC	
Projectile weight	9.60 gm
Muzzle velocity	820-835 m/s at a distance 25m from muzzle
Consistency	15 cm or less at 300 m (R-50)
Penetration	3.5 mm steel plate at 400 m
Chamber Pressure Avg.(Max).	284 Mpa
Operating Temp.	-52° C to +72°C



CARTRIDGE

SA 9 x 19 mm BALL

CARTRIDGE	Calibre	9 mm
	Length	29.69 mm
	Mass	11.94+ 0.65gm
	The shelf life of ammunition is 7 years	
CASE	Rimless, Brass 70:30, Bottle Necked	
BULLET	Guiding Metal envelope lead core	
PROPELLANT	NC 688	
PRIMER	Berdan with VH2/E1 Composition	

PERFORMANCE CHARACTERISTIC	
Projectile weight	7.45 (± 0.13 gm)
Muzzle velocity	397 ± 15 m/s (at 18 m from muzzle)
Consistency	75.2 mm Mean FoM at 45m
Chamber Pressure	Avg (Max) 201 Mpa
Individual	215 MPa
Operating Temp.	-52° C to +72°C



CARTRIDGE

0.22" BALL (LONG RANGE)

CARTRIDGE	Calibre	0.22 "
	Length	25 mm (approx)
	Mass	3.370 gm
	The shelf life of ammunition is 10 years	
CASE	Rimless, Brass 70:30, Bottle Necked	
BULLET	Gilding Metal envelope lead core	
PROPELLANT	3 N 36 or SPA I	
PRIMER	Rim Fire	

PERFORMANCE CHARACTERISTIC	
Projectile Weight	2.6 gm
Muzzle Velocity	305 $\pm$ 23m/s (at 9m from muzzle)
Consistency	95% within 3/4" dia (19 mm) Circle Mean Figure of Merit at 23 m
Chamber Pressure Avrg.(Max)	22 Mpa
Operating Temp.	-52°C to 72°C

GRENADE 40mm HEAP



Application:

- Used against personnel and soft targets.
- Fired from 40mm MGL/UBGL Weapon

Technical Specification:

- Mass of Round :240gm
- Length, Max: 104mm
- Mean Muzzle Velocity: 76 ± 3 m/s
- Effective Mean Range: 375m
- Functioning Temperature: -20°C to $+45^{\circ}\text{C}$
- Fuze: PIBD (Point Initiating Base Detonation)
- Fuze arming distance: 8m to 28m
- Accuracy at 75m: Within $0.95\text{m} \times 0.95\text{m}$
- Lethality radius: 5m
- Shelf-life: Min 10 Years
- Reliability 90%

GRENADE 40mm HEDP

Technical Specification:

- Mass of Round: 240gm
- Length, Max: 104mm
- Mean Muzzle Velocity: 76 ± 3 m/s
- Effective Mean Range: 375m
- Functioning Temperature: -20°C to $+45^{\circ}\text{C}$
- Fuze arming distance: 8m to 28m
- Accuracy at 75m: Within $0.95\text{m} \times 0.95\text{m}$
- Penetration: 50mm Armour /65 mm MS Plate
- Lethality radius: 5m
- Shelf-life: Min 10 Years
- Reliability 90%



Application:

- Used for Anti personal, Anti Armour (Penetration) & anti-fortification capabilities.
- Fired from 40mm MGL/UBGL Weapon



GRENADE 40mm RED PHOSPHOROUS



Technical Specification:

- Mass of Round :240gm
- Length, Max: 104mm
- Mean Muzzle Velocity: 76 ± 3 m/s
- Effective Mean Range: 375m
- Functioning Temperature: -20°C to $+45^{\circ}\text{C}$
- Fuze: PIBD (Point Initiating Base Detonation)
- Fuze arming distance: 8m to 28m
- Accuracy at 75m: Within $0.95\text{m} \times 0.95\text{m}$
- Lethality radius: 1.5m
- Shelf-life: Min 10 Years
- Reliability 90%

Application:

Used for spreading smoke screen particles over a wide area and igniting the readily combustible material. It is extremely effective for the cleaning of trenches, bunkers & building. Fired from 40mm MGL/UBGL Weapon

GRENADE 40mm PRACTICE PRF

Technical Specification:

- Mass of Round: 240gm
- Length, Max: 104mm
- Main Charge: Inert
- Mean Muzzle Velocity: 76 ± 3 m/s
- Effective Mean Range: 375m
- Functioning Temperature: -20°C to $+45^{\circ}\text{C}$
- Fuze: Plug representing fuze
- Accuracy at 75m: Within $0.95\text{m} \times 0.95\text{m}$
- Shelf-life: Min 10 Years



Application:

- Projectile hits the target without any explosion.
- The version is used for practice purpose.
- Fired from 40mm MGL/UBGL Weapon



GRENADE 40MM HE WITH SELF DESTRUCTION



Technical Parameters :

- Calibre 40 mm
- Maximum Range 400 m
- Maximum Length 102 mm
- Weight of Round 250 g
- Weight of Explosive 40 g
- Explosive used RDX WAX (95:05)
- Type of Fuze Direct action with SD mechanism
- Arming distance 10 m-40 m
- Casualty Radius 7 m
- Muzzle velocity 76 m/s
- Self-destruction time 14 secs to 19 secs
- Operating conditions -20 °C to +55 °C
- Weapon 40mm UBGL (EX OFT), 40mm MGL(Ex SA) & (Ex OFT), 40mm UBGL (Ex Arsenal), 40mm UBGL (Ex Israel).
- Shelf life Minimum 10 yrs
- Reliability 90%

MULTI MODE HAND GRENADE

Key Features

Grenade Body :

- length 140mm
- Maximum diameter 63mm
- Diameter of the blast cup 46mm
- Mass of RDX/TNT (60:40) 92±2 gm
- Mass of the fragmenting sleeve 230 gm (approx.)
- Length of the fragmenting sleeve 77 ± 0.5mm
- Total number of fragments 4000 (approx.)
- Material (Fragmenting sleeve) MS fragments in plastic matrix
- Mass of each fragment 45±5 mg
- Total mass of fragments 170 gm (approx.)





GRENADE ACTIVE TRAINING SYSTEM (36ATS)



GRENADE 36 HE

- Hand thrown & Non-lethal ammunition
- Reusable (up to 6 throw)

Technical Parameters

- Grenade body : Cast iron
- Delay time of ATS Grenade:
4.00 to 5.5 sec
- Mass of Round : 680 g
- Main Charge : HES
- Detonator : 4 Sec delay (Polycoated)
- Dentity: with colour yellow

FOR HAND GRENADE 36M

The 36 ATS has been specially designed for Training / Practice purpose. It is ideal for handling & lobbing by fresh recruits as well as veterans without exposure to dangers of high explosive practicing grenades. The 36 ATS Grenades is made out of real grenade body and striker mechanisms thus for all practical purpose.

Technical Specification:

- Made of Original Components of Grenade 36M.
- Sound and delay matched with 36M.
- Hand / Rifle application.
- Field Serviceable
- Repeated use.
- Safe for Training / Practice
- Only Detonator is consumable
- Non-Lethal / No fragments even if drops nearby.

30 MM

MIL - 17 HE

It is a Self destruction Ammunition fired from 30mm AGL-17 and AGS-30 Launcher

SPECIFICATIONS :

Caliber	30mm
Length	132 ± 0.5mm
Range	1700 m with Optical Sight
Functioning Temperature	Ambient, +55°C to -30°C
Casualty Radius	7 m
Muzzle Velocity	185 ± 5 m/s
Fuze Type	Instantaneous and SD
Arming Distance	10-60 m
SD Time	20 to 40 Sec
Time of Flight	22.5 Sec
Fragmentation Pieces	600 + pieces
Dispersion	Bc ≤3.4, Bb/Xmean ≤ 1/66
Weight of Explosive	33.5 gm
Explosive Used	RDX : WAX (95 : 5)
Shelf life	10 Years



GRENADE

40 MIL - 25 HE



- MIL-25 is a muzzle loaded fragmentation ammunition developed for the under barrel grenade launcher (UBGL) GP-25 & GP-30.
- Specialty of MIL-25 is propellant charge incorporated at the tail of the grenade so that user should just load the grenade into the launcher and save the shell extraction time.
- Range of Grenade MIL-25 : 400m.
- The grenade is fitted with self destruction fuze which detonates within 14-19 secs in case the fuze does not function after falling on the ground.

TECHNICAL PARAMETERS

Caliber	40mm	Self-destruction time	14 to 19 Secs
Maximum Length	102.64mm	Effective Range	400m
Muzzle Velocity	76 m/s	Radius of Defeat	Not less than 6 m
Weight of Round	250 gm	Operational Temp.	-40 to +50 0C
Weight of explosive	48 gms	Shelf Life	10 Years
Fuze Arming Distance	10 to 40 m	Weapon	GP-25 & GP-30



MORTAR BOMB 51MM HE



PURPOSE:

Mortar Bomb 51 mm HE is designed for use as Area Targeted / Anti-personnel. It explodes immediately on impact and is effective against troops, soft-skinned vehicles, and light shelters. It is muzzle-loaded and fin-stabilized. The bomb is fired from a 51 mm mortar weapon at a low muzzle velocity and is employed for high-angle fire in a short span of time.

CHARACTERISTICS :

- | | |
|--|-------------------|
| • Mass of the Filled Bomb | 850 g |
| • Maximum dia | 50.7 ± 0.1 mm |
| • Filling type (Standard) | TNT |
| • Length of Bomb with Fuze & Tail Unit | 282.96 mm |
| • Filling mass | 215 ± 5 g |
| • Fuze | Mechanical Fuze |
| • Shelf Life | 10 years |

PERFORMANCE :

- | | |
|-------------------|--------------------------|
| • Muzzle velocity | $101 \text{ m/s} \pm 10$ |
| • Range | 1000 m |

PACKAGES :

Packing consists of inner and outer packages. Inner packages are HDPE/LDPE containers. 6 such containers are packed in a canvas bag with a shoulder strap. Canvas bags are then packed in a wooden box.





MORTAR BOMB 51 MM SMOKE



PURPOSE:

Bomb 51 mm smoke is an emission type screening smoke ammunition capable of producing effective screen over wide area. Used for facilitating tactical deployment of troops and screening from enemy fire. Bomb is fired from 51 mm mortar, smooth bore, muzzle loading weapon. Ammunition is provided with delay unit of 10 sec. to facilitate emission of the smoke just on landing on the ground.

CHARACTERISTICS :

- | | |
|--|------------------------------------|
| • Mass of the Filled Bomb | 960 $\pm$ 25 g |
| • Maximum dia | 50.85 mm |
| • Filling type (Standard) | Hexachloroethane based composition |
| • Length of Bomb with Fuze & Tail Unit | 282 $\pm$ 1mm |
| • Filling mass | 500 g (approx.) |
| • Colour of smoke | White |
| • Shelf Life | 10 years |
| • Hazard Division | 1.2 G |

PERFORMANCE :

- | | |
|-----------------------------------|--------------|
| • Muzzle velocity | 110m/sec |
| • Range | 830 m |
| • Duration of screening smoke | 120 Sec. min |
| • Time required to build up smoke | 10 Seconds |

PACKAGES :

Packing consists of inner and outer packages. Inner packages are HDPE/ LDPE containers. 6 such containers are packed in canvas bag with shoulder strap. Canvas bags are then packed in Steel Box.





MORTAR BOMB 51 MM ILLG



PURPOSE:

Bomb 51 mm Illuminating belongs to the family of Illuminating ammunition extensively used to support night warfare. The bomb provides enough illumination to support infantry for combats, aerial photography and army movements. Bomb is fired from 51 mm mortar, smooth bore, muzzle loading weapon.

CHARACTERISTICS :

- | | |
|---------------------------|-----------------|
| • Mass of the Filled Bomb | 930 $\pm$ 25 g |
| • Maximum dia | 50.7 -0.1 mm |
| • Length of Bomb | 283 $\pm$ 2mm |
| • Filling mass | 215 g (approx.) |
| • Shelf Life | 10 years |
| • Hazard Division | 1.2 |
| • Compatibility | G |

PERFORMANCE :

- | | |
|------------------------|------------------------|
| • Muzzle velocity | 115 $\pm$ 2.5 m/s |
| • Range | 300 to 900 meters |
| • Height of burst | 600 m. (Optimum) |
| • Time of burning | 30 Sec.(min) |
| • Area of illumination | 600 m (radius) |
| • Luminosity | 2.5 Lakh Candela (min) |

PACKAGES :

Packing consists of inner and outer packages. The inner package is HDPE/LDPE container. 6 such containers are packed in a canvas bag with shoulder strap. 4 bags are then finally packed in a Steel Box.





MORTAR BOMB 81 MM HE



PURPOSE :

Mainly used for firing at troops in the open and enemy assembly areas, which cannot be engaged by flat trajectory. Very effective for counter mortar task and enemy position on reverse slope of mountains.

CHARACTERISTICS :

- | | |
|--|-----------------------|
| ● Mass of the Filled Bomb | 4.4 kg $\pm$ 0.125 kg |
| ● Maximum dia | 80.8 mm |
| ● Filling type (Standard) | TNT Grade 1 E |
| ● Length of Bomb with Fuze & Tail Unit | 379 mm (Max.) |
| ● Filling mass | 705 $\pm$ 5g |
| ● Fuze | Mechanical Fuze |
| ● Shelf Life | 10 years |

PERFORMANCE :

- | | |
|-------------------|------------------|
| ● Muzzle velocity | 305 m/s $\pm$ 10 |
| ● Range | 5000 m |

PACKAGES :

Two Bombs are Packed in one Plastic Carrier.
Further Two plastic Carriers are Packed in
One Steel Carrier.





MORTAR BOMB 81 MM SMOKE



PURPOSE:

Basically, a smoke type screening Ammunition. Achieves a dense smoke screen for facilitating tactical deployment of troops and screening from enemy observation and aimed fire.

CHARACTERISTICS :

• Mass of the Filled Bomb	4.31Kg to 4.51 Kg
• Maximum dia	80.80 mm
• Filling type (Standard)	Plasticized White Phosphorous
• Length of Bomb with Fuze & Tail Unit	379 mm approximately
• Filling mass	0.500 ± 0.025 kg
• Fuze	Mechanical Fuze
• Colour of smoke	White
• Shelf Life	10 years

PERFORMANCE :

• Muzzle velocity	300 m/sec
• Range	5000 Meters
• Duration of screening smoke	25 Seconds
• Time required to build up smoke	5 Seconds

PACKAGES :

Two Bombs are Packed in one Plastic Carrier.
Further Two plastic Carriers are Packed in One Steel Carrier.





MORTAR BOMB 81 MM ILLG



PURPOSE :

It is an illuminating Mortar Ammunition. It is fired from 81mm mortar, smoothbore, muzzle loading weapon. On firing, the gas pressure from the Primary Cartridge and Augmenting Cartridges propel the Bomb. The explosive charge contained in magazine of the fuze ignites the Buster Bag which in turn ignites the star / Candle through hole provided in the metallic disc (Baffle Plate) placed below.

CHARACTERISTICS :

- | | |
|---------------------------|-----------------|
| • Mass of the Filled Bomb | 3.85 kg |
| • Maximum dia | 80.6 - 0.1mm |
| • Length of Bomb | 552 mm |
| • Filling mass | 743 gm (approx) |
| • Fuze | Mechanical Fuze |
| • Shelf Life | 10 years |
| • Hazard Division | 1.2 |
| • Compatibility Group | G |
| • Fire Fighting | 2 |

PERFORMANCE :

- | | |
|------------------------|----------------------|
| • Muzzle velocity | 321m/s |
| • Range | 4800 m |
| • Height of burst | 600 m. (Optimum) |
| • Time of burning | 40.0 sec. (min) |
| • Area of illumination | 600 m (radius) |
| • Luminosity | 9 Lakh Candela (min) |

PACKAGES :

Packing consists of inner & outer packages. The inner package is HDPE/LDPE carrier which accommodates 2 bombs. 2 such packages are then put in a carrier





MORTAR BOMB 120 MM HE



PURPOSE:

Mainly used for firing at troops in open areas and enemy assembly areas which cannot be engaged by flat trajectory weapons, very effective for counter mortar task and enemy position on reverse sloped mountains.

CHARACTERISTICS :

- Mass of the Filled Bomb 13.4 Kg
- Maximum dia 119.6 mm
- Filling type (Standard) TNT 1E
- Length of Bomb with Fuze & Tail Unit 674.64 mm approximately
- Filling mass 2.488 kg $\pm$ 0.08 Kg
- Fuze Mechanical Fuze
- Shelf Life 10 years

PERFORMANCE :

- Muzzle velocity 335 m/sec approximately
- Range Not less than 6500 Meters

PACKAGES :

One Bomb Packed in Container 63A Further Two Containers 63A Packed in Steel Box B7A





MORTAR BOMB 120 MM SMOKE



PURPOSE:

Basically, a smoke type screening Ammunition. Achieves a dense smoke screen for facilitating tactical deployment of troops and evading from enemy firing.

CHARACTERISTICS :

• Mass of the Filled Bomb	13.5 Kg
• Maximum dia	119.6 mm
• Filling type (Standard)	Plasticized White Phosphorous
• Length of Bomb with Fuze & Tail Unit	674.64 mm approximately
• Filling mass	1.700±0.025kg
• Fuze	Mechanical Fuze
• Colour of smoke	White
• Shelf Life	10 years

PERFORMANCE :

• Muzzle velocity	335 m/sec
• Range	6500 Meters
• Duration of screening smoke	25 Seconds
• Time required to build up smoke	5 Seconds

PACKAGES :

One Bomb Packed in Container 63A Further Two Containers 63A Packed in Steel Box B7A





MORTAR BOMB 120 MM ILLG



PURPOSE:

Bomb 120mm illuminating belongs to the family of illuminating ammunition used extensively to support night warfare and aerial survey. The bomb is fired from 120 mm Mortar, smooth bore, Muzzle Loading Weapon. The bomb is provided with Time Mechanical Fuze which function along the trajectory at the pre-set time enabling illuminate canister supported by parachute to eject an deploy in the air.

CHARACTERISTICS :

- Mass of the Filled Bomb 13.05 kg $\pm$ 0.20 kg
- Maximum dia 119.6mm
- Length of Bomb 677 mm (max)
- Filling mass 1.030 Kg (approx)
- Fuze Mechanical Fuze
- Shelf Life 10 years
- Hazard Division 1.2
- Compatibility G

PERFORMANCE :

- Muzzle velocity 330 $\pm$ 4.30 m/s
- Range 6000 m
- Height of burst 600 m. (Optimum)
- Time of burning 40.0 sec. (min)
- Area of illumination 600 m (radius)
- Luminosity 10 Lakh Candela (min)

PACKAGES :

Packing consists of inner and outer packages. Inner packages are LP containers with steel end caps. Two such container bombs are packed in steel box





SHELL 155MM HE ERFB BT

Rapid and accurate firing at long ranges to attack the ground targets by 155 mm Howitzer

TECHNICAL SPECIFICATION	
Maximum Range	30 Km.
Muzzle Velocity	897 ± 5 m/s
Max. Chamber Pressure	444 MPa
Mass of Shell without Fuze	42.84 to 45.34 kg
Length of Shell without Fuze	842.3 mm
Shelf Life	10 years
Operating Temperature	-20 °C to +60 °C
Hazard Division	1.1
Compatibility	D
PACKAGING DETAILS	
Packed in 12 nos.in 01 wooden/Steel pallet named unit load	
Length x Width x Height: 1130 mm x 990 mm x 580 mm	



SHELL 155MM HE ERFB BB

Rapid and accurate firing at long ranges to attack the ground targets by 155 mm Howitzer.

TECHNICAL SPECIFICATION	
Maximum Range	38.4 km
Muzzle Velocity	897 ± 5 m/s
Max. Chamber Pressure	444 MPa
Mass of Shell without Fuze	45.27 to 47.77 kg
Length of Shell without Fuze	861 mm
Shelf Life	10 years
Operating Temperature	-20 °C to +60 °C
Hazard Division	1.1
Compatibility	D
PACKAGING DETAILS	
Packed in 12 nos. in 01 wooden/Steel pallet named unit load.	
Length x Width x Height : 1128mm x 960mm x 562 mm	



SHELL 155MM HE M107

Often used for training / practice, in addition to its normal role as anti-personnel, ammunition.



TECHNICAL SPECIFICATION	
Maximum Range	18 km
Muzzle Velocity	685 m/sec
Max. Chamber Pressure	386 MPa
Mass of Shell without Fuze	42.1 kg
Length of Shell without Fuze	604 mm
Shelf Life	10 years
Operating Temperature	-2 °C to +60 °C
Hazard Division	1.1
Compatibility	D
PACKAGING DETAILS	
Packed in 12 nos. in 01 wooden /Steel pallet named unit load. Length x Width x Height : 880mm x 1060mm x 575 mm	

SHELL 155MM HE M77 B

Rapid and accurate firing at long ranges to attack the ground targets by 155 mm Artillery Gun.



CHNICAL SPECIFICATION	
Maximum Range	24 km
Max. Chamber Pressure	440 MPa
Mass of Shell without Fuze	41.7 kg
Length of Shell without Fuze	728 mm
Shelf Life	10 years
Operating Temperature	-20 °C to +60 °C
Hazard Division	1.1
Com atibilit	D
PACKAGING DETAILS	
Packed in 12 nos. in 01 wooden /Steel pallet named unit load. Length x Width x Height : 900 mm x 1060 mm x 556 mm	



SHELL 155MM

ILLUMINATING ERFB

Designed to support night warfare. The illumination provided by this ammunition is sufficient for identification and engagement of all types of moving and non-moving objects.



TECHNICAL SPECIFICATION	
Weapon	155 mm Howitzer FH77B 39
Maximum Range	24 Km
Luminosity	750,000 Cd (Min)
Time of Burning	90 sec. (Min)
Mass of Shell without Fuze	42.84 to 45.34 kg
Length of Shell without Fuze	843mm
Diameter	154.5 mm
Net Explosive Content	2.6 Kg.
Height of payload ejection	1200m
Fuze	Electronic Fuze
Shelf Life	10 years
Operating Temperature	-20 °C to +60 °C
Hazard Division	1.3
Compatibility	G
PACKAGING DETAILS	
Packed in 12 nos. in 01 wooden/Steel pallet named unit load.	
Length x Width x Height : 1128 mm x 960 mm x 565mm	

SHELL 155MM

SCREENING SMOKE ERFB

The shells are normally used to mask the movement or redeployment of own forces from enemy observation, thereby neutralizing direct enemy fire.



TECHNICAL SPECIFICATION	
Maximum Range	24 km
Smoke Screening Time	120 sec
Descent Rate of Canister	5m/s
Mass of Shell without Fuze	42.84 to 45.34 Kg.
Length of Shell without Fuze	843 mm
Shelf Life	10 years
Operating Temperature	-20 °C to +60 °C
Hazard Division	1.3
Compatibility	G
PACKAGING DETAILS	
Packed in 12 nos. in 01 wooden/Steel pallet named unit load.	
Length x Width x Height : 1128 mm x 960mm x 565mm	



FUZE PD ELECTRONIC

The Fuze is compatible to fire with 155mm Ammunition. It has two modes of operation i.e. Point Detonation Super Quick and Point Detonation Delay as per requirement.



TECHNICAL SPECIFICATION

Mass	1000 gms
Length	151.5 mm max
Diameter	61.2 mm max
Shelf Life	15 years
Operating Temperature	-30 °C to +55 °C
The Fuze is safe for use in the muzzle velocity range of 180 to 1000 m/s and can withstand chamber pressure up to 444 MPa	

FUZE PD M557P1

The Point Detonating M557P1 is an impact fuze used in the High Explosive projectiles of 155mm Howitzer. This Fuze complies fully with all NATO military specifications and test methods.



TECHNICAL SPECIFICATION

Mass	950 g
Length (Overall)	151 mm
Length (Visible)	96.4 mm
Thread	25.4 mm
Operating Temperature	-62°C to +71°C

PACKAGING

8 / 12 Fuzes per box, 2 metal boxes per wooden box

BI- MODULAR CHARGE SYSTEM

It is a state of the art replacement for conventional propellant charges.

BMCS M91 SINGLE BASE PROPELLANT

Low Zone (consisting of 1 to 2 low zone modules, for smaller ranges and training purpose)

BMCS M92 TRIPLE BASE PROPELLANT

High Zone (consisting of 3 to 5 high zone modules for 39 Cal, or 3 to 6 for 45Cal & 52 Cal)



Parameter	BMCS M-91 (Single Base Propellant)	BMCS M-92 (Triple Base Propellant)
Type	Completely Combustible	Completely Combustible
Weight (1 module)	1.9 Kg. (Nominal, Based on ACM)	2.8 Kg. (Nominal, Based on ACM)
Length (1 module)	167 mm (Nominal)	167 mm (Nominal)
Muzzle Velocity	445 m/sec (at Zone-2)	878 m/sec (at Zone-6)
Maximum Range	12 km (Zone-2)	40 km (Zone-6)
Shelf Life	15 years (when storage at +5°C to +45°C)	15 years (when storage at +5°C to +45°C)
Operating Temperature	-30 °C to +60 °C	-30 °C to +60 °C
Weapon Compatible	155 mm Howitzer	155 mm Howitzer
Packing	5 modules in one Final Packaging Tube	5 modules in one Final Packaging Tube
Packing Weight	14 Kg.	18 Kg.

PACKAGING DETAILS

Each module is sealed in a multi-layered barrier bag with a protective packing piece. The barrier bags are partially vacuummed and hermetically sealed then packed in cylinder (with five modules) then put in palletized Unit (with 25 final packing tube).
Dimension of Wooden Crate: Length x Width x Height: 1100 mm x 1050 mm x 1078 mm
Dimension of Metallic Crate: Length x Width x Height: 1115 mm x 1085 mm x 1036 mm

HAZARD CLASSIFICATION

UN Number	0242
Hazard Division	1.3
Compatibility	C

DOUBLE BASE PROPELLANT

The product is used with 155 mm ammunition.

CHARGE 8



CHARGE 9



TECHNICAL SPECIFICATION	CHARGE 8	CHARGE 9
Length	735 ± 5 mm	740 ± 5 mm
OD	6.4 ± 0.30 mm	12.1 ± 0.2 mm
Hole Dia	3.30 ± 0.30 mm	1.28 ± 0.04 mm
Web	1.55 ± 0.05 mm	2.02 ± 0.03 mm
Cal Value	700 ± 25 Cal/gm	800 ± 25 Cal/gm
BALLISTICS	CHARGE 8	CHARGE 9
V of A	685 m/s at 21°C	827 m/s at 32°C
SD	3.2 m/s	3.5 m/s
ACP Mean	241 Mpa	309 Mpa
Range	19km	27 km



CHARGE M4A2

Single Base Propellants Charge M4A2 In White Bag,
Cylindrical and Perforated Propellant Grain
Used in 155 mm Howitzer Gun



PRESSURE	
P mean	218 Mpa
P average	153 to 190 Mpa
MUZZLE VELOCITY	
CHARGE NO.	MV
3	274 m/s
4	347 m/s
5	403 m/s
6	482 m/s
7	569 m/s

PRIMER M191 A2

The Primer is composed of a finished metal alloy cartridge which contains various components sealed within. In the rear end of the primer there is plunger while a sealing disc, percussion cap and Gun powder charge (GPC-20) are placed within the inner case.



TECHNICAL SPECIFICATION	
Body of Projectile	Brass
General Chemical Composition	Combination of Potassium Nitrate, Charcoal & Sulphur
Cap F-26	Combination of Lead Styphnate, Tetrazene, Barium Nitrate, Lead Dioxide & Antimony Trisulphide
Base Substance	Potassium Nitrate
Hazard Division	1.4
Compatibility	G
PACKAGING DETAILS	
It is packed in Plastic box viz. M31A containing 560 nos. each & 18 such plastic boxes packed in a box. Length x Width x Height : 1200 mm x 1000 mm x 822 mm	



FUZE DA B429



Fuze B429 is a percussion type of nose fuze having direct, delay and Graze action. This fuze is used for Shell 130 mm HE Filled. The fuze can be set externally to 'I' and 'D' mode corresponding to '0' and '3' markings on fuze body respectively with the help of selector mechanism incorporated in fuze body.

TECHNICAL SPECIFICATION

Mass of Filled Fuze	429 g
Length of fuze	103.02 mm to 105.71mm
Diameter	40 mm Max
Shelf Life	07 Years
Operating Temperature	-20°C to +60°C

HAZARD CLASSIFICATION

Hazard Division	1.2
Compatibility Group	D

PACKING DETAILS

Steel Box used for packing of 20 no of Fuze. With adaptor Box M23 B and plastic container 67 A having total Qty. 15 Nos.



SHELL 105 MM

HE

The ammunition is employed to demolish army concentrations, fortifications, bunkers and many other defence installations. This is suitable for use both in the plains as well as mountains.

TECHNICAL SPECIFICATION	
Maximum range	17.6 km
Muzzle velocity	591m/sec (normal charge) 710 m/sec (super charge)
Maximum Chamber Pressure	332 ± 8 MPa
Mass of the filled shell	16.97 kgs max
Length of Shell without Fuze	451.56 ±2.5 mm
Shelf life	30 years
Operating Temperature	-20 °C to +60 °C
Hazard Division	1.2
Compatibility Group	D
PACKING DETAILS	
One Wooden / Steel Box holding two Shells in laminated container	
Length x Width x Height : 671 mm x 312 mm x 185 mm	



SHELL 105 MM

HEER (BB)



It is a high explosive extended range (HEER) Shell. Better fragmentation is achieved by introducing high quality steel alloy and thinning the body of the shell. The optimised ballistic shape of the shell improve the ballistic coefficient (Reduced drag) & provide better accuracy. The Base Bleed Unit (BBU) at base reduces the drag and gives additional thrust to carry the shell further.

TECHNICAL SPECIFICATION	
Maximum Range	20.4 km
Muzzle Velocity	731 m/sec
Maximum Chamber Pressure	332 MPa
Mass of filled Shell	15.765 kg
Length of Shell (plugged)	611 mm
HAZARD CLASSIFICATION	
Hazard Division	1.2
Compatibility	F
PACKAGING DETAILS	
One Wooden / Steel Box holding two Shells in laminated container	
Length x Width x Height : 671 mm x 312 mm x 185 mm	



SHELL 105 MM ILLG



This ammunition provides intense illumination for identification and engagement of all types of stationary and moving objects.

The shell is fired with time mechanical fuze, present to ensure ejection at the desired height and range. The illuminant canister supported with parachute and spin break system provides intense illumination on the ground covering an area of 600 mtrs. radius.

TECHNICAL SPECIFICATION	
Weapon	105 mm IFG
Maximum range	17 Kms
Luminosity	700,000 candela
Time of burning	25 sec (min)
Height of burst	400 mtrs (Approx)
Duration of illumination	25sec (min)
Rate of descent	10 m/sec (max)
Net explosive content	800 gm (Approx)
Estimated mass	15 88 $\pm$ 0.1 Kgs
Length	450 mm (Approx)
Diameter	108-0.3 mm(Approx)
Fuze	213P MK5 (M2) or M85P13T1 (Electronic)
Shelf life	10 years.
Hazard Division	1.2
Compatibility Group	G
PACKING DETAILS	
One Wooden / Steel Box holding two Shells in laminated container	
Length x Width x Height : 671 mm x 312 mm x 189 mm	



SHELL 105 MM

SMOKE (SCREENING & COLOUR)

The BE Smoke is used for screening and counter surveillance purpose in the combat field. It produces uniform thick opaque screen over a wide area to facilitate tactical deployment of troops and shielding from direct enemy attack.

BE colour smoke is similar emission type smoke ammunition producing uniform dense colour smoke in red, orange and blue colours for signalling purposes.



TECHNICAL SPECIFICATION	
FOR COLOUR	
Estimated mass	15.970 Kgs
Net explosive content	Red - 450 gm (approx) Orange - 450 gm (approx) Blue - 410 gm (approx)
Length	450 mm (approx)
Diameter	104.5 + 0.2 mm (approx)
Time of burning (including built up time)	45 sec (min)
Fuze	Time - Fuze
Range	17 km (Max)
Shelf Life	10 years
Compatibility Group	G
Fire Fighting Class	2
Hazard Division	1.2
FOR BE SMOKE	
Mass of filled bomb	16.49 ± 0.13 Kg.
Length	465mm (approx)
Diameter	104.5 + 0.2 mm (approx)
Duration of smoke	Over 45 sec
Range	11 Km
Smoke	Dense white
Fuze	Time - Fuze
Shelf Life	10 years
Hazard Division	1.2
Compatibility group	G
Fire Fighting Classification	2
PACKING DETAILS	
One Wooden / Steel Box holding two Shells in laminated container	
Length x Width x Height : 671 mm x 312 mm x 189 mm	

FUZE PERCUSSION

DA NO.117



Fuze 117 is a direct action and graze fuze. It is used in a variety of equipment, with HE, bursting smoke and chemical shells. It functions at low angle of impact and is rapid in action.

TECHNICAL SPECIFICATION	
Mass of Filled Fuze	1.188 Kg $\pm$ 10 gms.
Length of fuze	124.689 mm to 126.848 mm
Diameter	61 mm Max
Shelf Life	18 Years
Operating Temperature	-20°C to +60°C
HAZARD CLASSIFICATION	
Hazard Division	1.2
Compatibility Group	D
PACKING DETAILS	
Container 47B is used for packing of Fuze Box M104 is used to hold 20 fuzes	

FUZE 213 MK5

M1& M2

M3 & M4



Fuze 213 MK5 (M-1) & (M-2)

These are high precision mechanical time and impact fuzes which offer a choice of air burst at a desired point above the target or detonation on impact. Time setting is 0-80 seconds in steps of 0.5 seconds. Reliable and versatile the fuzes are compatible to all guns and howitzers from 75 mm to 152 mm calibers. M1 is used with HE shells whereas M-2 is employed with cargo shells/smokes base ejection type shells.

Fuze 213 MK5 (M-3) & (M-4)

Very accurate mechanical time and direct action fuzes, specially suited for accurate laying of smoke screens, battle field illumination and release of cargo at the precise point over the target.

CARTG. 105 MM

SUPER CHARGE & NORMAL CHARGE

Cartg 105 mm SC & NC is loosely assembled with the shell in the chamber of the gun to release required pressure to project the ammunition at a muzzle velocity sufficient to perform effectively at the target.



TECHNICAL SPECIFICATION SUPER CHARGE

Max mass of the cartg case	3.2 Kgs
Total weight of the propellant	3135 g
Muzzle velocity	703.1m/sec
Maximum pressure	330 Mpa max.

TECHNICAL SPECIFICATION NORMAL CHARGE

Max mass of the cartg case	3.2 Kgs
Total weight of the propellant	2286 g
Muzzle velocity	595.8 /m sec
Maximum pressure	354 Mpa
Hazard division	1.3
Compatibility	E
Fire Fighting classification	3

PACKING DETAILS

One Wooden / Steel Box holding four Cartgs. in laminated container
Length x Width x Height : 663 mm x 650 mm x 248 mm

ROUND 120 MM FSAPDS MK-II MBT



PURPOSE :

Fin Stabilized Armour Piercing Discarding Sabot (FSAPDS) capable of defeating NATO target upto 2000 mtrs.

CHARACTERISTICS :

Gun (Bore)	120mm Rifled Gun
Mass of the filled Shell	20.840 kg
Length of complete round	998 mm
Filling type in Shell	NO/M 110
Filling Mass	8.5 kg
Weight of	
• SCCC Liner (Set Weight)	0.910 kg
• Steel Cup	3.4 kg
• Primer	0.487 kg
Weight of Projectile	7.30 Kg
Length of Projectile	566 mm
Type of Primer	SCP MK II 'C' NATO
Tracer	Red PMT for MK-II

PERFORMANCE:

Maximum Range	1600-1700 mtrs.
Muzzle velocity	1650 m/sec
Penetrator	Tungsten Heavy Alloy
Penetration capability	515 mm
Shelf Life	10 years

ROUND 120 MM HESH

PURPOSE :

Round 120 mm HESH having high explosive squash head capable of defeating NATO target upto 2000 mtrs.

CHARACTERISTICS:

Gun (Bore)	120mm Rifled Gun
Mass of the filled Shell	22.52 kg
Length of complete round	998 mm
Filling type in Shell	AP/S 400-120
Filling Mass	3.3 kg
Weight of	
• SCCC Liner (Set Weight)	0.790 kg
• Steel Cup	3.4 kg
• Primer	0.620 kg
Weight of Projectile	14.4 kg
Type of Primer	L1 A4 MK-II (NATO)
Type of Fuze	L29 A3 Base Fuze
Tracer	No. 30 MK ½

PERFORMANCE:

Maximum Range	2000 Meters.
Muzzle velocity	736 m/sec
Scab Area	230 mm (Mass of scab 5 kg)
RHA Plate Thickness	120 mm
Weight of scabbed material	5 kg
Shelf Life	10 years



SHELL 125MM HEAT 1A



PURPOSE :

Main role is for direct fire against armored vehicles, SP Guns, Mortars & other heavy armored targets. Effective against targets fitted with protective devices such as skirting plates & girders. It can also be used against bunkers.

CHARACTERISTICS :

Gun (Bore)	125mm Smooth Bore Gun
Mass of the filled Shell	18.401-19.541 Kg.
Filling type in Shell	RDX / WAX(95:5)
Filling Mass	1.661 Kg.
Propellant -	
• Single base propellant 15/1	3 Kg.
• Single base propellant 12/7	2.2 Kg.
Alternatively Triple Base Propellant -	
• NQ/S 400-100	3.00 Kg
• NQ/M 119	2.2 Kg.

PERFORMANCE :

Maximum Range	4000 m
Point blank Range	960 m
Muzzle Velocity + 15°C	905 m/s
Armour Thickness defeated at -	
Angle of attack	60°
Normal Effective Penetration	400 mm in RHA plate
Maximum Chamber Pressure	370 ± 7 MPa at 40°C
Rate of Fire	8 Rounds per minute

SHELL 125 MM HE 1A



PURPOSE :

Designed for destroying enemy shelters, vehicles personnel.

CHARACTERISTICS :

Gun (Bore)	125mm Smooth Bore Gun
Mass of the filled Shell	22.575 ± 0.705 kg.
Filling type in Shell	TNT 1E SPL.
Filling Mass	2.95 ± 0.05 Kg.
Propellant - Method of Filling	Screw Filling
• Single base propellant 15/1:	3 Kg.
• Single base propellant 12/7:	2.2 Kg.
Alternatively Triple Base Propellant -	
• NQ/S 400-100	3.00 Kg
• NQ/M 119	2.22 Kg

PERFORMANCE :

Maximum Range	5000 m
Muzzle Velocity + 15°C	850 m/s
Maximum Chamber Pressure	430 ± 7 MPa
Rate of Fire	8 Rounds per minute

125MM FSAPDS AMMUNITION

PURPOSE :

125mm FSAPDS ammunition with 3BM42 armor piercing projectile for D81 tank gun is used with T-72 and T-90 Tanks.

CHARACTERISTICS :

Gun (Bore)	125mm Smooth Bore Gun
Weight of Round	20.4 Kg
Length of Projectile	566.9 to 571.4 mm
Weight of Projectile	7.05 Kg
Muzzle Velocity	1700 m/s at 15°C
Standard Deviation	0.35 miles
Density of Hits in Range (max)	≤0.6 m
Density of Hits in Direction (max)	≤0.6 m
Tracer	Visibility min. 3000 m
Bore Pressure	Max 600MPa at +50°C
Armor Penetration Depth	460mm i.e. 230 mm plate at 60°

CHARGE MASS

Propellant	Primary	Secondary
NQ/S 400-100	3.0 Kg.	1.8 Kg.
NQ/m 119	2.34 Kg.	0.95 Kg.

ENVIRONMENTAL CONDITION :

Minimum Temperature for use	- 40°C
Maximum Temperature for use	+50°C
Minimum Temperature for Storage	- 40°C
Maximum Temperature for Storage	+50°C
Maximum Relative Humidity	95%
Average Relative Humidity	65%
Average Annual Temperature	32°C



Pinaka Mk-I



Features :

The Pinaka Multi Barrel Rocket System (MBRS) is an all-weather indirect fire free flight artillery Rocket System. The free flight Rockets are fired from launch vehicles each of which can deliver a massive fire power at a high rate over extended ranges. A Battery of six launchers can fire a salvo of lethal warheads can be delivered up to a range of 38 Km and can effectively neutralize the target 1000m x 800m.

The Pinaka Multi Barrel Rocket launching System, is a force multiplier for destroying/neutralizing enemy troop concentration areas, communication centres, air terminal complexes, Gun Rocket Locations.

The system delivers accurate and massive fire power at a high rate over extended ranges. The system's accuracy provides an edge in modern artillery warfare. The Pinaka is meant as a supplement to the existing artillery system at a range beyond 30 km and it can be fitted with a variety of warheads like PF, RHE

Technical Specification :

Range	10 km to 38 Km.
Calibre	214 mm.
Length	4.88 m.
Rocket Weight	280 Kg.
Propellant Weight	100 Kg.
Warhead Weight	100 Kg.
Accuracy	<1.5% of range (PE).
Warheads	PF, RHE,
Guidance	Free Flight.
Rate of Fire	Approximately 44 s.
Flight Stabilization	4 curved fins (WAF).
Salvo reload time	4 minutes.
Detonation Mechanism	Electronic Time & Proximity Fuze.
Rocket Configurations	a. Without Brake Km. c. With Big Brake Ring - 12.6 to 18 Km.
Shelf life	10 years.
POD	6 No



Pinaka Mk-I Enhanced



Features :

The Pinaka Multi Barrel Rocket System (MBRS) is an all-weather indirect fire free flight artillery Rocket System. The free flight Rockets are fired from launch vehicles each of which can deliver massive fire power at a high rate over extended ranges. A Battery of six launchers can fire a salvo of lethal warheads which can be delivered up to a range of 48 Km and can effectively neutralize the target 1000m x 800m.

The Pinaka Multi Barrel Rocket launching System, is a system for destroying/neutralizing enemy troop concentration areas, communication centres, air terminal complexes, Gun Rocket Locations.

The system delivers accurate and massive fire power at a high rate over extended ranges. The system provides an edge in modern artillery warfare. The Pinaka is meant as a supplement to the existing artillery system at a range beyond 30 km and it can be fitted with a variety of warheads like PF, RHE

Technical Specification :

Range	13 km to 48 Km.
Calibre	214 mm.
Length	4.72 m.
Rocket Weight	280 Kg.
Propellant Weight	111 Kg.
Warhead Weight	100 Kg.
Accuracy	<1.5% of range (PE).
Warheads	PF, RHE,
Guidance	Free Flight.
Rate of Fire	Approximately 44 s.
Flight Stabilization	6 flat fins (WAF).
Salvo reload time	4 minutes.
Detonation Mechanism	Electronic Time & Proximity Fuze.
Shelf life	15 years.
POD	6 Nos. of Rockets are loaded in each POD.



Pinaka Mk-II



Features :

Pinaka - II is a free-flight artillery rocket with different types of warhead & fuzes, a multi-tube launcher vehicle, a replenishment-cum-loader vehicle, a replenishment vehicle and a command post vehicle. There are two pods containing 6 rockets each, capable of firing in salvo mode within 48 sec neutralizing the area of 700 x 500 m. In light of the requirement of the Army for a free flight rocket with enhanced range, Pinaka Mk-II rocket with 48 km range.

Technical Specification :

Range	48 km (37mi)
Lenght	5.17 m (17.0 ft)
Rocket Diameter	214 mm (8.4 in)
Warhead Weight	100 kg (220 lb)
Rocket Weight	325 kg (717 lb)
Propellant Weight	131.5 kg (290 lb)
Rate of Fire	Approximately 44 seconds
Accuracy	$\leq 1.5\%$ range
Reload time	4 minutes
Warheads	PF, RHE,
Detonation mechanism	Electronic time and Proximity fuze
Guidance	Free flight
Flight stabilization	6 flat wrapped around fins
Launching pod	2 detachable pods, each carrying 6 rockets



Guided Pinaka



Features :

The Pinaka Multi Barrel Rocket launching System, is a state of the art weapon for destroying/neutralizing enemy troop concentration areas, communication centres, air terminal complexes, gun/rocket locations by firing rockets with several warheads from launching vehicle.

Guided Pinaka Rocket system (GPRS) is capable of striking targets located deep into enemy territory up to 75 km range with accuracy of ≤ 60 m (CEP).

It is equipped with a Guidance and Navigation (GNC) Kit and has canard based aerodynamic control to achieve an accuracy of ≤ 60 m (CEP). The Guided Pinaka Rockets are fired from launch vehicles each of which can fire 8 Rockets. Only 2-3 rockets are required for achieving a kill probability of 99% against a single target. The Pinaka is meant as a supplement to the existing artillery system at a range beyond 30 km and it can be fitted with a variety of warheads like PF, RHE. The system delivers accurate and massive fire power at a high rate over extended ranges.

Technical Specification :

Range	20 km to 75 Km.
Calibre	214 mm.
Length	5.17 m.
Rocket Weight	325 Kg.
Propellant Weight	131.5 Kg.
Warhead Weight	100 Kg.
Accuracy	< 60 m of range (CEP).
Warheads	PF, RHE,
Guidance	INS+GPS.
Rate of Fire	Approximately 44 s.
Flight Stabilization	6 flat fins (WAF).
Salvo reload time	4 minutes.
Detonation Mechanism	Electronic Time & Proximity Fuze.
Shelf life	15 years.
POD	4 Nos. of Rockets are loaded in each POD.





CARTG 30MM AK-630 HEI/HET/PRACTICE

The Indigenous 30mm ammunition for AK 630 gun has the following three variants:

- | | |
|-----------------------------|---|
| a) Cartridge 30 mm HE | Rounds with HE Shell and Nose fuze
DASD (Direct Action and Self - destruction) |
| b) Cartridge 30 mm PRACTICE | Round with inert shell and PRF
(Plug Representing Fuze) |
| c) Cartridge 30 mm TRACER | Round with tracer shell and ballistic cap |

SPECIFICATIONS

Gun Mount	AK 630
Caliber	30mm
Muzzle Velocity	890 ± 15
Rate of Fire	4000 to 5000 rounds / minute
Weight of Cartridge	830 gms
Length	289.45 to 292.84mm
Range	4 Km Slant, 5 Km by reverse post
Target	Air borne target (It can also be used against surface targets)



CARTRIDGE OF 40MM L/60 NAVAL

- ♦ It is anti aircraft ammunition for 40mm Guns Mounted on Naval Platforms

SPECIFICATIONS

Total length of ammunition	447 mm
Total mass of ammunition	2.1 kg
Mass of Projectile	0.9 kg
Propellant (ACM)	0.4 kg
Muzzle velocity	869 + 10 m/sec
Rate of fire	120 rounds per minute
Maximum range @45"	9830 meters
Armor class 'B' Penetration	11 mm
from 5500 meters	





CARTG 76.2MM NAVAL HE AND PRACTICE

This Ammunition is designed to fight against enemy Aircraft / ships from Warship. It is made in two versions. Cartg. 76.2 mm HE Fuzed with variable time fuze for combat purpose and Cartg. 76.2 mm Practice used for practice purpose.

SPECIFICATIONS

Total length of Ammunition	815.5 mm
Total Mass of Ammunition	15.30 kgs (Approx.)
Weight of Projectile (Filled) and with PRF	5.9 kgs (Approx.) $\pm$ 0.045 kg
Propellant	Triple Base Propellant NA2P/M 109
Muzzle Velocity	994,5 m/s
Rate of firing	90 Rds/min
Maximum Range	6900 m (approx.)



CARTG 76.2MM NAVAL HEPF

SPECIFICATIONS

Total Length of Ammunition	815.5 mm
Total Mass of Ammunition	13.10 kgs to 13.40 kgs (approx)
Weight of Projectile with fuze	5.9 kgs $\pm$ 0.045 kgs
Type of fuze	Radio proximity or Direct Action
Muzzle velocity	983 $\pm$ 10 m/s
Pressure	4250 $\pm$ 80 Kg/cm ²
Prop. Of charge mass	2.895 kgs
Volume of Cartg case	3800 C.C.
Wt of Cartg case	3.580 kgs
Rate of Firing	
- AK 176	90 rds / min
- AK 726	180 rds / min
Max Range	15.5 km



CARTG. 76/62 SRGM

SPECIFICATIONS

Mass of Round	12.5 Kg (nominal)
Length of Round	907mm
Muzzle velocity	905+/- 5 M/sec, Sd Not More Than 3 M/sec
Pressure	3792 Kg/sq Cm [305 Mpa (mean)]
Max. Pressure At 60°C	3975 Kg/sq Cm
Range	16000m
Dispersion Over 500m At +21°C	< 1m Vertically & 1m Horizontally
Rate of Fire	120 RPM

Components

Cartg Case	70/30 Brass
Propellant	Single Base Smokeless



KAVACH/ CHAFF ROCKETS

- ♦ Used as missile counter measure or defence system
- ♦ Designed for dispensing Chaff payload at designated ranges

SPECIFICATIONS

Parametere	KAVACH ROCKET		
	1	2	3
	SRCR	MRCR	LRCR
Caliber	98.00mm	105.00mm	105.00mm
Muzzle velocity	80m/s	450m/s	450m/s
Range	500m	2000m	10000m



SRCR

MRCR

LRCR

RGB 60 ROCKET

- ♦ Rocket is used against under water target
- ♦ Fuze YDB-60 is used in Anti-Submarine Rocket RGB-60.
- ♦ Time Mode:- by timer mechanism at preset depth
- ♦ Direct Action mode : On striking the target
- ♦ Sympathetic mode: activated by shock waves due to explosion of adjacent anti-submarine Rocket.

SPECIFICATIONS

Diameter	212 mm
Length	1830 mm
Explosive	Torpex 4 -A
Range	350 m to 5500 m
Fuze	YDB 60
Motor	2 stage
Rate of sinking	11.5 m/s
Launcher	RBU - 6000 (Russian System) & Indian indigenous Rocket Launcher
Length of Fuze	361mm
Max. Diameter of Fuze	135mm
Weight of Fuze	6.5 kg



AIR FORCE AMMUNITION

AERIAL BOMB 500 KG GP



- 500 kg GP Bomb is an air-dropped weapon intended to neutralize a variety of targets varying from soft skinned to moderately protected targets in the close vicinity of bomb impact
- The bomb has two modes of functioning i.e. on impact and with impact delay.
- In the impact mode.bomb generates blast and natural fragmentation effects
- In the impact delay mode, the bomb penetrates into the RCC targets and explodes within the target causing extensive structural damage and confined blast effects.

PHYSICAL PARAMETERS	
Total length of Ammunition	3031 mm
Weight of Empty Bomb	280 Kg (Approx.)
Filled weight of Bomb	463 KGs $\pm$ 3 Kgs
Weight of filing	185 KGs $\pm$ 3 Kgs
Center of gravity	1200 $\pm$ 15 mm
Density	1.68 $\pm$ 0.02 gm/ cc (min)
Explosive used	Torpex-4B

AIR FORCE AMMUNITION

AERIAL BOMB 1000 LBS HE



The Bomb HE 1000 LB is made of Cast Steel construction. The Bomb body is filled with high explosive. The nose opening is closed by an exploder container. The rear end of the body is under cut internally, to form a lip in which are out two diametrically opposite slots. It can be dropped from heights as high as 15000-metres. It penetrates deep into subsoil strats and detonates giving earthquake effect. Against concrete runways penetrates deep and detonates leaving a crater of approx 6m x 3m deep thus putting them out of commission.

PHYSICAL PARAMETERS	
Length of Ammunition with Tail Unit	7 ft.6 inch approx.
Total Weight of filled Bomb W/O Tail Unit	450 Kg Approx.
Tail Unit Length	2ft. 4.5 inch approx.
Weight of Tail Unit	25.36 Kgs
Charge Mass	186 KGs $\pm$ 5 Kgs
Centre of gravity	808 $\pm$ 20 mm
Explosive Used	Torpex-4A

AIR FORCE AMMUNITION

AERIAL BOMB 450 KG HSLD



It is carried on different fighter planes and dropped from heights . It penetrates deep into subsoil and starts to detonate giving earthquake effect. Against concrete runways penetrates deep and detonates leaving a crater thus rendering it non operational.

PHYSICAL PARAMETERS	
Total length of Ammn	280 cm
Weight of Empty Bomb	255±7kgs
Volume of Empty Bomb	117000 cc
Filled weight of Bomb with BTU	450 KGs ± 25Kgs
Weight of filing	200 Kgs ± 5kgs
Center of gravity	1155 ± 20mm
Density	1.70 gm/cc (min)
Explosive used	DENTEX

AIR FORCE AMMUNITION

AERIAL BOMB 250 KG HSLD



It is carried on different fighter planes and dropped from heights . It penetrates deep into subsoil and starts to detonate giving earthquake effect. Against concrete runways penetrates deep and detonates leaving a crater thus rendering it non operational.

PHYSICAL PARAMETERS	
Length of Ammunition	237 cm
Weight Empty of Bomb	135 Kgs
Volume of filled Bomb	60000cc
Weight of Bomb with tail unit	250 KGs $\pm$ 25 Kgs
Empty weight Bomb	145 $\pm$ 5 Kg
Filled weight	250 $\pm$ 8 Kg
Charge Mass	103 $\pm$ 3 kg
Center of gravity	972 $\pm$ 20mm
Density	1.7 gm/ cc (min)
Explosive Used	Dentex

AIR FORCE AMMUNITION

AERIAL BOMB 100 - 120 KG



100-120 Kg aerial bomb is used to target industrial, military field installations, railway junctions and airfields etc. Primarily as well as also for anti personnel applications. The aerial bomb 100-120 Kg is intended to be used as a target bomb at horizontal flights and altitudes between 50 to 500 m and airplane speed between 500 to 1150 km/hr. The bomb is delivered by aircraft such as MiG-21, MiG-27 & MiG-29

PHYSICAL PARAMETERS	
Weight of Bomb with AVU - ETM fuze	123+3 kg
Empty weight of Bomb	73.5 kg Max
Total filed weight	Max 122kg
Charge Mass	47±1.5 kg
Center of gravity	345- 355mm
Density	1.70 gm/cc (min)
Explosive used	DENTEX

AIR FORCE AMMUNITION

ROCKET 68 MM



ROCKET
68 MM HE



ROCKET
68 MM HC



ROCKET
68 MM PRACTICE

Weight without Fuze	4.100kg $\pm$ 110 gm.	5.275 kg $\pm$ 110 gm.	4.100kg $\pm$ 110 gm.
Length without Fuze (Plugged)	820.50 mm	942.20 mm	838 mm
Filling type standard RDX	TNT 60:40 Type 'A'	TNT 60:40 Type 'A'	HE Substitute (inert Composition)
Filling Weight	760 $\pm$ 25 gm.	250 gm.	550 gm. Approx
Compatible Fuze	Fuze Rocket 24A HE (Base Fuze)	MK-II (Base Fuze)	Fuze Rocket 24A HE
SNEB Propellant (inhibited)	1.5 kg	1.5 kg	1.5 kg
Maximum Pressure	300 kg / sq cm	300 kg / sq cm	300 kg / sq cm
Thrust	500 kg	500 kg	500 kg
Operating Temp.	-40° C to + 70°C	-40° C to + 70°C	-40° C to + 70°C
Packages	1 Rocket packed in container 1203 and 06 containers packed in 1 Steel Box 412-S/4	1 Rocket packed in container 1203 and 06 containers packed in 1 Steel Box 412-S/4	1 Rocket packed in container 1203 and 06 containers packed in 1 Steel Box 412-S/4
PURPOSE:	Designed primarily for Air to Ground deployment. Very light, fast and accurate.		

ACHUK (LM-60)

Tube-Launched Loitering Munition System (Kamikaze Drone)



Overview

The ACHUK (LM-60) is a lightweight, (Tube-launched) loitering munition designed for precision strikes. With advanced safety features, a powerful warhead, and self destruction capability, it is ideal for tactical operations.



Key Features



Warhead

380g explosive with 1500 steel balls for maximum lethality.



Launch Method

Portable, Tube-launched design for quick deployment.



Power Supply

Reserve battery activates upon drone command.



Fuse System

Electronic fuse with Reserve Battery. ON-OFF switch & arming safety.



Self-Destruction Mode

Prevents capture & misuse.

Applications

- Precision strikes on personnel, vehicles, and infrastructure.
- Tactical missions in confined or remote areas.

Advantages

- Portable and easy to deploy.
- High lethality and precision targeting.
- Multiple safety mechanisms for secure operation.

ACHUK (LM-60)

WINGSPAN (M)	1.5
LENGTH (M)	1
DIAMETER (CM)	12.4
MAX TAKE-OFF WEIGHT (KG)	5
MAX PAYLOAD (KG)	1
POINT PERFORMANCE AT ISA, SEA LEVEL, WITH MTOW	
CRUISE SPEED @75%P (KM/H)	80
MAX SPEED (KM/H)	125
CEILING (M)	5000
ENDURANCE (HRS)	1 (1 KG PL)
RANGE (KM)	80
OPERATIONAL SAFETIES	GEOPENCING, ALTIMETER SENSING



ARKA

Multi-Barrel Launch System for Loitering Munitions



Overview

The ARKA is a 10-barrel launch system designed for rapid deployment of Loitering Munitions (LM's). It enables sequential launches, enhancing efficiency and firepower in tactical operations.



Key Features



Capacity

10 barrels for high-volume LM deployment.



Mobility

Vehicle-mounted for ease of movement.



Launch Mechanism

Canister-based system with remote and autonomous firing modes.



Safety

Electronic ignition with advanced pre-launch safety protocols.



Compatibility

Supports a range of loitering munitions (e.g., LM-60, LM-110).

Applications

- Precision strikes in enemy territories.
- Tactical missions requiring rapid LM deployment.

Advantages

- High-volume firepower.
- Reliable and efficient operation.
- Mobile and adaptable for varied missions.

ARKA (Multi-Barrel Launch System for Loitering Munitions)

NO. OF TUBES	10
L X B X H (M)	2 x 2.4 x 1.5
TUBE DIAMETER (CM)	13.4
WEIGHT (KG)	200
LAUNCH MECHANISM	PNEUMATIC
LAUNCH TRIGGER	ELECTRONIC
OPERATIONAL SAFETIES	GEOFENCING, ALTIMETER SENSING



GANDIVA

Micro Kamikaze Drone

Overview

GANDIVA is a palm-sized Anti-Personnel Kamikaze UAV. Designed for day and night operations, it meets the demands of counter-terrorism, law enforcement, and battlefield engagements.



Key Features



Compact Design

Highly portable and space-efficient, ideal for rapid deployment in tight spaces.



Indoor and Outdoor Capability

Designed for versatile operation, capable of executing missions in various environments.



High Maneuverability

Exceptional agility in both urban and rural terrains, enabling precise targeting.



Lethal Efficiency

Despite its compact size, the Gandiva UAV delivers devastating payload strikes with precision & speed.

SHAKTI

JET PROPULSION ENGINE

Length	3.96m
Wing Span	3.49m
Empty Weight	55 kg
All Up Weight	120 kg
Fuel Capacity	54 ltr
Payload Capacity	upto 20 kg
Endurance	45 min
Max Speed	180 m/s
Range	200 kms
Max Altitude	8000 m

Operational Safeties

Geofencing & Altimeter Sensing



Applications

- Precision targeting in counter-terrorism and law enforcement.
- Room intervention and target neutralization in confined spaces.

GANDIVA (Micro Kamikaze Drone)

- **Range:** 2 km (Line-of-Sight) and 150 m (Non-Line-of-Sight).
- **Endurance:** 15 minutes with maximum payload.
- **Speed:** Up to 45 km/h.
- **Payload:** 200g Warhead with 30g Explosive
- **Killing Radius:** 5 meters
- **Flight Modes:** Autonomous or remote piloted.
- **Camera:** Day and night vision with 1200 TVL resolution.
- **Safety Mechanisms:** Fuse-based safety, arming, disarming features, and self-deonation.
- **Operational Features:** Geofencing, Altimeter Sensing



PT-4

Grenade Dropping UAV

Overview

The PT-4 is an advanced Drone for Grenade Dropping, . Designed for precision strikes, it autonomously drops grenades on identified targets, providing unmatched efficiency in tactical and security operations.

Key Features



Specialty Designed Grenade Payload

Custom-engineered to enhance operational effectiveness with precise targeting.



Improved Accuracy

High precision in targeting for better effectiveness in mission execution.



Lightweight Design

Easy to deploy and carry, designed for quick deployment in tactical operations.



Return to Home

Automatically returns to base after mission completion for safety and efficiency.



Mission Abort Capability:

Abort the mission at any time, ensuring flexibility and control during operations.



Applications

- Precision grenade drops on identified targets for counter-terrorism, urban warfare, and tactical missions.

Safety Mechanisms

- Geo-location and electrical fuze safety.
- Pre-arming and disarming mechanisms.



PT - 4 (Grenade Dropping UAV)

- **Range :** 4 km (Line-of-Sight).
- **Endurance :** 40 minutes with payload.
- **Payload :** Carries up to 1 kg (grenades including mortar shells).
- **Speed :** 65 km/h for rapid deployment.
- **Flight Modes :** Autonomous or remote piloted.
- **Operational Conditions :** Handles winds up to 15 knots.
- **Operational Safeties :** Geofencing, Altimeter Sensing.



AIRAWAT

(High Altitude Ammunition Delivery Logistic Drone)



Ammunition Delivery Drone – AIRAWAT

Key Specifications

Payload: 50 kg (1 Pod)

Range: 18 km (to target)

Endurance: 45 minutes

Altitude: Up to 4000 m AMSL / 500 m AGL

TETHERED DRONE SYSTEM

Dual Mode Operation

Tethered Mode:

- Endurance : 6 hours.
- Tether Height : 60 m.
- Power/Data Link : Operates via tether station

Untethered Mode:

- Mission Range: 5 km (one way).
- Endurance : 45 minutes.
- Power/Data Link : Up to 500 m AGL, Up to 4500 m AMSL.

Key Features

-  **Deployment Time**
10 minutes.
-  **All-Up Weight (AUW)**
15 kg.
-  **Launch & Recovery**
VTOL within a 5x5 m area.
-  **Operating Temperature**
Min: -20°C to -10°C.
Max: As per operational area.
-  **Flight Modes**
Fully Autonomous, Semi-Autonomous, Manual, & Return Home.
-  **Fall-Safe Features:**
Auto return to home on communication failure, tether break, or low battery.



Support Systems

- Ground Control Station (GCS):**
Ruggedized modular platform.
Real-time video, image snapshots, and UAV health checks.
Compatible with DSM maps.
- Navigation:**
GPS/GLONASS/IRNSS NAVIC compatible.
- Tether Station:**
Provides continuous power and data link.

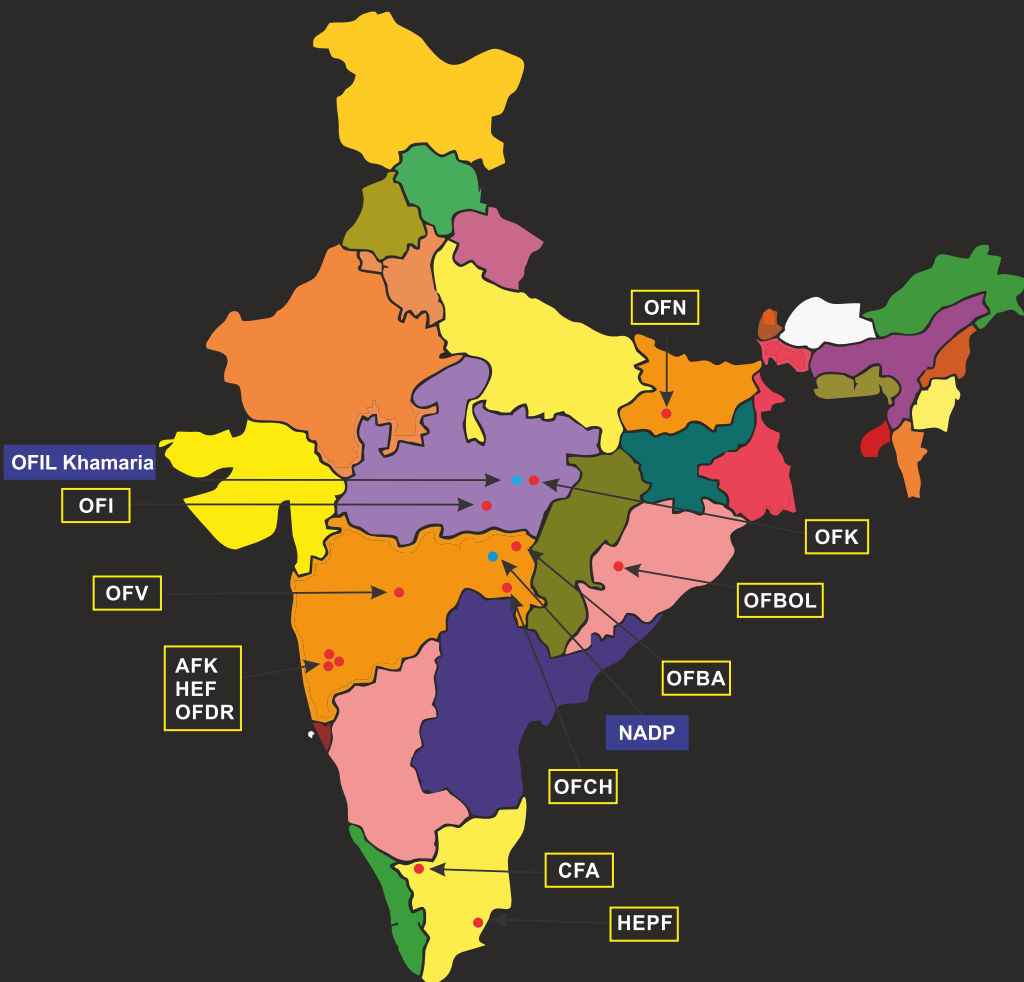
Additional Features

- Battery Charging:** Independent charging station with generator.
- Video Recording:** Onboard recording capability.
- Service Life:**
Drone: 7 years or 1000 landings.
Battery: 500 charging cycles.

Application

Aerial Surveillance & Monitoring





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