UNMAS more than mines

AMMUNITION IDENTIFICATION GUIDE

LIBYA

APRIL 2015

Disclamer:
Information in this document has NOT been verified.
This document should only be used as support to identify ammunition and NOT be connected with any reder safe procedure (RSP).

Feedback:
The document is a living document. Any information about ammunition found in specific country and corrections to ammunition in the guide please forward it to dagms@unops.org so improvements can be done.

Contents

Bomb

Cluster

RBK-250-275

Bomb; Cluster

Origin Country	Russia	Tot. Weight (g)	275,000	Length (mm)	2,150
Caliber	N/A	Weight, Projectile (g)	275,000	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	325
HCC/CG		Weight, Propellant (g	0		

Description

The RBK (Razbros Bomba Konteiner) meaning scatter bomb container family of cluster bombs is of post-Second World War design, and in its earlier days was primarily used for delivering large numbers of anti-personnel fragmentation submunitions. In more recent years they have been adapted to carry various other types of submunitions, such as anti-material, airfield cratering and various types of anti-tank submunitions.
It is believed that the RBK-250-275 was originally designed to carry fragmentation bomblets designated AO-2.5. However, later versions carried 150 AO-1SCh fragmentation bomblets, or 30 PTAB-2.5 anti-armor bomblets. It can also carry ZAB 2.5 incendiary submunitions.
Explosive contents depends on the payload.

The bomb exists of a one piece nose and body, open at the base. In this bomb body the trays are placed over a steel central rod. To the front side of this rod a headpiece is welded which fits over a pipe which is connected to the nosepiece of the bomb body. The expulsion charge is placed in the pipe. The headpiece and the pipe are fixated to one another by two steel balls in a hole, kept in outward -fixated- position by a piston. Upon ignition of the expulsion charge, the gasses push the piston downward allowing the balls to fall inward, releasing the headpiece from the pipe. The gasses fill up and pressurize the space between the flanges, pushing the tail, the rod and the trays backward, opening the bomb body like a match box. The two steel cables are just a little longer than the bomb body, ensuring the trays slide of the rod upon expulsion.

RBK-250-275

Fuzes used in Ammunition

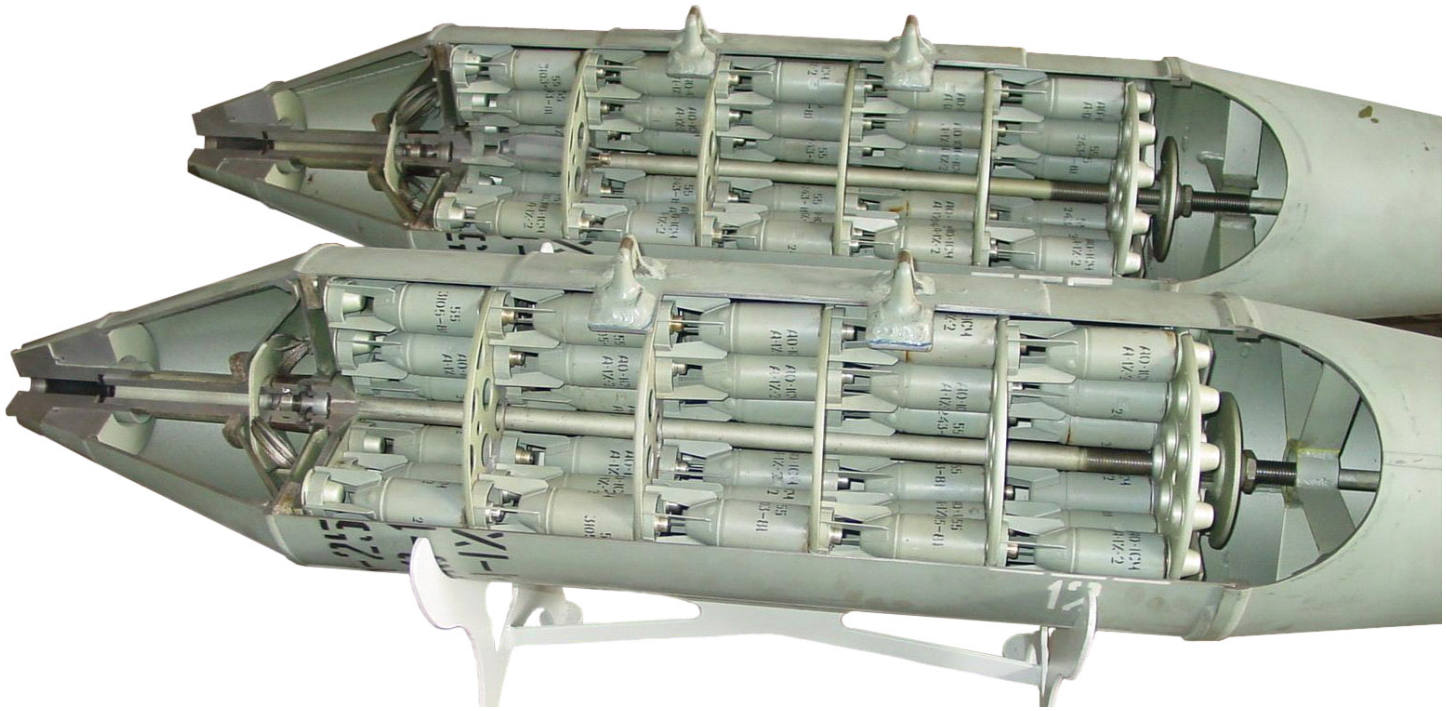
Fuze Name	Placement
ATK-EK and ATK-EB	Nose
TM-24A and TM-24B	Nose

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;

RBK-250-275 Payload (AO-1SCh)



RBK-250-275 Payload (AO-1SCh) Cut through

General Purpose

1,000-LB, HE, MC, MK 13,14,16, & 20

Bomb; General Purpose

Origin Country	United Kingdom	Tot. Weight (g)	0	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	
HCC/CG		Weight, Propellant (g	0		

Description

The British describe general-purpose bombs as medium capacity (MC) bombs. The principal modern British bombs are 540 lb (245 kg) and 1,000 lb (454 kg), with a wide variety of fin, fuze, and retarder options.

Bomb bay showing 1,000-pound MC

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;

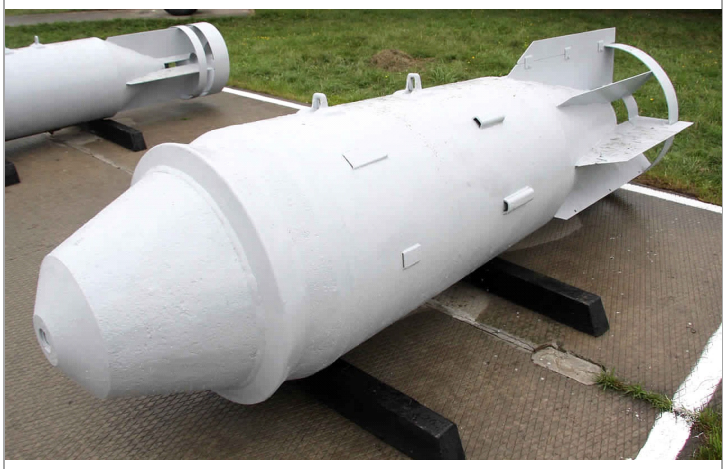
FAB-3000-M46

Bomb; General Purpose

Origin Country	Russia	Tot. Weight (g)	1,198,000	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	198,000	Width (mm)	
Function		Weight, NEQ (g)	1,000,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	
HCC/CG	B	Weight, Propellant (g	0		

Description

NIL



FAB-3000-M46

Fuzes used in Ammunition

Fuze Name	Placement
AD-A	
ADOZ, ADZ, ADZU	
AVDM	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	1,000,000	Main Charge	

Sources;

IATG Ammunition Statistics

Mark 81

Bomb; General Purpose

Origin Country	USA	Tot. Weight (g)	113,000	Length (mm)	1,880
Caliber	N/A	Weight, Projectile (g)	45,200	Width (mm)	
Function		Weight, NEQ (g)	67,800	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	229
HCC/CG	B	Weight, Propellant (g	0		

Description

The Mark 81 (Mk 81) 250 lb (113 kg) general purpose bomb (nicknamed "Firecracker") is the smallest of the Mark 80 series of low-drag general-purpose bombs.

Mark 81

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks
Tritonal (TNT/AL)	67,800	Main Charge	Tritonal, Minol or Composition H6

Sources;

Mk. 81 bomb with Tail Retarding Device "Snakeye"

Mark 82

Bomb; General Purpose

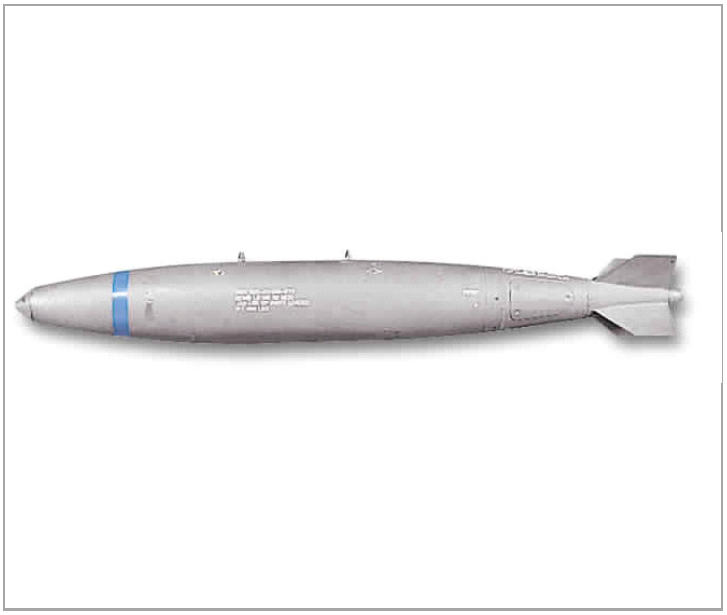
Origin Country	USA	Tot. Weight (g)	241,000	Length (mm)	2,220
Caliber	N/A	Weight, Projectile (g)	152,000	Width (mm)	
Function		Weight, NEQ (g)	89,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	273
HCC/CG	B	Weight, Propellant (g	0		

Description

The Mark 82 (Mk 82) is an unguided, low-drag general-purpose bomb, part of the U.S. Mark 80 series. The explosive filling is tritonal.

With a nominal weight of 500 lb (227 kg), it is the one of the smallest in current service, and one of the most common air-dropped weapons in the world. Although the Mk 82's nominal weight is 500 lb (227 kg), its actual weight varies considerably depending on its configuration, from 510 lb (232 kg) to 570 lb (259 kg). It is a streamlined steel casing containing 192 lb (89 kg) of Tritonal high explosive. The Mk 82 is offered with a variety of fin kits, fuzes, and retarders for different purposes.

Variants:
BLU-111/B – Mk 82 loaded with PBXN-109
BLU-111A/B – Used by the U.S. Navy, this is the BLU-111/B with a thermal-protective coating added to reduce cook-off in (fuel-related) fires.
BLU-126/B – Designed following a U.S. Navy request to lower collateral damage in air strikes.
Mark 62 Quickstrike mine – A naval mine, which is a conversion of Mark 82 bomb.



Mark 82

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks
Tritonal (TNT/AL)	89,000	Main Charge	Tritonal, Minol or H6

Sources;

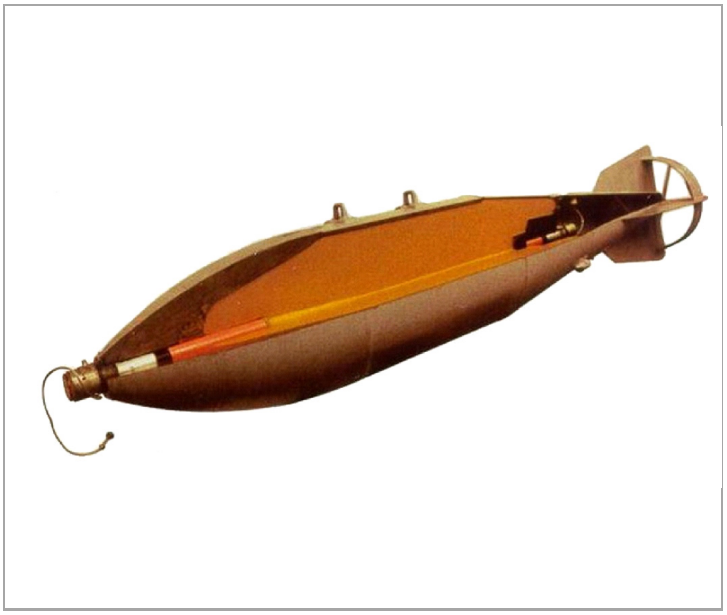
FAB-250-M62

Bomb; General Purpose

Origin Country	Russia	Tot. Weight (g)	227,000	Length (mm)	1,920
Caliber	N/A	Weight, Projectile (g)	120,000	Width (mm)	
Function		Weight, NEQ (g)	107,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	300
HCC/CG	B	Weight, Propellant (g	0		

Description

The FAB 250 kg M62 is a modern streamlined (Low Drag) design High Explosive GP bomb, which is thin cased and designed to produce destructive effect through blast overpressure and some casualties at long distance by the fragmentation of the casing. The main difference between the FAB and OFAB bombs is the thickness of the casing which on the FAB series of bombs is only 10 mm at the central parallel section of the bomb. The rounded ogive or nose section is considerably thicker to add strength. The tail cone, which is mainly hollow, is sheet steel no more than 4 mm thick. The bomb has two fuze wells, one in the nose and one in the hollow section of the tail cone, into which are normally fitted impact and inertia/ impact fuzes (respectively). There are four fins welded onto the tail section into which is fitted one strengthening ring. Unlike earlier designs of FAB and OFAB bombs, (e.g. M54) the nose section does not have a hollow steel "Kopf " Anti penetration ring. The bomb has two upper and a single lower suspension lugs and can be found fitted with either a nose or a tail fuze or occasionally with both.



FAB-250-M62

Fuzes used in Ammunition

Fuze Name	Placement
ADP	Nose
AGP	
AVU-ET	Nose/Tail

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	107,000	Main Charge	

Sources;

FAB-250-M62

Mark 83

Bomb; General Purpose

Origin Country	USA	Tot. Weight (g)	454,000	Length (mm)	3,000
Caliber	N/A	Weight, Projectile (g)	181,600	Width (mm)	
Function		Weight, NEQ (g)	272,400	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	357
HCC/CG	B	Weight, Propellant (g	0		

Description

The Mark 83 is part of the Mark 80 series of low-drag general-purpose bombs in United States service.

The Mk 83/BLU-110 is used as the warhead for a variety of precision-guided weapons, including the GBU-16 Paveway laser-guided bombs, the GBU-32 JDAM and Quickstrike sea mines.

Mark 83

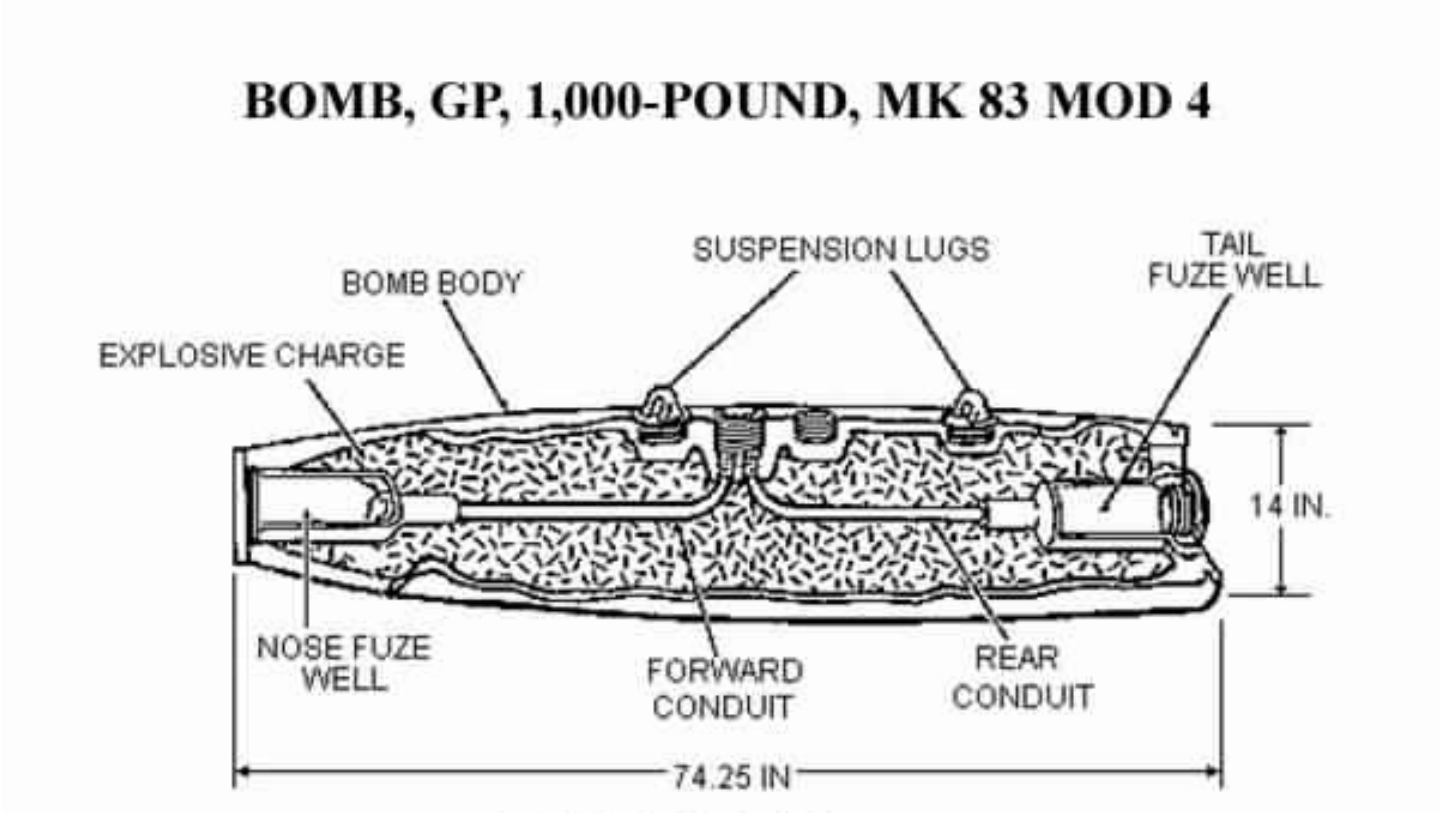
Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks
Tritonal (TNT/AL)	272,400	Main Charge	Tritonal, Minol or H6

Sources;


BOMB, GP, 1,000-POUND, MK 83 MOD 4
SUSPENSION LUGS
TAIL
FUZE WELL
BOMB BODY
EXPLOSIVE CHARGE
14 IN.
NOSE FUZE
WELL
FORWARD
CONDUIT
REAR
CONDUIT
74.25 IN

Mark 83

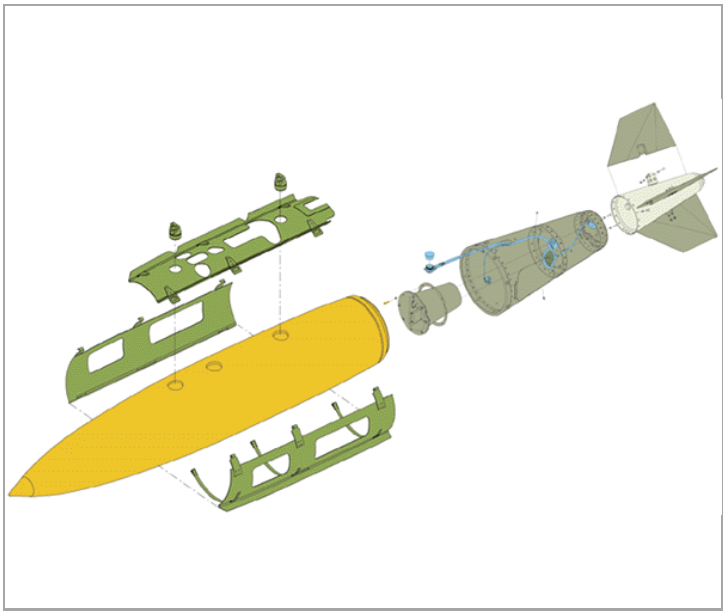
BLU-109/B

Bomb; General Purpose

Origin Country	USA	Tot. Weight (g)	883,000	Length (mm)	2,400
Caliber	N/A	Weight, Projectile (g)	643,000	Width (mm)	
Function		Weight, NEQ (g)	240,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	370
HCC/CG	B	Weight, Propellant (g	0		

Description

The BLU-109/B has a steel casing about 1 inch (25.4 mm) thick, filled with 530 lb (240 kg) of Tritonal. It has a delayed-action tail-fuze. The BLU-109 entered service in 1985. It is also used as the warhead of some marks of the GBU-15 electro-optically guided bomb, the GBU-27 Paveway III laser-guided bomb, and the AGM-130 rocket-boosted weapon. This weapon can penetrate 4-6 feet of reinforced concrete, which is greater than the 3 foot capability of the Small Diameter Bomb. The BLU-109 is not likely to be retired anytime soon, due to the much larger blast capable from its warhead.



BLU-109/B

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose/base

Explosives

Explosives	Weight (g)	Role	Remarks
Tritonal (TNT/AL)	240,000	Main Charge	

Sources;

SWEDEC, Kosovo handbook, Appendix 3

BLU-109/B

FAB-500-M62

Bomb; General Purpose

Origin Country	Russia	Tot. Weight (g)	500,000	Length (mm)	2,425
Caliber	N/A	Weight, Projectile (g)	287,000	Width (mm)	
Function		Weight, NEQ (g)	213,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	400
HCC/CG	B	Weight, Propellant (g	0		

Description

The FAB 500 M62 (ФАБ 500 M62) is a modern streamlined low drag design high explosive blast bomb, which is thin cased and designed to produce a destructive effect through blast overpressure and some casualties at long distance by the fragmentation of the casing.
The main difference between the FAB and OFAB bombs is the thickness of the casing which on the FAB series of bombs is only 10 mm at the central parallel section of the bomb.
The bomb has two fuze wells, one in the nose and one in the hollow section of the tail cone, into which are normally fitted impact and inertia/ impact fuzes (respectively).

Externally the FAB 500 M62 closely resembles the FAB 500T but the FAB 500T has a tail section bolted to the body by 8 bolts, the FAB 500 M62 being welded.

FAB-500-M62

Fuzes used in Ammunition

Fuze Name	Placement
APUV, APUV-1, APUV-M	
VDV/VDV-1/VDV-2	

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	213,000	Main Charge	

Sources;

FAB-500-M62 Cut through

FAB-500-ShN

Bomb; General Purpose

Origin Country	Russia	Tot. Weight (g)	515,000	Length (mm)	2,180
Caliber	N/A	Weight, Projectile (g)	294,000	Width (mm)	
Function	GP Retarded	Weight, NEQ (g)	221,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	450
HCC/CG	B	Weight, Propellant (g	0		

Description

The FAB 500kg ShN (ФАБ-500 ШН) is a modern design HE parachute retarded blast bomb, specially designed for dropping from low altitude, which is thin cased and designed to produce destructive effect through blast overpressure and some casualties at long distance by the fragmentation of the casing.
The casing of the bomb is approximately 10mm thick but the rounded ogive or nose section is considerably thicker, as is the base plate forward of the tail section, to add strength.
There is a thin inner casing, with diamond shaped projections, designed to assist the breakup of the casing into optimum sized pieces.
The tail section, which is hollow, is aluminum no more than 4 mm thick, and contains the parachute retarding mechanism.
The tail section is secured to the bomb body by a number of bolts.
The bomb has one fuze well, in the hollow tail section into which is fitted the AV 551 electro mechanically operated inertia/impact fuze. What appears to be a nose fuze well may be fitted with an impact sensing probe, this is linked to the tail fuze by an electrical conduit cable to provide instantaneous function on impact with the ground.
The FAB-500 ShL has enhanced performance over the earlier FAB-500 ShN design.
Unlike the conventional FAB series of bombs with their tapered tail units these retarded bombs have flat ended cylindrical tail units for holding the retard parachute systems.

FAB-500-ShN

Fuzes used in Ammunition

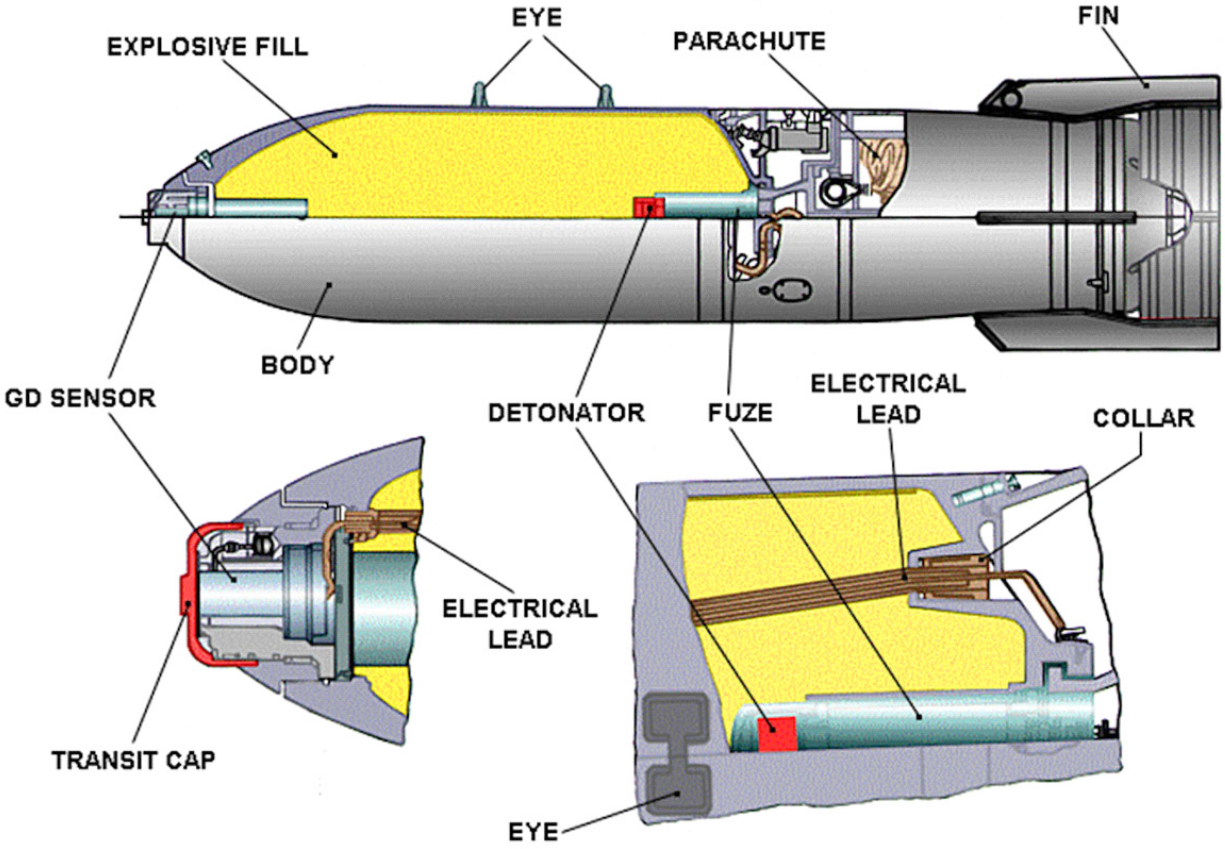
Fuze Name	Placement
AVU-ET	Nose/Tail

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	221,000	Main Charge	TGAF-5

Sources;

FAB-500-ShN Cut through



FAB-500-ShN Diagram

Mark 84

Bomb; General Purpose

Origin Country	USA	Tot. Weight (g)	894,000	Length (mm)	3,280
Caliber	N/A	Weight, Projectile (g)	466,000	Width (mm)	
Function		Weight, NEQ (g)	428,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	458
HCC/CG	B	Weight, Propellant (g	0		

Description

The Mark 84 has a nominal weight of 2,000 lb (907.2 kg), but its actual weight varies depending on its fin, fuze options, and retardation configuration, from 1,972 to 2,083 lb (894.5 to 944.8 kg). It is a streamlined steel casing filled with 945 lb (428.6 kg) of Tritonal high explosive.

The Mark 84 is capable of forming a crater 50 feet (15.2 m) wide and 36 ft (11.0 m) deep. It can penetrate up to 15 inches (381.0 mm) of metal or 11 ft (3.4 m) of concrete, depending on the height from which it is dropped, and causes lethal fragmentation to a radius of 400 yards (365.8 m).

Many Mark 84s have been retrofitted with stabilizing and retarding devices to provide precision guidance capabilities. They serve as the warhead of a variety of precision-guided munitions, including the GBU-10/GBU-24/GBU-27 Paveway laser-guided bombs, GBU-15 electro-optical bomb, GBU-31 JDAM and Quickstrike sea mines.

Mark 84

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks
Tritonal (TNT/AL)	428,000	Main Charge	Tritonal, Minol or Composition H6

Sources;

Mark 84

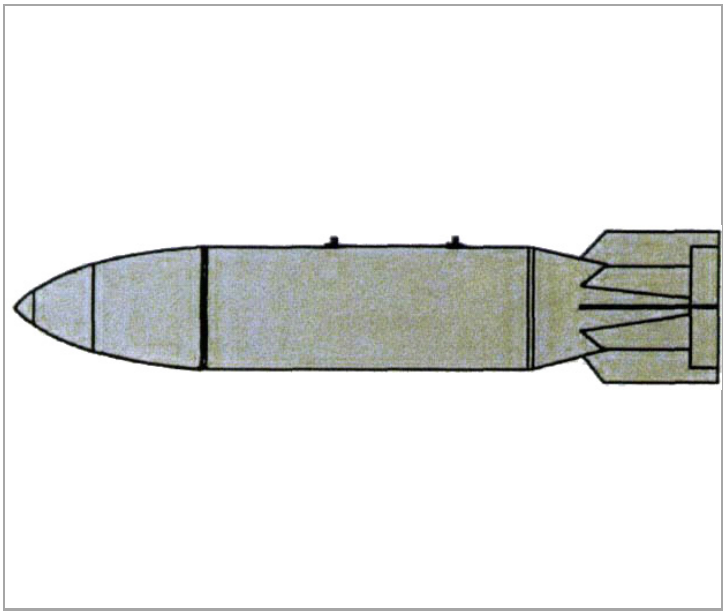
FAB-1500-M54

Bomb; General Purpose

Origin Country	Russia	Tot. Weight (g)	1,392,000	Length (mm)	2,310
Caliber	N/A	Weight, Projectile (g)	725,000	Width (mm)	
Function		Weight, NEQ (g)	667,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	570
HCC/CG	B	Weight, Propellant (g	0		

Description

Bomb has a false ogive which covers a blunt nosed forward portion.



FAB-1500-M54

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	667,000	Main Charge	

Sources;

HANDBOOK OF AMMUNITION USED IN IRAQ AND SURROUNDING AREAS, REV5

HE

OFAB-100-120

Bomb; HE

Origin Country	Russia	Tot. Weight (g)	123,000	Length (mm)	1,060
Caliber	N/A	Weight, Projectile (g)	81,000	Width (mm)	
Function	HE Frag	Weight, NEQ (g)	42,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	273
HCC/CG	B	Weight, Propellant (g	0		

Description

The OFAB 100-120 (ОФАБ 100- 120) is a thick cased High Explosive Fragmentation bomb designed to produce a large quantity of lethal fragments effective at long distance and blast overpressure for destructive effect at shorter distances.

The thickness of the bomb casing is 25mm at the central parallel section of the bomb though the rounded ogive or nose section is considerably thicker to add strength. The tail cone, which is explosive filled, is sheet steel no more than 6mm thick. The bomb has two fuze wells, one in the nose and one in the tail into which are normally fitted impact and inertia/impact fuzes. There are four fins welded onto the tail section into which are fitted two strengthening rings, one inner, and one outer. The nose section has a hollow steel "Kopf "Anti-penetration ring welded on (this ring often breaks off on impact with the ground). The bomb has one centrally located suspension lug and may be found fitted with either a nose or a tail fuze or occasionally with both. The charge to weight ratio of the bomb is approximately 35/65.

OFAB-100-120

Fuzes used in Ammunition

Fuze Name	Placement
AD-A	
ADOZ, ADZ, ADZU	
AVDM	
VDV/VDV-1/VDV-2	

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	42,000	Main Charge	

Sources;

OFAB-250-270

Bomb; HE

Origin Country	Russia	Tot. Weight (g)	275,000	Length (mm)	1,456
Caliber	N/A	Weight, Projectile (g)	181,000	Width (mm)	
Function	HE Frag	Weight, NEQ (g)	94,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	325
HCC/CG	B	Weight, Propellant (g	0		

Description

The OFAB 250kg (250-270) (Cyrillic ОФАБ 250- 270) is a thick cased High Explosive Fragmentation bomb designed to produce a large quantity of lethal fragments effective at long distance and blast overpressure for destructive effect at shorter distances. The bomb casing is internally grooved to assist break up into optimum sized fragments and is 25mm thick at the central parallel section of the bomb. The rounded nose section is considerably thicker to add strength.

The tail cone, which is explosive filled, is sheet steel no more than 4 mm thick. The bomb has two fuze wells, one in the nose and one in the tail into which are normally fitted impact and inertia/impact fuzes (respectively). There are eight fins welded onto the tail section into which are fitted two strengthening rings, one inner, and one outer. The nose section has a hollow steel "Kopf "anti-ricochet ring welded on (this ring often breaks off on impact with the ground). The bomb has two centrally located suspension lugs, and on the opposite side a single suspension lug and may be found fitted with either a nose or a tail fuze or occasionally with both.

The charge /weight ratio of the bomb is approximately 35/65.

OFAB-250-270

Fuzes used in Ammunition

Fuze Name	Placement
AD-A	
ADOZ, ADZ, ADZU	
AVDM	
VDV/VDV-1/VDV-2	

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	94,000	Main Charge	

Sources;


ФАБ-500М-62
ФГУП "ГНПП "БАЗАЛЬТ"
MAKET
ОФАБ 250-270
ФГУП "ГНПП "БАЗАЛЬТ"
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OFAB-250-270

Illumination

SAB-250T

Bomb; Illumination

Origin Country	Russia	Tot. Weight (g)	215,000	Length (mm)	2,400
Caliber	N/A	Weight, Projectile (g)	215,000	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	325
HCC/CG		Weight, Propellant (g	0		

Description

The SAB 250T (САБ-250T) is a thin cased, streamlined low drag, parachute retarded, base ejection bomb, designed to dispense a payload of 7 parachute flares over a target area to illuminate it at night.
A small low explosive ejection charge below the fuze blows the tail cone off the bomb, igniting and ejecting the flares at the same time.
The parachute flares when ignited burn for approximately 5 minutes.

SAB-250T

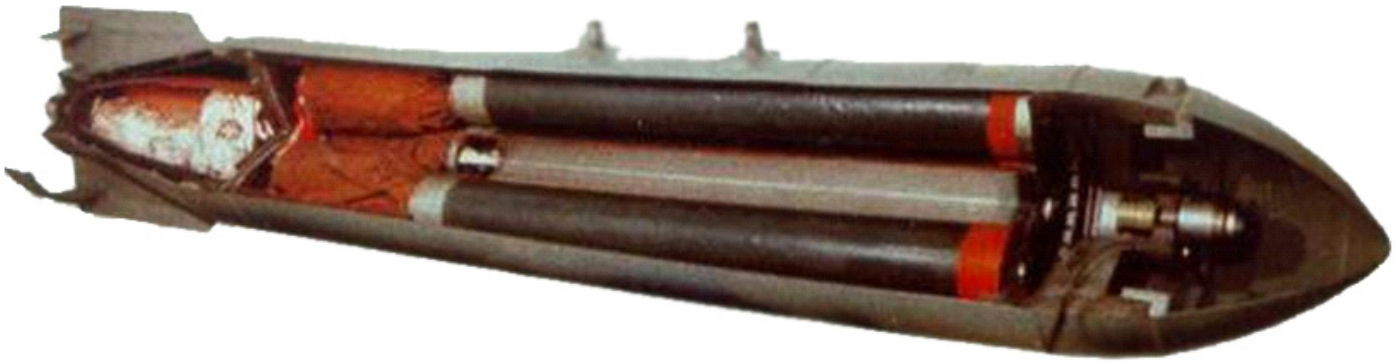
Fuzes used in Ammunition

Fuze Name	Placement
ATK-EK and ATK-EB	Nose
TM-24A and TM-24B	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN		Main Charge	Illumination

Sources;



SAB-250T Cut through

Incendiary

ZAB-100-105

Bomb; Incendiary

Origin Country	Russia	Tot. Weight (g)	106,900	Length (mm)	1,065
Caliber	N/A	Weight, Projectile (g)	78,400	Width (mm)	
Function		Weight, NEQ (g)	28,500	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	273
HCC/CG		Weight, Propellant (g	0		

Description

The ZAB 100-105 (ЗАБ 100-105) has a distinctive truncated conical nose and a large nose adapter.
It has a large plug at the end of the tail cone.
The bomb has an M54 pattern tail fin configuration (4 fins and two strengthening/support rings, one external one internal).
There is a mistaken belief out there that the ZAB-100-105 contains a liquid (napalm-type) filler, however this is not the case. The ZAB-100-105 contains 9 canisters. These incendiary canisters, seen above, weigh approximately 2.7kg each, and will burn for around three minutes.
The bomb has a single centrally located suspension lug and only one fuze well located in the nose.

ZAB-100-105

Fuzes used in Ammunition

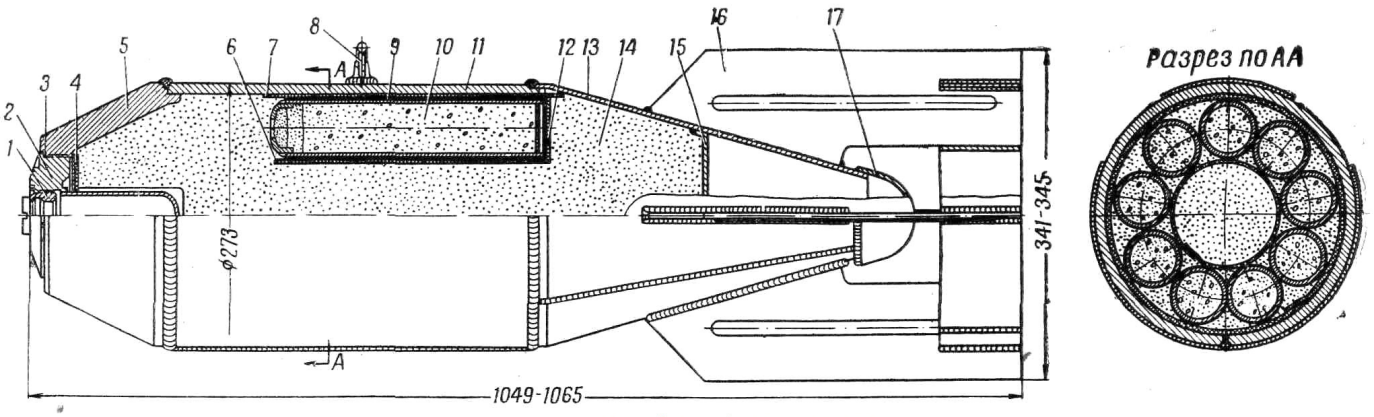
Fuze Name	Placement
AVU-ET	
TM-24A and TM-24B	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	28,500	Main Charge	Thermite-type mixture

Sources;

The Rouge Adventurer, ZAB-100-105 INCENDIARY BOMBS IN SYRIA



Aircraft Bomb ZAB-100-105

Рис. 1. Авиабомба ЗАБ-100-105:

1. Adaptor bushing
2. Booster adaptor
3. Sealing washer
4. Sealing washer
5. Head section
6. Intermediate layer
7. Intermediate layer of bomb body
8. Lifting lug
9. Glassine tape
10. Thermite charge
11. Bomb body
12. Intermediate layer
13. Tail section
14. Incendiary composition
15. Base plate
16. Fin section
17. End cap

Diagram of ZAB-100-105 with Incendiary bomblets.

ZAB-100-105 Bomblet (thermite canister).

ZAB-250-200

Bomb; Incendiary

Origin Country	Russia	Tot. Weight (g)	202,000	Length (mm)	1,500
Caliber	N/A	Weight, Projectile (g)	142,000	Width (mm)	
Function		Weight, NEQ (g)	60,000	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	325
HCC/CG		Weight, Propellant (g	0		

Description

The ZAB 250-200 (ЗАБ 250-200) is a relatively thin cased incendiary bomb, which is designed to produce destructive effect through extreme heat and fire (caused by the incendiary filling).
The bomb has a High Explosive bursting charge contained in a central tube which is surrounded by a second tube containing White Phosphorus as an ignition charge.
It has eight fins welded onto it, into which is fitted two strengthening rings, one outer, and one inner.
The bomb is very similar in appearance to the OFAB 250-270 and the FAB 250 kg M54 but the ZAB 250-200 has no tail fuze well, and normally has a red band behind the ogive.

ZAB-250-200

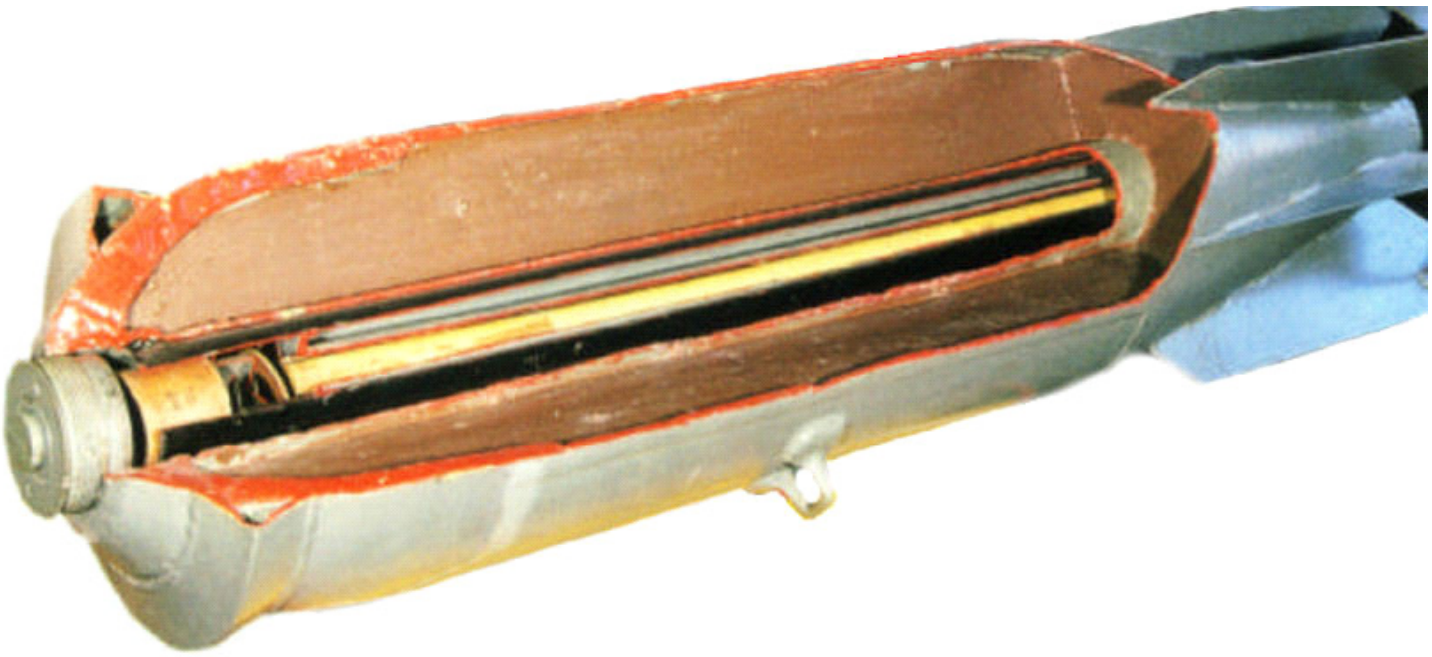
Fuzes used in Ammunition

Fuze Name	Placement
AVU-ET	
TM-24A and TM-24B	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	60,000	Main Charge	Incendiary Composite

Sources;



ZAB-250-200 Cut through

Fins of ZAB-250-200

Penetrator

BLU-107 Durandal

Bomb; Penetrator

Origin Country	France	Tot. Weight (g)	200,000	Length (mm)	2,700
Caliber	N/A	Weight, Projectile (g)	85,000	Width (mm)	
Function	Rocket-boosted ant	Weight, NEQ (g)	115,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	223
HCC/CG	B	Weight, Propellant (g	0		

Description

Designed to be dropped from low altitudes, the bomb's fall is slowed by a parachute. The maximum release speed is 550 knots (1,020 km/h; 630 mph) and the minimum release altitude is 200 feet (61 m). When the bomb has reached a 40° angle due to the parachute's drag, it fires a rocket booster that accelerates it into the runway surface. The 100-kilogram (220 lb) primary charge explodes once the weapon has penetrated the concrete and drives the secondary charge even deeper. The 15-kilogram (33 lb) secondary charge then explodes after a one-second delay. Later production weapons have a programmable fuze that can delay the secondary detonation up to several hours.

The weapon can penetrate up to 40 centimetres (16 in) of concrete, and creates a crater 2 metres (6 ft 7 in) deep and approximately 5 metres (16 ft) in diameter. In addition, concrete slabs around the crater are disturbed in an area approximately 15 metres (49 ft) in diameter. The disturbed slabs are displaced up to 50 centimetres (20 in) above the original surface, making repair more difficult than the simple crater from a conventional bomb.

An American F-111 carrying BLU-107 Durandals

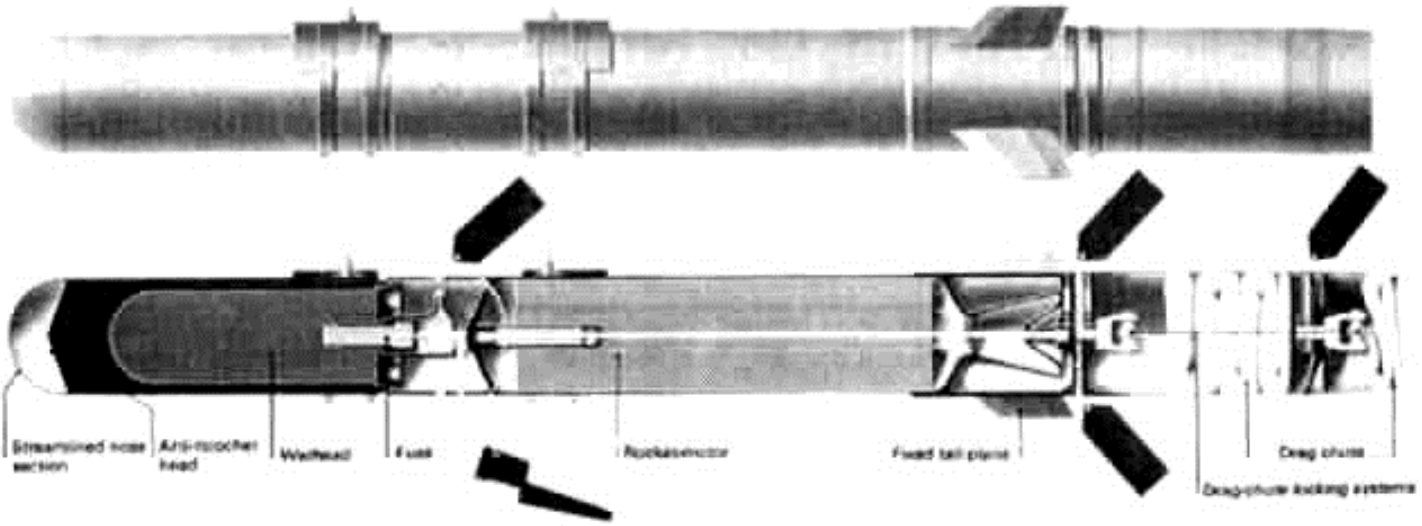
Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	15,000	Secondary Charge	UNKNOWN Filling
UNKNOWN	100,000	Main Charge	UNKNOWN Filling

Sources;



BLU-107 Durandal

Practice

5-LBS, MK 106 MOD 1

Bomb; Practice

Origin Country	Turkey	Tot. Weight (g)	2,000	Length (mm)	495
Caliber	N/A	Weight, Projectile (g)	2,000	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	
HCC/CG		Weight, Propellant (g	0		

Description

NIL

MK 106 MOD 1

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;

P-50-75N

Bomb; Practice

Origin Country	Russia	Tot. Weight (g)	66,000	Length (mm)	1,065
Caliber	N/A	Weight, Projectile (g)	66,000	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	203
HCC/CG		Weight, Propellant (g	0		

Description

Practice Air bomb P 50-75 N is used for night operations. It is intended for aircrew training in targeted bombing as well as technical staff training in prep work and bomb suspension techniques.

P-50-75N

Fuzes used in Ammunition

Fuze Name	Placement
AMV EA2	

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;

P-50-75N

Grenade

Hand Grenade

RGD-33

Grenade; Hand Grenade

Origin Country	Russia	Tot. Weight (g)	500	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	415	Width (mm)	
Function	Frag	Weight, NEQ (g)	85	Height (mm)	190
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	45
HCC/CG		Weight, Propellant (g	0		

Description

The Soviet RGD-33 is an anti-personnel fragmentation stick grenade developed in 1933. It was designed to replace the ageing Model 1914 grenade and was used during World War II.

Operation:
The thumb safety is moved to the left, exposing the red dot.
A crisp and rapid throwing motion is required to activate the mechanism.
When thrown, the grenade head shifts relative to the outer handle and frees the firing pin clip from the small notch in the internal insert. The forward momentum of the head, aided by the handle spring, twists and pulls the firing pin clip back until it reaches the long slot, then is snapped forward, pulled by that same spring, forcing the firing pin into the primer, starting the fuze delay.
About 3.5 seconds later the grenade explodes.

RGD-33

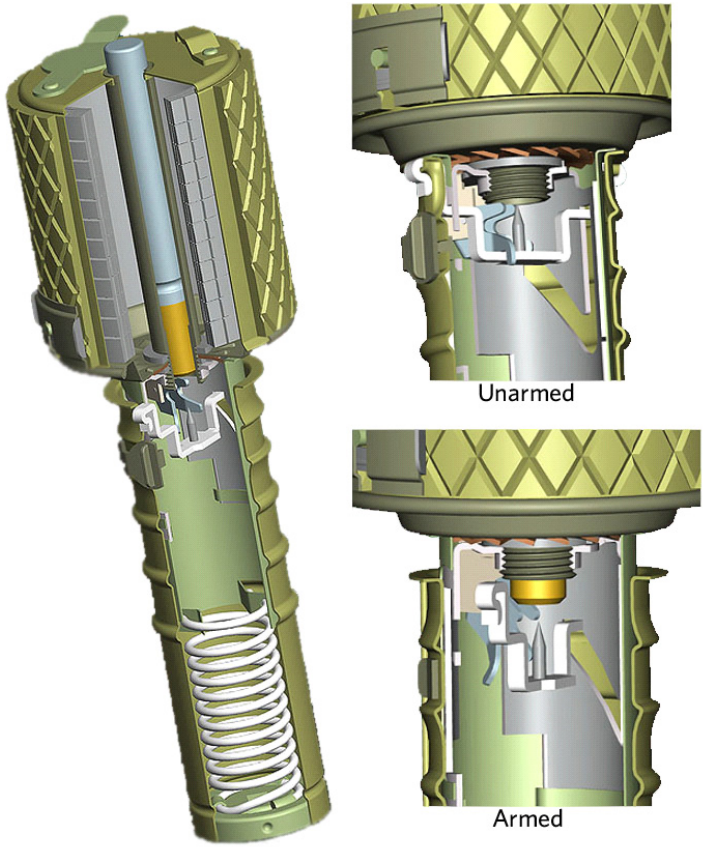
Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

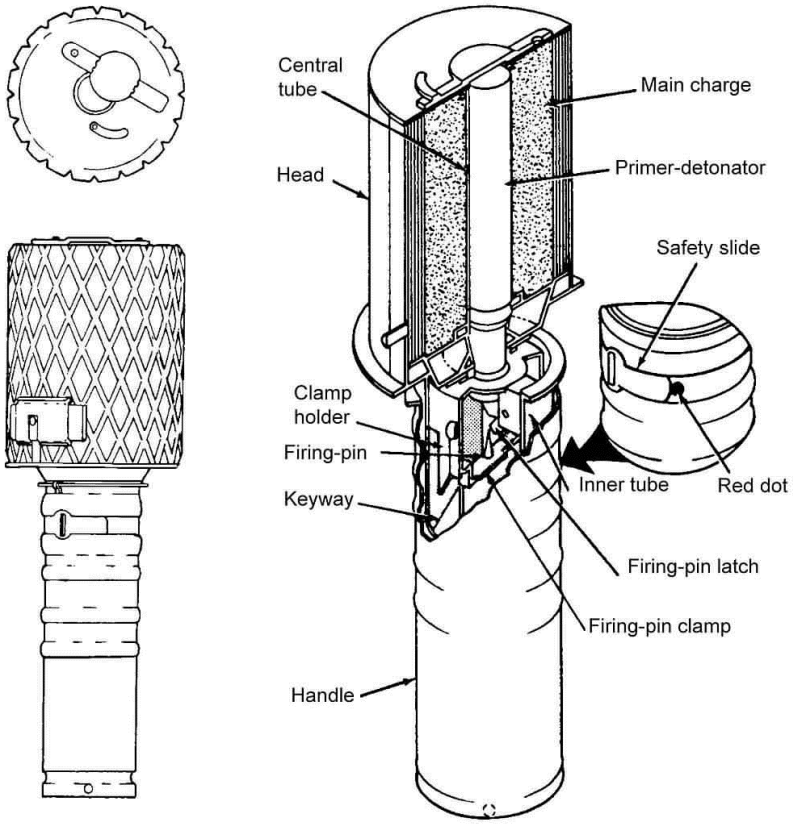
Explosives

Explosives	Weight (g)	Role	Remarks
TNT	85	Main Charge	

Sources;



RGD-33 Cut through



RGD-33 Diagram

MOD 35

Grenade; Hand Grenade

Origin Country	Italy	Tot. Weight (g)	200	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	140	Width (mm)	
Function		Weight, NEQ (g)	60	Height (mm)	97
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	53
HCC/CG		Weight, Propellant (g	0		

Description

The grenade body is in two parts and features a cylindrical cup-shape base with a rolled on thread which mates with a similar thread rolled on to the flange of the coned top. Two diametrically opposed slots are cut into the top immediately above the flange. The grenade filling secures the two parts by means of a locking spring. The body of the grenade is made from pressed aluminium, painted red and carries the safety cover drogue which is painted black. Protruding from the side of the safety cover is the end of the brass safety strip to which is attached a rubberised tab. There are no manufacturer markings visible on the grenade body.

MOD 35, BREDA

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	60	Main Charge	

Sources;

RG-4

Grenade; Hand Grenade

Origin Country	Russia	Tot. Weight (g)	322	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	217	Width (mm)	
Function		Weight, NEQ (g)	105	Height (mm)	84
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	53
HCC/CG		Weight, Propellant (g	0		

Description

This impact grenade was an offensive grenade and functioned with a slightly improved "RG34" mechanism. It was used throughout the cold-war period.
A fragmentation shell existed and would make it into a defensive grenade.
There appears to be two types of this grenade, an early manufactured type and a newer model.
There is no hole present in the top of the older type, also markings are different.
The old markings are in the same style as found on the older OUG-Vz.34.

RG-4

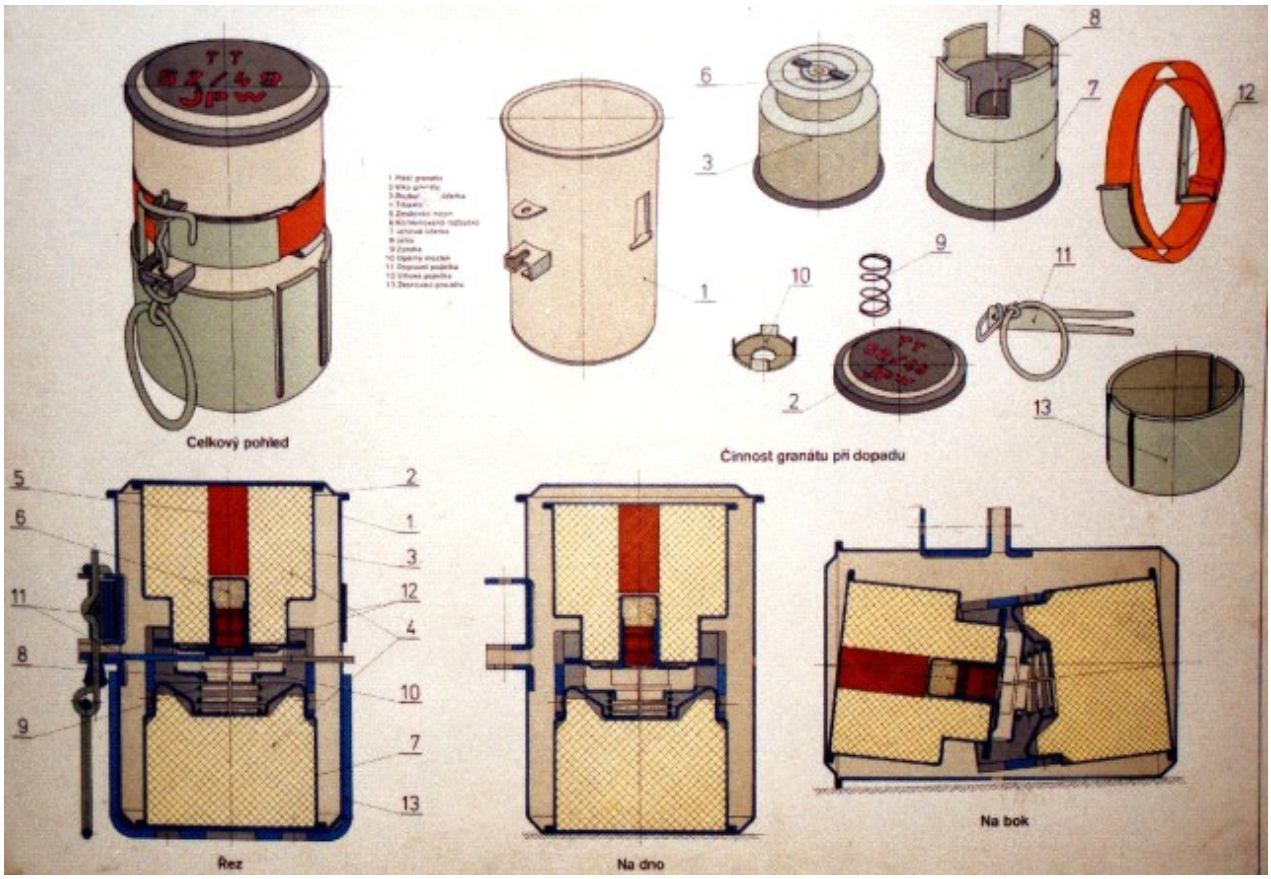
Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Center

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	105	Main Charge	

Sources;



RG-4 Diagram

RG-4 Cut through

RGO-78

Grenade; Hand Grenade

Origin Country	NIL	Tot. Weight (g)	450	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	365	Width (mm)	
Function	Defensive	Weight, NEQ (g)	85	Height (mm)	97
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	54
HCC/CG		Weight, Propellant (g	0		

Description

The RGO-78 defensive hand grenade is intended for destruction of manpower. It has internal pre-fragmented ball lining and is fitted with detonating mechanism DVM that provides for delay detonation within 3.2 – 4.2 sec. mechanism DVM that provides for delay detonation within 3.2 – 4.2 sec.
Fuzes used with this grenade: AWM-78 , DVM and UZRGM (gives differences in total length)

RGO-78 with DVM fuze

Fuzes used in Ammunition

Fuze Name	Placement
DVM	Top
UZRGM/UZRGM/UZGRM-2	Top

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	85	Main Charge	

Sources;

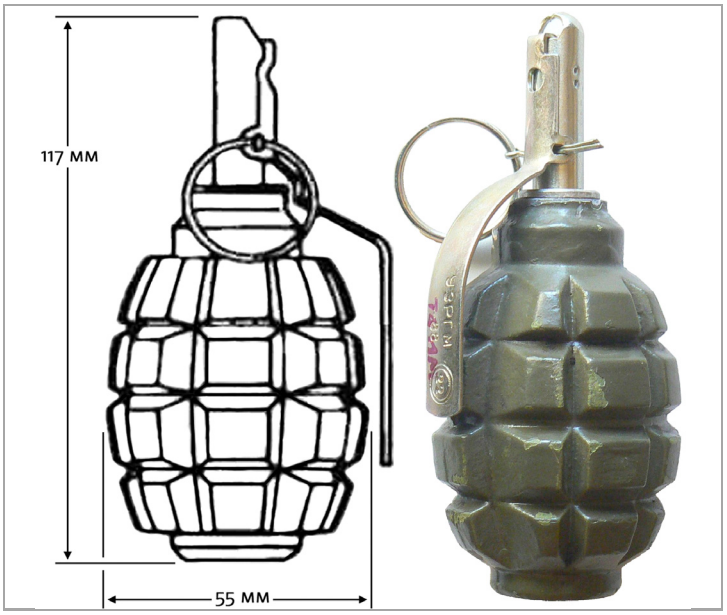
F1

Grenade; Hand Grenade

Origin Country	Russia	Tot. Weight (g)	591	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	540	Width (mm)	
Function		Weight, NEQ (g)	51	Height (mm)	117
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	55
HCC/CG		Weight, Propellant (g	0		

Description

The Soviet F1 hand grenade, nicknamed the limonka (lemon-like), is an anti-personnel fragmentation defensive grenade. It is based on the French F1 grenade and contains a 60 gram explosive charge (TNT). The total weight of the grenade with the fuze is about 600 grams. The UZRGM fuze is a universal Russian type also used in the RG-41, RG-42, RGO-78, RGN-86 and RGD-5 grenades. The standard time delay for this fuze is 3.5 to 4 seconds. However, UZRGM fuze variants are available which give delays between zero (i.e., instantaneous) and 13 seconds, specifically for use in booby-traps.



F1

Fuzes used in Ammunition

Fuze Name	Placement
UZRGM/UZRGM/UZGRM-2	Top

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	51	Main Charge	

Sources;

SWEDEC, Kosovo Handbook, Appendix 2

F1

F1 Cut through

Mils No36

Grenade; Hand Grenade

Origin Country	United Kingdom	Tot. Weight (g)	600	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	540	Width (mm)	
Function	Frag	Weight, NEQ (g)	60	Height (mm)	95
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	58
HCC/CG		Weight, Propellant (g	0		

Description

The body is made of cast iron. The hole in the base is threaded to receive the cast zinc alloy fuze and detonator housing, which is screwed in the base. The Baratol charge is cast in the body through the filler hole in the side of the body, and closed by a filler plug. Inside the central hole of the fuze and detonator housing. A zinc "saddle" is placed which houses a .22 rimfire cartridge case. In the casemouth of the cartridge case the fuze cord is crimped in place, crimped to the detonator on the other side. This assembly is placed in the base of the grenade. Above the rimfire cartridge, the springloaded firing pin is placed, held in upper position by a fly off lever which fits a radial groove in top of the firing pin. As soon as the split pin is removed, the grenade can only be kept safe by pressing the lever against the grenade body. As soon as the lever is released, the fuze of the grenade is ignited by the rimfire cartridge.
In the threaded hole in the base a rod can be screwed. This rod is inserted in the rifle of an Enfield rifle enabeling the grenade to be fired as a rifle grenade by means of a propelling cartridge up to 130 mtrs.
Soon it was found that using the rifle as a launching platform damaged the barrel, so a firing cup was designed to launch the No.36 Mills.
A green band around the body marks the type of explosives used (Baratol, TNT, Trotyl, or Amatoland), a band of red crosses at the top of the body points out the grenade is suitable for tropical use.

Mils No36

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks
Baratol (TNT/BN)	60	Main Charge	

Sources;

Mils No36

Mils No36 Cut through

RGD-5

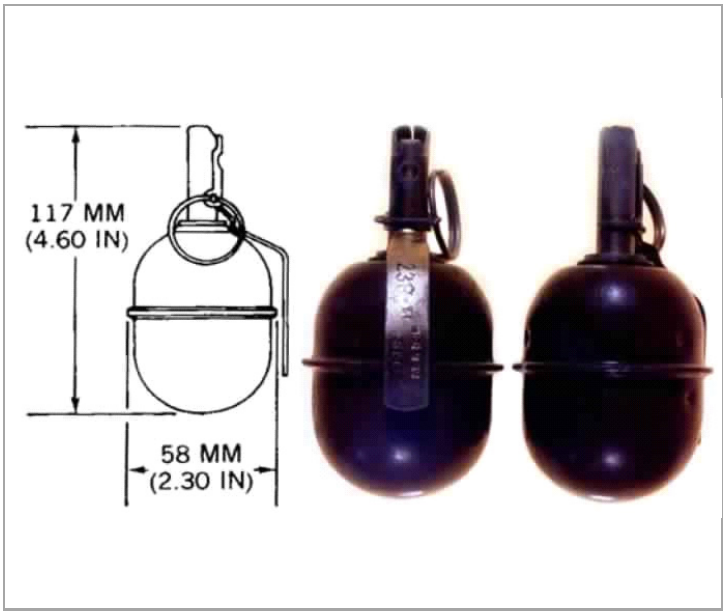
Grenade; Hand Grenade

Origin Country	Russia	Tot. Weight (g)	320	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	210	Width (mm)	
Function	Frag	Weight, NEQ (g)	110	Height (mm)	117
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	58
HCC/CG		Weight, Propellant (g	0		

Description

The grenade contains a 110-gram (3.9 oz) charge of TNT with an internal fragmentation liner that produces around 350 fragments and has a lethality radius of 25 metres (82 ft). The weight of the grenade with the fuze fitted is 310 grams (11 oz). Typically, the RGD-5 uses the 3.2 to 4 second UZRGM fuze, a universal Russian type which is also used in the RG-41, RG-42, and F1 grenades. The RGD-5 may be fitted with the more modern DVM-78 fuze, or variants of the UZRGM with delays of between zero (i.e. instantaneous for use in booby traps) and 13 seconds. It is also possible to screw an MUV booby-trap firing device into the fuze well.

Versions:
China - Type 59



RGD-5

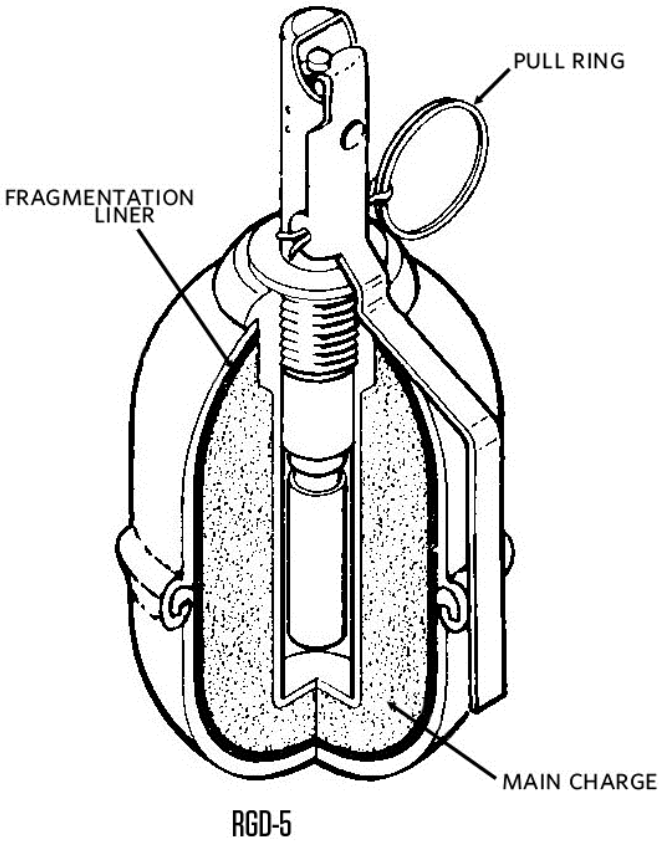
Fuzes used in Ammunition

Fuze Name	Placement
UZRGM/UZRGM/UZGRM-2	Top

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	110	Main Charge	

Sources;



RGD-5

Chinese copy - Type 59

OF 37

Grenade; Hand Grenade

Origin Country	France	Tot. Weight (g)	300	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	210	Width (mm)	
Function		Weight, NEQ (g)	90	Height (mm)	67
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	60
HCC/CG		Weight, Propellant (g	0		

Description

This grenade was used by France during the First World War and adopted by the US Army in 1917. The OF 37 did not count on fragmentation but on the explosive blast to bring the enemy soldiers out of combat. This grenade was moderate but was reliable (little did not explode) and convenient to use. Stocks of unused grenades were captured by the Germans who delivered it into service in their army as the Eihandgranate 302.

OF 37

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Top

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	90	Main Charge	

Sources;

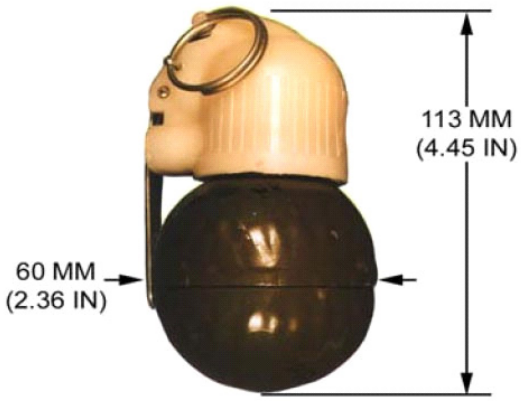
RGN

Grenade; Hand Grenade

Origin Country	Russia	Tot. Weight (g)	290	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	193	Width (mm)	
Function	Dual-purpose	Weight, NEQ (g)	97	Height (mm)	113
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	60
HCC/CG		Weight, Propellant (g	0		

Description

The RGN hand grenade (Ruchnaya Granata Nastupatel'naya) is an offensive Russian fragmentation hand grenade. It consists of a single layered aluminium pre-fragmented body. It is very similar to the defensive RGO hand grenade. The grenade shell consists of two internally serrated aluminium hemispheres.
The UDZS fuze has both impact and time delay functions, the impact fuze arms after a pyrotechnic delay of 1 to 1.8 seconds. If the grenade strikes an object after this time a spherical lead shot filled impact weight will trigger detonation. If the grenade has not struck anything after 3.2 to 4.2 seconds the second pyrotechnic delay will detonate the grenade. The grenade has a lethal radius of between 4 and 10 meters, and a safety radius of 25 meters. It can be thrown 30 to 40 meters. The grenade is in production in Russia and the Ukraine, and is in service with a number of other countries.



RGN

Fuzes used in Ammunition

Fuze Name	Placement
UDZS	Top

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-1 (RDX/wax)	97	Main Charge	

Sources;

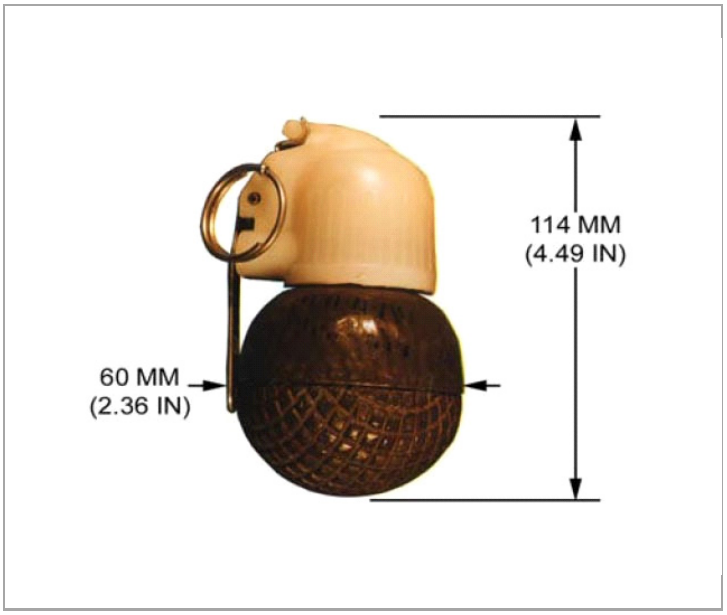
RGO

Grenade; Hand Grenade

Origin Country	Russia	Tot. Weight (g)	520	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	430	Width (mm)	
Function	Defensive	Weight, NEQ (g)	90	Height (mm)	114
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	60
HCC/CG		Weight, Propellant (g	0		

Description

The RGO hand grenade (Ruchnaya Granata Oboronitel'naya) is a defensive Russian fragmentation hand grenade. It consists of a double layered steel pre-fragmented body. It is very similar to the single-layered offensive/defensive aluminium-bodied RGN hand grenade.
It uses the UDZS dual action fuze, which has both impact and time delay functions. The impact fuze arms after a pyrotechnic delay of 1 to 1.8 seconds. If the impact fuze has not triggered the grenade after 3.2 to 4.2 seconds a second pyrotechnic delay triggers the grenade. The fragments produced by the grenade generate a lethal radius of between 6 metres (20 ft) and 20 metres (66 ft), with the safety radius being 100 metres (330 ft). The grenade is still in production in Russia and Ukraine and is in service with a number of countries.



RGO

Fuzes used in Ammunition

Fuze Name	Placement
UDZS	Top

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-1 (RDX/wax)	90	Main Charge	

Sources;

No. 80 Mk1

Grenade; Hand Grenade

Origin Country	United Kingdom	Tot. Weight (g)	553	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	184	Width (mm)	
Function	SMOKE	Weight, NEQ (g)	369	Height (mm)	140
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	61
HCC/CG		Weight, Propellant (g	0		

Description

NIL

No. 80 Mk1

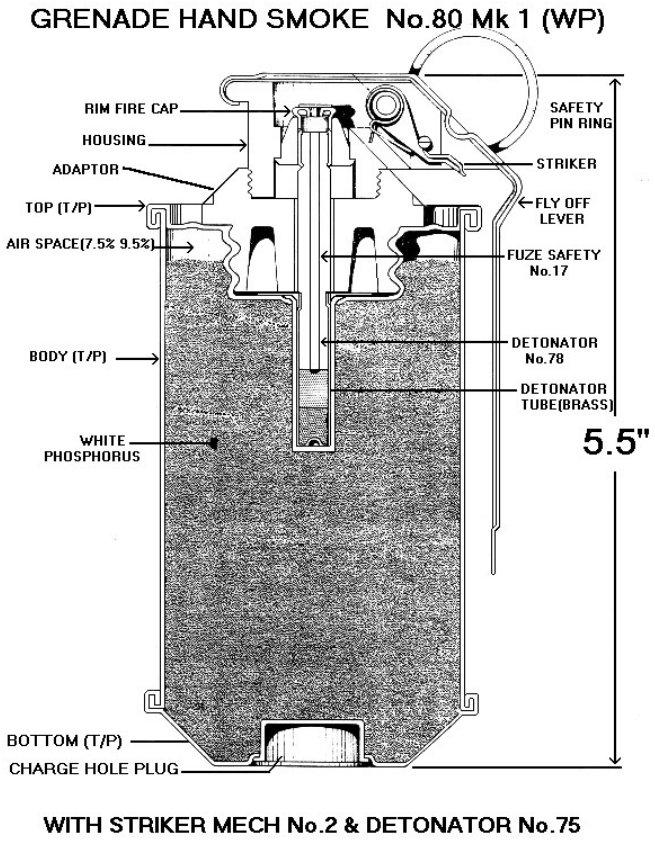
Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Top

Explosives

Explosives	Weight (g)	Role	Remarks
WP	369	Main Charge	

Sources;



No. 80 Mk1 Diagram

Mine

AP

NR 413

Mine; AP

Origin Country	Belgium	Tot. Weight (g)	640	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	545	Width (mm)	
Function	Stake	Weight, NEQ (g)	95	Height (mm)	114
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	46
HCC/CG		Weight, Propellant (g	0		

Description

The NR 413 is a cylindrical, steel bodied, stake mounted anti-personnel landmine which is designed to wound or kill by fragmentation.
The mine is similar in shape to a wine bottle and screws onto a metal stake.
The mine body is spirally wound steel wire scored to allow even breakup of 600 pieces of fragmentation.
The NR 410 fuze is actuated by 2 kg of pull.
It has four actuating prongs which have a small ring at each end.
The fuze can take up to 8 tripwires for full 360' coverage.
The mine contains a 95 g explosive charge which propels fragments to a radius of 25 meters when actuated.
The NR 413 can be located visually and with metal detectors under most field conditions.
The NR 413 can be defeated by blast overpressure from explosive breaching systems.

NR 413 body

Fuzes used in Ammunition

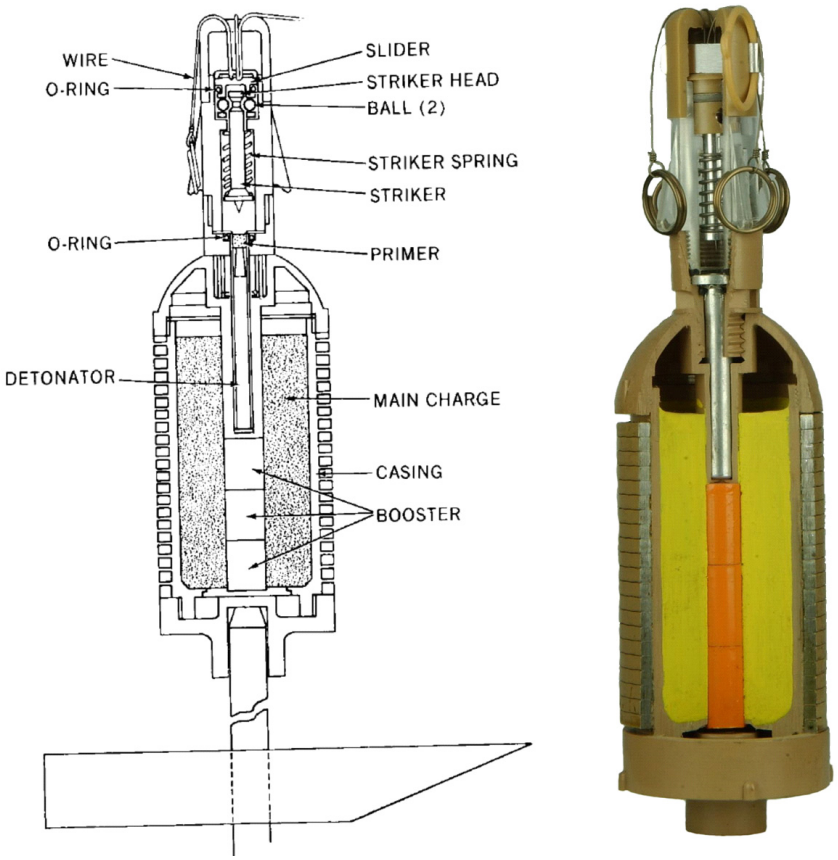
Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
CompB (RDX/TNT)	95	Main Charge	

Sources;
CAT UXO

NR 410 fuze



NR 413 Diagram, Cut through

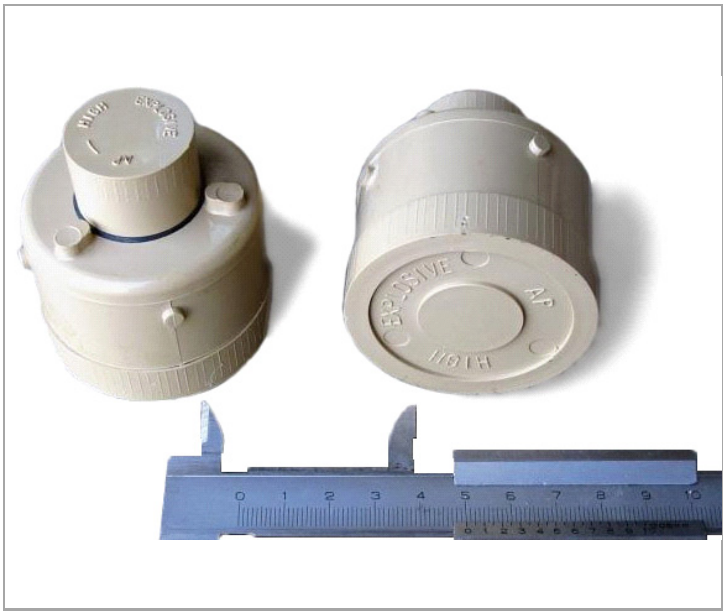
TAB-1

Mine; AP

Origin Country	Brazil	Tot. Weight (g)	125	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	65	Width (mm)	
Function		Weight, NEQ (g)	60	Height (mm)	61
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	60
HCC/CG		Weight, Propellant (g	0		

Description

The TAB-1 is a Brazilian AP blast mine.
Although not a true minimum-metal mine, the metal content of the TAB-1 is low, with the only metallic components being the mild steel firing pin (0.36 g) and the aluminum detonator capsule (estimated at 0.15 g). The main charge is approximately 60 g of Pentolite (PETN/TNT mixture). There is also a small booster pellet, which appears to be PETN, in the base of the fuze. The simple mechanical fuze screws into the central well of the mine body and is actuated by a pressure of approximately 20 kg.
There is no safety or arming device. Also noteworthy is that the TAB-1 is used as the initiator for an AT mine (also designated TAB-1).



TAB-1

Fuzes used in Ammunition

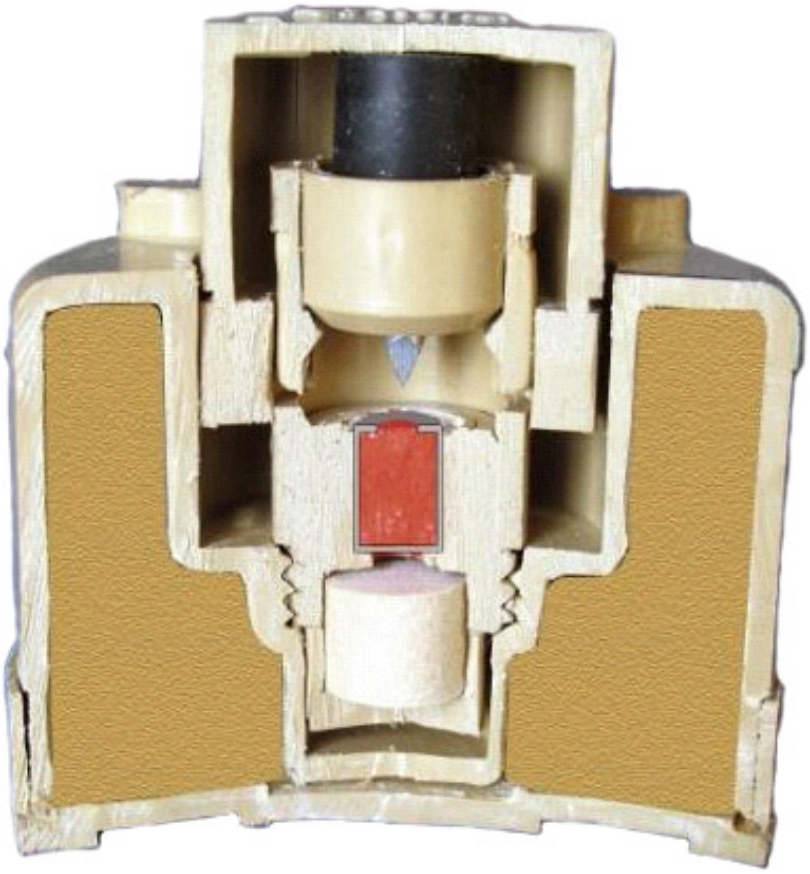
Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
PETN-TNT 50:50 (PETN-TNT)	60	Main Charge	

Sources;

Landmines in Libya by Colin King



TAB-1

TAB-1 Fuze

PSM-1

Mine; AP

Origin Country	Bulgaria	Tot. Weight (g)	2,500	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	2,330	Width (mm)	
Function	Bounding	Weight, NEQ (g)	170	Height (mm)	135
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	75
HCC/CG		Weight, Propellant (g	0		

Description

The PSM-1 is a cylindrical steel bodied bounding anti-personnel mine which is designed to wound or kill by fragmentation.
The mine has a smooth painted finish with a fuze cavity centered on top and a crimped seam close to the bottom.
The fuze cavity accepts an adapter which will take three different fuzes. It comes with a MUV-2, MVN2M and EVU detonator each.
The mine can be pull, pressure or electric command actuated. When actuated the mine is expelled upward to a height of 0.5 to 1.5 meters and explodes.
The mine contains 170 g of Hexogen to propel 1200 preformed fragments to a lethal radius of 20 meters.
The PSM-1 can be located visually if set in tripwire mode or with metal detectors under most field conditions if buried.
Because of the small surface area of the prongs on the pressure fuze, the mine is resistant to blast over pressure from explosive breaching methods.

PSM-1 Body

Fuzes used in Ammunition

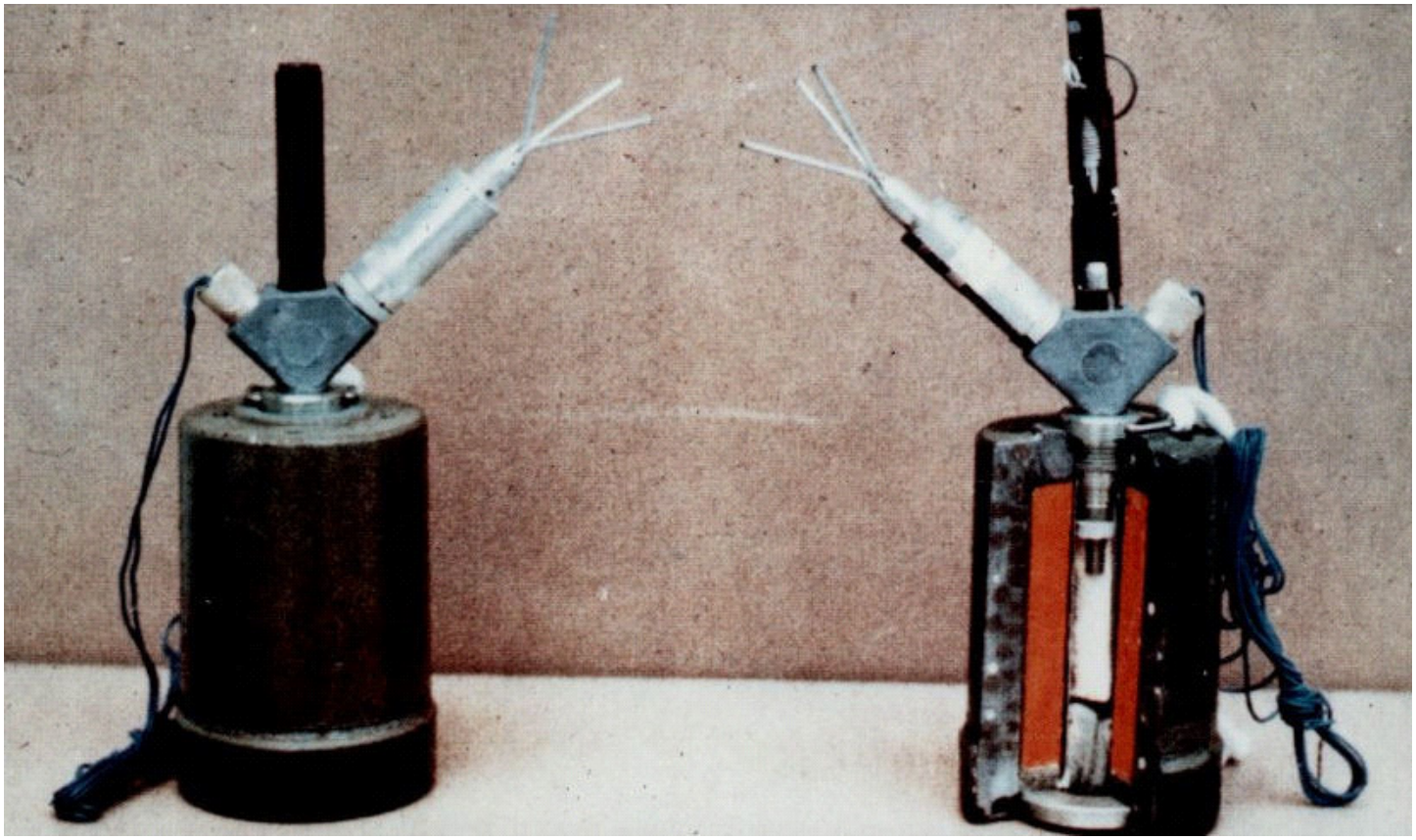
Fuze Name	Placement
UNKN. FUZE	Top

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-1 (RDX/wax)	170	Main Charge	

Sources;

SWEDEC, Kosovo Handbook, Appendix 1



PSM-1

PSM-1 Fuzes

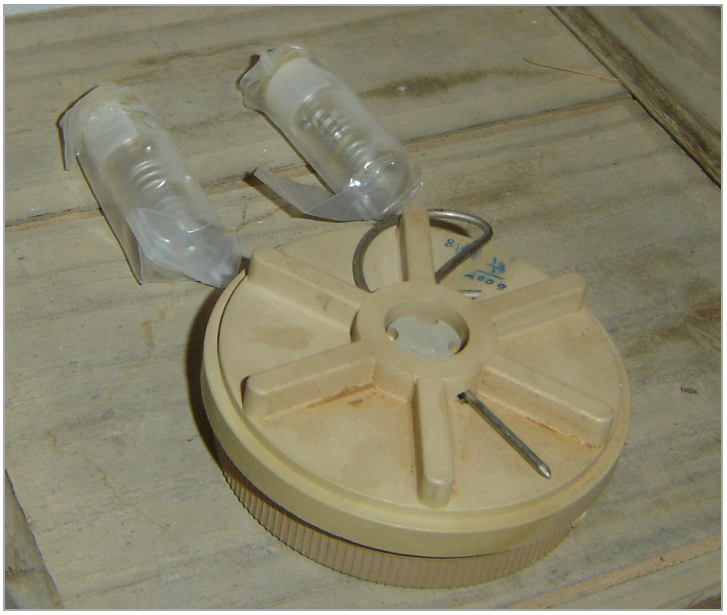
NR 409

Mine; AP

Origin Country	Belgium	Tot. Weight (g)	183	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	103	Width (mm)	
Function		Weight, NEQ (g)	80	Height (mm)	28
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	82
HCC/CG		Weight, Propellant (g	0		

Description

The NR 409 is a small, circular plastic bodied anti-personnel landmine which is designed to wound or kill by blast effect.
The top of the mine is a full surface pressure membrane. It has a raised bolt in the center with a hole through it which is used for securing the shipping/safety cover.
The safety cover has a raised radial design with six ribs and a hole which fits over the bolt on top of the mine body.
The shipping/safety cover is secured with a metal safety pin which prevents the mine from functioning during normal handling.
The lower part of the mine body has small reinforcing ribs running top to bottom around its circumference.
The detonator retaining plug is located at the side of the mine and is sealed with melted plastic.
The only metal components are two steel spring strikers and two copper cased percussion caps which makes the NR 409 very difficult to locate using metal detectors under most field conditions.
The mine is also known by the manufacturers designation PRB 409 and a copy made in Portugal is called the M 411 or M969 .
The Portuguese also manufactured a variant called M-972 MAPS which has a slightly thicker body and greater weight and a screw on safety cover instead of the unthreaded pin secured version.



NR 409

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	80	Main Charge	Can be CompB

Sources;

NR 409 Cut through

NR 409

NR 442

Mine; AP

Origin Country	Belgium	Tot. Weight (g)	4,500	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	3,940	Width (mm)	
Function	Bounding	Weight, NEQ (g)	560	Height (mm)	130
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	105
HCC/CG		Weight, Propellant (g	0		

Description

The mine is build up of two main parts: The outer container that hurdles the mine up into the air and the mine itself.
Inside of the container two fragmentation wires are placed.
The cylinder and the lower flange are held together by three aluminium pipes which are rolled on both ends to ensure a tight connection between both parts. One of the pipes is threaded inside on the top to receive the fuze, the lower part of the pipe has a rim on which the powder expulsion charge rests. In the lower part of the central channel an internal pull-release fuze is placed. It exists of a firing pin -with a weak tensioned firing pin spring- which is held in position by a U-shaped spoon.
On expulsion of the mine from the outer cylinder, the wire will -when completely stretched out tension the firing pin spring by pulling the firing pin backward up to a moment where the U shaped spoon is pulled away.
The firing pin will now move forward into the firing cap igniting the detonator.
In top of the central channel two plugs are placed into each other. The large plug is used for casting the main charge and placement of the penthrite booster charges, the small one for placing the detonator. The small plug has a rod that keeps the detonator in the lower position.
On top of the mine a ring is placed over which the thinner top rim of the outer container is rolled. Between the mine, the rim and the pot a thin layer of watertight putty is present.
The fuze Nr.2110 is a pressure, tilt and rotation sensitive fuze. A four seconds powder delay charge is placed to ensure the person that activated the mine has stepped of the mine before it is hurdled upward.

NR 442 without main fuze

Fuzes used in Ammunition

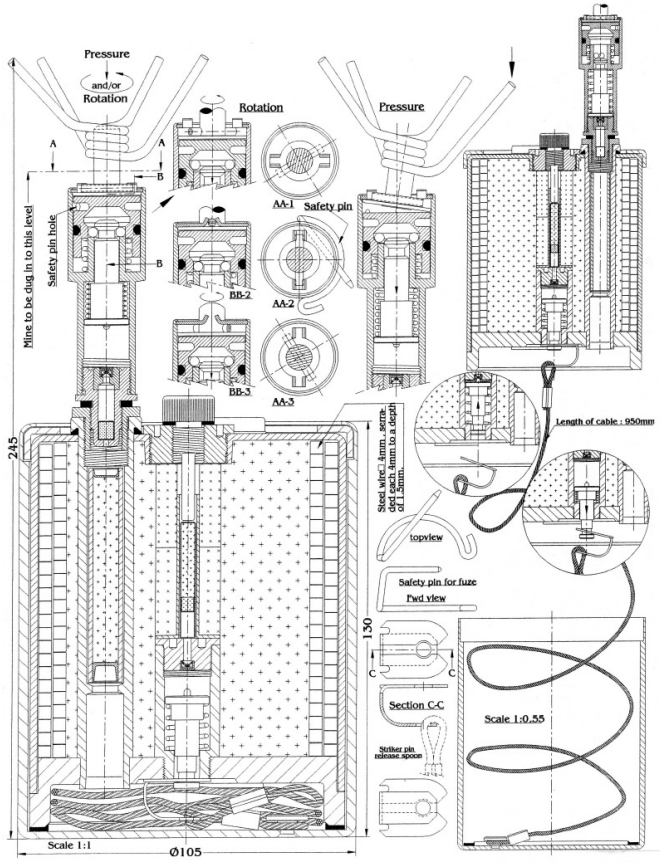
Fuze Name	Placement
UNKN. FUZE	Top

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	560	Main Charge	

Sources;

NR 442 Cut through



NR 442 Diagram

AT

PRB M3

Mine; AT

Origin Country	Belgium	Tot. Weight (g)	6,800	Length (mm)	230
Caliber	N/A	Weight, Projectile (g)	800	Width (mm)	230
Function		Weight, NEQ (g)	6,000	Height (mm)	130
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	
HCC/CG		Weight, Propellant (g	0		

Description

The PRB M3 and PRB M3A1 are plastic cased minimum metal anti-tank blast mine produced by the Belgian company Poudreries Réunies de Belgique in the 1970s and 1980s. The mine is square with an olive drab body constructed from polythene with a webbing carrying handle on the side and an ammonia-free bakelite seating for the pressure plate to be screwed into. The fuze well is in the centre of the seating, with the pressure plate screwed into it after the fuze has been inserted. The cylindrical pressure plate consists of two plastic plates, one of which moves under the weight of a vehicle driving over the mine to transmit the force to the fuze, shearing pins which hold it in place.

PRB M3

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
Torpex (RDX/TNT/AL)	6,000	Main Charge	similar mix as Torpex

Sources;

Landmines in Libya by Colin King

PRB M3

PRB M3A1

Mine; AT

Origin Country	Belgium	Tot. Weight (g)	6,800	Length (mm)	230
Caliber	N/A	Weight, Projectile (g)	800	Width (mm)	230
Function		Weight, NEQ (g)	6,000	Height (mm)	130
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	
HCC/CG		Weight, Propellant (g	0		

Description

Unlike the M3, the M3A1 incorporates two auxiliary fuze wells for booby trapping; one in the side and one in the base. This capability is particularly relevant given that compatible anti-handling devices have also been seen in Libya. Even more worrying is the prospect that, without the pressure-plate assembly fitted, either of these mines could be initiated by the weight of a person, thereby converting the AT mine into an oversized AP mine.

PRB M3A1

Fuzes used in Ammunition

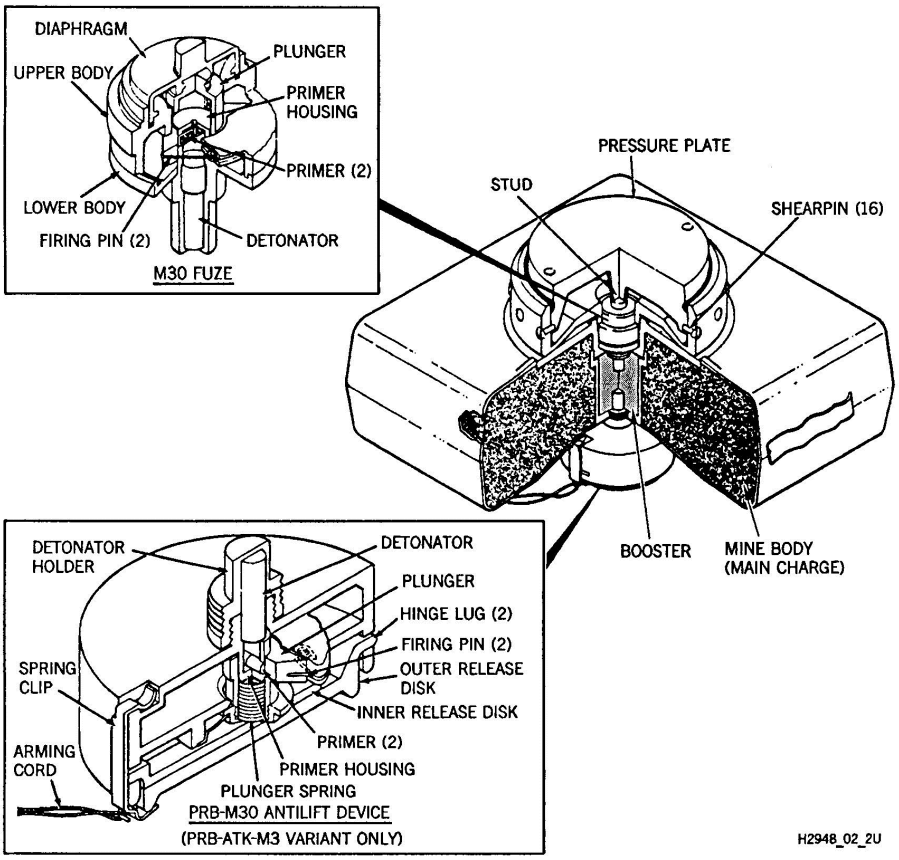
Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
Torpex (RDX/TNT/AL)	6,000	Main Charge	similar mix as Torpex

Sources;

Landmines in Libya by Colin King



PRB M3A1 (fitted with anti-lift device)

PRB M3A1

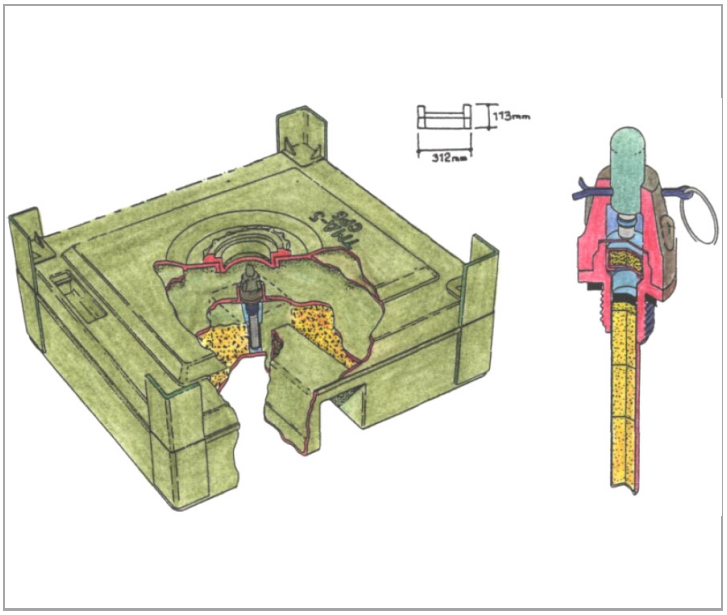
TMA-5

Mine; AT

Origin Country	Former Yugoslavia	Tot. Weight (g)	6,600	Length (mm)	310
Caliber	N/A	Weight, Projectile (g)	900	Width (mm)	275
Function		Weight, NEQ (g)	5,700	Height (mm)	110
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	
HCC/CG		Weight, Propellant (g	0		

Description

The TMA-5 and TMA-5A are rectangular plastic cased Yugoslavian minimum metal anti-tank blast mines. The mine's top surface has a single circular threaded fuze cap in the center, covering the fuze well. Additionally there is a small compartment for storing the fuze when disarmed. The corners of the mine have small posts to permit stacking of the mine. Although the mine does not have a secondary fuze well, it could easily be fitted with an improvised one in the field. The mine uses a single black plastic UANU-1 fuze.



TMA-5

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
RDX	200	Booster Charge	
TNT	5,500	Main Charge	

Sources;

Mines & Fuzes, Czechoslovakia, Hungary, Yugoslavia, USSR & GDR
SWEDEC, Kosovo Handbook, Appendix 1

TMA-5

Type 84

Mine; AT

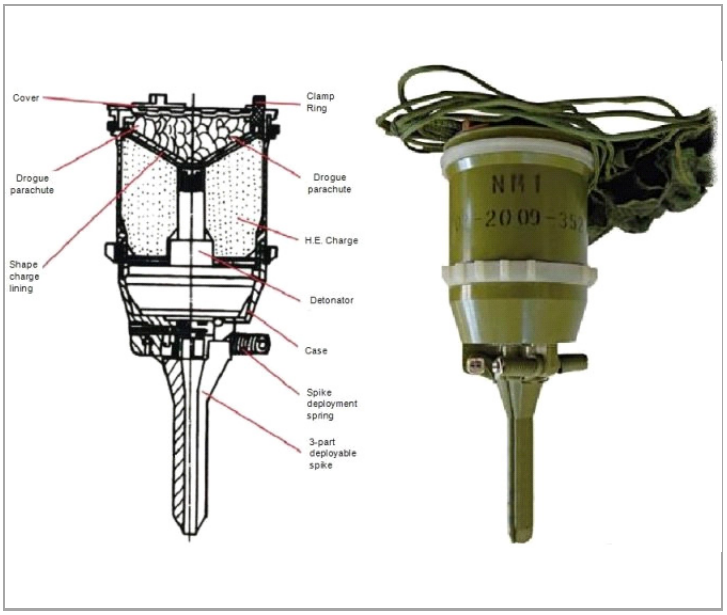
Origin Country	China	Tot. Weight (g)	3,120	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	2,340	Width (mm)	
Function		Weight, NEQ (g)	780	Height (mm)	160
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	114
HCC/CG		Weight, Propellant (g	0		

Description

The Type 84 used in Libya differs slightly from those shown in Chinese sales literature, but key features remain, including a parachute, three folding prongs (designed to stick into the ground on impact) and electronic magnetic influence fuze. Initiation using magnetic influence is particularly significant to deminers since these fuzes can be highly sensitive to both the proximity of small magnetic objects and to movement. It is unknown whether this Type 84 variant incorporates a self-destruct feature.

Care must be taken when approaching the deployed Type 84 AT mines, as they contain a magnetically influenced fuzing system which remains active for at least 72 hours.

It is believed that there are three variants of this mine, two with magnetic influence fuzes (GLD220 & GLD220A) and one with a contact fuze (GLD221)



Type 84

Fuzes used in Ammunition

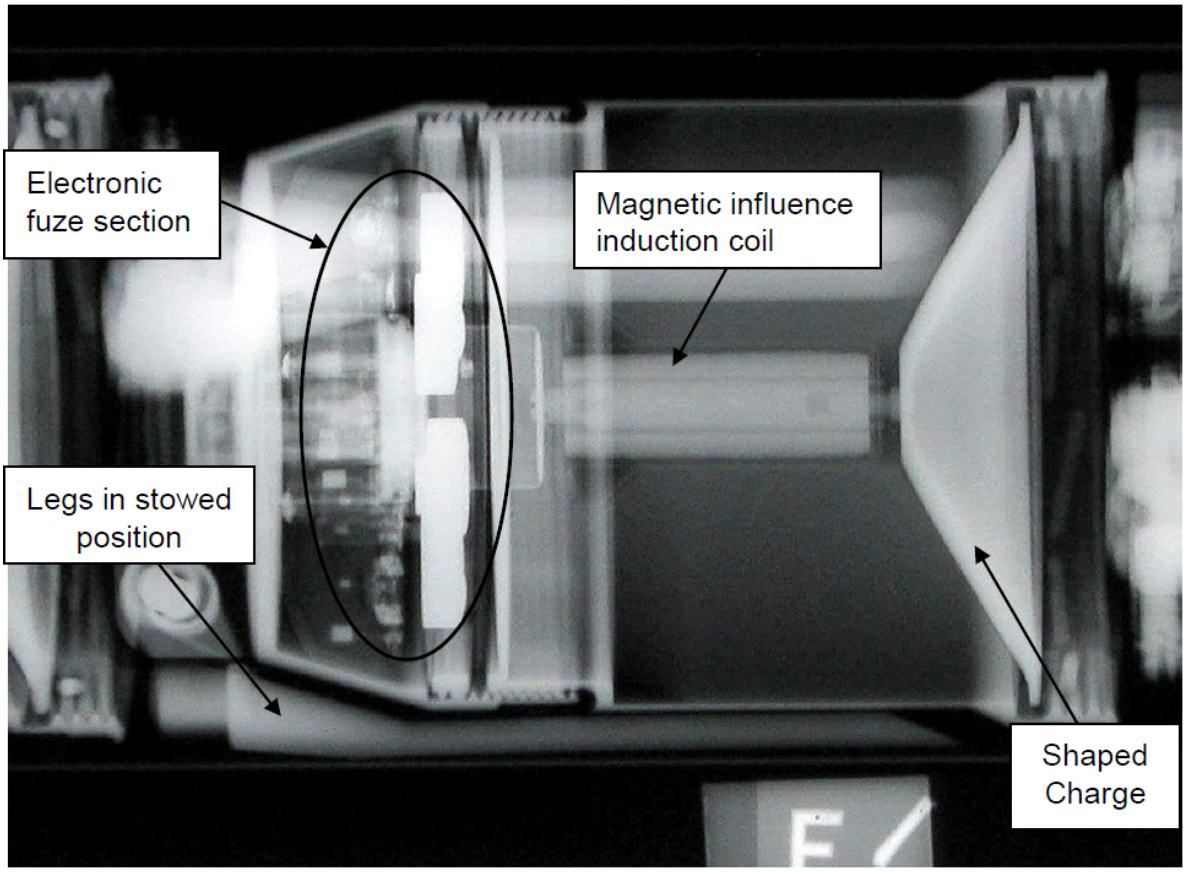
Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
RDX	780	Main Charge	

Sources;

Type 84



Type 84 mine inside the rocket delivery system

Type 72SP

Mine; AT

Origin Country	NIL	Tot. Weight (g)	8,000	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	3,000	Width (mm)	
Function		Weight, NEQ (g)	5,000	Height (mm)	93
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	279
HCC/CG		Weight, Propellant (g	0		

Description

The Type 72 (one of several Chinese mines with this designation) is externally similar to the Russian TM-46, but uses a completely different fuze, which incorporates an effective blast-resistant mechanism. It also has a springloaded pressure plate to allow the fuze to reset after being subjected to overpressure.
Use of the SP suffix was previously unknown, and this is believed to refer to an export version for tropical use. In this variant, sand-colored paint had been sprayed over the olive green used on most Chinese mines; this is clearly visible around the internal voids and wells. There is a large auxiliary fuze well in the base for booby trapping, but there have been no sightings of the anti-handling devices used with this mine.

Type 72SP

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
RDX/TNT	5,000	Main Charge	

Sources;

Landmines in Libya by Colin King

Type 72SP, bottom side

PT-Mi-Ba III

Mine; AT

Origin Country	Czechoslovakia	Tot. Weight (g)	10,800	Length (mm)	
Caliber	N/A	Weight, Projectile (g)	2,800	Width (mm)	
Function		Weight, NEQ (g)	8,000	Height (mm)	110
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	330
HCC/CG		Weight, Propellant (g	0		

Description

PT Mi-Ba-III is a large anti-vehicle blast mine with a Bakelite body. The dished pressure plate sits in a similar shaped cavity in the mine body, so that pressure on the rim will cause it to tilt. In the center of the pressure plate is a knurled Bakelite fuze cover; this gives access to the fuze well, beneath which is the central booster charge.
A safety ring may be inserted into the fuze well, over the fuze, to prevent any movement of the pressure plate.
The cast TNT main charge is contained in the lower part of the body.
The mine is normally used with the RO-2 fuze (sometimes known as RO-7-I); this contains a spring-loaded striker, the end of which is retained by a brittle plastic cap. The small firing pin, striker spring and aluminum detonator capsule are the only metallic components of the mine.
The base of the mine has a central plug, which retains the booster charge.
To one side is the plastic carrying handle, which slides out from its transit position, almost flush with the edge of the mine. The mine is normally unpainted, in the red-brown color of the Bakelite.

PT-Mi-Ba III

Fuzes used in Ammunition

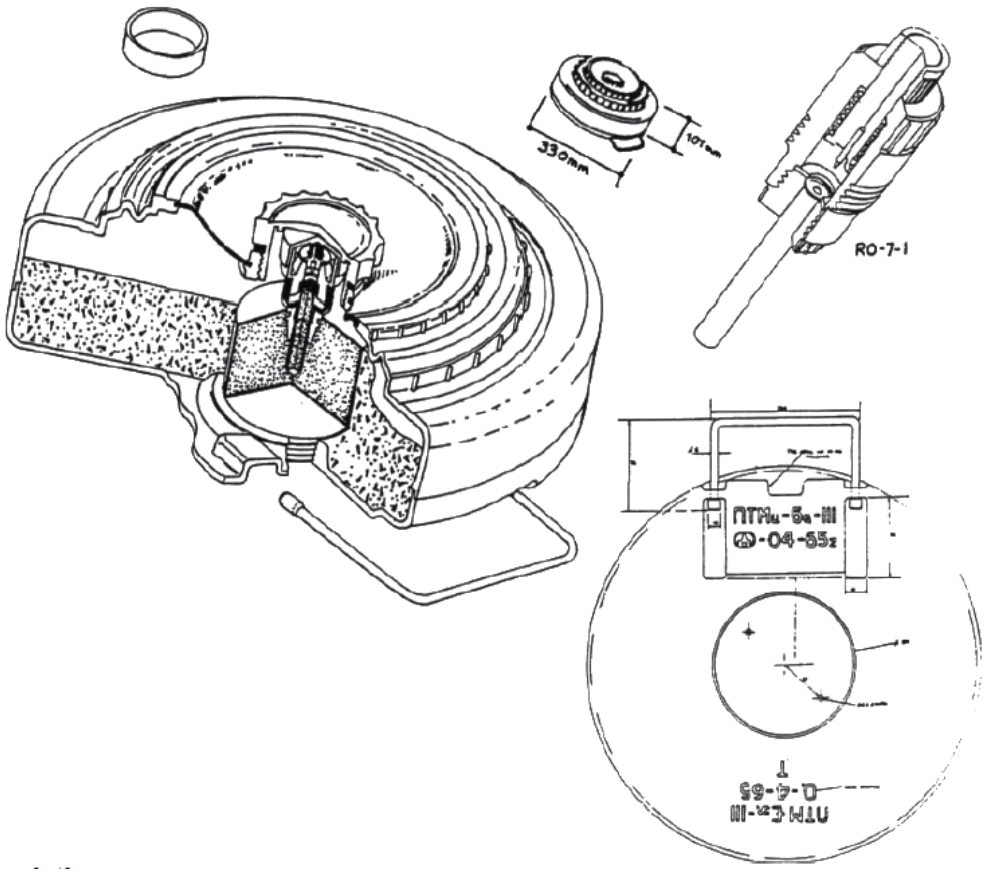
Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	7,200	Main Charge	

Sources;

Mines & Fuzes, Czechoslovakia, Hungary, Yugoslavia, USSR & GDR
CAT UXO



PT-Mi-Ba III Diagram

PT-Mi-Ba III Bottom side

Missile

Air-to-Air

AA-8 Aphid-B / R60M

Missile; Air-to-Air

Origin Country	Russia	Tot. Weight (g)	43,000	Length (mm)	2,090
Caliber	120mm	Weight, Projectile (g)	39,500	Width (mm)	
Function		Weight, NEQ (g)	3,500	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	120
HCC/CG	D	Weight, Propellant (g	0		

Description

The R-60 was initially developed for the MiG-23. Work began on the weapon, under the bureau designation K-60 (izdeliye 62), in the late 1960s. Series production began in 1973. It entered service with the designation R-60 (NATO 'Aphid-A').
An upgraded version, the R-60M (NATO 'Aphid-B'), using a nitrogen-cooled seeker with an expanded view angle of 420°, was introduced around 1982. Although its seeker is more sensitive than its predecessor, the R-60M has only limited all-aspect capability. Minimum engagement range was further reduced, to only 200 m (220 yd). The proximity fuzes had improved resistance to ECM, although both optical and radar fuzes remained available (radar-fuzed R-60Ms with the Kolibri-M fuze are designated R-60KM). The R-60M is 42 mm (1.7 in) longer, and has a heavier, 3.5 kg (7.7 lb) continuous-rod warhead, increasing launch weight to 45 kg (99 lb). In some versions the warhead is apparently laced with about 1.6 kg (3.5 lb) of depleted uranium to increase the penetrating power of the warhead.
Since 1999, a modified version of the weapon has been used as a surface-to-air missile (SAM) as part of the Yugoslav M55A3B1 towed anti-aircraft artillery system. It has also been seen carried on a twin rail mount on a modified M53/59 Praga armored SPAAG of (former) Czechoslovakian origin. These missiles have been modified with the addition of a first stage booster motor, with the missile's own motor becoming the sustainer.

AA-8 Aphid-B on pylon

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	3,500	Main Charge	

Sources;

IATG Ammunition Statistics

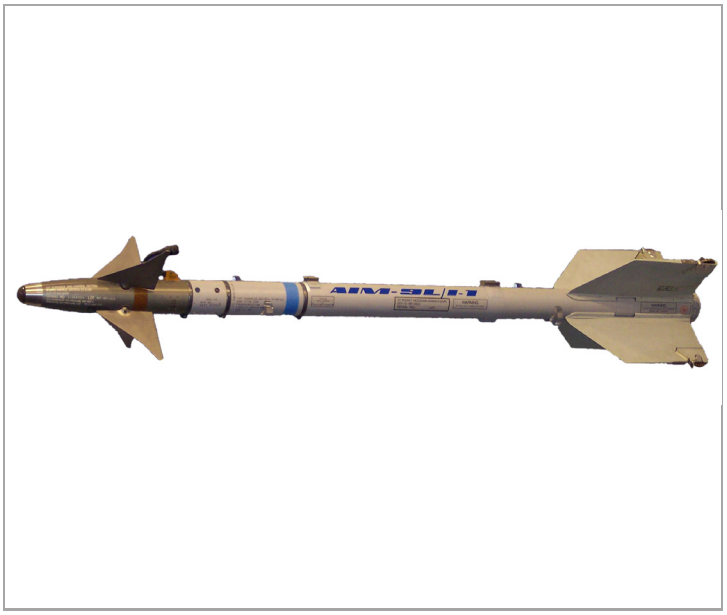
AIM-9 Sidewinder

Missile; Air-to-Air

Origin Country	USA	Tot. Weight (g)	85,300	Length (mm)	3,020
Caliber	127mm	Weight, Projectile (g)	48,700	Width (mm)	
Function		Weight, NEQ (g)	9,400	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	127
HCC/CG	B	Weight, Propellant (g	27,200		

Description

The current Sidewinder, as well as its replacement, the AIM-9X, carries the 20-pound (9-kg) WDU-17/B warhead. The WDU-17/B consists of a case assembly, a good amount of PBXN-3 high explosive, booster plates, an initiator device and nearly 200 titanium fragmentation rods. When the target detector senses the enemy aircraft, it activates the fuze mechanism, which sends an explosive charge through the initiator (a train of low-explosive material) to the booster plates. The explosive charge from the initiator ignites low-explosive material in the booster plate channels, which ignites explosive pellets surrounding the high-explosive material. The pellets ignite the high explosive, causing it to release a huge amount of hot gas in a short amount of time. The powerful explosive force from this expanding gas blasts the titanium rods outward, breaking them apart to form thousands of metal pieces, all zipping through the air at top speed. If the warhead goes off within range of the target, the speeding titanium fragments will break apart the enemy aircraft's fuselage. In some cases, the missile may go right up the target's tailpipe, demolishing the aircraft from the inside. The WDU-17/B is referred to as an annular blast fragmentation warhead because the explosive force carries the metal fragments outward in all directions, in an annular, or ring-shaped, pattern.



AIM-9L Sidewinder

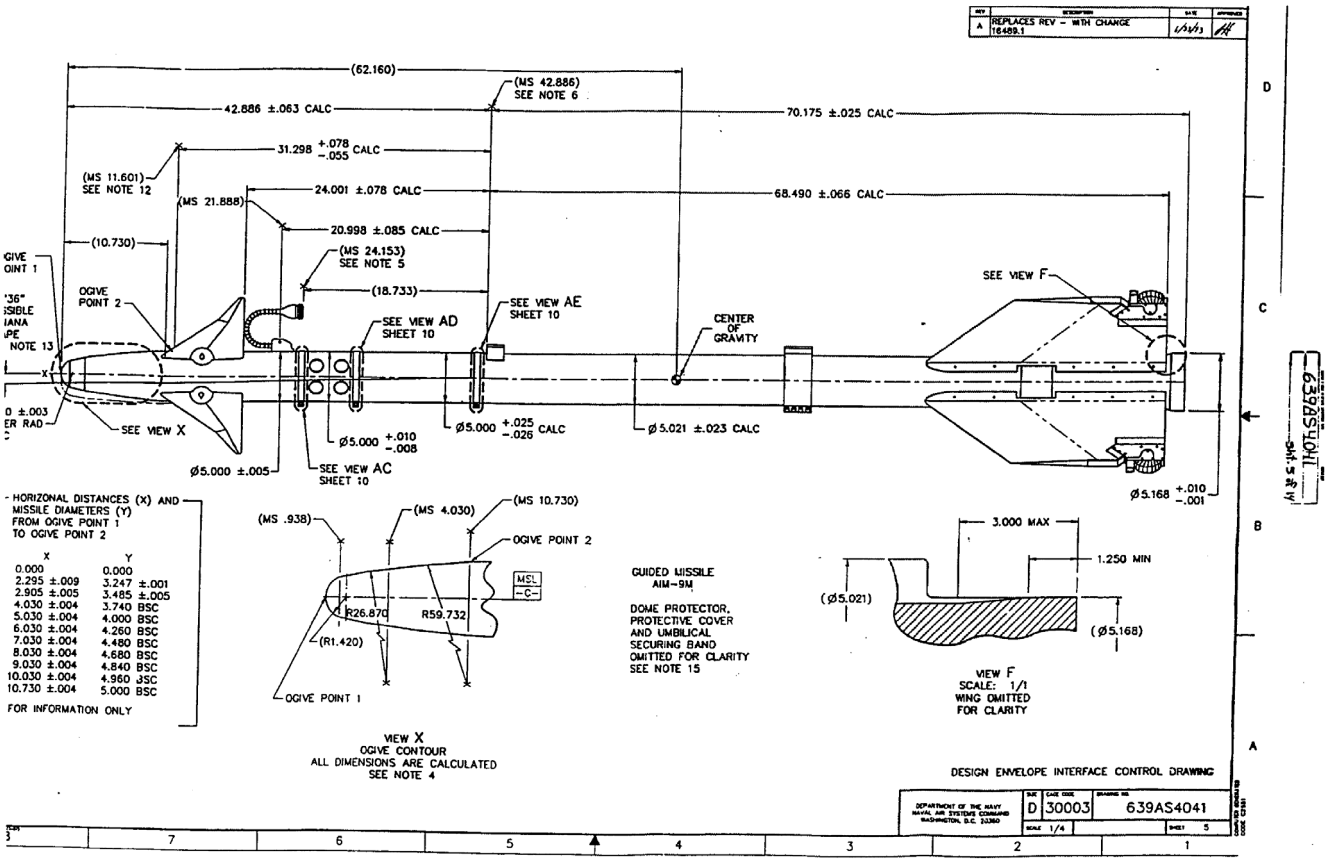
Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

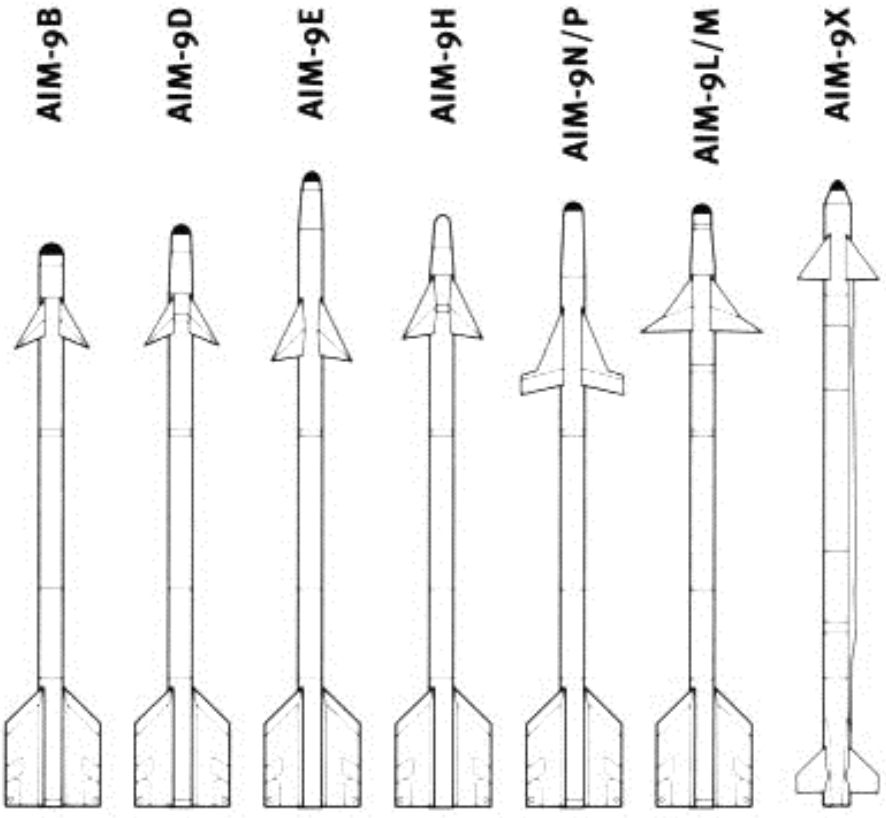
Explosives

Explosives	Weight (g)	Role	Remarks
PBXN-3 (RDX)	9,400	Main Charge	

Sources;



AIM-9L/M



AIM-9 Sidewinder versions

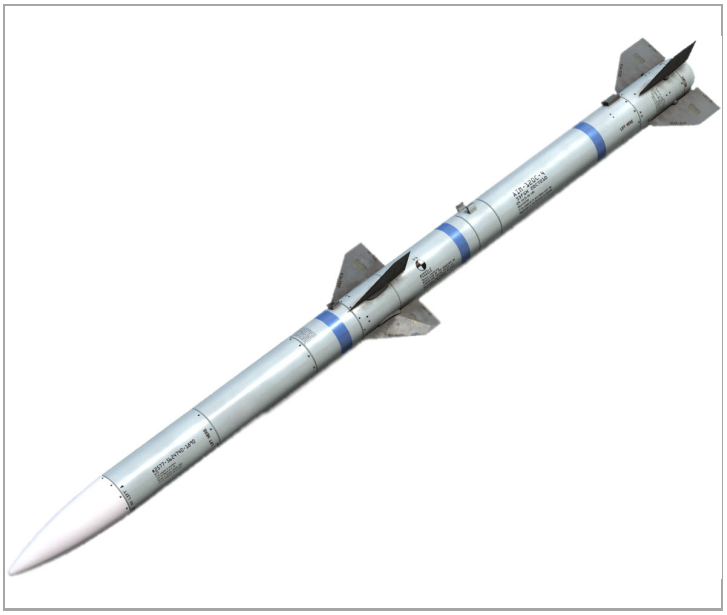
AIM-120 AMRAAM

Missile; Air-to-Air

Origin Country	USA	Tot. Weight (g)	157,000	Length (mm)	3,650
Caliber	180mm	Weight, Projectile (g)	86,000	Width (mm)	
Function		Weight, NEQ (g)	22,000	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	178
HCC/CG	B	Weight, Propellant (g	49,000		

Description

The AIM-120 Advanced Medium-Range Air-to-Air Missile (AMRAAM) is a modern beyond-visual-range air-to-air missile (BVRAAM) capable of all-weather day-and-night operations.
Designed with the same form-and-fit factors as the previous generation of semiactive guided Sparrow missiles, it is a fire-and-forget missile with active guidance.
The differences between the AIM-120A, AIM-120B, and the AIM-120C are of no EOD significance.
The motor assembly weighs 70.3 kg and contains 49 kg of solid propellant.



AIM-120 AMRAAM

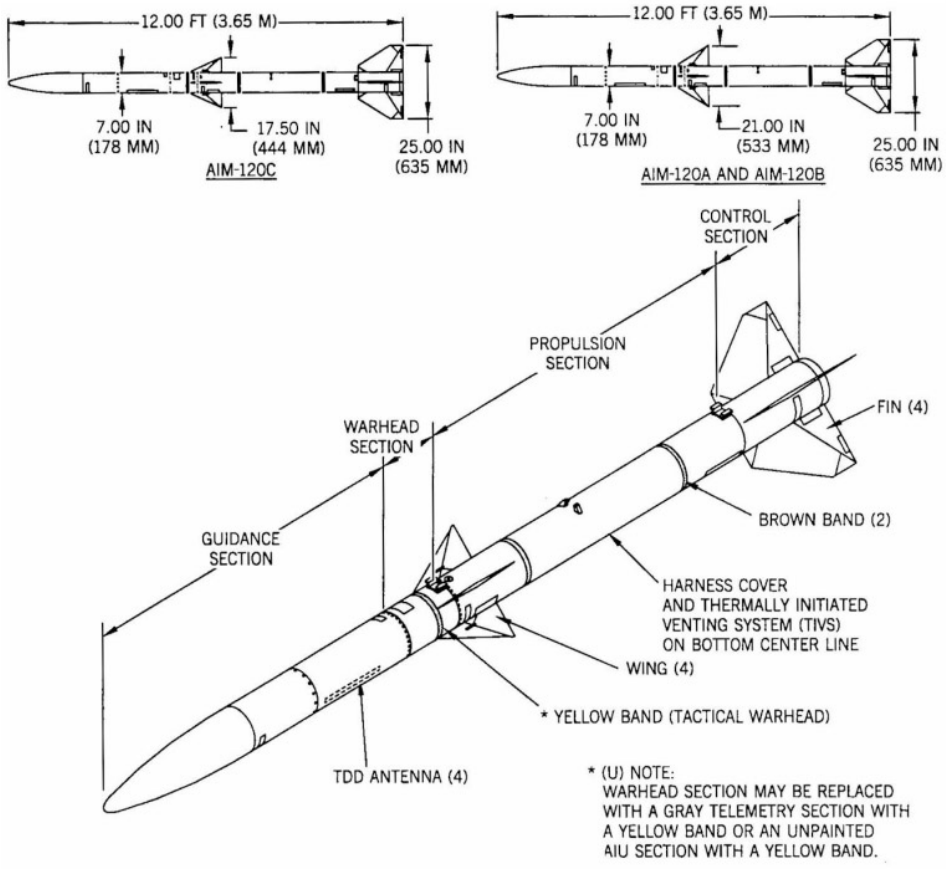
Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	22,000	Main Charge	

Sources;



AIM-120 AMRAAM Diagram

AIM-120 on pylon

AA-7 Apex / R-23R

Missile; Air-to-Air

Origin Country	Russia	Tot. Weight (g)	222,000	Length (mm)	4,500
Caliber	223mm	Weight, Projectile (g)	147,400	Width (mm)	
Function		Weight, NEQ (g)	8,600	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	223
HCC/CG	D	Weight, Propellant (g	66,000		

Description

AA-7 `Apex' is the NATO code and designation for the Russian third-generation air-to-air missile designated the R-23.
`Apex' was developed in the late 1960s in both IR-guided (R-23T) and semi-active radar-guided (R-23R) versions, although few IR missiles have been seen.
It has four clipped triangular fixed stabilizers at the front, four clipped delta-wings and four moving clipped-tip raked control fins at the rear.

Warhead: expanding-rod high explosive

AA-7 Apex / R-23R

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	8,600	Main Charge	Unknown Type

Sources;
CAT UXO

AA-6 Acrid / R-40RD

Missile; Air-to-Air

Origin Country	Russia	Tot. Weight (g)	436,300	Length (mm)	6,220
Caliber	310mm	Weight, Projectile (g)	291,000	Width (mm)	
Function		Weight, NEQ (g)	19,300	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	310
HCC/CG	D	Weight, Propellant (g	126,000		

Description

The Bisnovat (later Molniya then Vympel) R-40 (NATO reporting name AA-6 'Acrid') was a long-range air-to-air missile developed in the 1960s by the Soviet Union specifically for the MiG-25 interceptor, but can also be carried by the later MiG-31. It is the largest air-to-air missile in the world to ever go into production.

After the defection of a MiG-25P to Japan on 06 September 1976, an extensive redesign was undertaken.
The new missile R-40D and its R-40D1 update ("dorabotanaya" [more elaborate]) were produced in two variants R-40RD and R-40TD, both featuring improved countermeasures resistance and a more sensitive homing head to improve performance against low-flying targets.
The later R-40D (or R-46) missiles are also in two versions: the IR seeker version R-46TD has a 35 kg HE fragmentation warhead and a launch weight of 467 kg, while the semi-active radar seeker version has a larger 55 kg HE fragmentation warhead and a launch weight of 472 kg.

AA-6 Acrid

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	19,300	Main Charge	Unkn. Expl. Type

Sources;
CAT UXO

AA-6 Acrid Warhead

AA-6 Acrid Exhaust

Anti-Tank

AT-13 / 9M131

Missile; Anti-Tank

Origin Country	Russia	Tot. Weight (g)	13,700	Length (mm)	910
Caliber	130mm	Weight, Projectile (g)	8,750	Width (mm)	
Function	Tandem HEAT	Weight, NEQ (g)	4,950	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	130
HCC/CG		Weight, Propellant (g	0		

Description

9M131 missile wings are made of thin sheets of steel and disclosed after the start under its own elastic forces. Just as in the 9M115 missile "Metis", adopted technical solutions, namely the placement of the tracer at the ending of one of the 3 of the wings, have allowed to abandon the use of gyroscopic devices, on-board batteries and electrical units. During the flight of the rocket tracer moves in spirals, ground equipment receives information about the angular position of the anti-tank and adjusts the commands issued via a wired connection to the band controls the rocket.

Thermobaric anti-personnel/anti-material warhead is also available.

AT-13 / 9M131 with launcher

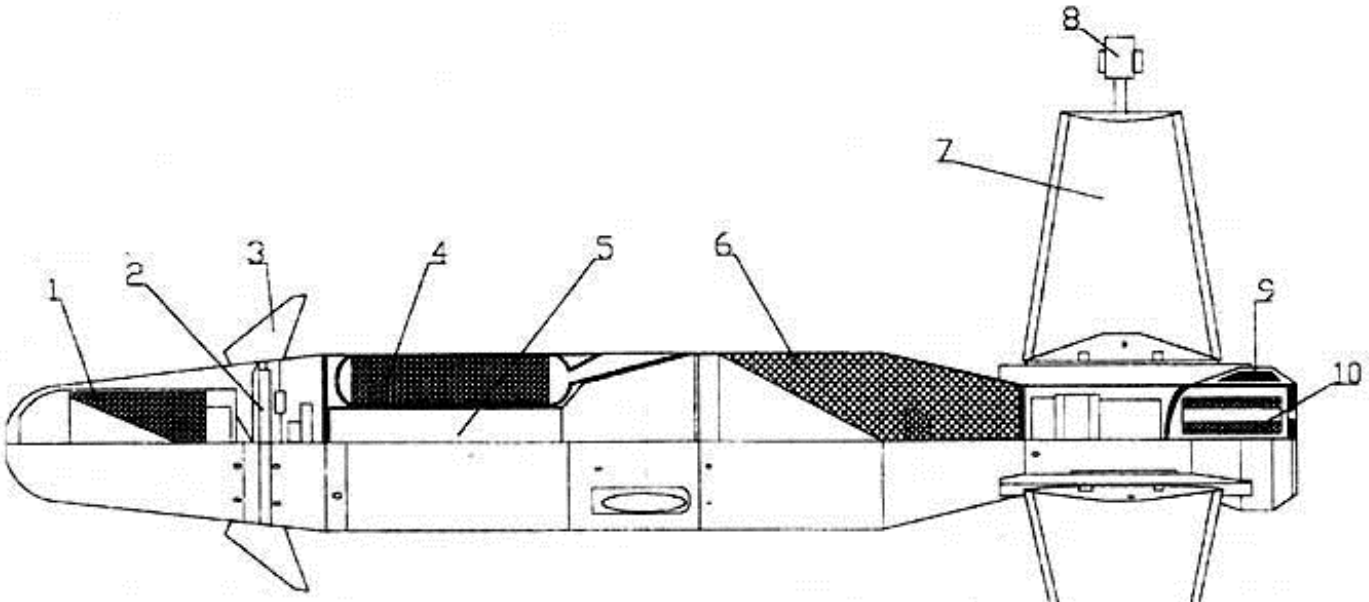
Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	4,950	Main Charge	

Sources;



1 — pre-charge tandem battle parts;
2 — Air-dynamic drive semi-open;
3 — aerodynamic control surfaces;
4 — engine;
5 — channel for the cumulative jet;
6 — the main charge tandem battle parts;
7 — wings;
8 — tracer;
9 — spool of wire;
10 — starting the engine;

AT-13 / 9M131 Diagram

AT-14 / 9M133

Missile; Anti-Tank

Origin Country	Russia	Tot. Weight (g)	27,000	Length (mm)	1,200
Caliber	152mm	Weight, Projectile (g)	20,000	Width (mm)	
Function		Weight, NEQ (g)	7,000	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	152
HCC/CG		Weight, Propellant (g	0		

Description

The Kornet anti-tank missile was unveiled in October 1994 by the KBP Instrument Design Bureau. The missile started development in 1988 as a modular, universal system able to engage any target from a mix of platforms using a reliable laser beam guidance system that was simple to use. It is a heavy ATGM, superior to the earlier 9K111 Fagot (NATO: AT-4 Spigot) and 9K113 Konkurs (NATO: AT-5 Spandrel) wire-guided ATGMs, but not to replace them (due to the cost). The missile entered service in the Russian army in 1998. Its export designation is the Kornet-E.

AT-14 / 9M133 with launcher

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	7,000		

Sources;

AT-14 / 9M133 UXO

AT-14 / 9M133 with launch container

Surface-to-Air

SA-24 / 9M342

Missile; Surface-to-Air

Origin Country	Russia	Tot. Weight (g)	11,700	Length (mm)	1,574
Caliber	72mm	Weight, Projectile (g)	1,915	Width (mm)	
Function	MANPADS	Weight, NEQ (g)	585	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	72
HCC/CG		Weight, Propellant (g	9,200		

Description

The SA-24, 9K338 Igla-S, NATO reporting name SA-24 Grinch is a further development of the Igla (Needle) family systems of surface to air missile systems.
The Igla-S (Super) missile 9M342 is much more sophisticated and efficient in countering air threats than previous versions.
The effectiveness of the 9M342 missile against air targets is attributed to the increase weight of the explosive in the missile's warhead and to the impact/proximity fuze enabling the missile to kill the target both in the event of a direct hit and when it passes at a distance of up to 1.5 m from the target.
The 9M342 missile can be mounted on different platforms using control equipment and launching modules of the Strelets (9S846) set.

SA-24, 9M342 Missile and launcher

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
HMX	585	Main Charge	

Sources;

9M342

9M342 Nozzle

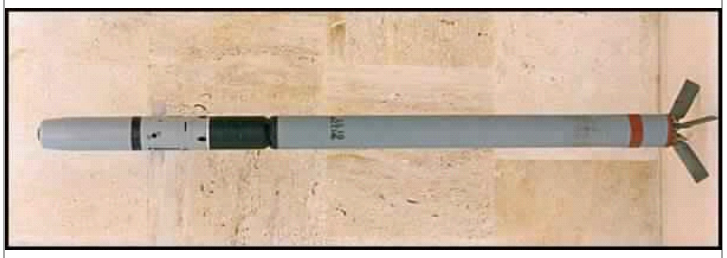
SA-7b Grail / 9M32M

Missile; Surface-to-Air

Origin Country	Russia	Tot. Weight (g)	9,800	Length (mm)	1,440
Caliber	72mm	Weight, Projectile (g)	9,430	Width (mm)	
Function	HE-Frag	Weight, NEQ (g)	370	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	72
HCC/CG	D	Weight, Propellant (g	0		

Description

The front of the missile has a glass dome behind which is the Infra-red sensor head.The fuze of the missile is direct impact action with an inertia-impact graze action if the missile strikes the target a glancing blow.



SA-7b Grail (9M32M)

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	370	Main Charge	

Sources;

SA-7b launchers, gripstocks

SA-8 GECKO (9M33)

Missile; Surface-to-Air

Origin Country	Russia	Tot. Weight (g)	170,000	Length (mm)	3,160
Caliber	210mm	Weight, Projectile (g)	97,900	Width (mm)	
Function		Weight, NEQ (g)	16,000	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	210
HCC/CG		Weight, Propellant (g	56,100		

Description

9K33 is its Russian designation with a NATO reporting name of SA-8 Gecko.
The missile has a solid propellant boost and sustainer motor.
The SA-8 GECKO is command radar guided and has a proximity fuzing system with a direct impact back-up.
Due to the proximity fuzing system, do not approach the missile from the front.
If a missile has crashed wait a period of at least 48 hours, after the time of the crash, before approaching the missile.
The missile is 3.2 m long and has a diameter of 210mm (main missile body).
The SA-8b (GECKO Mod 1), introduced in 1980, is mounted in a rectangular launch box and incorporates improved guidance and higher speed providing an increased maximum range of 15000 meters.
The warhead of both missiles is fitted with proximity and contact fuses, and the 19 kilogram warhead's lethal radius at low altitude is about 5 meters.
Mounted on top of each missile guidance radar is a low light level TV optical assist system for target tracking in low visibility and heavy ECM.

SA-8 GECKO (9M33)

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	16,000	Main Charge	

Sources;

IATG Ammunition Statistics
CAT UXO

SA-8 GECKO Cut through

SA-8 GECKO (9M33)

SA-6 / 9M336

Missile; Surface-to-Air

Origin Country	Russia	Tot. Weight (g)	635,000	Length (mm)	5,700
Caliber	340mm	Weight, Projectile (g)	310,400	Width (mm)	
Function		Weight, NEQ (g)	59,000	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	340
HCC/CG		Weight, Propellant (g	265,600		

Description

The missile is 5.7 m long and has a diameter of 340mm (main missile body).
The wingspan is 1.25m (at the centre body) and 1.53m at the rear end (where the booster motor is located).
The missile has a proximity fuzing system do not approach the missile from the front.
If a missile has crashed wait a period of at least 48 hours, after the time of the crash, before approaching the missile.
The missiles are normally fired in pairs, or in threes, with the same fire control unit guiding all of them.
The missile sends back telemetry information in the G & H bands and receives course correction commands through I band antennas mounted on the tail fins.
The 59 kg HE-Fragmentation warhead is detonated by either contact or radar proximity fuzing.
An upgrade saw the 2K12 missiles replaced with the 2K12E versions and this system was known as Kvadrat ("Квадрат", meaning Square).

9M336 on launch vehicle

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	59,000	Main Charge	

Sources;

9M336

SA-3 (5V27)

Missile; Surface-to-Air

Origin Country	Russia	Tot. Weight (g)	33,000	Length (mm)	6,090
Caliber	375mm	Weight, Projectile (g)	0	Width (mm)	
Function	HE-Frag	Weight, NEQ (g)	33,000	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	375
HCC/CG		Weight, Propellant (g	0		

Description

The later version of missile for the SA-3 is named V-601 (or 5V27). It has a length of 6.09 m, a wing span of 2.2 m and a body diameter of 0.375 m. This missile weighs 953 kg at launch, and has a 70 kg warhead containing 33 kg of HE and 4,500 fragments.

SA-3 (5V27)

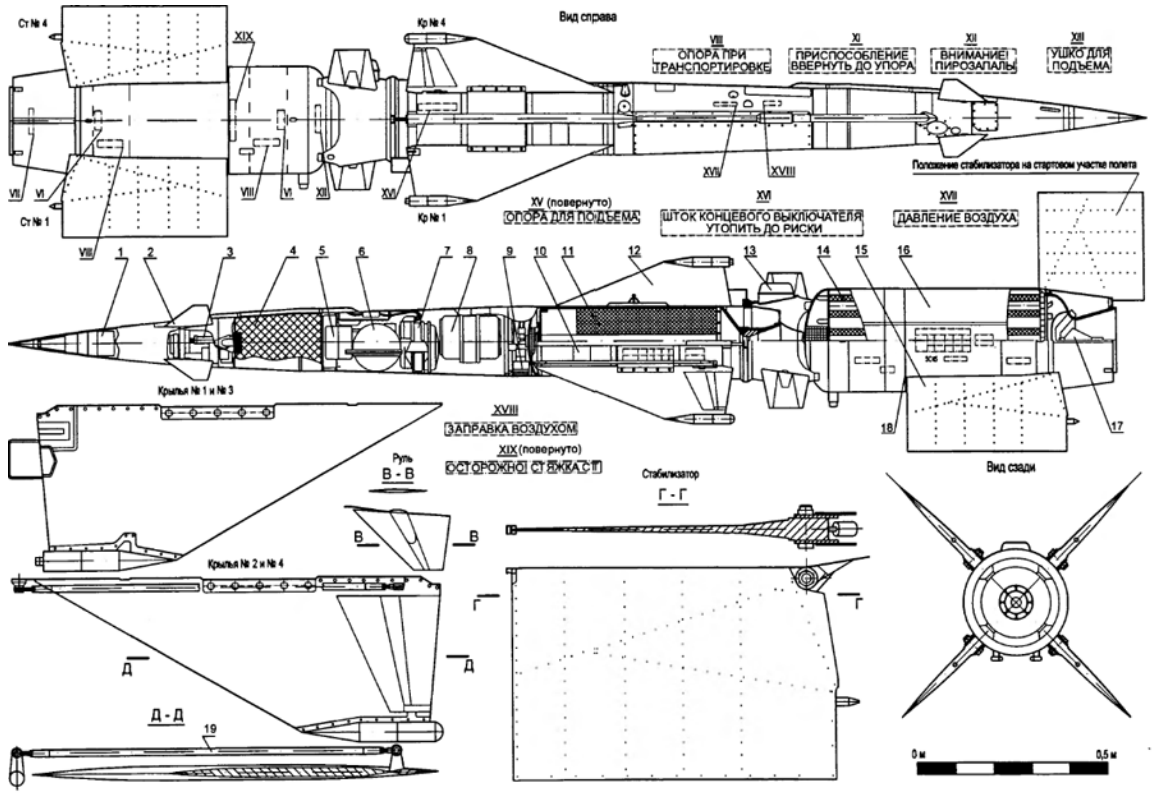
Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	33,000	Main Charge	

Sources;



Ракета 5В27:
1 — радиовзрыватель с антеннами; 2 — аэродинамические рули; 3 — приводы аэродинамических рулей; 4 — боевая часть с предохранительно-исполнительным механизмом; 5 — центральный распределитель и преобразователь; 6 — шар-баллон; 7 — автопилот; 8 — блок аппаратуры радиоуправления; 9 — привод элеронов; 10 — маршевый двигатель; 11 — вкладная топливная шашка; 12 — крыло; 13 — привод аэродинамических тормозов ускорителя; 14 — вкладная топливная шашка ускорителя; 15 — стабилизатор; 16 — стартовый двигатель; 17 — устройство регулирования критического сечения сопла («груша»); 18 — тяга привода элеронов; 19 — тяга привода крыла

SA-3 (5V27)

Mortar

<100mm

M721 ILLUM

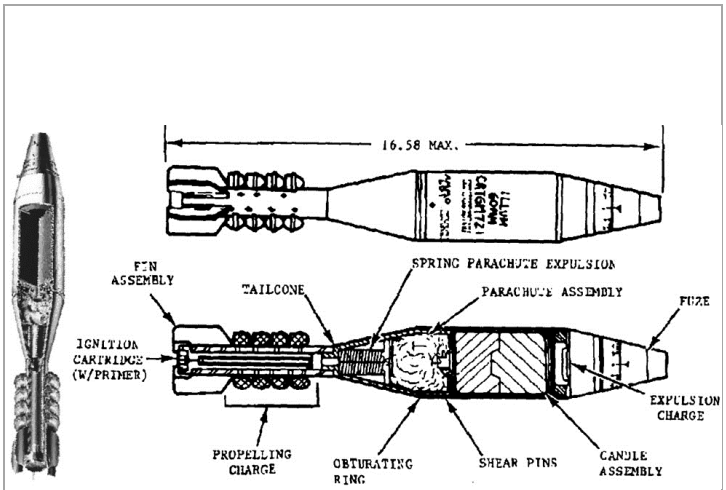
Mortar; <100mm

Origin Country	USA	Tot. Weight (g)	1,710	Length (mm)	421
Caliber	60mm	Weight, Projectile (g)	1,710	Width (mm)	
Function	Illumination	Weight, NEQ (g)	0	Height (mm)	
HCC/HD	1.2	Weight, Cartridge (g)	0	Diameter (mm)	60
HCC/CG	G	Weight, Propellant (g	0		

Description

The cartridge has a mechanical time superquick fuze with an expulsion charge, a candle/parachute assembly a four increment propelling charge, and an ignition cartridge. The round provides 400,000 average candlepower illumination for about 40 seconds.

Loaded fin-end first into the mortar barrel, the cartridge slides down the barrel and strikes the firing pin. The ignition cartridge functions and ignites the propelling charge. Combustion gases from the ignition cartridge and propelling charges propel the cartridge out of the barrel. At a pre-set time the fuze functions in flight. The expulsion charge ignites and ejects the candle assembly.
A spring ejects the parachute from the tail cone. The parachute opens, slowing the descent of the burning candle which illuminates the target.



M721 ILLUM

Fuzes used in Ammunition

Fuze Name	Placement
M776	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
ILLUM	0	Main Charge	Unknown weight

Sources;

M83 ILLUM

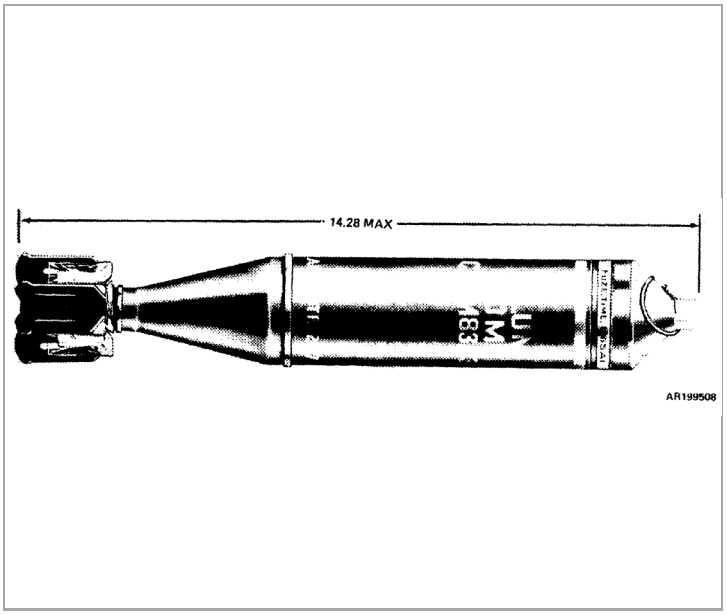
Mortar; <100mm

Origin Country	USA	Tot. Weight (g)	1,882	Length (mm)	363
Caliber	60mm	Weight, Projectile (g)	1,660	Width (mm)	
Function		Weight, NEQ (g)	222	Height (mm)	
HCC/HD	1.2	Weight, Cartridge (g)	0	Diameter (mm)	60
HCC/CG	G	Weight, Propellant (g	0		

Description

Type Classification:
M83A3: Std AMCTC 8346, dtd 1971.
M83A2&A1: C&T OTCM 37119, dtd 1959.
The complete round consists of a body tube, a tail cone assembly, an illuminant charge, a parachute assembly, a time fuze, a fin assembly with four increments of propellant charge, an ignition cartridge, and a percussion primer. The nose of the thin-walled steel body tube is fitted with a steel adapter, which is internally threaded to accept the fuze.
The cone is fitted with an internally threaded adapter to accept the fin assembly and is attached to the body tube with four equally spaced shear pins.

	M83A3	M83A2	M83A1
Burn time	32 sec	32 sec	25 sec
Candlepower	250,000	250,000	145,000



M83 ILLUM

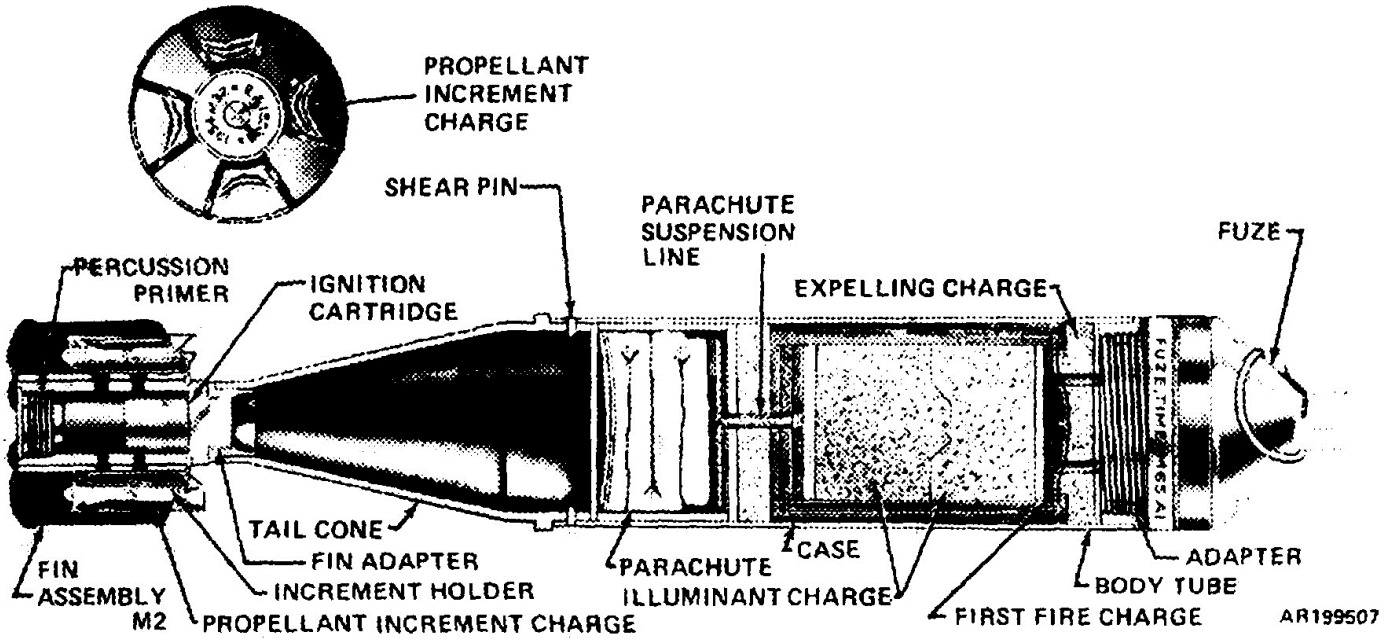
Fuzes used in Ammunition

Fuze Name	Placement
M65A1	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	222	Main Charge	Illuminant

Sources;


PROPELLANT
INCREMENT
CHARGE
SHEAR PIN
PARACHUTE
SUSPENSION
LINE
FUZE
PERCUSSION
PRIMER
IGNITION
CARTRIDGE
EXPELLING CHARGE
TAIL CONE
FIN ADAPTER
INCREMENT HOLDER
PROPELLANT INCREMENT CHARGE
FIN
ASSEMBLY
M2
PARACHUTE
ILLUMINANT CHARGE
CASE
ADAPTER
BODY TUBE
FIRST FIRE CHARGE
AR199507

M83 ILLUM

NR431A1

Mortar; <100mm

Origin Country	Belgium	Tot. Weight (g)	1,390	Length (mm)	197
Caliber	60mm	Weight, Projectile (g)	1,209	Width (mm)	
Function		Weight, NEQ (g)	181	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	60
HCC/CG		Weight, Propellant (g	0		

Description

NIL

NR431A1

Fuzes used in Ammunition

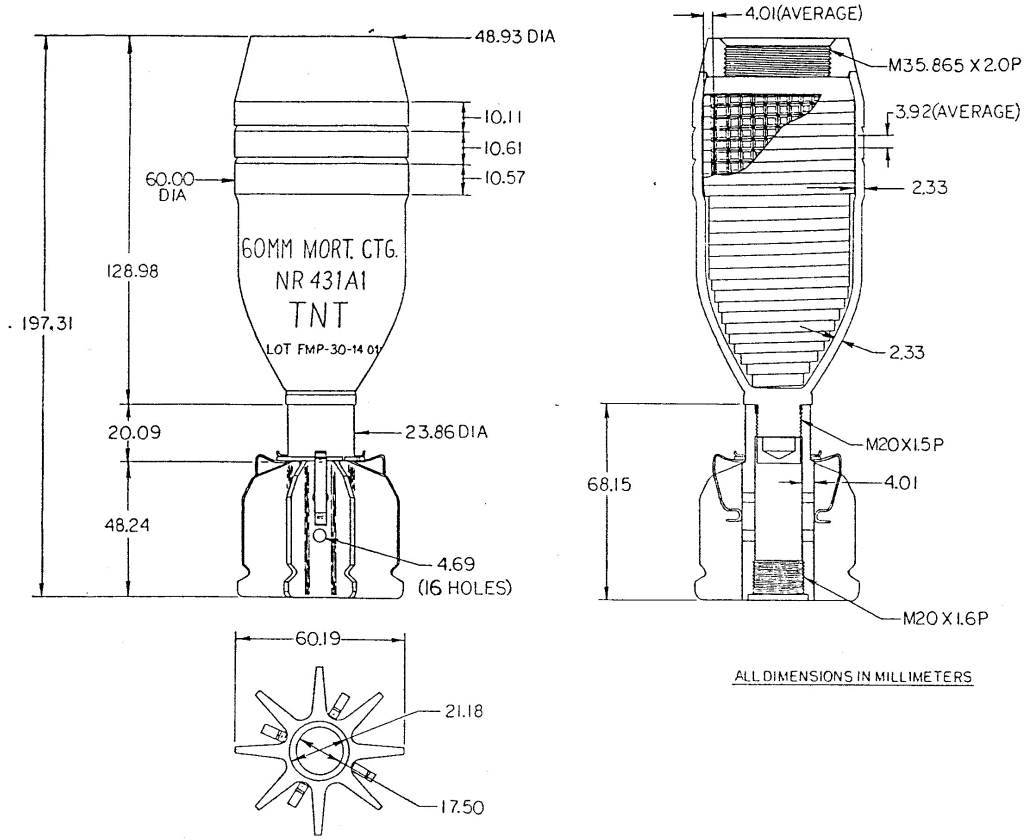
Fuze Name	Placement
DM-111 (AZ-111)	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	181	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710



NR431A1 Diagram

M61 HE

Mortar; <100mm

Origin Country	France	Tot. Weight (g)	0	Length (mm)	
Caliber	81mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	81
HCC/CG		Weight, Propellant (g	0		

Description

NIL

M61 HE

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	0	Main Charge	UNKNOWN WEIGHT

Sources;

M61 SMOKE

Mortar; <100mm

Origin Country	France	Tot. Weight (g)	0	Length (mm)	
Caliber	81mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	81
HCC/CG		Weight, Propellant (g	0		

Description

NIL

M61 SMOKE

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
WP	0	Main Charge	UNKNOWN WEIGHT

Sources;

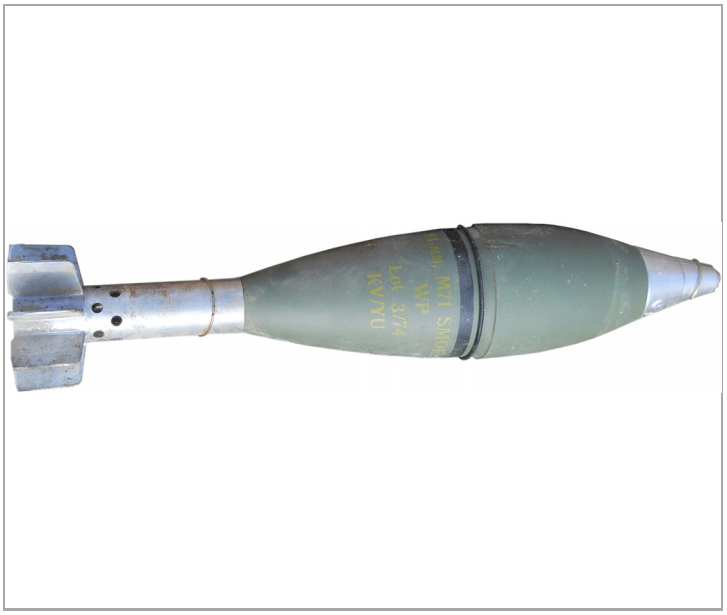
M71 SMOKE

Mortar; <100mm

Origin Country	Former Yugoslavia	Tot. Weight (g)	0	Length (mm)	
Caliber	81mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	81
HCC/CG		Weight, Propellant (g	0		

Description

NIL



M71

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
WP	0	Main Charge	UNKNOWN WEIGHT

Sources;

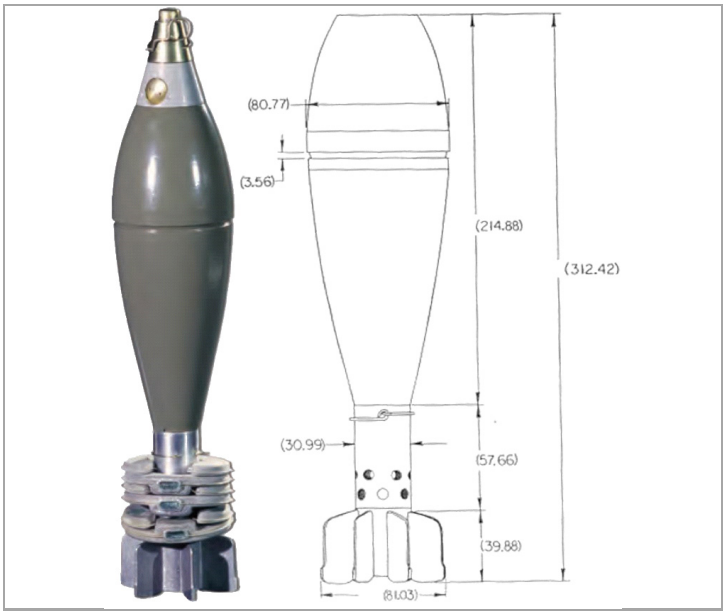
M72 HE

Mortar; <100mm

Origin Country	Former Yugoslavia	Tot. Weight (g)	3,050	Length (mm)	312
Caliber	81mm	Weight, Projectile (g)	2,370	Width (mm)	
Function		Weight, NEQ (g)	680	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	81
HCC/CG		Weight, Propellant (g	0		

Description

NIL



M72

Fuzes used in Ammunition

Fuze Name	Placement
M68 P1	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	680	Main Charge	

Sources;

Pretis, Manufacturer

Projectile and Warhead Identification Guide - Foreign, # RB97-5710

M48P1

Mortar; <100mm

Origin Country	Former Yugoslavia	Tot. Weight (g)	3,300	Length (mm)	
Caliber	82mm	Weight, Projectile (g)	2,760	Width (mm)	
Function		Weight, NEQ (g)	540	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	82
HCC/CG	D	Weight, Propellant (g	0		

Description

NIL

M48P1

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	540	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710

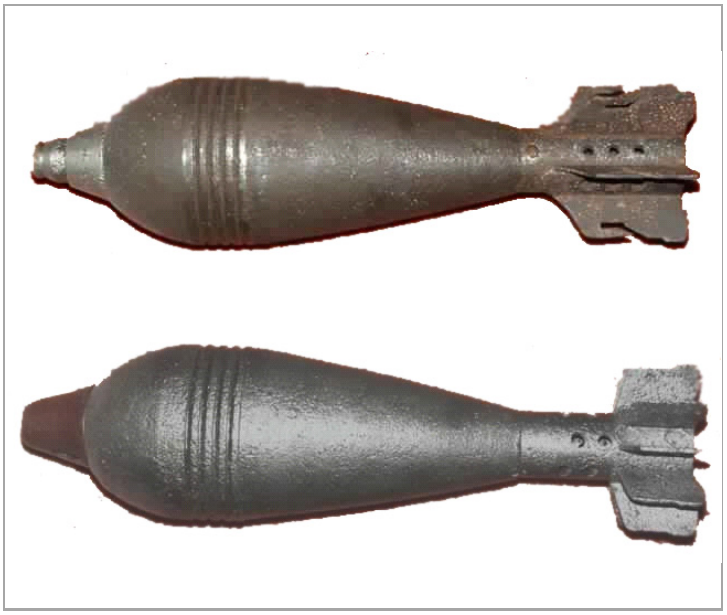
O-832

Mortar; <100mm

Origin Country	Russia	Tot. Weight (g)	3,360	Length (mm)	
Caliber	82mm	Weight, Projectile (g)	2,960	Width (mm)	
Function	Frag	Weight, NEQ (g)	400	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	82
HCC/CG		Weight, Propellant (g	0		

Description

Original 82mm mortar bomb supplied for the BM37 Infantry Mortar. There are two vversions, the 0-832 and the 0-832D. The only difference between the two is that 0-832 has six fins while the 0-832D has ten fins.



0-832 (top) 0-832D (bottom)

Fuzes used in Ammunition

Fuze Name	Placement
M-1	Nose
M-5/M-5M	Nose
MP-82	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	400	Main Charge	Can be Amatol or

Sources;

>100MM

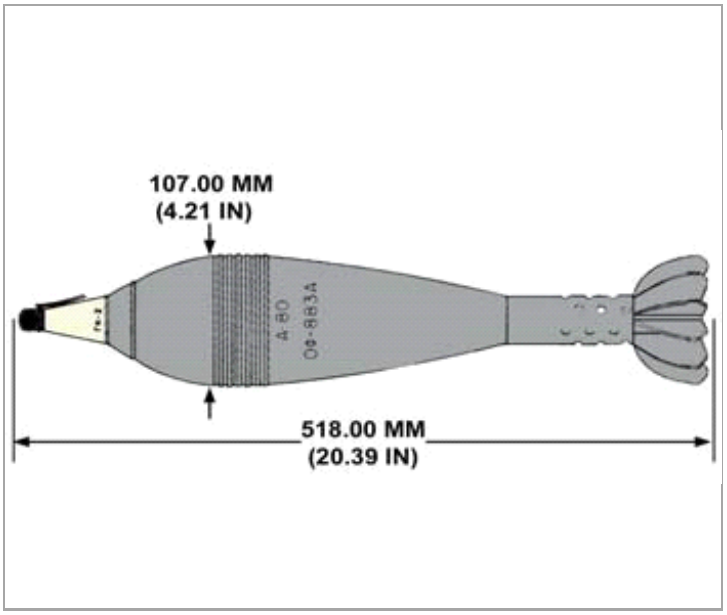
OF-883A

Mortar; >100mm

Origin Country	Russia	Tot. Weight (g)	8,330	Length (mm)	444
Caliber	107mm	Weight, Projectile (g)	6,240	Width (mm)	
Function		Weight, NEQ (g)	2,090	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	107
HCC/CG		Weight, Propellant (g	0		

Description

NIL



OF-883A

Fuzes used in Ammunition

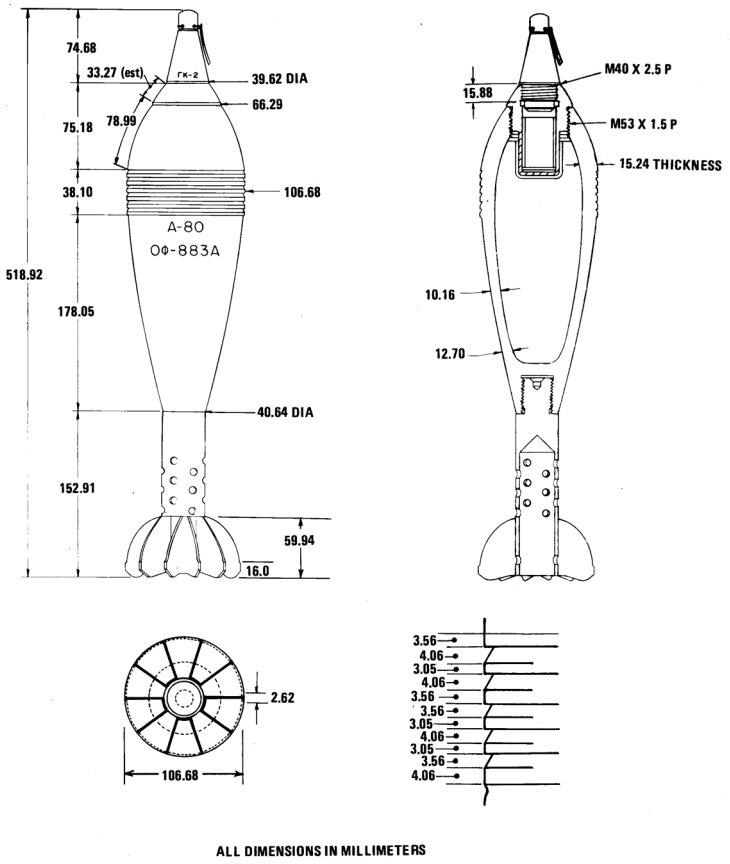
Fuze Name	Placement
D-1	
GK-2	

Explosives

Explosives	Weight (g)	Role	Remarks
Amatol 80/20 (TNT/AN)	2,090	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710



OF-883A Diagram

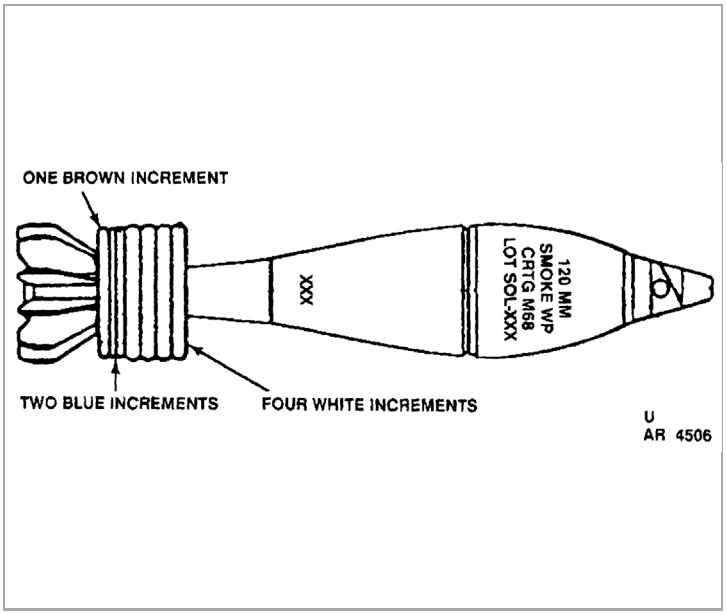
M68 SMOKE

Mortar; >100mm

Origin Country	USA	Tot. Weight (g)	13,000	Length (mm)	665
Caliber	120mm	Weight, Projectile (g)	10,970	Width (mm)	
Function		Weight, NEQ (g)	2,030	Height (mm)	
HCC/HD	1.2	Weight, Cartridge (g)	0	Diameter (mm)	120
HCC/CG	H	Weight, Propellant (g	0		

Description

The complete round consists of a fuze, three types of propellant increment, fin assembly, ignition cartridges and shell body. The shell body, made of steel, is loaded with white phosphorus (WP) filler. The ignition cartridge has a percussion primer and is assembled to the end of the fin assembly. The propellant charge is contained in one brown increment, two blue increments and four white increments and is assembled around the fin assembly shaft.



M68 SMOKE

Fuzes used in Ammunition

Fuze Name	Placement
M935	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
WP	2,030	Main Charge	

Sources;

ARMY AMMUNITION DATA SHEETS, TM 43-0001-28

M91 ILLUM

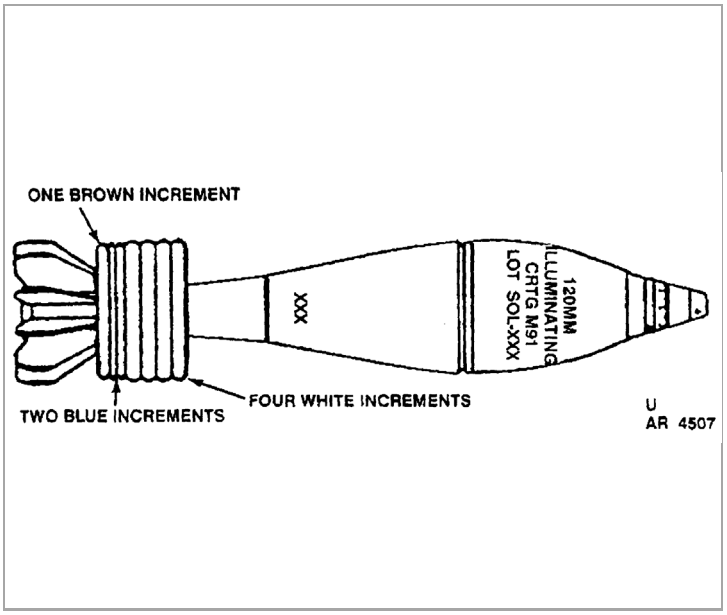
Mortar; >100mm

Origin Country	USA	Tot. Weight (g)	12,250	Length (mm)	665
Caliber	120mm	Weight, Projectile (g)	11,050	Width (mm)	
Function		Weight, NEQ (g)	1,200	Height (mm)	
HCC/HD	1.3	Weight, Cartridge (g)	0	Diameter (mm)	120
HCC/CG	G	Weight, Propellant (g	0		

Description

The complete round consists of a steel body and tail cone assembly an illuminant candle and parachute assembly a time fuze with a built-in expelling charge, a fin assembly propellant charge, and an ignition cartridge with percussion primer. The nose of the thin walled steel tubing body is fitted with a steel adapter and internally threaded to accept the fin assembly, and is attached to the body tube with eight equally spaced shear pins. The illuminant assembly consisting of a first-fire charge and an illuminant charge, is contained in an aluminum case and attached to the parachute with a fiberglass suspension line.

Candlepower - 1,000,000 candlepower/sec
Burning time - 50 sec



M91 ILLUM

Fuzes used in Ammunition

Fuze Name	Placement
M776	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
ILLUM	1,200	Main Charge	

Sources;

ARMY AMMUNITION DATA SHEETS, TM 43-0001-28

MAT-120

Mortar; >100mm

Origin Country	Spain	Tot. Weight (g)	0	Length (mm)	
Caliber	120mm	Weight, Projectile (g)	0	Width (mm)	
Function	Cluster	Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	120
HCC/CG		Weight, Propellant (g	0		

Description

120mm mortar cluster munition containing 21 37mm dual purpose AP/AT submunitions, each submunition weighs 275g with 50 g explosive filling.

The action of firing the round starts a timer which triggers opening the projectile, scattering the submunitions, which land in a random pattern between fifty and sixty meters in diameter.

MAT-120 on display

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	1,050	Main Charge	Combined expl. weight of submunition

Sources;

MAT-120 Mortar with submuniton

MAT-120, Tail section

OF-843

Mortar; >100mm

Origin Country	Russia	Tot. Weight (g)	16,020	Length (mm)	605
Caliber	120mm	Weight, Projectile (g)	13,340	Width (mm)	
Function		Weight, NEQ (g)	2,680	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	120
HCC/CG		Weight, Propellant (g	0		

Description

Filler can be TNT or TNT+Amatol.

OF-843

Fuzes used in Ammunition

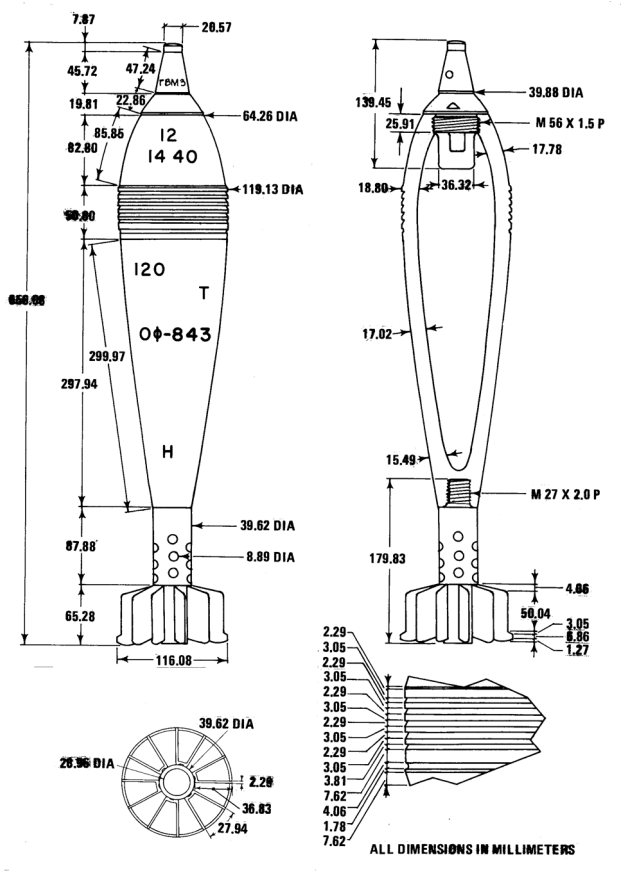
Fuze Name	Placement
GVMZ-7	Nose
M-12	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	2,680	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710
HANDBOOK OF AMMUNITION USED IN IRAQ AND SURROUNDING AREAS, REV5



OF-843 Diagram

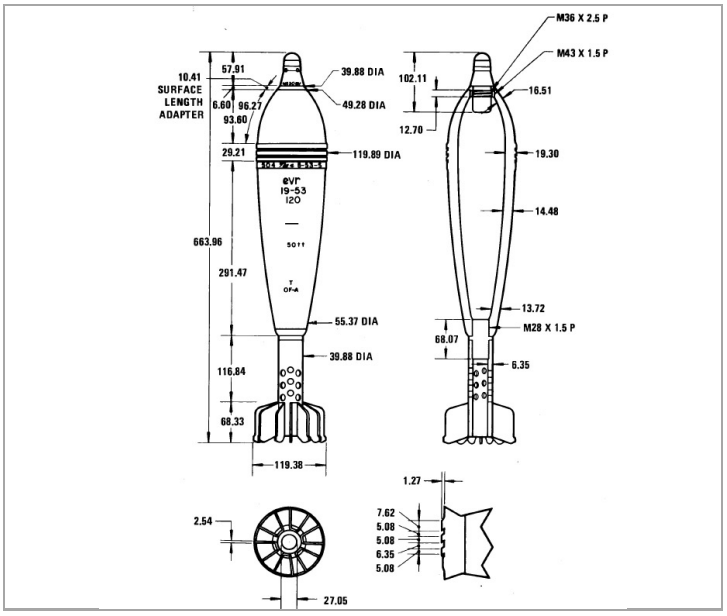
OF-A

Mortar; >100mm

Origin Country	Czechoslovakia	Tot. Weight (g)	15,330	Length (mm)	606
Caliber	120mm	Weight, Projectile (g)	13,290	Width (mm)	
Function		Weight, NEQ (g)	2,040	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	120
HCC/CG		Weight, Propellant (g	0		

Description

NIL



OF-A Diagram

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	2,040	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710

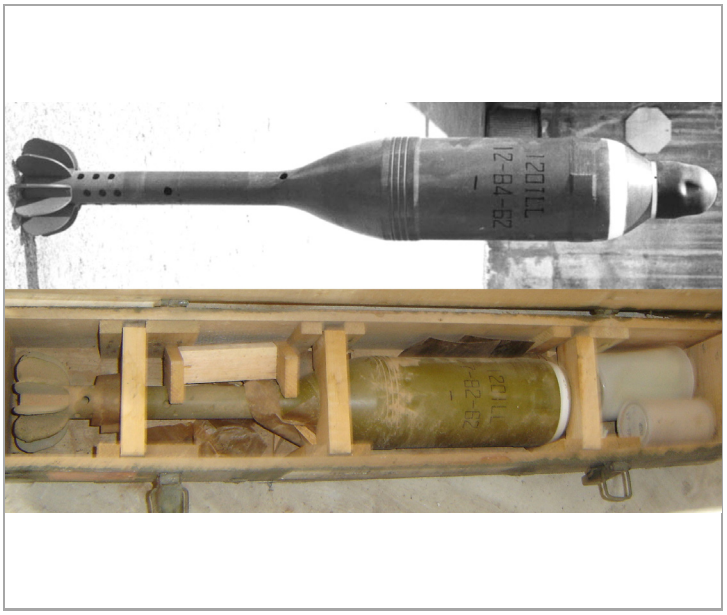
Type 55 ILLUM

Mortar; >100mm

Origin Country	China	Tot. Weight (g)	15,720	Length (mm)	722
Caliber	120mm	Weight, Projectile (g)	13,680	Width (mm)	
Function	Illumination	Weight, NEQ (g)	2,040	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	120
HCC/CG		Weight, Propellant (g	0		

Description

NIL



Type 55 ILLUM

Fuzes used in Ammunition

Fuze Name	Placement
MS-3A	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
ILLUM	2,040	Main Charge	

Sources;

Projectile

AP

M81A1

Projectile; AP

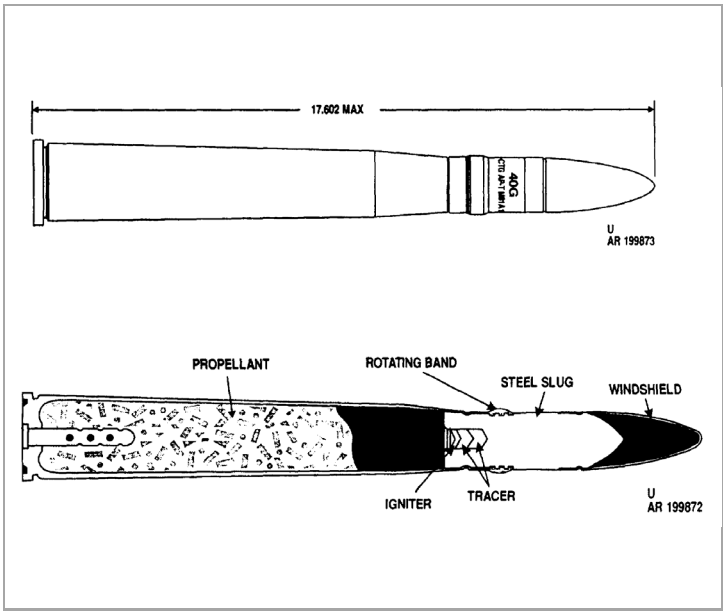
Origin Country	USA	Tot. Weight (g)	2,077	Length (mm)	175
Caliber	40mm	Weight, Projectile (g)	889	Width (mm)	
Function	AP-T	Weight, NEQ (g)	0	Height (mm)	
HCC/HD	1.2	Weight, Cartridge (g)	1,188	Diameter (mm)	40
HCC/CG	C	Weight, Propellant (g	0		

Description

The projectile for the M81A1 cartridge consists of a hardened steel monobloc slug, crimpfitted on the blunt ogival nose with a thin steel, streamlined windshield cap to reduce aerodynamic rag.
A tracer element in the base of the projectile provides a visible trace for approximately 12 seconds. In addition, some lots of these cartridges are coated on the windshield with a compound designed to leave a vapor trail for about 1,000 yards. Such lots are intended for training only and not for use in combat except for emergency.
A rotating band encircles the projectile near the base. A brass or steel cartridge case filled with loose propellant is crimped to the projectile. The case has an extractor rim base, and the base contains a percussion primer consisting of a perforated tube containing black powder and a percussion element.

Difference Between Models:
The windshield on the M81 is attached with an adapter rather than by crimping, and a different model primer is used.

Body material: Steel
Color: Black w/white markings



M81A1

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Base

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;
ARMY AMMUNITION DATA SHEETS, TM 43-0001-28

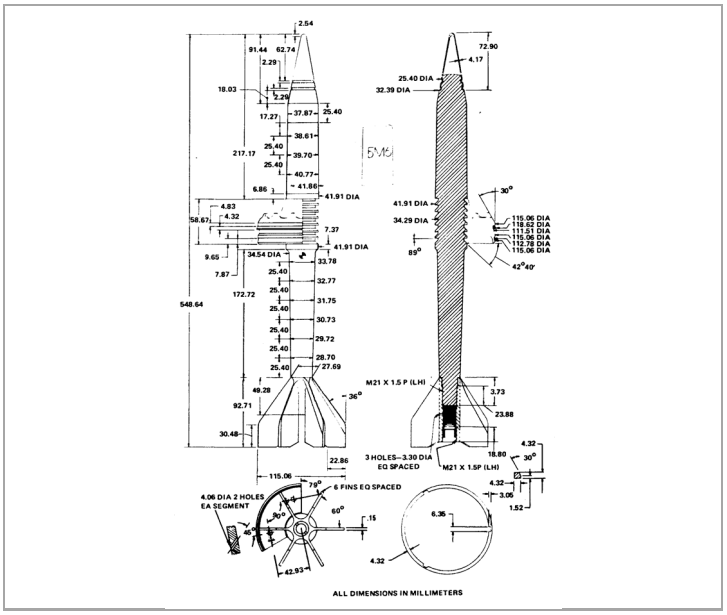
BM-6

Projectile; AP

Origin Country	Russia	Tot. Weight (g)	5,400	Length (mm)	549
Caliber	115mm	Weight, Projectile (g)	5,400	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	115
HCC/CG		Weight, Propellant (g	0		

Description

Projectile mass: 5.40 kg with sabot, 3.9 kg without sabot
Penetrator: Monobloc steel
Remarks: Cartridge designated UBM-5



BM-6

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;

APHE-T

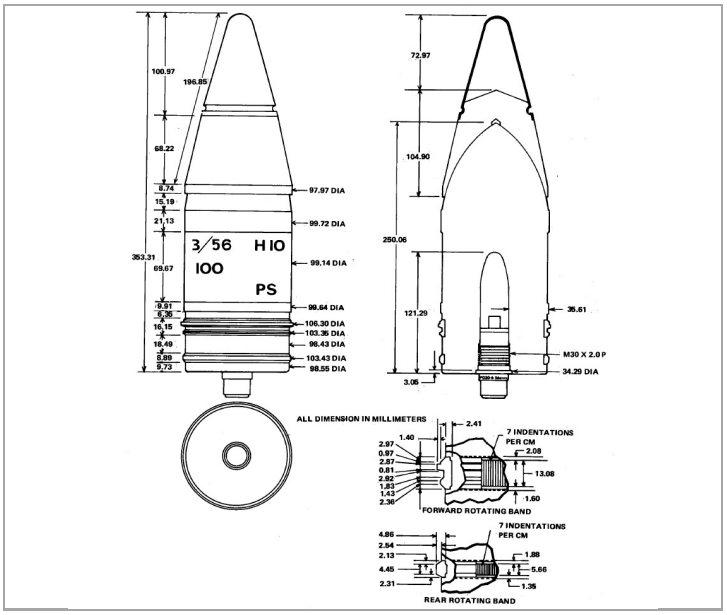
PSv

Projectile; APHE-T

Origin Country	Czechoslovakia	Tot. Weight (g)	14,600	Length (mm)	353
Caliber	100mm	Weight, Projectile (g)	14,540	Width (mm)	
Function		Weight, NEQ (g)	60	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	100
HCC/CG		Weight, Propellant (g	0		

Description

Similar to former Soviet BR-412D projectile.



PSv

Fuzes used in Ammunition

Fuze Name	Placement
PD 30	Base

Explosives

Explosives	Weight (g)	Role	Remarks
RDX	60	Main Charge	

Sources;

HANDBOOK OF AMMUNITION USED IN IRAQ AND SURROUNDING AREAS, REV5

Projectile and Warhead Identification Guide - Foreign, # RB97-5710

BR-482B

Projectile; APHE-T

Origin Country	Russia	Tot. Weight (g)	33,490	Length (mm)	496
Caliber	130mm	Weight, Projectile (g)	33,360	Width (mm)	
Function		Weight, NEQ (g)	130	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	130
HCC/CG		Weight, Propellant (g	0		

Description

NIL

BR-482B

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Base

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-2 (RDX/AL)	130	Main Charge	

Sources;

HE

UOF-83D

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	1,106	Length (mm)	
Caliber	30mm	Weight, Projectile (g)	358	Width (mm)	
Function		Weight, NEQ (g)	30	Height (mm)	
HCC/HD		Weight, Cartridge (g)	528	Diameter (mm)	30
HCC/CG		Weight, Propellant (g	190		

Description

Caliber 30x210B

Ammunition is manufactured by China, Yugoslavia and Russia.

UOF-83D

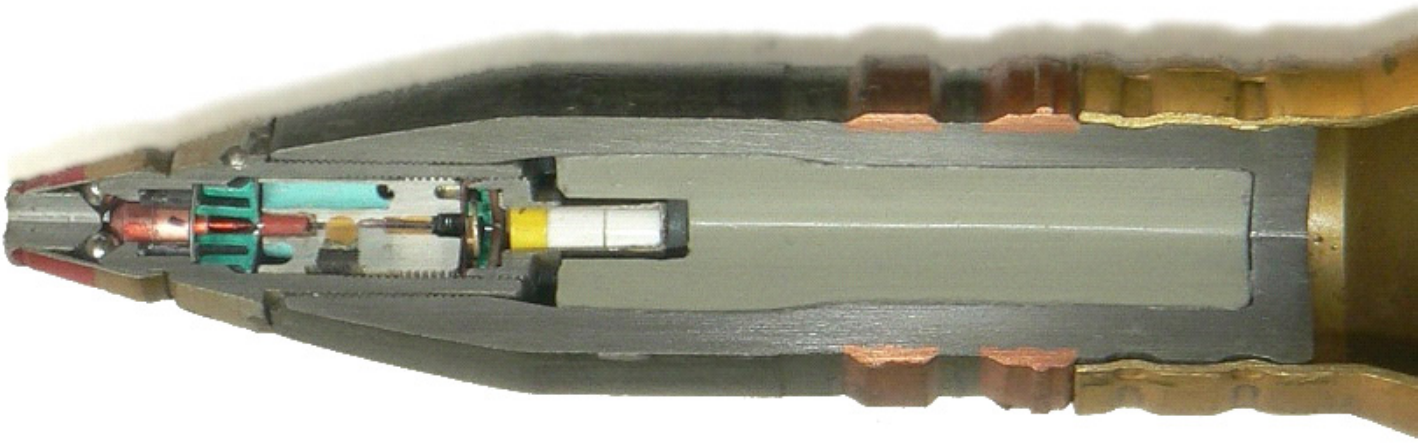
Fuzes used in Ammunition

Fuze Name	Placement
MG-31	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-2 (RDX/AL)	30	Main Charge	

Sources;



UOF-83D Cut though

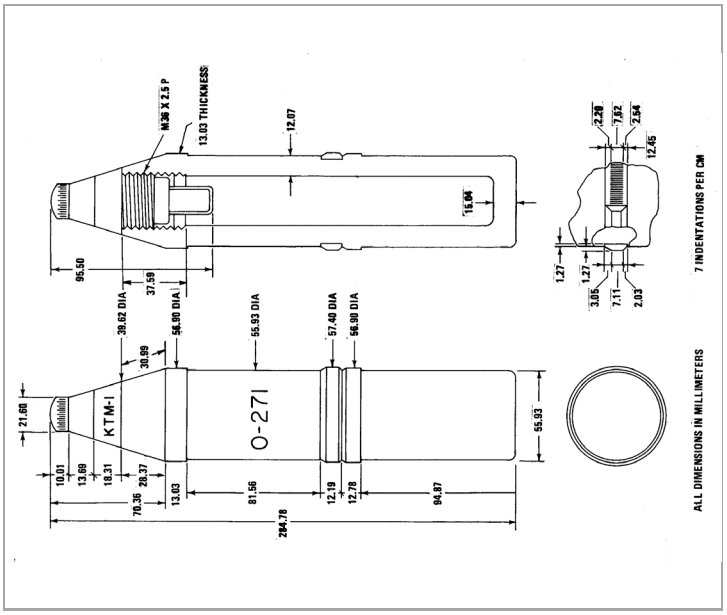
0-271

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	3,680	Length (mm)	285
Caliber	57mm	Weight, Projectile (g)	3,460	Width (mm)	
Function		Weight, NEQ (g)	220	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	57
HCC/CG	D	Weight, Propellant (g	0		

Description

NIL



0-271 Diagram

Fuzes used in Ammunition

Fuze Name	Placement
KTM-1	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	220	Main Charge	

Sources;

OG-9V

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	3,660	Length (mm)	725
Caliber	73mm	Weight, Projectile (g)	2,925	Width (mm)	
Function		Weight, NEQ (g)	735	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	73
HCC/CG		Weight, Propellant (g	0		

Description

NIL

OG-9V

Fuzes used in Ammunition

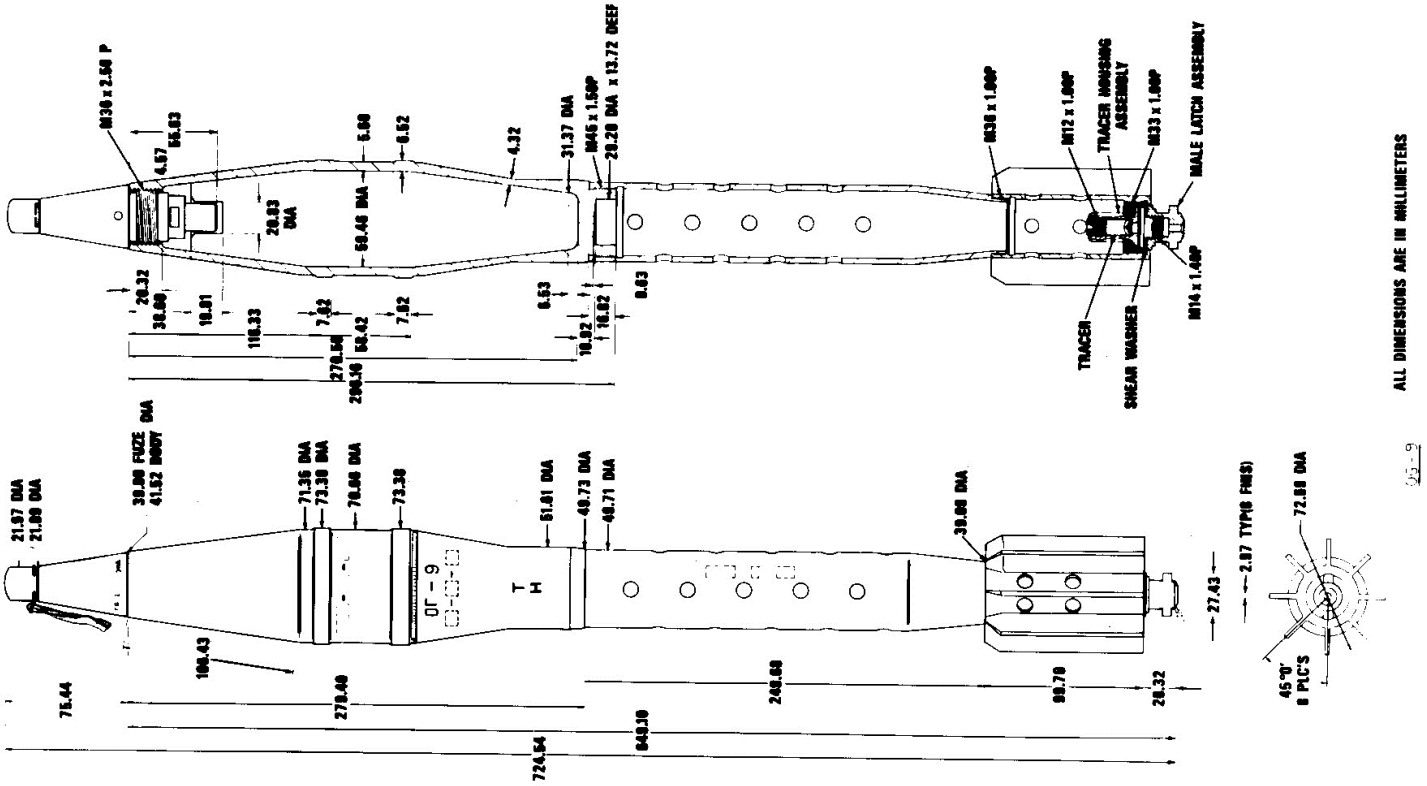
Fuze Name	Placement
GO-2	

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	735	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710



OG-9V Diagram

OG-9VM

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	3,300	Length (mm)	725
Caliber	73mm	Weight, Projectile (g)	2,645	Width (mm)	
Function		Weight, NEQ (g)	655	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	73
HCC/CG		Weight, Propellant (g	0		

Description

NIL

OG-9VM

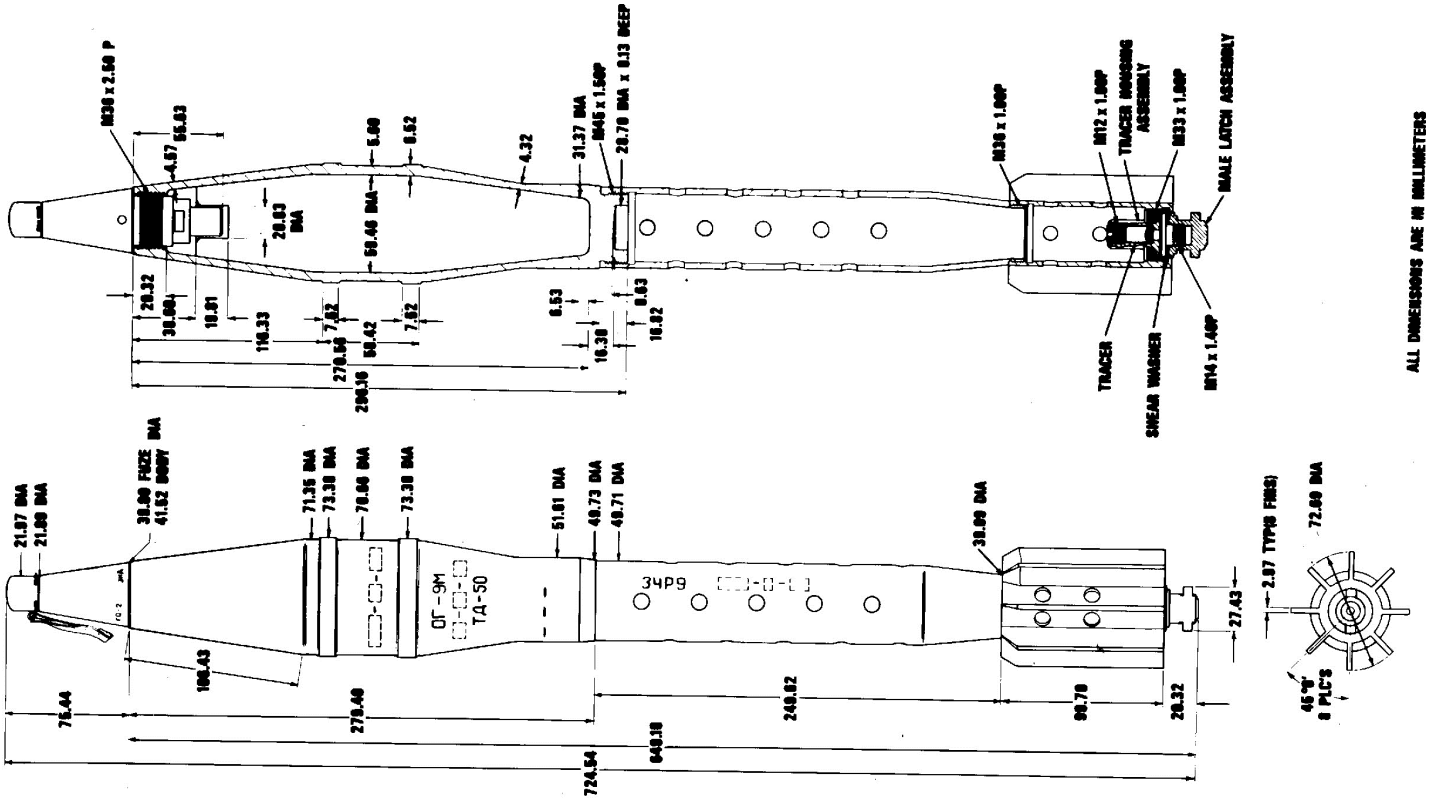
Fuzes used in Ammunition

Fuze Name	Placement
GO-2	

Explosives

Explosives	Weight (g)	Role	Remarks
TD-50 (TNT/DNNPh)	655	Main Charge	

Sources;



OG-9VM Diagram

OF-412

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	15,610	Length (mm)	489
Caliber	100mm	Weight, Projectile (g)	14,150	Width (mm)	
Function		Weight, NEQ (g)	1,460	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	100
HCC/CG		Weight, Propellant (g	0		

Description

Using weapon(s): Field (AT) gun BS-3, tank guns D-10T, D-10TG, and D-10TS; AA gun KS-19 series and SU-100 assault gun
Remarks: Also uses RGM series fuzes. Projectile may have Bulgarian markings

OF-412

Fuzes used in Ammunition

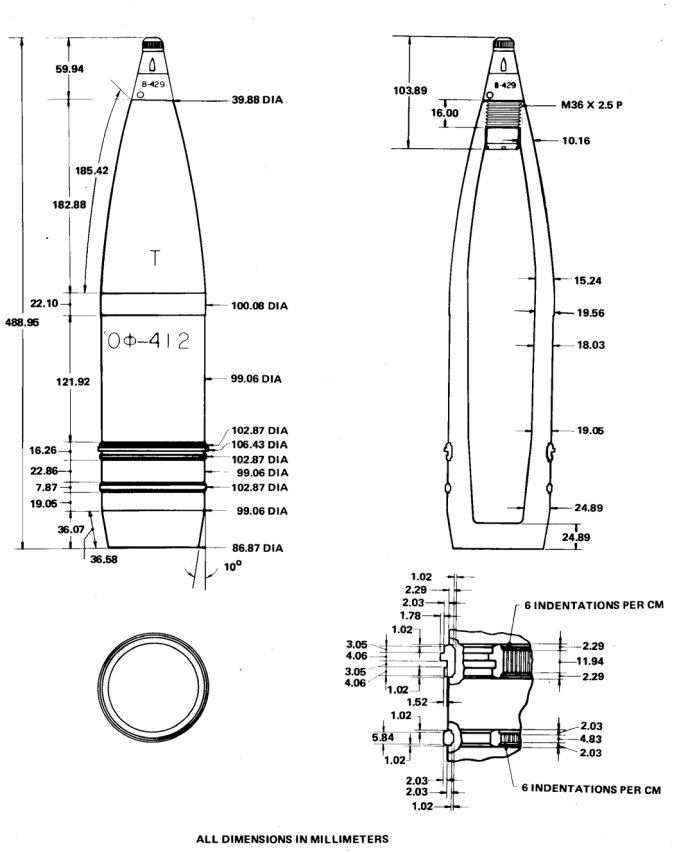
Fuze Name	Placement
RGM	Nose
RGM-2	Nose
RGM-6	Nose
V-429	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	1,460	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710



OF-412 Diagram

M1

Projectile; HE

Origin Country	USA	Tot. Weight (g)	2,177	Length (mm)	
Caliber	105mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	2,177	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	105
HCC/CG		Weight, Propellant (g	0		

Description

The projectile consists of a hollow steel forging with a boattail base, a streamlined ogive, and gilding metal rotating band. A base cover is welded to the base of the projectile for added protection against the entrance of hot gases from the propelling charge during firing.
The high explosive (HE) filler within the projectile may be either cast TNT or Composition B.
A fuze cavity is either drilled or formed in the filler at the nose end of the projectile. This cavity may be either shallow or deep. A cavity liner, to preclude dusting of HE during transportation and handling, is seated in the cavity and expanded into the lower projectile fuze threads.
A supplementary charge is placed in the fuze cavity of projectiles having deep cavities.
Projectiles with shallow cavities or deep cavities containing a supplementary charge use only short intrusion fuzes, PD, or MT. Those with deep cavities will accept the long intrusion proximity fuze after removing the supplementary charge.
Projectiles may be shipped with a PD or MTSQ fuze or with a closing plug. When shipped with a closing plug, a chip board spacer is assembled between the supplementary charge and plug to limit movement of the former during transportation and handling.
Fuzes:
PD: M557, M78 Series; M739 Series
MTSQ: M582 Series; M564
Prox: M513 series, M728, M732 series,
ET: M767

M1

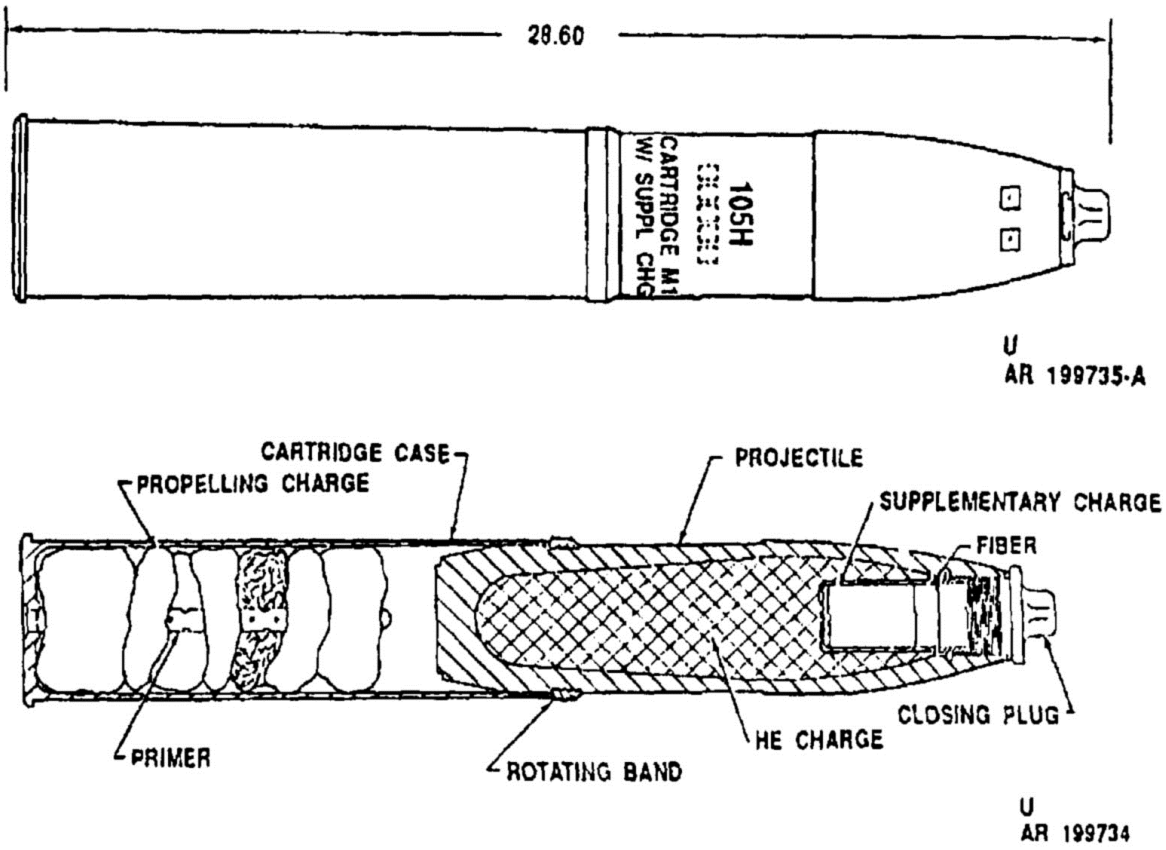
Fuzes used in Ammunition

Fuze Name	Placement
M557	Nose
M732	Nose
M739 / M739A1	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	2,177	Main Charge	

Sources;



M1 Complete round

M760

Projectile; HE

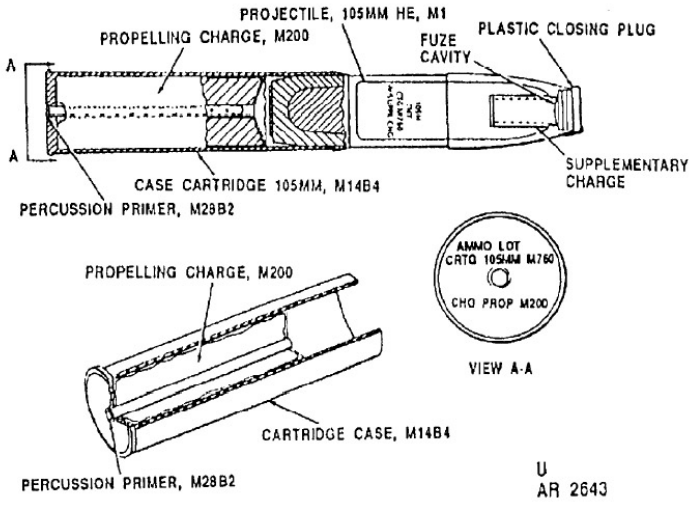
Origin Country	USA	Tot. Weight (g)	18,110	Length (mm)	
Caliber	105mm	Weight, Projectile (g)	14,080	Width (mm)	
Function		Weight, NEQ (g)	2,100	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	105
HCC/CG		Weight, Propellant (g	1,930		

Description

This cartridge is a high explosive round initially developed for use with the Howitzer, Light Towed, 105mm: Soft Recoil, M204.
Currently, the M760 Cartridge is only authorized for use with the Howitzer, Light, Towed, 105mm: M119.

The projectile of this cartridge consists of hollow steel forging and is similar to the projectile in the M1 cartridge. The projectile is loaded with approximately 4.6 lb (2.1 kg) of Type 1 TNT only. "Composition B" cannot be loaded with cartridge M760 as it is too sensitive for use with propelling charge M200.
The propelling charge M200 is a single bag charge consisting of 4.25 lb (1.93 kg) of M30 propellant. The bag charge has a hole through the center for fitting around the primer in the cartridge case.
The M200 propelling charge is for extended range firing (Charge 8) for 105mm, Howitzer M119 use only.

Fuze:
PD:M739/ M739A1
MTSQ: M582 series
Prox: M732



M760

Fuzes used in Ammunition

Fuze Name	Placement
M520/M520A1	Nose
M732	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	2,100	Main Charge	

Sources;
TM 43-0001-28 April 1977

MIL-C-63261 (AR)

PROJECTILE 105MM, HE, TNT, M1
RADIOGRAPHIC PENETRAMETER REQUIREMENTS

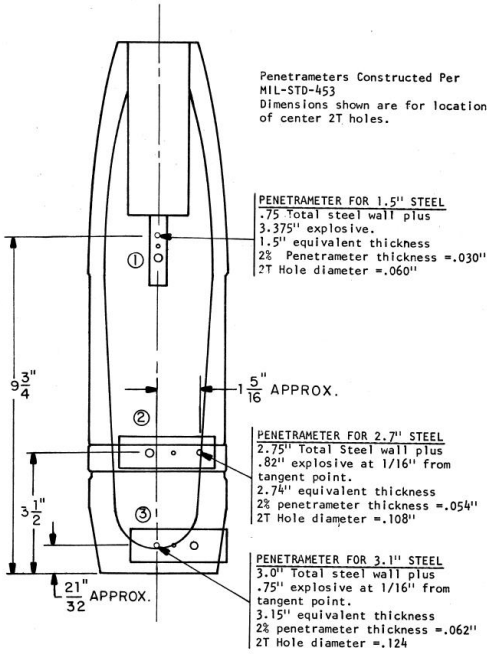


FIGURE 2

34

M760 (M1 projectile)

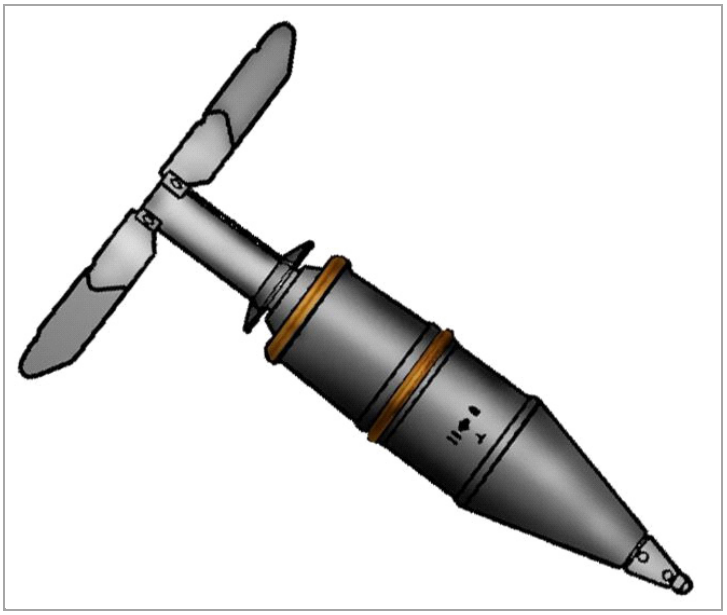
OF-11

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	14,900	Length (mm)	635
Caliber	115mm	Weight, Projectile (g)	12,300	Width (mm)	
Function		Weight, NEQ (g)	2,600	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	115
HCC/CG		Weight, Propellant (g	0		

Description

NIL



OF-11 Drawing

Fuzes used in Ammunition

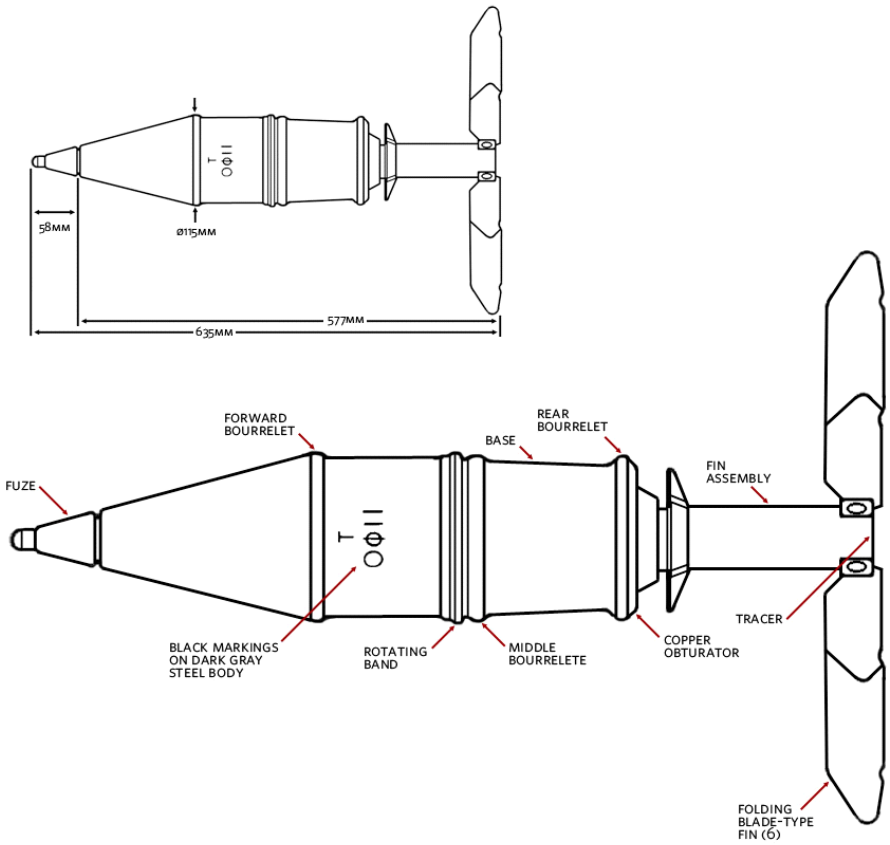
Fuze Name	Placement
V-429E	Nose

Explosives

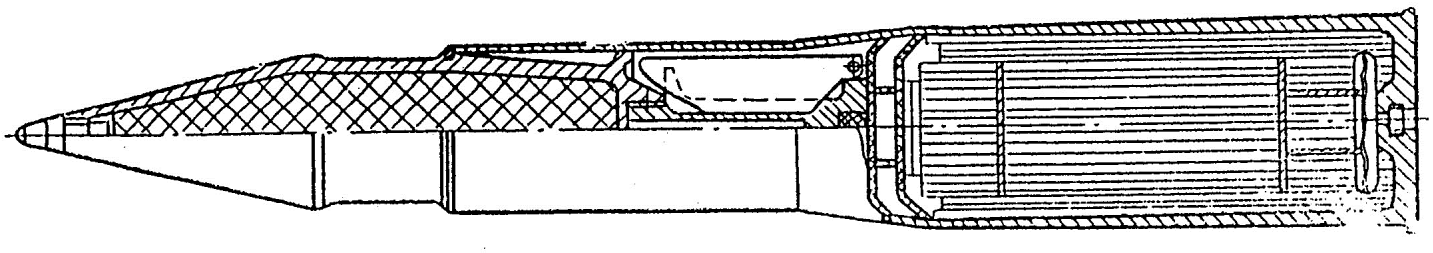
Explosives	Weight (g)	Role	Remarks
TNT	2,600	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710



OF-11 Drawing



OF-11 Drawing

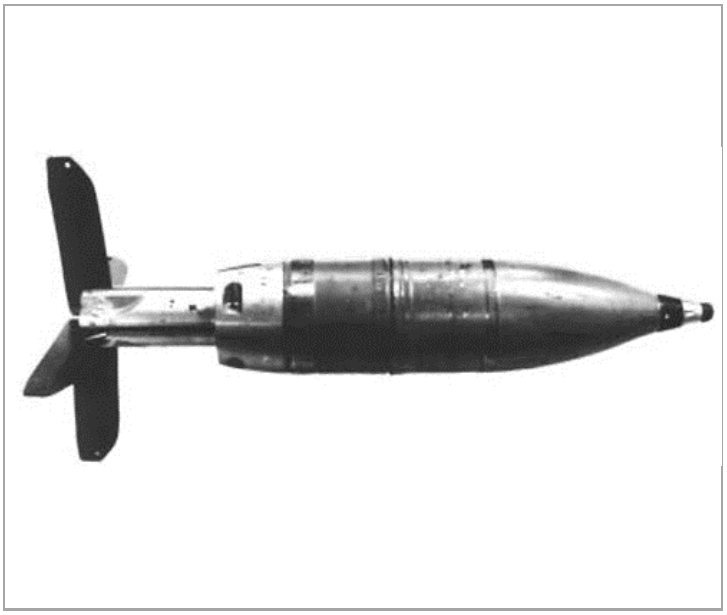
OF-18

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	17,740	Length (mm)	639
Caliber	115mm	Weight, Projectile (g)	15,020	Width (mm)	
Function		Weight, NEQ (g)	2,720	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	115
HCC/CG		Weight, Propellant (g	0		

Description

NIL



OF-18 with fuze

Fuzes used in Ammunition

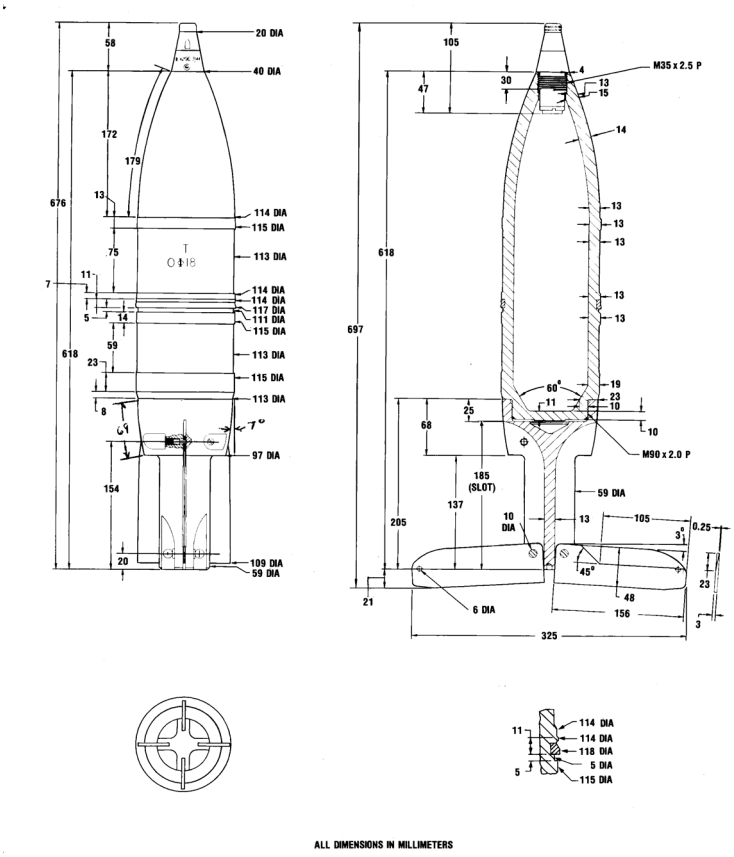
Fuze Name	Placement
V-429E	Nose

Explosives

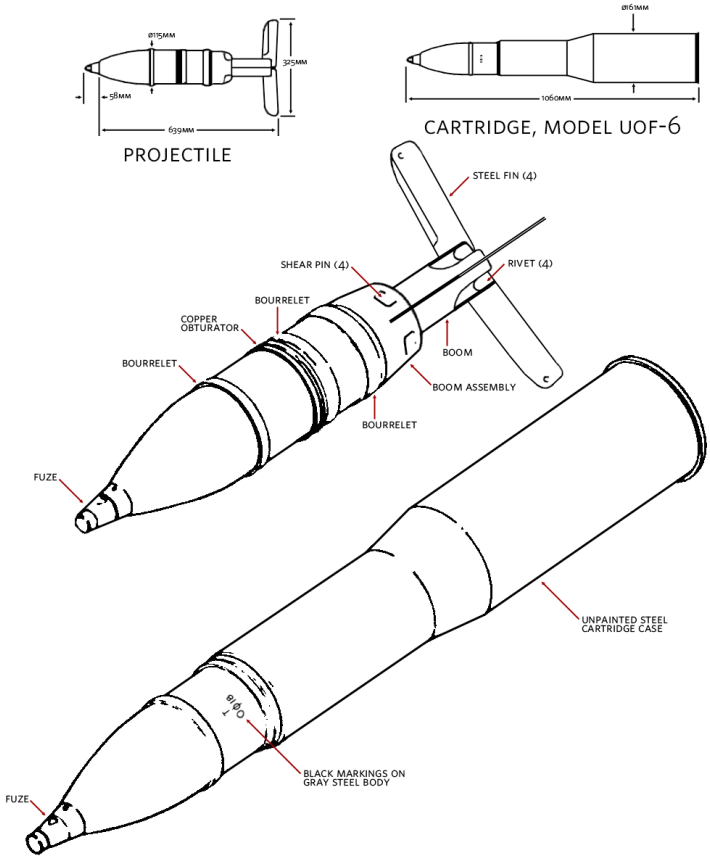
Explosives	Weight (g)	Role	Remarks
TNT	2,720	Main Charge	

Sources;

Handbook of Ammunition Used in Irak and Surrounding Area
Projectile and Warhead Identification Guide - Foreign, # RB97-5710



OF-18 Diagram



OF-18 Diagram

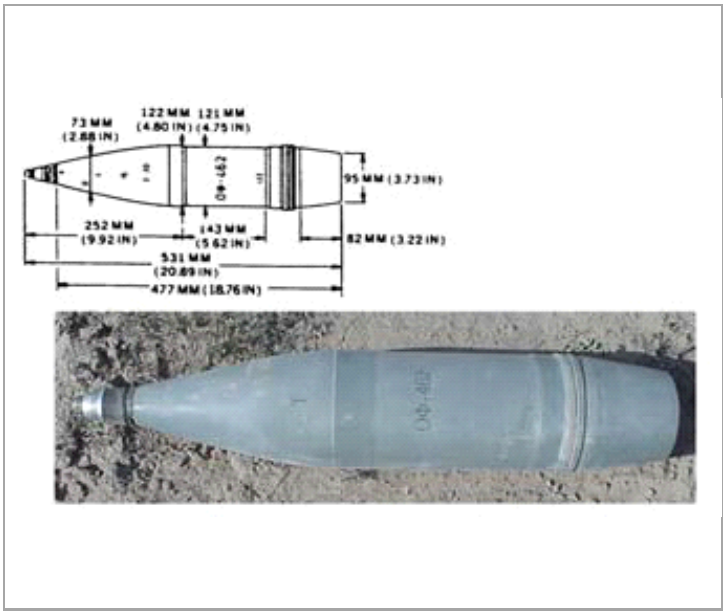
OF-462

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	21,322	Length (mm)	500
Caliber	122mm	Weight, Projectile (g)	17,862	Width (mm)	
Function		Weight, NEQ (g)	3,460	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	122
HCC/CG		Weight, Propellant (g	0		

Description

NIL



OF-462

Fuzes used in Ammunition

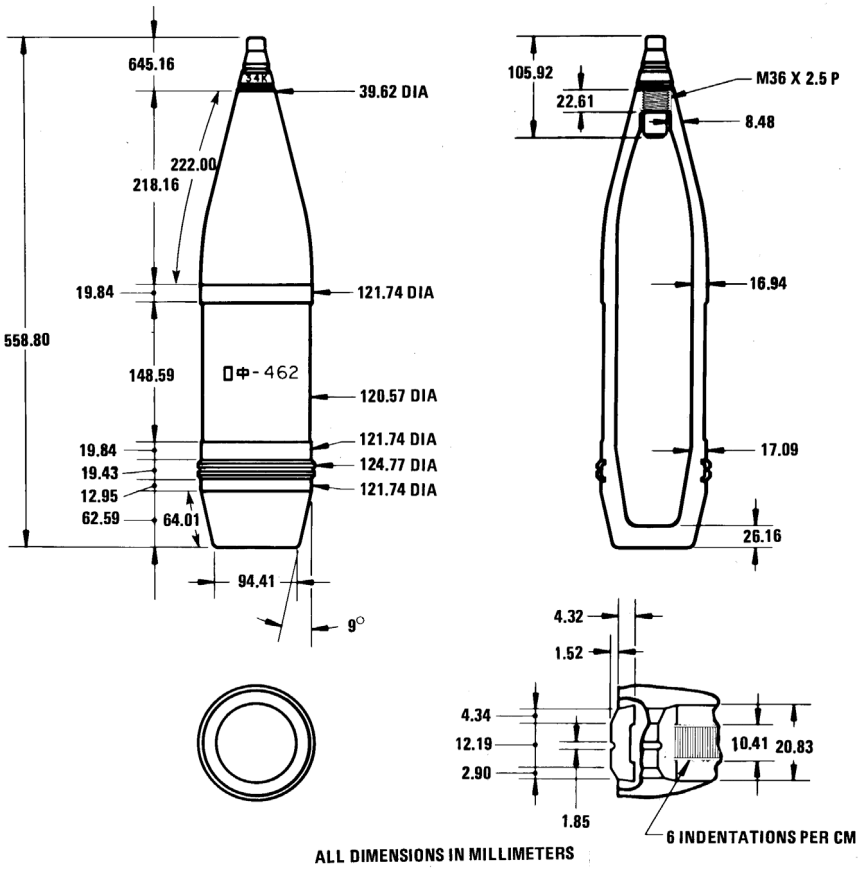
Fuze Name	Placement
D-1	
D1U	
RGM-2	
V90	

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	3,460	Main Charge	

Sources;

HAHDBOOK OF AMMUNITION USED IN IRAQ AND SURROUNDING AREAS, REV5
Projectile and Warhead Identification Guide - Foreign, # RB97-5710



OF-462 Diagram

OF-462

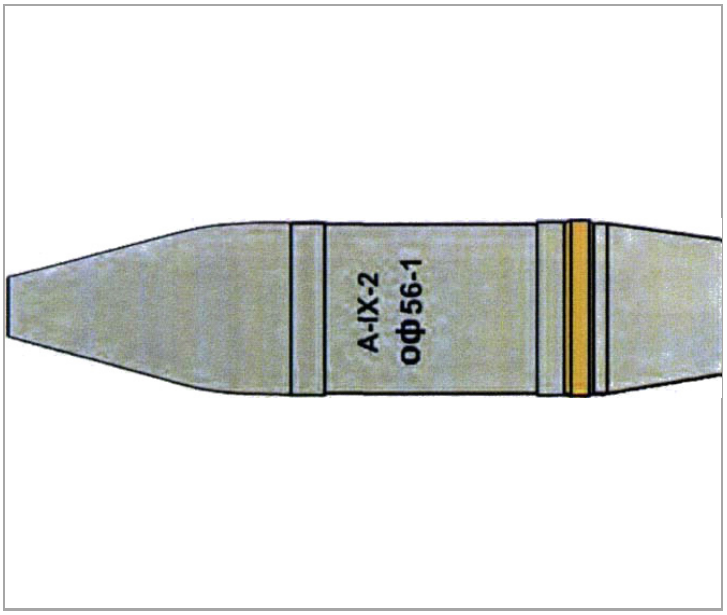
OF56-1

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	21,760	Length (mm)	501
Caliber	122mm	Weight, Projectile (g)	17,450	Width (mm)	
Function		Weight, NEQ (g)	4,310	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	122
HCC/CG		Weight, Propellant (g	0		

Description

NIL



OF56-1

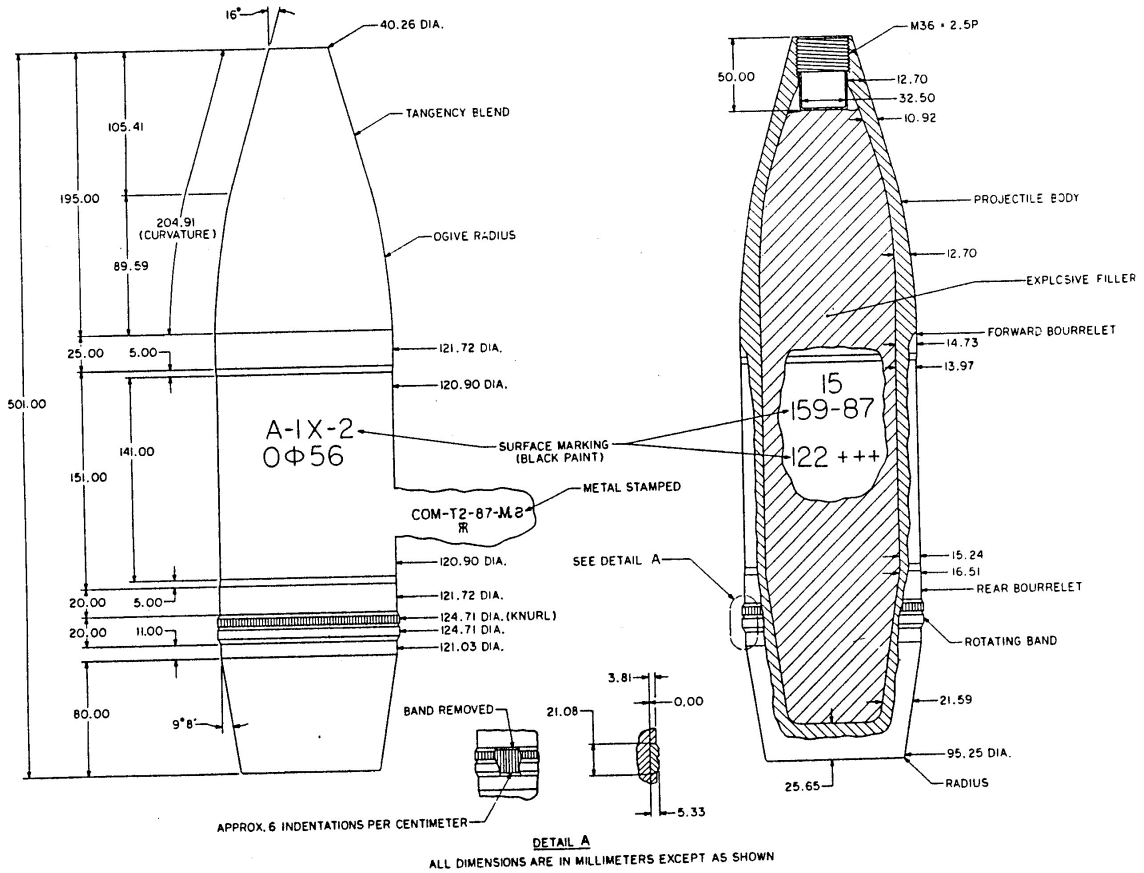
Fuzes used in Ammunition

Fuze Name	Placement
D1U	Nose
RGM-2	Nose
V90	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-2 (RDX/AL)	4,310	Main Charge	

Sources;



OF56-1 Diagram

OF56-1 on pallet

OF-19

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	23,000	Length (mm)	611
Caliber	125mm	Weight, Projectile (g)	19,850	Width (mm)	
Function		Weight, NEQ (g)	3,150	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	125
HCC/CG		Weight, Propellant (g	0		

Description

(60D-35-2-100)
Projectile Length w/ Fuze: 671.00mm

OF-19

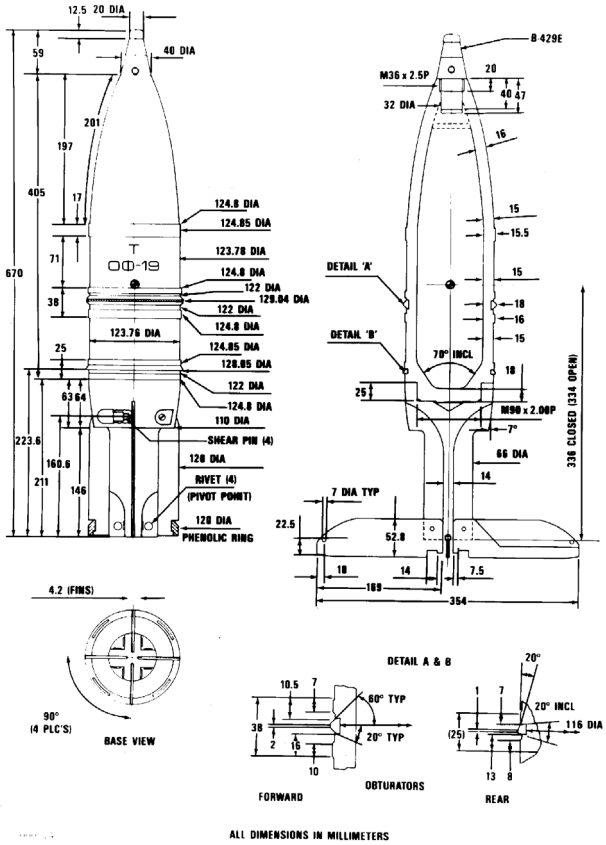
Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose
V-429E	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	3,150	Main Charge	

Sources;



OF-19 Diagram

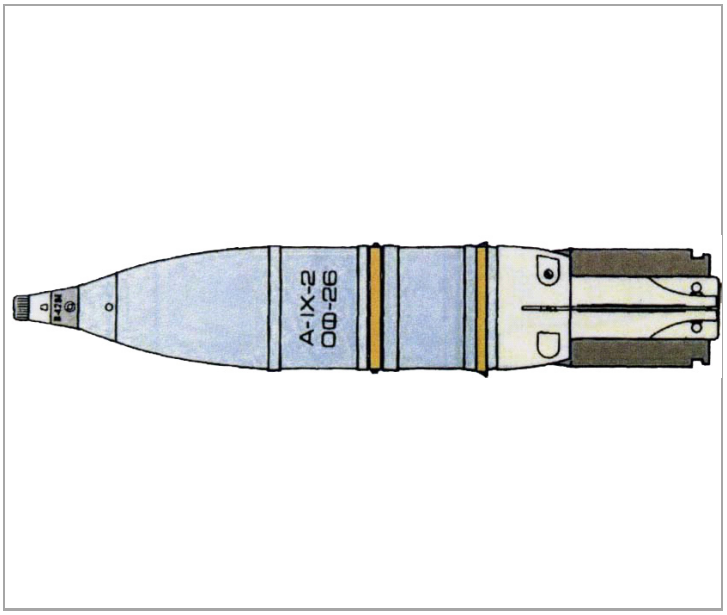
OF-26

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	26,540	Length (mm)	603
Caliber	125mm	Weight, Projectile (g)	23,200	Width (mm)	
Function		Weight, NEQ (g)	3,340	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	125
HCC/CG		Weight, Propellant (g	0		

Description

NIL



OF-26 with fuze

Fuzes used in Ammunition

Fuze Name	Placement
V-429E	Nose

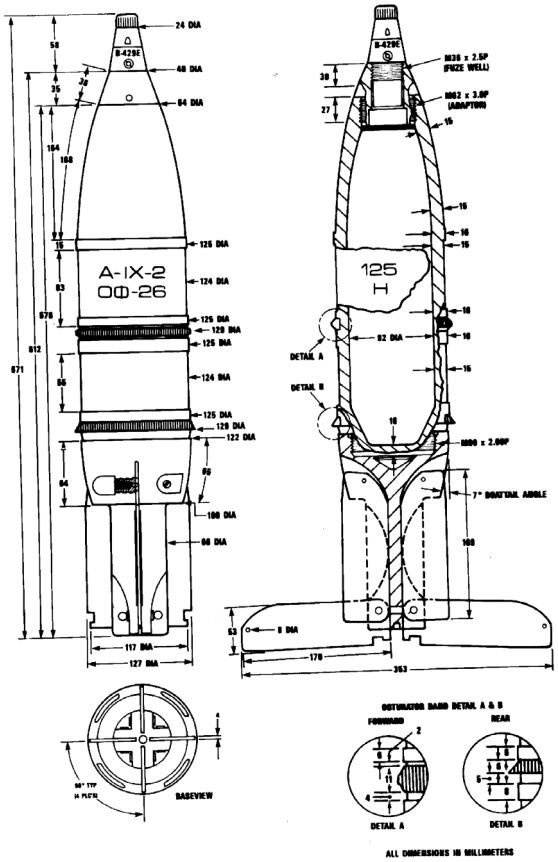
Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-2 (RDX/AL)	3,340	Main Charge	

Sources;

Handbook of Ammunition Used in Irak and Surrounding Area
Projectile and Warhead Identification Guide - Foreign, # RB97-5710

OF-26



OF-26 Diagram

OF-482M

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	33,400	Length (mm)	612
Caliber	130mm	Weight, Projectile (g)	29,800	Width (mm)	
Function		Weight, NEQ (g)	3,600	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	130
HCC/CG		Weight, Propellant (g	0		

Description

NIL

OF-482M with fuze.

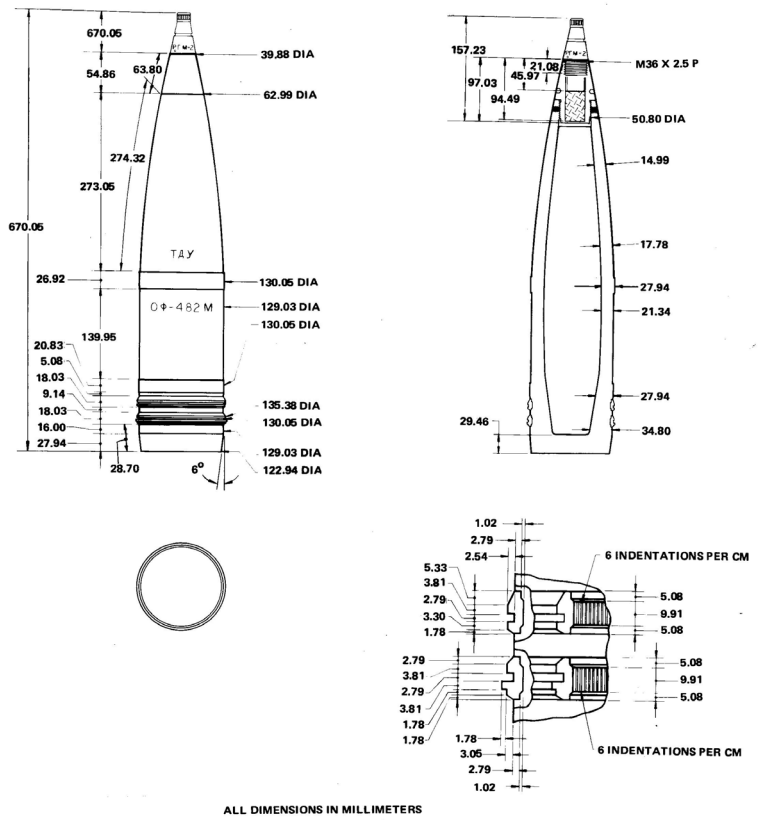
Fuzes used in Ammunition

Fuze Name	Placement
RGM-6	Nose
V-429	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	3,600	Main Charge	

Sources;



OF-482M. All dimensions in millimeters (mm).

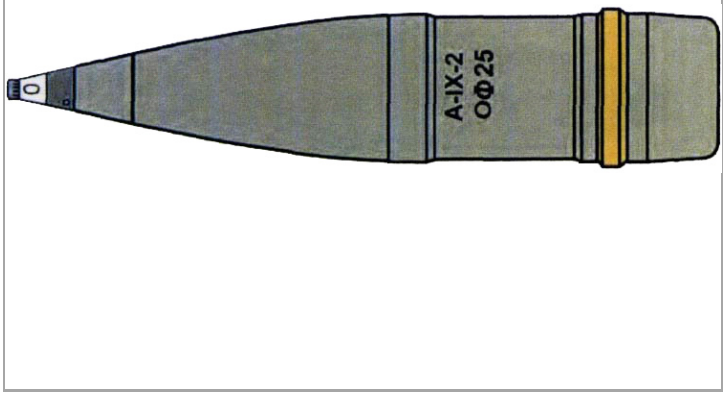
OF25

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	43,560	Length (mm)	650
Caliber	152mm	Weight, Projectile (g)	36,990	Width (mm)	
Function		Weight, NEQ (g)	6,570	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	152
HCC/CG		Weight, Propellant (g	0		

Description

(60D-35-5-99)



OF25

Fuzes used in Ammunition

Fuze Name	Placement
RGM-2	Nose
V90	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-2 (RDX/AL)	6,570	Main Charge	

Sources;

Handbook of Ammunition Used in Irak and Surrounding Area

OF-540

Projectile; HE

Origin Country	Russia	Tot. Weight (g)	43,560	Length (mm)	650
Caliber	152mm	Weight, Projectile (g)	37,320	Width (mm)	
Function		Weight, NEQ (g)	6,240	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	152
HCC/CG	D	Weight, Propellant (g	0		

Description

A two-piece OF-540B projectile also exists.

OF-540

Fuzes used in Ammunition

Fuze Name	Placement
D1U	Nose
RGM	Nose
RGM-2	Nose
V90	Nose

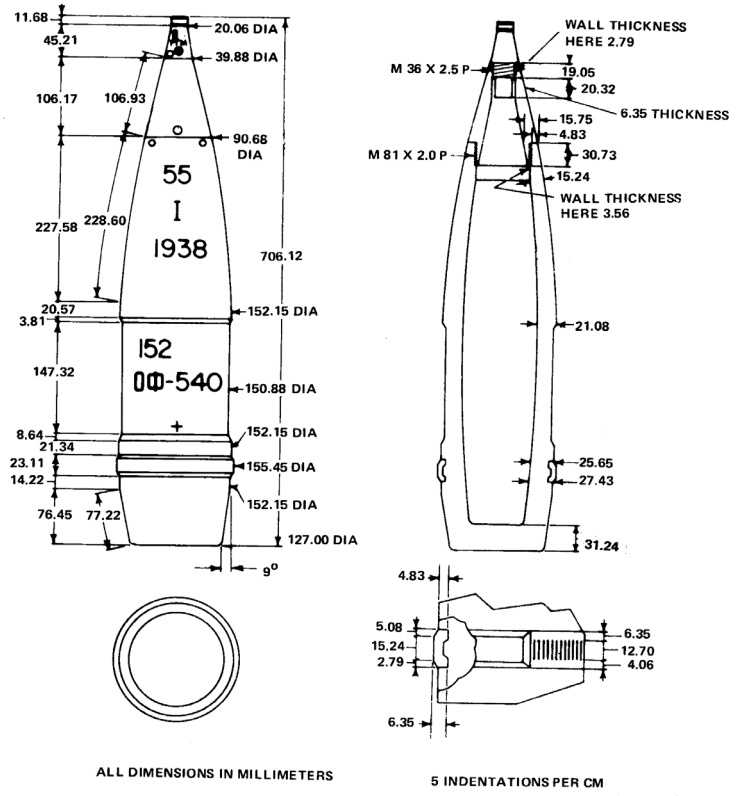
Explosives

Explosives	Weight (g)	Role	Remarks
TNT	6,240	Main Charge	

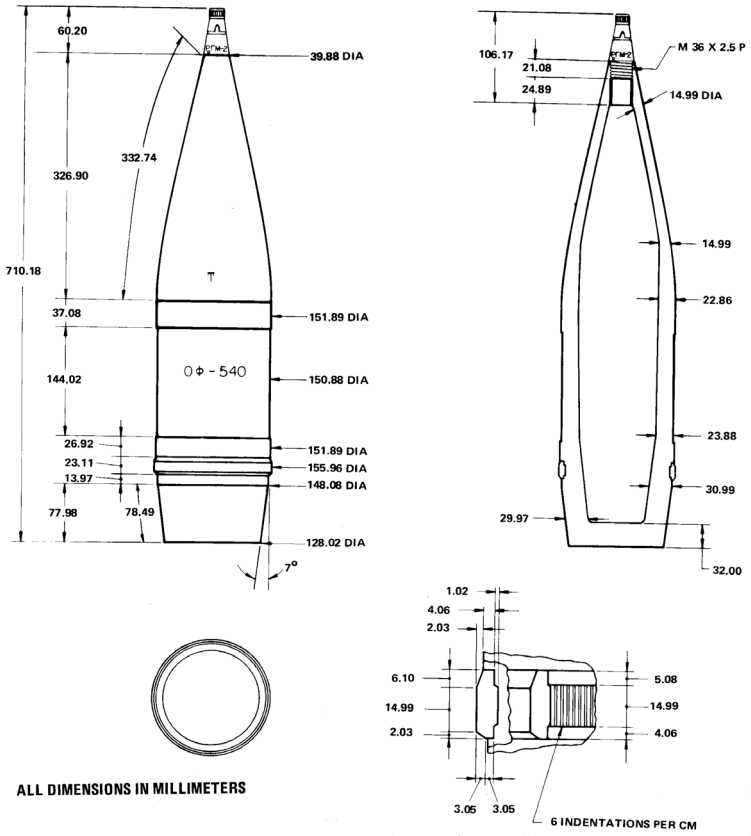
Sources;

Handbook of Ammunition Used in Irak and Surrounding Area

Projectile and Warhead Identification Guide—Foreign, NGIC-1143-782-98, p.146



OF-540 (Two-Piece) Diagram



OF-540 Diagram

M107

Projectile; HE

Origin Country	USA	Tot. Weight (g)	43,880	Length (mm)	607
Caliber	155mm	Weight, Projectile (g)	37,258	Width (mm)	
Function		Weight, NEQ (g)	6,622	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	155
HCC/CG	D	Weight, Propellant (g	0		

Description

Deep cavity ---------- 1320-D544
Normal cavity ---------- 1320-D571

Can be filled with TNT (6622g) or CompB (6985g)

Fuzes
PD: M557, M78 series; M739 series; MK399 MOD 1
MTSQ: M564, M582 series
Prox: M728, M732 series
ET: M767

M107 filled with CompB

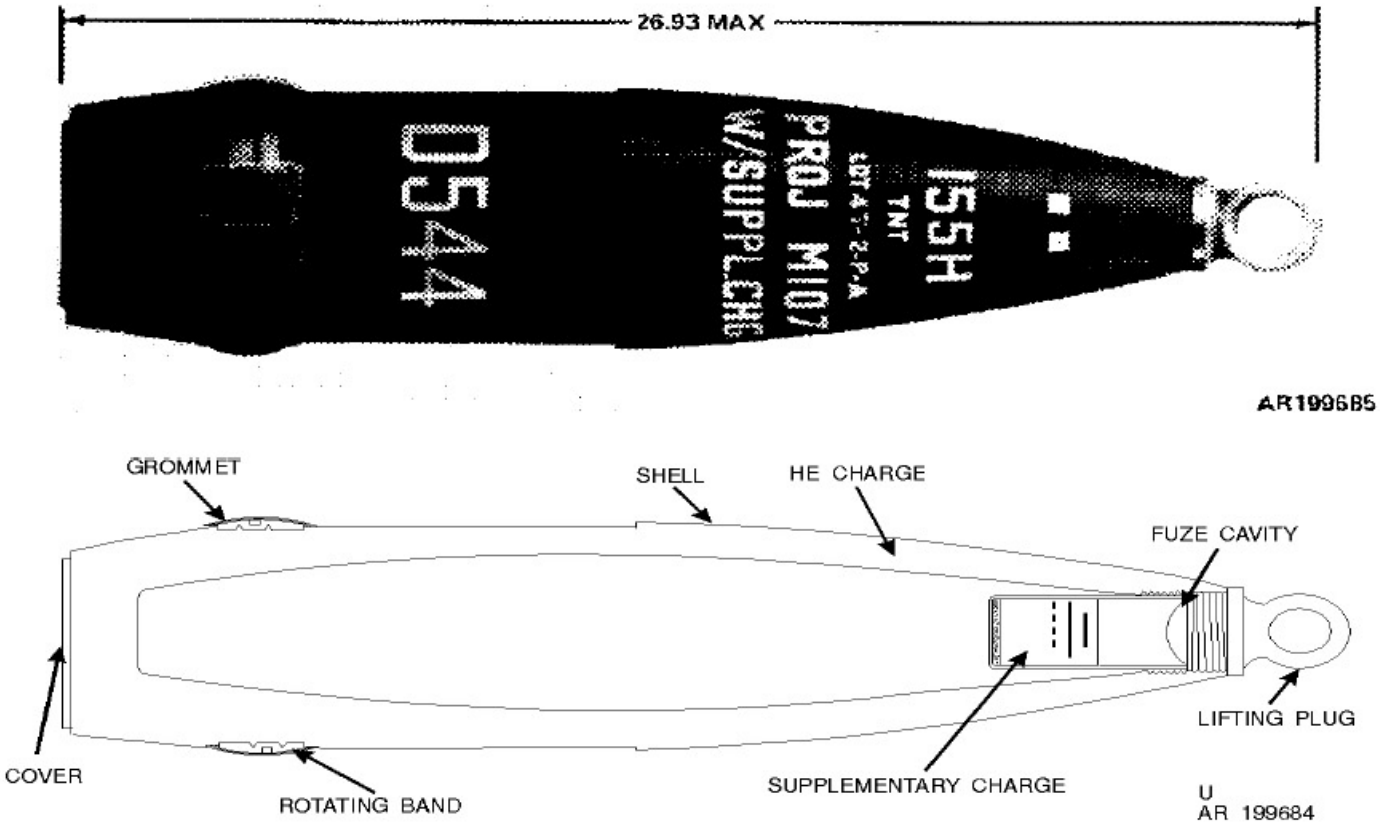
Fuzes used in Ammunition

Fuze Name	Placement
M557	Nose
M732	Nose
M739 / M739A1	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	6,622	Main Charge	

Sources;
ARMY AMMUNITION DATA SHEETS, TM 43-0001-28


26.93 MAX
155H
TNT
PROJ M107
W/SUPPL CHG
0544
AR199685
GROMMET
SHELL
HE CHARGE
FUZE CAVITY
LIFTING PLUG
COVER
ROTATING BAND
SUPPLEMENTARY CHARGE
U
AR 199684

M107

HEAT

M307A1

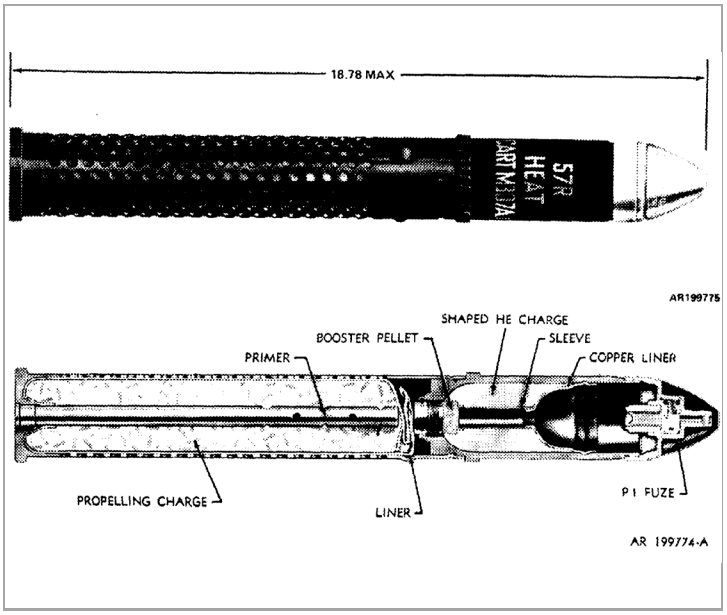
Projectile; HEAT

Origin Country	USA	Tot. Weight (g)	181	Length (mm)	
Caliber	57mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	181	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	57
HCC/CG	E	Weight, Propellant (g	0		

Description

HEAT Cartridge M307A1 includes a perforated metal cartridge case containing a plastic liner and a percussion primer and is crimped to the projectile just behind the pre-engraved rotating band of the projectile. The projectile forward cap is threaded to receive a point detonating fuze. A hemispherical copper liner crimped to the interior of the projectile forms a shaped charge to the rear and space forward to provide the standoff necessary for penetration. A steel sleeve brazed to the neck of the copper liner provides a passage from the fuze to a booster pellet in the base of the projectile. The booster pellet extends into the high explosive charge.

UNKNOWN WEIGHT AND LENGTH



M307A1

Fuzes used in Ammunition

Fuze Name	Placement
M90A1/M90	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
CompB (RDX/TNT)	181	Main Charge	Can be 50-50 Pentolite
Tetryl	0	Booster Charge	Unknown weight

Sources;

ARMY AMMUNITION DATA SHEETS, TM 43-0001-28

M310A1

Projectile; HEAT

Origin Country	USA	Tot. Weight (g)	5,984	Length (mm)	405
Caliber	75mm	Weight, Projectile (g)	5,530	Width (mm)	
Function		Weight, NEQ (g)	454	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	75
HCC/CG	E	Weight, Propellant (g	0		

Description

This cartridge is used against armored targets. The plastic-lined cartridge case M31A1 is crimped to the high-explosive anti-tank projectile by means of four equally spaced ball-point crimps.
The projectile consists of a relatively thin-walled steel body containing a shape charge of 1.00 pound of Composition B. Projectiles of earlier manufacture contain 0.81 pound of 50-50 pentolite; and 0.19 pound of 10-90 pentolite surrounds the fuze well. The projectile body is internally threaded at the base to receive the BD fuze M91A1 (or M91) with integral tracer and at the nose to receive the ogive assembly, which acts as a ballistic cap.
The shape charge is to the rear of a thin copper cone which is cemented to the interior of the projectile.
The primer ignites the propelling charge when struck by the firing pin of the weapon. The burning propellant generates rapidly expanding gases to propel the proiectle through the barrel. Recoil is eliminated because some of the gas pressure escapes through the perforated cartridge case and release is controlled through apertures in the breech-block of the rifle. The propelling charge also ignites the tracer in the BD fuze to provide visibility of the trajectory.
The rotating band engages the barrel rifling to spin the projectile for stability in flight. On impact, the fuze functions to detonate the shaped charge and collapse the internal cone. This action generates a focussed high velocity shock wave. The intensity of the shock wave causes failure of the target armor, and a jet of metal particles penetrates the interior of the target.

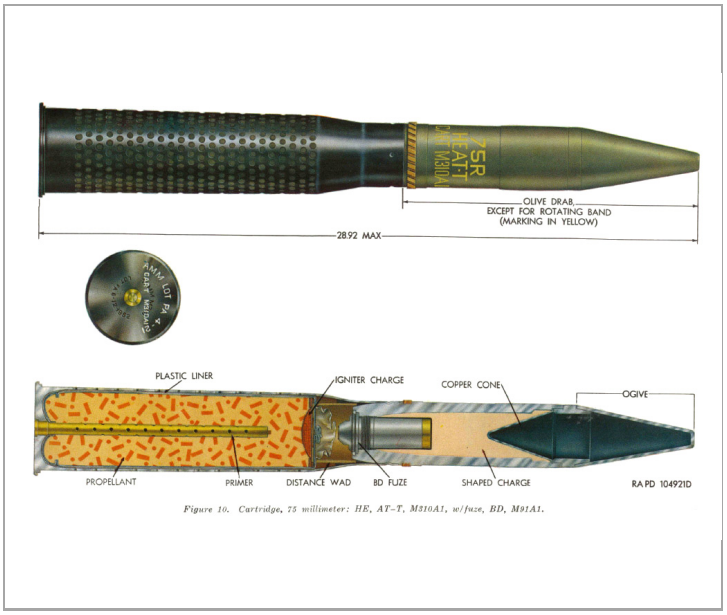


Figure 10. Cartridge, 75 millimeter: HE, AT-T, M310A1, w/fuze, BD, M91A1.

M310A1

Fuzes used in Ammunition

Fuze Name	Placement
M91	Base

Explosives

Explosives	Weight (g)	Role	Remarks
CompB (RDX/TNT)	454	Main Charge	

Sources;

ARMY AMMUNITION DATA SHEETS, TM 43-0001-28

M74

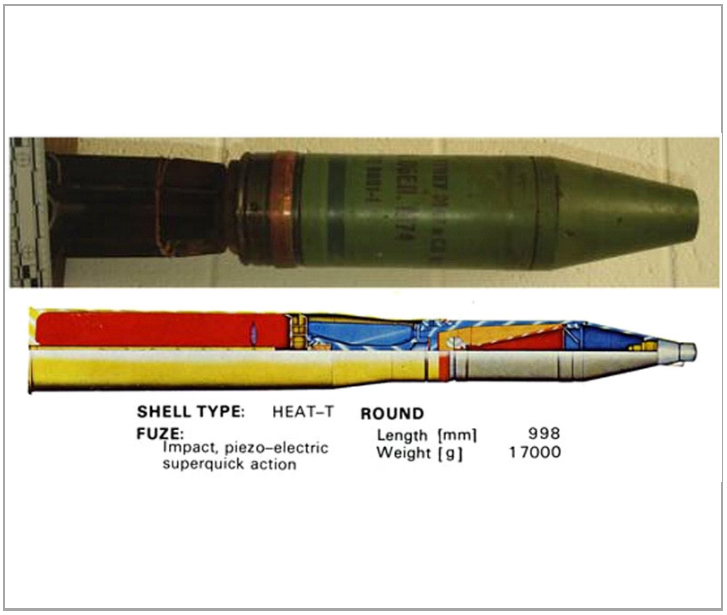
Projectile; HEAT

Origin Country	Former Yugoslavia	Tot. Weight (g)	16,830	Length (mm)	516
Caliber	90mm	Weight, Projectile (g)	7,530	Width (mm)	
Function		Weight, NEQ (g)	735	Height (mm)	
HCC/HD		Weight, Cartridge (g)	5,165	Diameter (mm)	90
HCC/CG		Weight, Propellant (g	3,400		

Description

For Gun 90 mm T119E1 on Tank M47 and Gun 90 mm M3 and M3A1 and on Self-Propelled Gun M36

Packing
1 rds per carton, airtightly close
2 cartons in wooden case (fuzes are put in separate boxes in the case cover)
Wooden case dimensions (cm): 120 x 33 x 21
Case gross weight (kg): 57
Case volume (m3): 0.831



M74

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
RDX	735	Main Charge	

Sources;

NR 488

Projectile; HEAT

Origin Country	Belgium	Tot. Weight (g)	4,100	Length (mm)	
Caliber	90mm	Weight, Projectile (g)	3,600	Width (mm)	
Function		Weight, NEQ (g)	500	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	90
HCC/CG		Weight, Propellant (g	0		

Description

NIL

NR 488

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
CompB (RDX/TNT)	500	Main Charge	

Sources;

M69

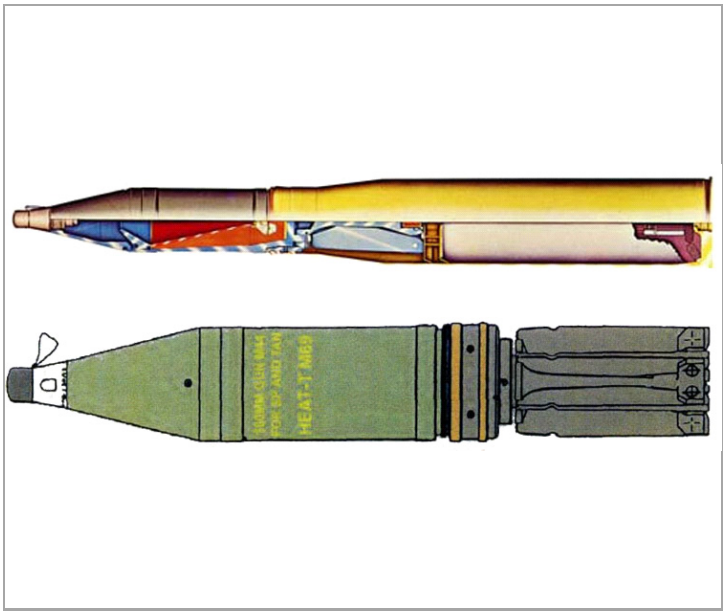
Projectile; HEAT

Origin Country	Former Yugoslavia	Tot. Weight (g)	25,295	Length (mm)	579
Caliber	100mm	Weight, Projectile (g)	11,000	Width (mm)	
Function	HEAT-T	Weight, NEQ (g)	995	Height (mm)	
HCC/HD		Weight, Cartridge (g)	8,500	Diameter (mm)	100
HCC/CG		Weight, Propellant (g	4,800		

Description

For Gun 100 mm on Tank T-55 and Self-Propelled Gun 100 mm M44.

Packing
2 rds per wooden case
Wooden case dimensions (cm): 125 x 43 x 26
Case gross weight (kg): 71
Case volume (m3): 0.139



M69

Fuzes used in Ammunition

Fuze Name	Placement
UT-PEM69	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
RDX	995	Main Charge	

Sources;

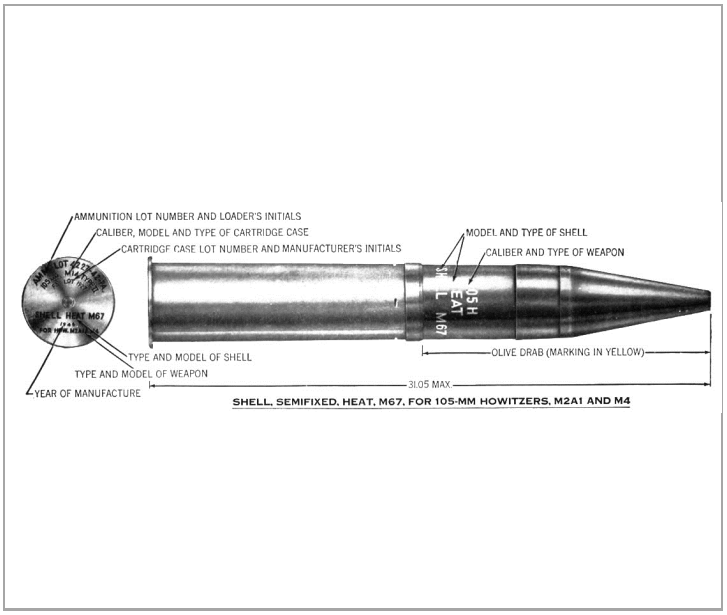
M67

Projectile; HEAT

Origin Country	USA	Tot. Weight (g)	1,764	Length (mm)	509
Caliber	105mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	1,764	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	105
HCC/CG		Weight, Propellant (g	0		

Description

Figures are based on the practice round TP-T, M67 and the Yugoslavian copy HEAT, M67



M67

Fuzes used in Ammunition

Fuze Name	Placement
M62	Base

Explosives

Explosives	Weight (g)	Role	Remarks
CompB (RDX/TNT)	1,764	Main Charge	

Sources;

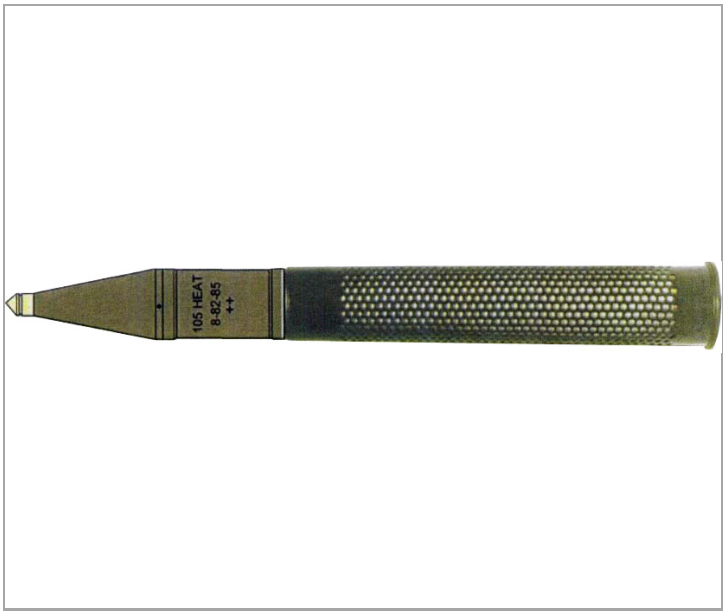
Type 75

Projectile; HEAT

Origin Country	China	Tot. Weight (g)	7,960	Length (mm)	677
Caliber	105mm	Weight, Projectile (g)	6,700	Width (mm)	
Function		Weight, NEQ (g)	1,260	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	105
HCC/CG		Weight, Propellant (g	0		

Description

105mm recoilless HEAT projectile.



Type 75

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
RDX/TNT	1,260	Main Charge	

Sources;

HANDBOOK OF AMMUNITION USED IN IRAQ AND SURROUNDING AREAS, REV5

M344A1

Projectile; HEAT

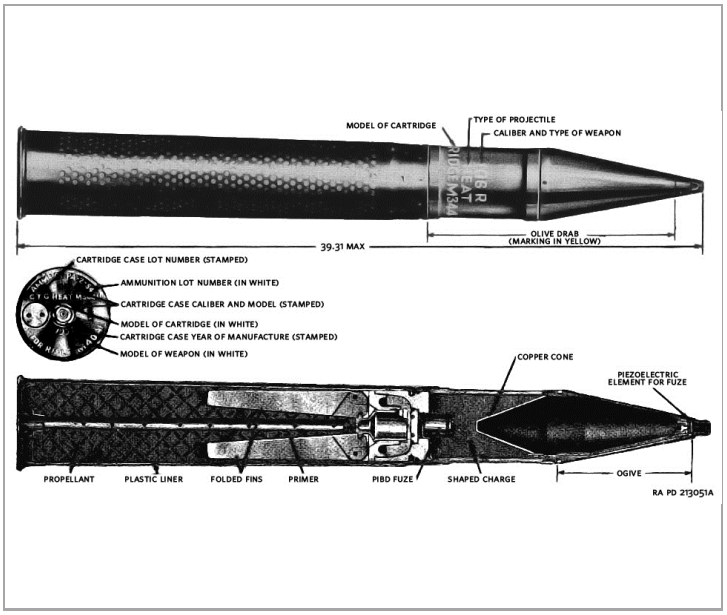
Origin Country	USA	Tot. Weight (g)	11,616	Length (mm)	
Caliber	106mm	Weight, Projectile (g)	6,695	Width (mm)	
Function		Weight, NEQ (g)	1,265	Height (mm)	
HCC/HD	1.2	Weight, Cartridge (g)	0	Diameter (mm)	106
HCC/CG	E	Weight, Propellant (g	3,656		

Description

This cartridge is used against armored targets. The plastic-lined cartridge case M93Bl or M93 is crimped to the high-explosive antitank projectile by means of eight equally spaced ball-point crimps.
The projectile consists of a relatively thin-walled steel body containing a shaped charge of 2.79 pounds of Composition B. The projectile body is internally threaded at the nose to receive the ogive assembly, which acts as a ballistic cap. The shaped charge is to the rear of a thin copper cone. Concentration of blast is obtained by the shape of the charge. The space forward of the copper cone provides the "stand off" necessary for the penetration of the target.

Differences between M344 and M344A1 is the design of the copper cone in the projectile and in the composition of propellant used.

Equivalent to:
NR 160 (Belgium)



M344A1

Fuzes used in Ammunition

Fuze Name	Placement
M509A1/A2	Base

Explosives

Explosives	Weight (g)	Role	Remarks
CompB (RDX/TNT)	1,265	Main Charge	

Sources;

ARMY AMMUNITION DATA SHEETS, TM 43-0001-28
AMMUNITION FOR RECOILLESS RIFLES, TM 9-1300-204

NR 160

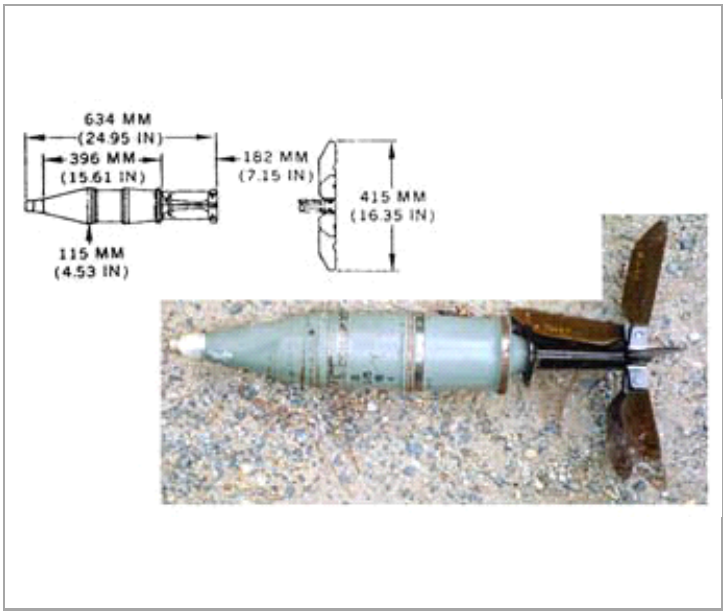
BK4M

Projectile; HEAT

Origin Country	Russia	Tot. Weight (g)	13,150	Length (mm)	634
Caliber	115mm	Weight, Projectile (g)	11,700	Width (mm)	
Function		Weight, NEQ (g)	1,450	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	115
HCC/CG		Weight, Propellant (g	0		

Description

Cartridge designated UBK-3M



BK4M

Fuzes used in Ammunition

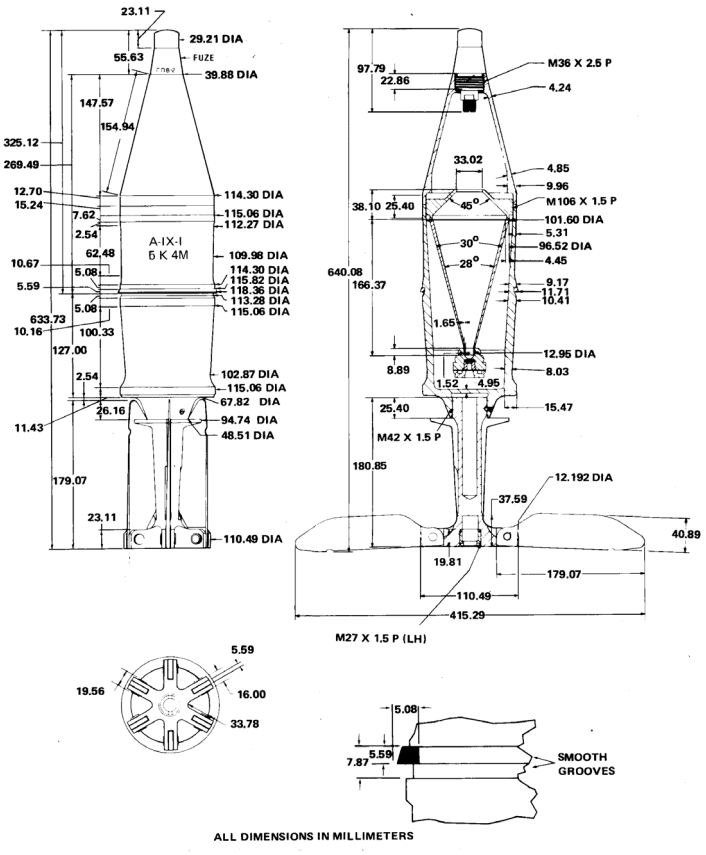
Fuze Name	Placement
GPV-2	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-1 (RDX/wax)	1,450	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710



BK4M Diagram

BK-13

Projectile; HEAT

Origin Country	Russia	Tot. Weight (g)	18,200	Length (mm)	637
Caliber	122mm	Weight, Projectile (g)	16,400	Width (mm)	
Function		Weight, NEQ (g)	1,800	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	122
HCC/CG		Weight, Propellant (g	0		

Description

NIL

BK-13

Fuzes used in Ammunition

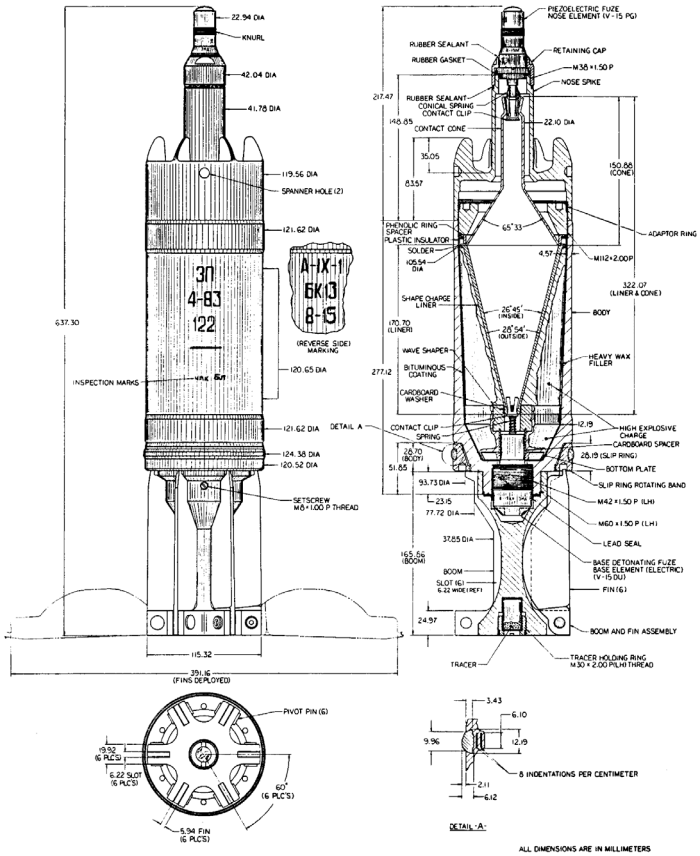
Fuze Name	Placement
UNKN. FUZE	

Explosives

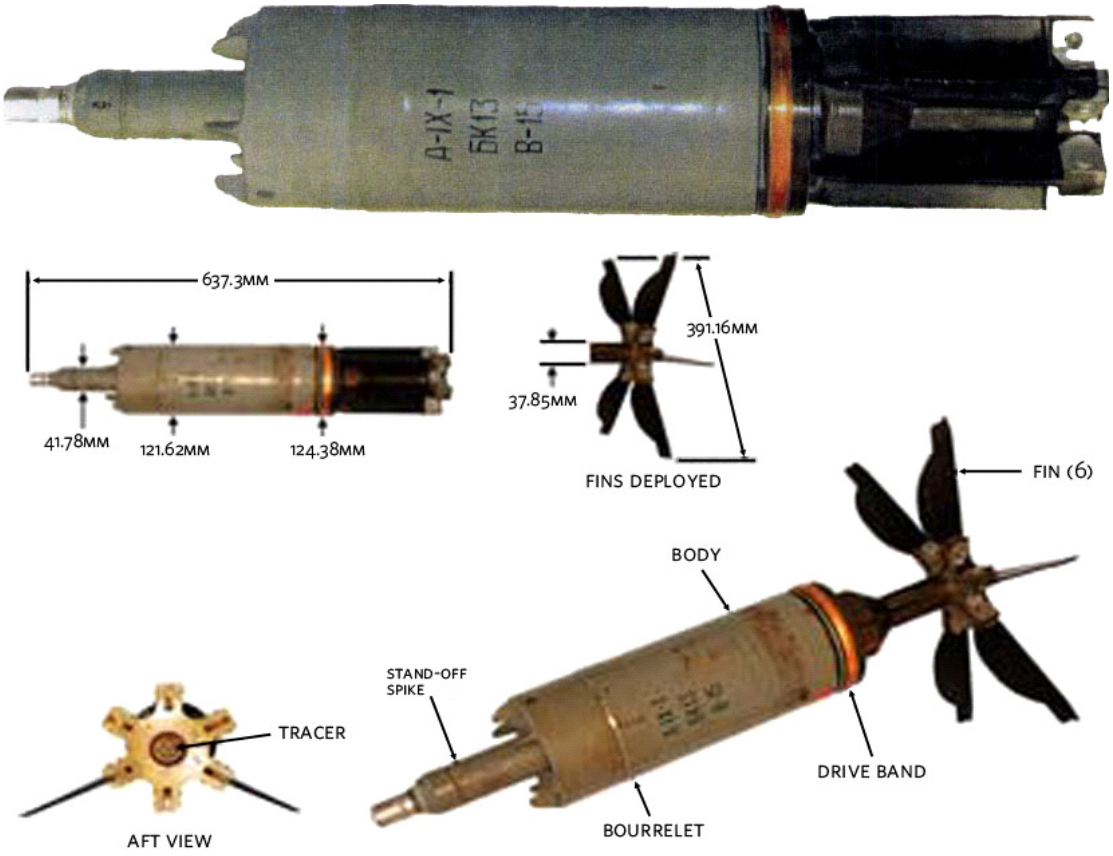
Explosives	Weight (g)	Role	Remarks
A-IX-1 (RDX/wax)	1,800	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710



BK-13 Diagram



BK-13

BK-9

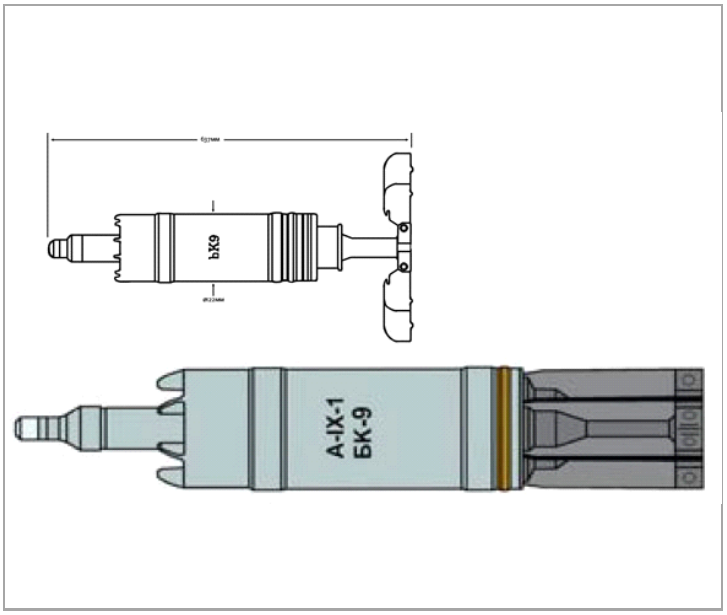
Projectile; HEAT

Origin Country	Russia	Tot. Weight (g)	1,960	Length (mm)	637
Caliber	122mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	1,960	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	122
HCC/CG		Weight, Propellant (g	0		

Description

(60D-35-5-126)

UNKNOWN WEIGHT



BK-9

Fuzes used in Ammunition

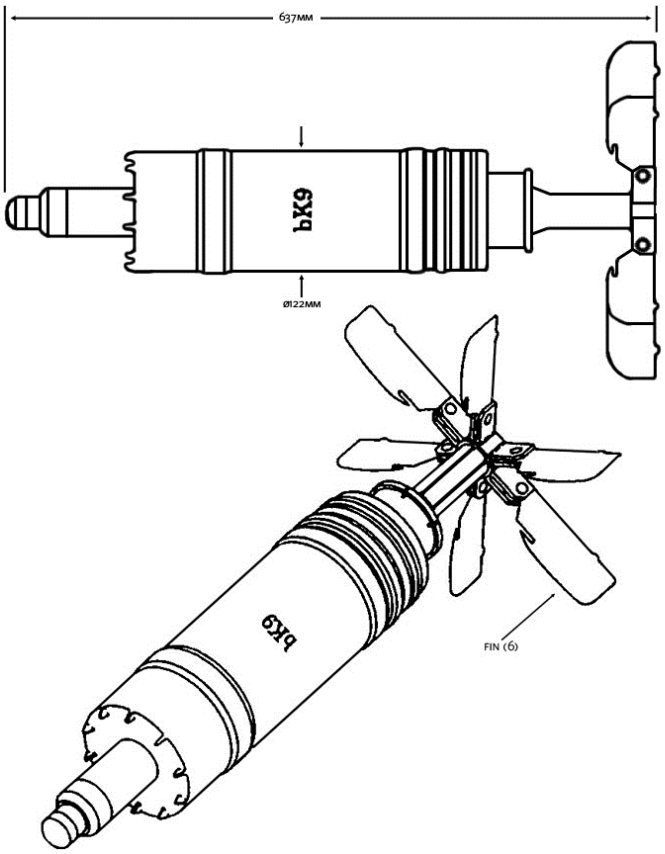
Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-1 (RDX/wax)	1,960	Main Charge	

Sources;

HAHDBOOK OF AMMUNITION USED IN IRAQ AND SURROUNDING AREAS, REV5


637MM
bK9
Ø122MM
bK9
FIN (6)

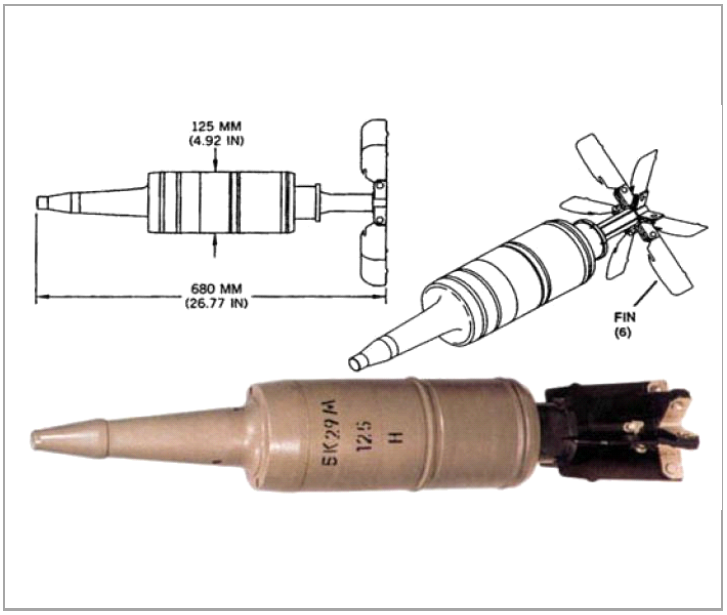
3BK29

Projectile; HEAT

Origin Country	Russia	Tot. Weight (g)	18,400	Length (mm)	680
Caliber	125mm	Weight, Projectile (g)	16,550	Width (mm)	
Function		Weight, NEQ (g)	1,850	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	125
HCC/CG		Weight, Propellant (g	0		

Description

3VBK-25 (3BK-29 projectile) (est.DOI 1988)
New explosive pressing technology improves jetprecision.
Weight reduced to 18,400g; MV boosted to 15m/s. Est. 650mm RHA at 0°; Unknown liner; tandem charge
3BK-29M presented by NIMI in 1998; unknown improvements over 3BK-29.
Estimate explosive weight not more than 1,850g.



3BK29

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	1,850		

Sources;

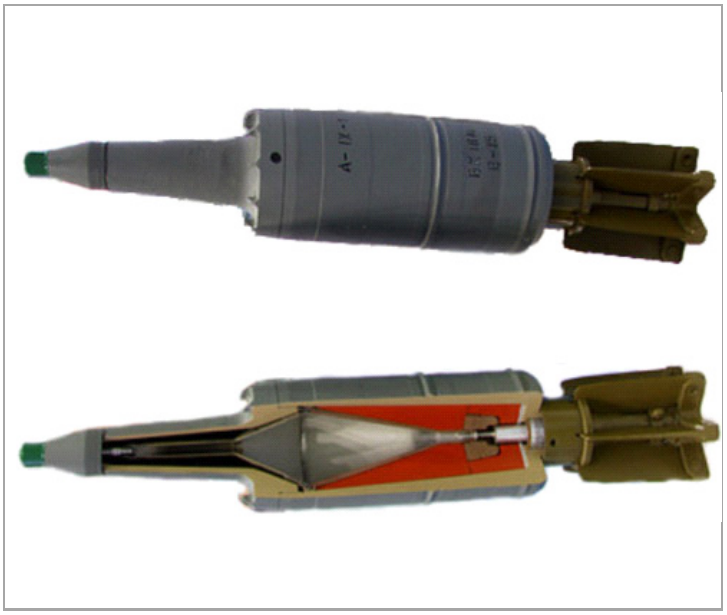
BK18M

Projectile; HEAT

Origin Country	Russia	Tot. Weight (g)	19,000	Length (mm)	680
Caliber	125mm	Weight, Projectile (g)	17,240	Width (mm)	
Function		Weight, NEQ (g)	1,760	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	125
HCC/CG		Weight, Propellant (g	0		

Description

NIL



BK18M

Fuzes used in Ammunition

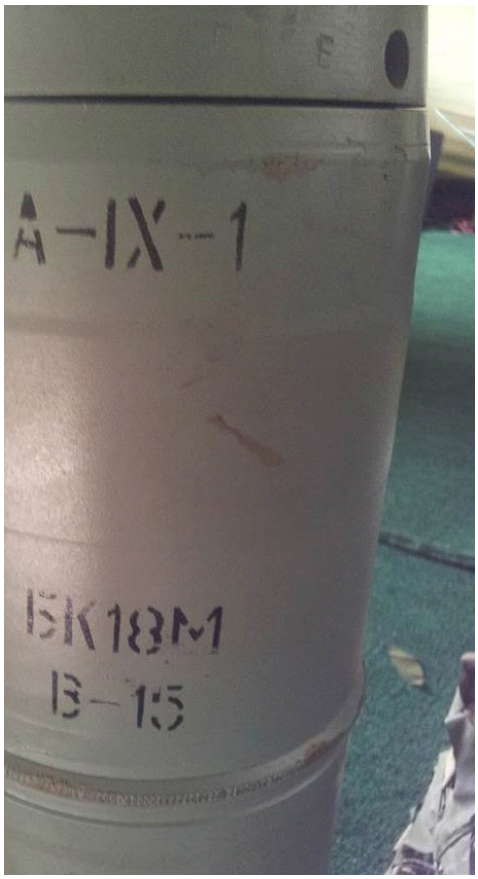
Fuze Name	Placement
UNKN. FUZE	Base

Explosives

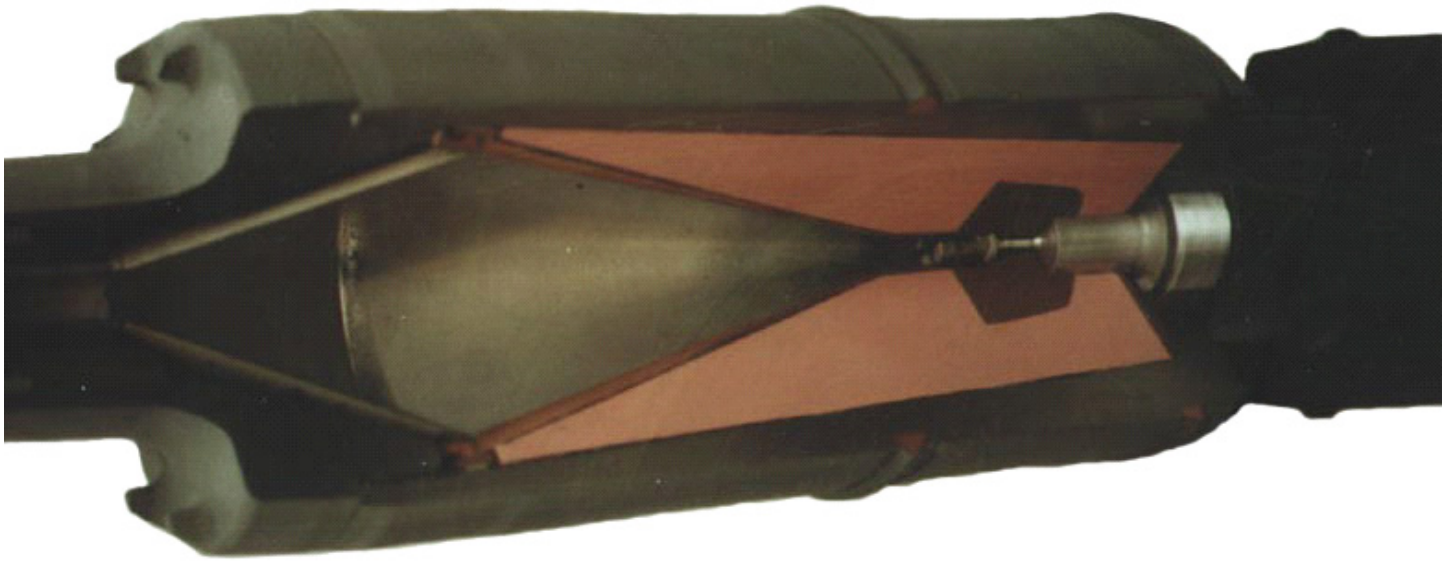
Explosives	Weight (g)	Role	Remarks
A-IX-1 (RDX/wax)	1,760	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710



BK18M markings



BK18M Cut through

HE-Frag

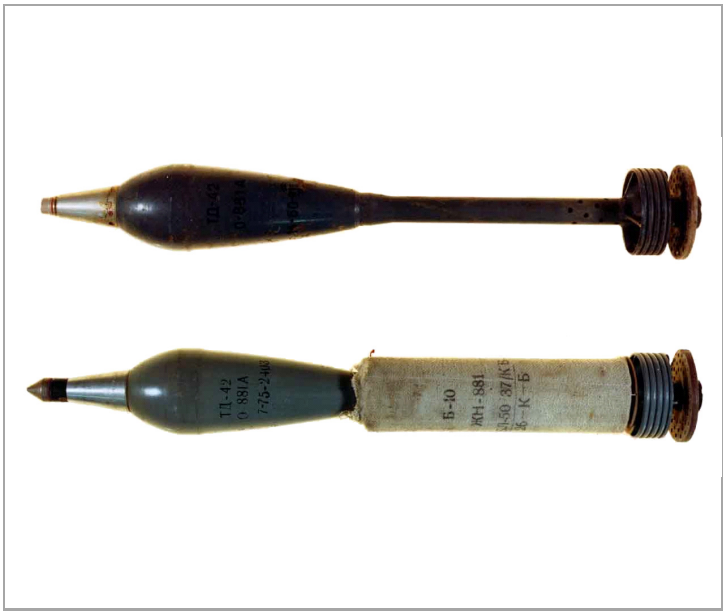
O-881A

Projectile; HE-Frag

Origin Country	Russia	Tot. Weight (g)	3,900	Length (mm)	608
Caliber	82mm	Weight, Projectile (g)	3,430	Width (mm)	
Function		Weight, NEQ (g)	470	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	82
HCC/CG		Weight, Propellant (g	0		

Description

This is a fin stabilized, recoilless rifle fired, high explosive projectile.



0-881A

Fuzes used in Ammunition

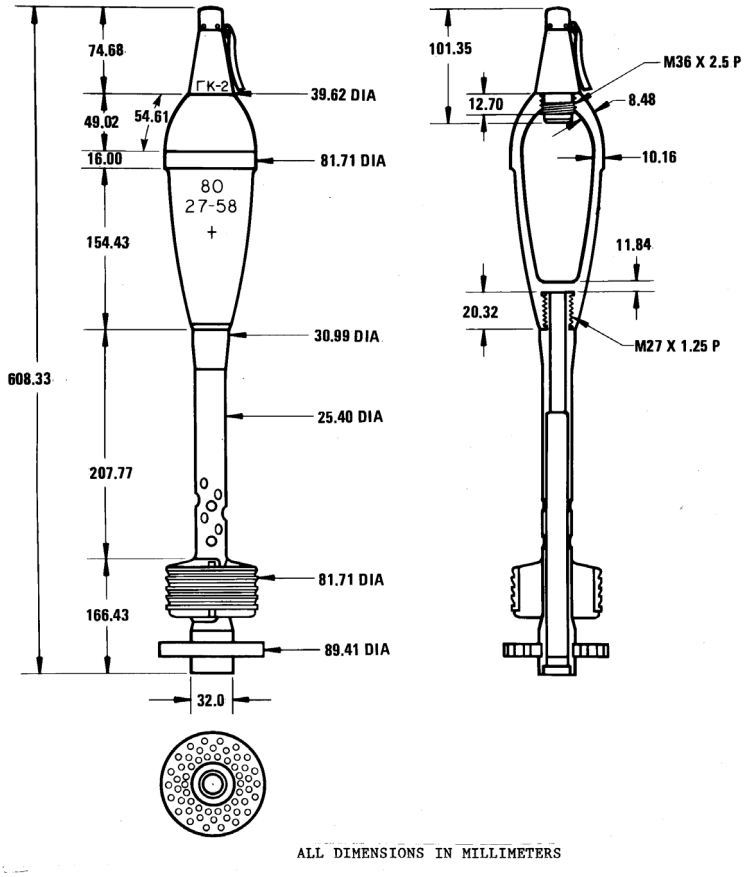
Fuze Name	Placement
GK-2	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT / DNN	470	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710
CORD, GICHD



0-881A Diagram

0-881A

HEI

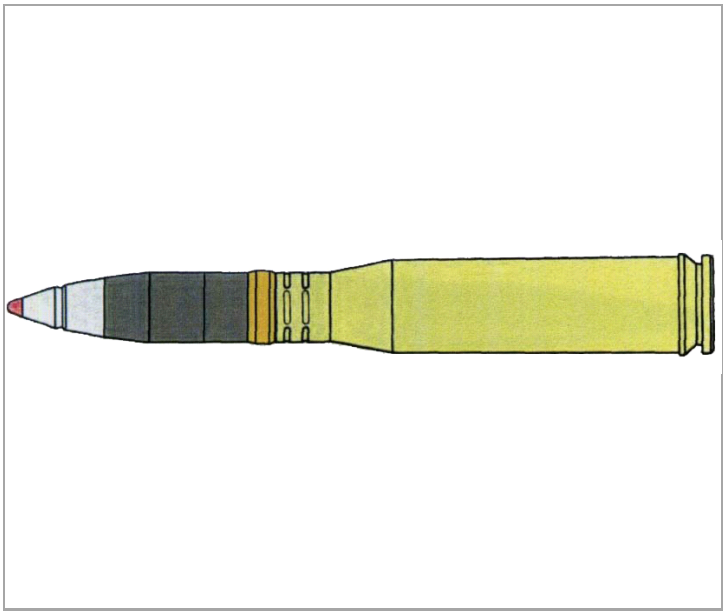
OFZ 23MM

Projectile; HEI

Origin Country	Russia	Tot. Weight (g)	620	Length (mm)	108
Caliber	23mm	Weight, Projectile (g)	135	Width (mm)	
Function		Weight, NEQ (g)	45	Height (mm)	
HCC/HD		Weight, Cartridge (g)	440	Diameter (mm)	23
HCC/CG		Weight, Propellant (g	0		

Description

Fuze: PDSD, V19



23mm OFZ

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-2 (RDX/AL)	45	Main Charge	

Sources;

Handbook of Ammunition Used in Irak and Surrounding Area

HEI-T

OFZT 23mm

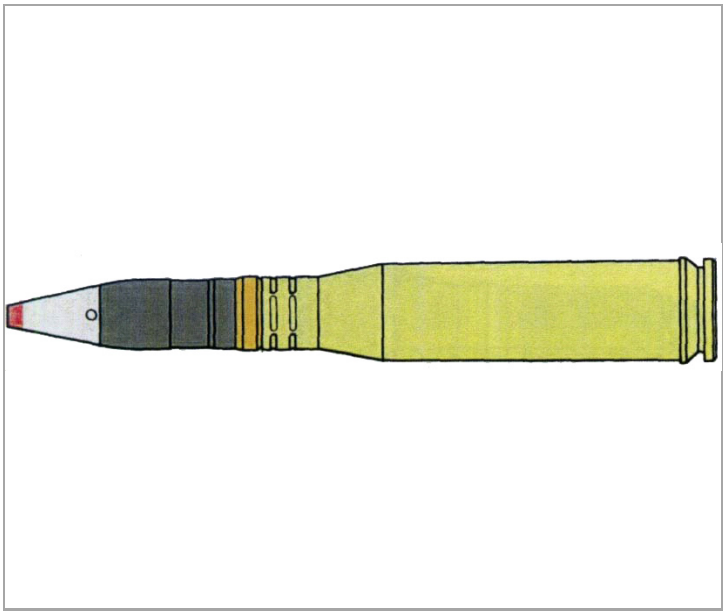
Projectile; HEI-T

Origin Country	Russia	Tot. Weight (g)	13	Length (mm)	108
Caliber	23mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	13	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	23
HCC/CG		Weight, Propellant (g	0		

Description

(60D-35-2-34)
Filler: RDX NEW: 13.00kg (28.60lbs)
Fuze: PDSD, MG-25

(60D-35-2-18)
Filler: RDX NEW: 10.60g (0.37oz)
Fuze: PDSD, B23



23mm OFZT

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks
RDX	13	Main Charge	

Sources;

Handbook of Ammunition Used in Irak and Surrounding Area

MK11/MK2

Projectile; HEI-T

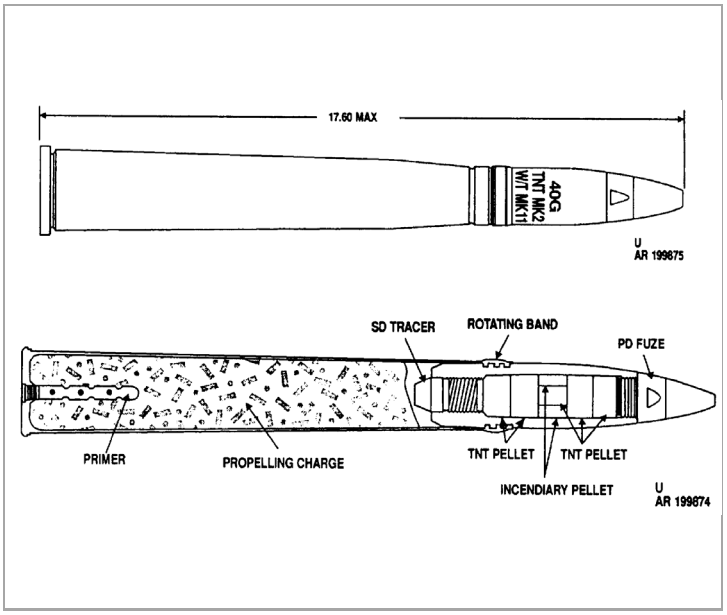
Origin Country	USA	Tot. Weight (g)	427	Length (mm)	
Caliber	40mm	Weight, Projectile (g)	0	Width (mm)	
Function	HEI-T, SD	Weight, NEQ (g)	100	Height (mm)	
HCC/HD	1.2	Weight, Cartridge (g)	0	Diameter (mm)	40
HCC/CG	E	Weight, Propellant (g	327		

Description

This fixed ammunition is used in 40mm gun cannons for firing against materiel.
The relatively thin-walled projectile contains a burster charge, an incendiary charge, a point-detonating fuze, and a self-destroying (SD) tracer. The projectile nose is threaded to receive the fuze. The SD tracer assembly is contained in the boat-tailed base of the projectile, which is internally threaded, and it extends approximately 0.6 inch beyond the base. The SD tracer consists of an igniting charge, a red tracer composition, and a relay igniting charge.
The cartridge case, either brass or steel, is crimped rigidly to the projectile by means of a 360° crimp. The base of the cartridge case contains a percussion primer consisting of a perforated tube containing black powder and a percussion element.

Difference Between Models:
Cartridges manufactured by the Navy may be distinguished by the painting on the fuzes. The fuze for the Navy HEI-T cartridge is painted red and white (red tip on fuze).

Color:
Army: Olive drab w/yellow marking
Navy: Green w/black band



MK11/MK2 (MV2890)

Fuzes used in Ammunition

Fuze Name	Placement
MK27	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	64	Main Charge	
UNKNOWN	36	Secondary Charge	Tracer and Incendairy

Sources;

HESH

M346A1

Projectile; HESH

Origin Country	USA	Tot. Weight (g)	16,950	Length (mm)	
Caliber	106mm	Weight, Projectile (g)	4,460	Width (mm)	
Function		Weight, NEQ (g)	3,500	Height (mm)	
HCC/HD		Weight, Cartridge (g)	5,410	Diameter (mm)	106
HCC/CG		Weight, Propellant (g	3,580		

Description

This is a special high-explosive cartridge intended primarily for defeat of armor. The plastic-lined cartridge case M94B1 (T75) (or alternative M94) is crimped to the high-explosive projectile by means of four equally spaced ball-point crimps. The projectile consists of a relatively thin-walled steel body containing a bursting charge of 7. 72 pounds of Composition A-3. The projectile has a pre-engraved rotating band and two manganese bronze indexing buttons at the bourrelet to facilitate insertion of the cartridge into the tube.

Equivalent to:
NR 601 (Belgium)

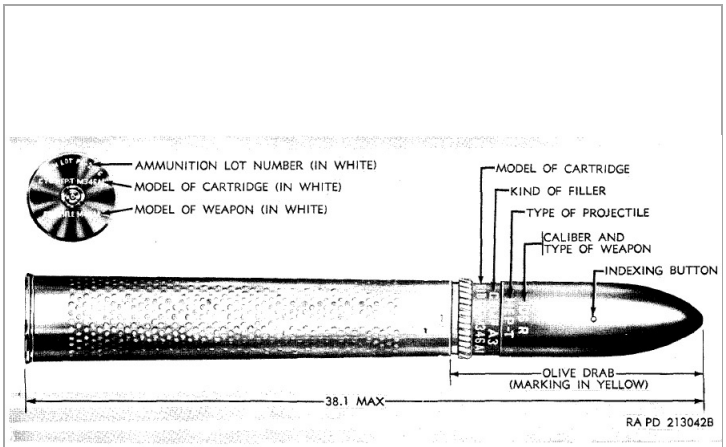


Figure 14. Cartridge, 106 millimeter: HEP-T, M346A1, w/fuze, BD, M91A1.

M346A1

Fuzes used in Ammunition

Fuze Name	Placement
M91	Base

Explosives

Explosives	Weight (g)	Role	Remarks
CompA3 (RDX/wax)	3,500	Main Charge	

Sources;

ARMY AMMUNITION DATA SHEETS, TM 43-0001-28, 5-27
AMMUNITION FOR RECOILLESS RIFLES, TM 9-1300-204, p.21

NR 601

Illumination

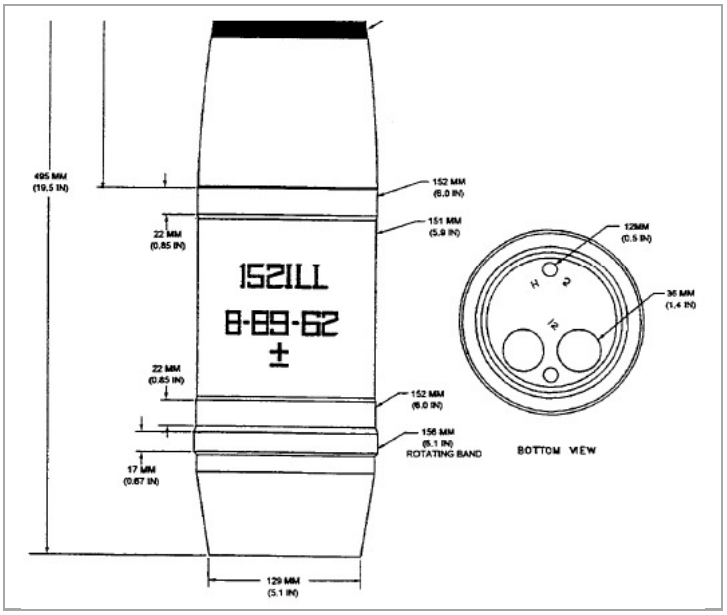
Type 66 ILLUM

Projectile; Illumination

Origin Country	China	Tot. Weight (g)	2,380	Length (mm)	495
Caliber	152mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	2,380	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	152
HCC/CG		Weight, Propellant (g	0		

Description

Filler: 100 g black powder, 2.38 kg illumination charge



Type 66 ILLUM Diagram

Fuzes used in Ammunition

Fuze Name	Placement
MS-1	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
ILLUM	2,380	Main Charge	

Sources;

Smoke

M60

Projectile; Smoke

Origin Country	NIL	Tot. Weight (g)	19,500	Length (mm)	
Caliber	105mm	Weight, Projectile (g)	13,791	Width (mm)	
Function		Weight, NEQ (g)	1,750	Height (mm)	
HCC/HD	1.2	Weight, Cartridge (g)	2,676	Diameter (mm)	105
HCC/CG	H	Weight, Propellant (g	1,283		

Description

The projectile consists of a hollow steel forging with a boattail base, a streamlined ogive, and gilding metal rotating band. The projectile cavity is filled with cast WP. A steel nose adapter, having a female fuze thread, with a press fitted burster casing, is threaded into the nose of the projectile providing a seal for the filler. A burster charge is placed inside the burster casing and a fuze is threaded into the adapter.
The cartridge case contains a percussion primer assembly and seven individually bagged and numbered propelling charge increments. The base of the cartridge case is drilled and the primer assembly pressed into the base.
The percussion primer assembly consists of a percussion ignition element and a perforated flash tube containing black powder. The seven numbered increment bags are tied together, in numerical order, with acrylic cord. These are assembled into the cartridge case around the primer flash tube with Increment 1 at the base of the cartridge case and Increment 7 toward the mouth of the cartridge case.

M60

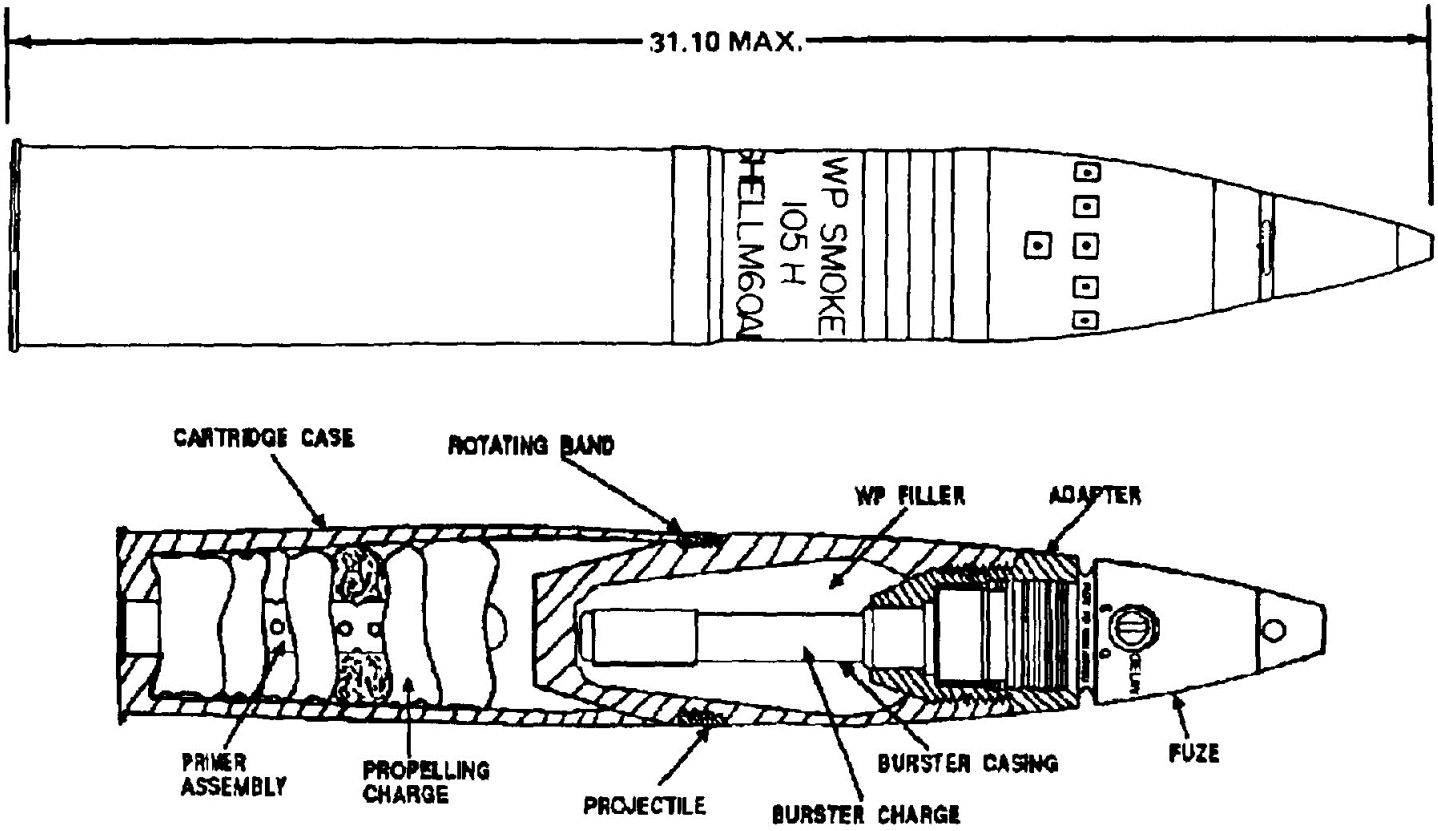
Fuzes used in Ammunition

Fuze Name	Placement
M557	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
Tetryl	0	Secondary Charge	Unkn. Expl. W. Can be CompB
WP	1,750	Main Charge	

Sources;



M60A1 Diagram

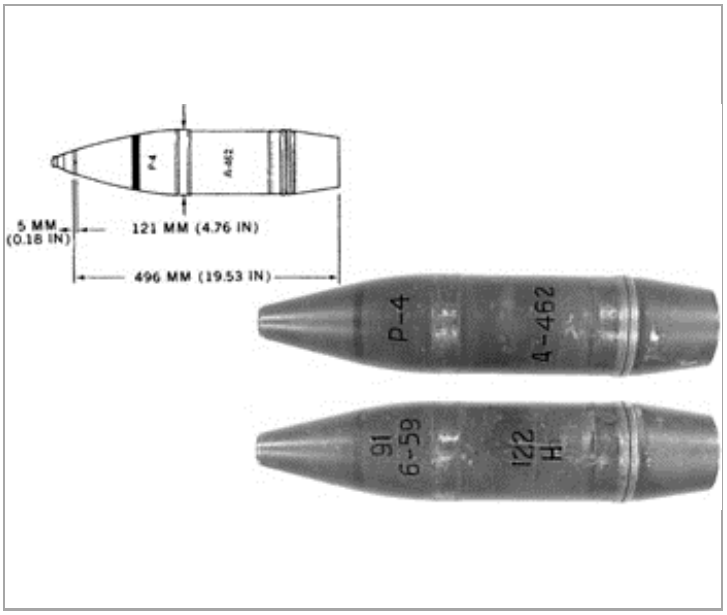
D-462

Projectile; Smoke

Origin Country	Russia	Tot. Weight (g)	22,022	Length (mm)	545
Caliber	122mm	Weight, Projectile (g)	18,262	Width (mm)	
Function		Weight, NEQ (g)	3,760	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	122
HCC/CG		Weight, Propellant (g	0		

Description

NIL



D-462

Fuzes used in Ammunition

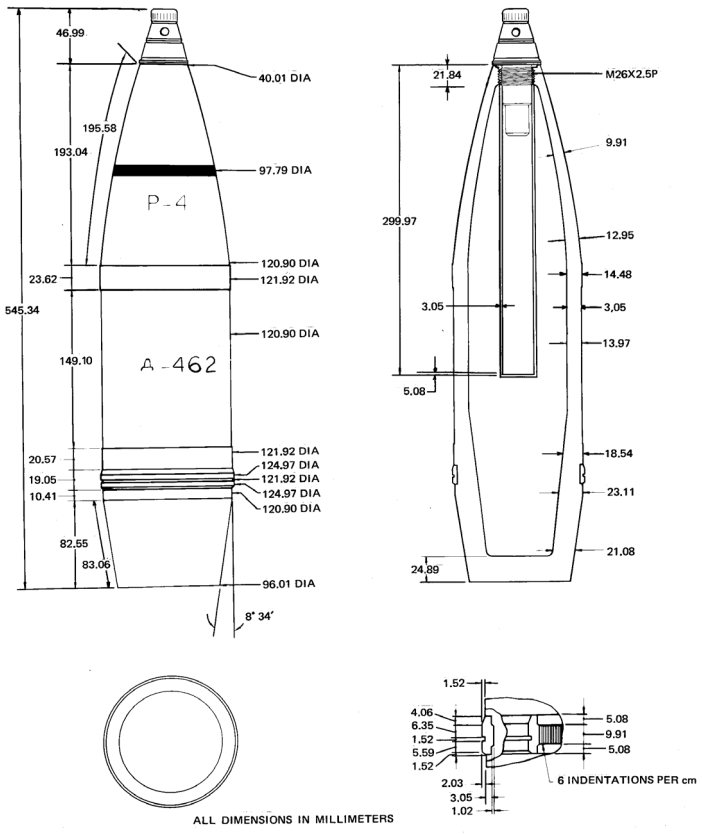
Fuze Name	Placement
KTM-2	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	160	Secondary Charge	
WP	3,600	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710



D-462 Diagram

M110

Projectile; Smoke

Origin Country	USA	Tot. Weight (g)	42,800	Length (mm)	680
Caliber	155mm	Weight, Projectile (g)	35,700	Width (mm)	
Function		Weight, NEQ (g)	7,100	Height (mm)	
HCC/HD	1.2	Weight, Cartridge (g)	0	Diameter (mm)	155
HCC/CG	H	Weight, Propellant (g	0		

Description

The M110A1 and M110A2 projectiles both contain a comp B5 burster providing greater high temperature tolerance than the tetrytol bursters used in previous models of the M110 series WP projectiles. The M110A2 contains a burster tube assembly with an aluminum plug sealing the base of the tube while the M110A1 contains a plastic plug,

Fuzes
PD:M557, M739
MTSQ: M564, M582
ET: M767

DODAC: 1320 -D550

M110

Fuzes used in Ammunition

Fuze Name	Placement
M557	

Explosives

Explosives	Weight (g)	Role	Remarks
WP	7,100	Main Charge	

Sources;
ARMY AMMUNITION DATA SHEETS, TM 43-0001-28

Rocket

Cargo

Type 84

Rocket; Cargo

Origin Country	China	Tot. Weight (g)	59,000	Length (mm)	2,970
Caliber	122mm	Weight, Projectile (g)	59,000	Width (mm)	
Function	Scatter Mine	Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	122
HCC/CG		Weight, Propellant (g	0		

Description

The details of the rocket can be seen in the markings of the transit case, the model number of the Type 84 mine rocket delivery system is marked as 122-15 ATML (Anti-Tank Mine Laying)
Carries one Type 85 AT Mine.

Type 84 rocket

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;

Markings on rocket (top) and transit casing (bottom)

Type 84 Nose cone markings

Frag

OG-7V

Rocket; Frag

Origin Country	Russia	Tot. Weight (g)	2,000	Length (mm)	
Caliber	40mm	Weight, Projectile (g)	1,790	Width (mm)	
Function	Fragmentation	Weight, NEQ (g)	210	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	40
HCC/CG		Weight, Propellant (g	0		

Description

40mm fragmentation warhead for anti-personnel warfare (warhead is within caliber due to limitations of international treaties).

OG-7V

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-1 (RDX/wax)	210	Main Charge	

Sources;

HE

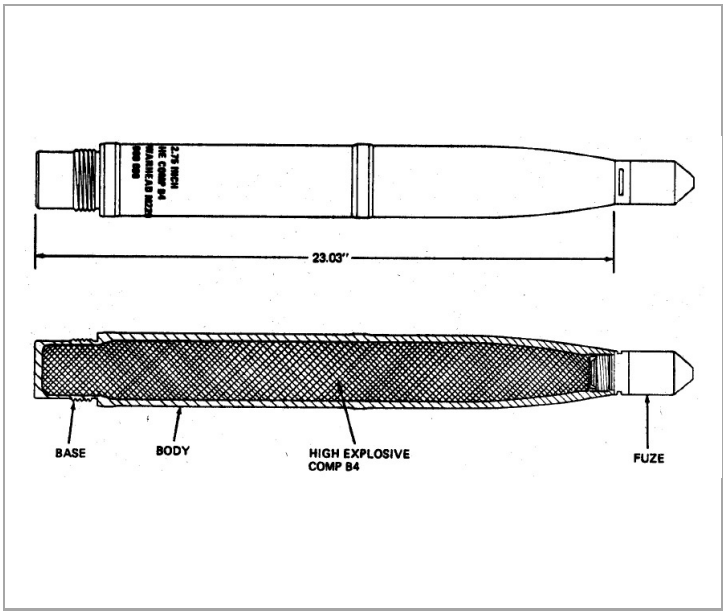
M229

Rocket; HE

Origin Country	USA	Tot. Weight (g)	8,210	Length (mm)	585
Caliber	70mm	Weight, Projectile (g)	6,030	Width (mm)	
Function		Weight, NEQ (g)	2,180	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	70
HCC/CG	E	Weight, Propellant (g	0		

Description

The 17 pound M229 uses 4.8 pounds of composition B-4 High Explosive. The performance of the M229 is roughly a 50 percent increase in lethal area over the M151. Temperature limits for storage and firing the M151 and M229 are -65 oF to +150 oF (-53.35 oC to +64.9 oC). Warhead to the Hydra system.



M229 (Hydra warhead)

Fuzes used in Ammunition

Fuze Name	Placement
M423	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
CompB (RDX/TNT)	2,180	Main Charge	

Sources;

Hydra-70 Rocket System Integration Information
ARMY AMMUNITION DATA SHEETS, TM 43-0001-30

M229 Rocket

HASEB

Rocket; HE

Origin Country	Iran	Tot. Weight (g)	4,800	Length (mm)	765
Caliber	107mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	1,300	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	107
HCC/CG		Weight, Propellant (g	3,500		

Description

Iranian copy of 107mm Type 63 rockets.

HASEB 107mm rocket

Fuzes used in Ammunition

Fuze Name	Placement
MJ-1	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	1,300	Main Charge	

Sources;

HASEB HEI 107mm rocket

HASEB 107mm rocket on improvised laucher

HEAT

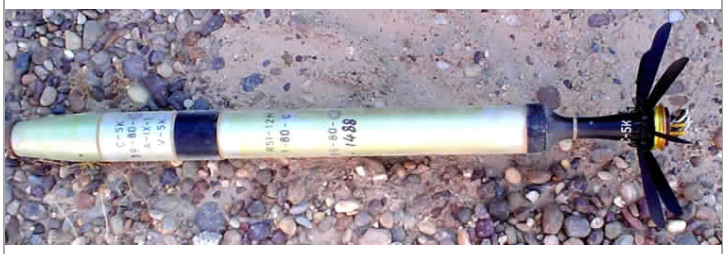
S-5K

Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	3,640	Length (mm)	874
Caliber	57mm	Weight, Projectile (g)	2,050	Width (mm)	
Function		Weight, NEQ (g)	1,590	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	57
HCC/CG		Weight, Propellant (g	0		

Description

The S-5K is an anti-tank/anti-armour rocket that has a steel-bodied penetrating warhead activated by a V-5K mechanical contact fuze and is credited with the ability to penetrate 100mm of armour plate. Its intended use is for fighter bombers and helicopters but many recent conflicts have seen improvised ground based firing platforms.



S-5K

Fuzes used in Ammunition

Fuze Name	Placement
V-5K	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	1,590	Main Charge	

Sources;

S-5K Warhead

S-5KPB

Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	5,010	Length (mm)	1,079
Caliber	57mm	Weight, Projectile (g)	5,010	Width (mm)	
Function	HEAT/Frag	Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	57
HCC/CG		Weight, Propellant (g	0		

Description

The S-5KPB is an anti-tank/anti-armour shaped charge rocket with a wound wire fragmentation jacket and sensitive piezoelectric impact fuze.
Identification and manufacturing information is stenciled in black on the fragmentation sleeve and the rocket motor.

S-5KPB

Fuzes used in Ammunition

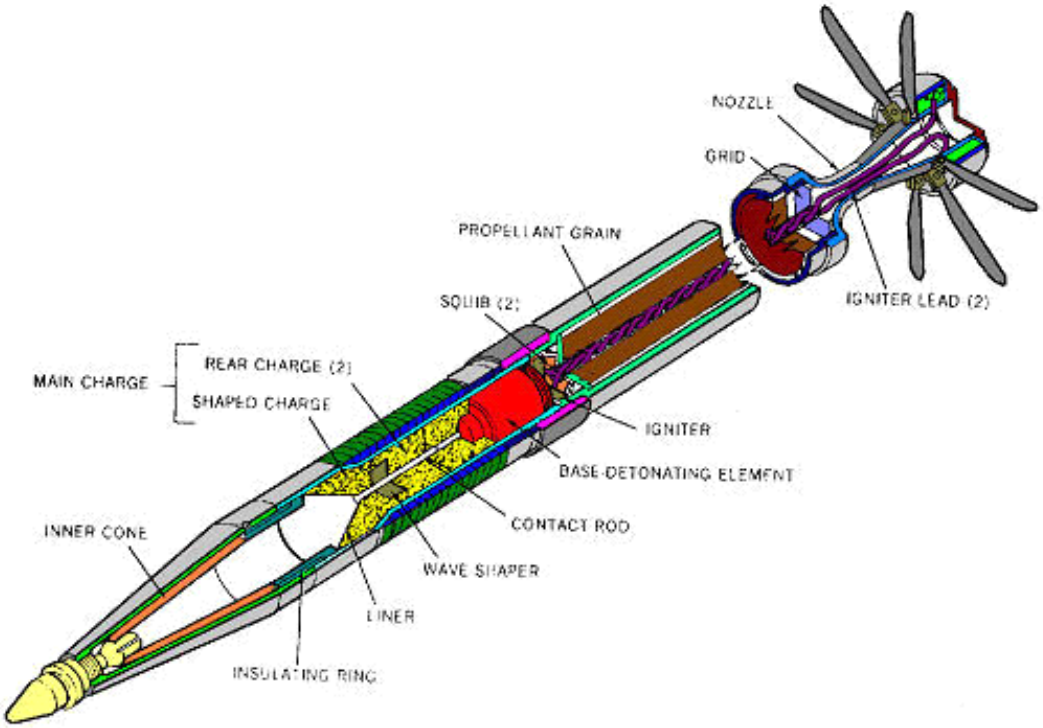
Fuze Name	Placement
V-5KP1	Nose/Base

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN		Main Charge	Unknown type and weight

Sources;

Improvised Employment of S-5 Air-to-Surface Rockets in Land Warfare



S-5KPB Diagram

S-5KPB

PG-16

Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	1,670	Length (mm)	686
Caliber	58mm	Weight, Projectile (g)	1,390	Width (mm)	
Function		Weight, NEQ (g)	280	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	58
HCC/CG		Weight, Propellant (g	0		

Description

This is a rocket-propelled, high-explosive antitank fin-stabilized with tracer (HEAT-FS-T) grenade.
The point-initiating base-detonating (PIBD) fuze consists of a piezoelectric crystal PI element, and a setback-armed PD element containing a self-destruct feature.
This RPG system uses a streamlined HEAT propelled grenade with a powerful HMX High Explosive filling to give an Anti Armour performance similar to that achieved by the 57mm S-5 HEAT and HEAT/fragmentation Air-to-Ground rockets.
The fuzing mechanism to the PG-16 grenade is similar to that used on the PG-7 series of HEAT grenades used with the RPG-7 launcher (ie. PIBD Piezo Electric) with self destruct mechanism.
The grenade has a booster charge which clips onto the grenade (sustainer) rocket motor. When the grenade is fired and leaves the launcher the sustainer motor is ignited and blows off the booster motor, which is ejected to the rear.
The Grenade has 6 spring out fins to stabilize it in flight, and two tracer elements.
RPG-16 antitank grenade launcher has been developed in late 1960s especially for Soviet airborne troops. Compared to the contemporary RPG-7, RPG-16 provided greater effective range and better accuracy, thanks to the smaller caliber warhead and more powerful rocket booster.
Adopted in 1970, RPG-16 was widely used during Soviet campaign in Afghanistan, mostly against hardened fire positions and buildings and from stand-off ranges.

PG-16

Fuzes used in Ammunition

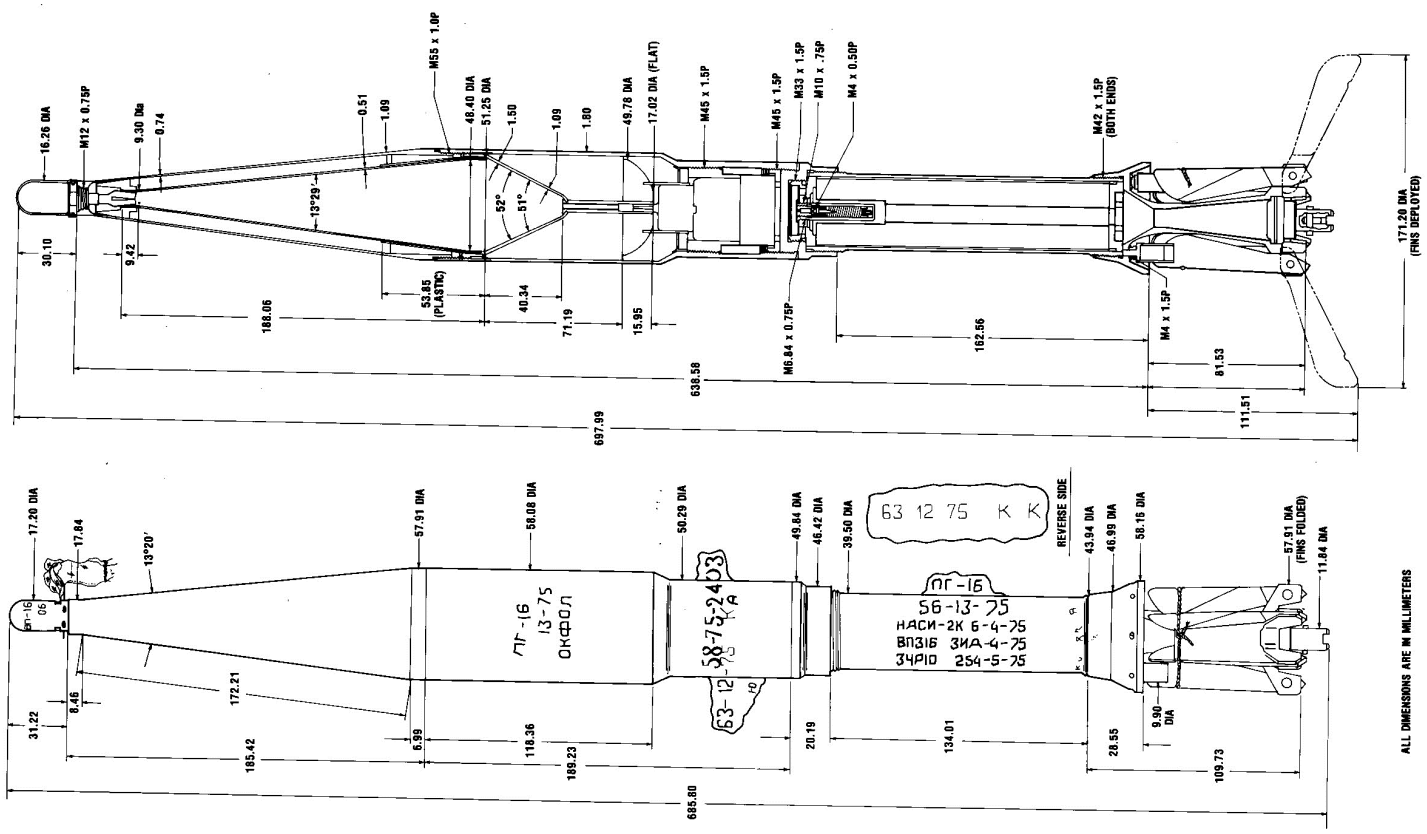
Fuze Name	Placement
UNKN. FUZE	Base

Explosives

Explosives	Weight (g)	Role	Remarks
HMX	280	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710
CAT UXO



PG-16 Diagram

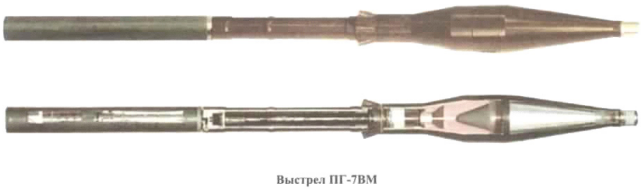
PG-7VM

Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	0	Length (mm)	675
Caliber	40mm	Weight, Projectile (g)	0	Width (mm)	
Function	HEAT	Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	70
HCC/CG		Weight, Propellant (g	0		

Description

After the RPG-7 rocket launcher and the PG-7V round were fielded in 1961, the Bazalt State Research and Production Enterprise continued improving them. As a result, in 1969 the PG-7V round was replaced with the upgraded PG-7VM, designed by V. I. Medvedev.
A more advanced shaped-charge warhead taken from the PG-9 round, fired by the SPG-9 recoilless gun, improved expelling charge and rocket motor, as well as a reduced weight: of the round have resulted in a significant increase in a number of its characteristics. For instance, despite a reduction in the calibre from 85 to 70 mm. its armour penetration increased from 260 to 300 mm. Improved expelling charge and rocket motor have significantly reduced the side wind-caused cross-trail (1.5-fold). The accuracy of fire has also been improved by 20-25%. At the same time it is worth mentioning that simultaneously with improving basic specifications, designers decreased the weight of the round from 2.2 to 2.0 kg.



PG-7VM

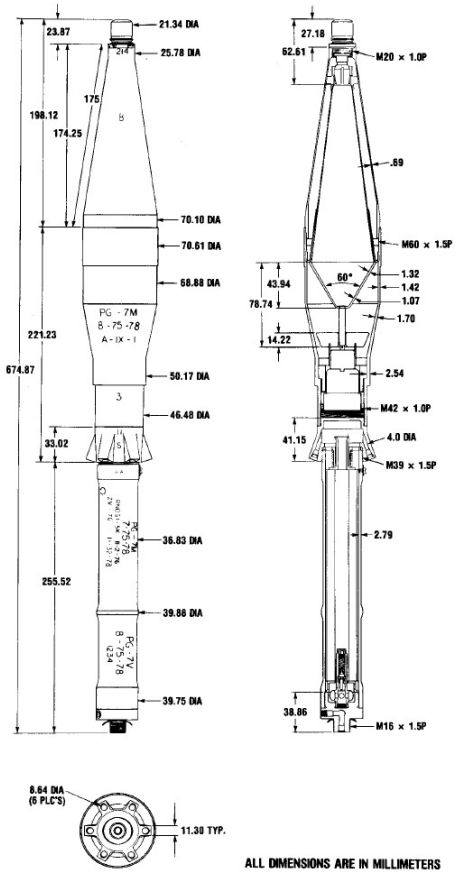
Fuzes used in Ammunition

Fuze Name	Placement
VP-7	

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-1 (RDX/wax)	314	Main Charge	

Sources;



PG-7VM Diagram

RPG-26

Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	1,710	Length (mm)	625
Caliber	73mm	Weight, Projectile (g)	1,150	Width (mm)	
Function		Weight, NEQ (g)	420	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	73
HCC/CG		Weight, Propellant (g	140		

Description

Rocket for the disposable anti-tank rocket launcher RPG-26. The rocket is fin-stabilized (with four switch-blade like fins at the rear), and its solid-propellant motor burns out completely while rocket is still in the barrel, accelerating it to about 144 m/s.

A variant of the RPG-26 called the RShG-2 is armed with a thermobaric warhead.

Fuze: VP-16GCh

RPG-26 Rocket

Fuzes used in Ammunition

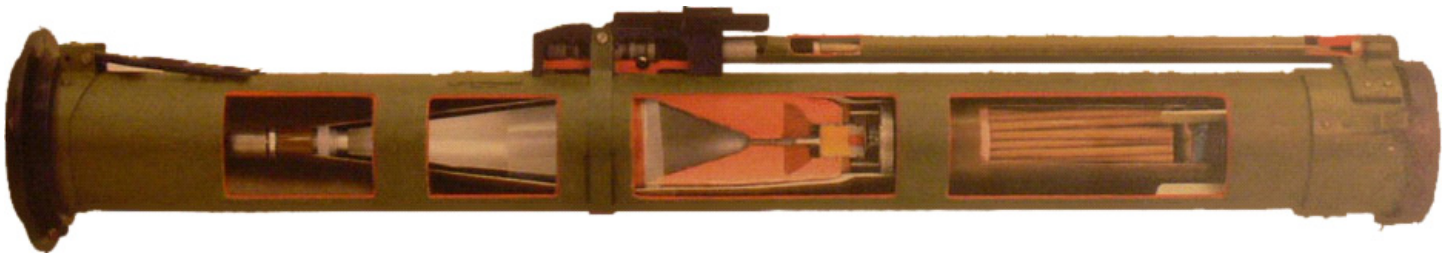
Fuze Name	Placement
UNKN. FUZE	Base

Explosives

Explosives	Weight (g)	Role	Remarks
HMX	420	Main Charge	

Sources;

RPG-26 Rocket



RPG-26 Launcher cut through

PG-9V

Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	2,600	Length (mm)	920
Caliber	73mm	Weight, Projectile (g)	2,278	Width (mm)	
Function		Weight, NEQ (g)	322	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	73
HCC/CG		Weight, Propellant (g	0		

Description

Standard rocket for SPG-9 Recoilless gun.

PG-9

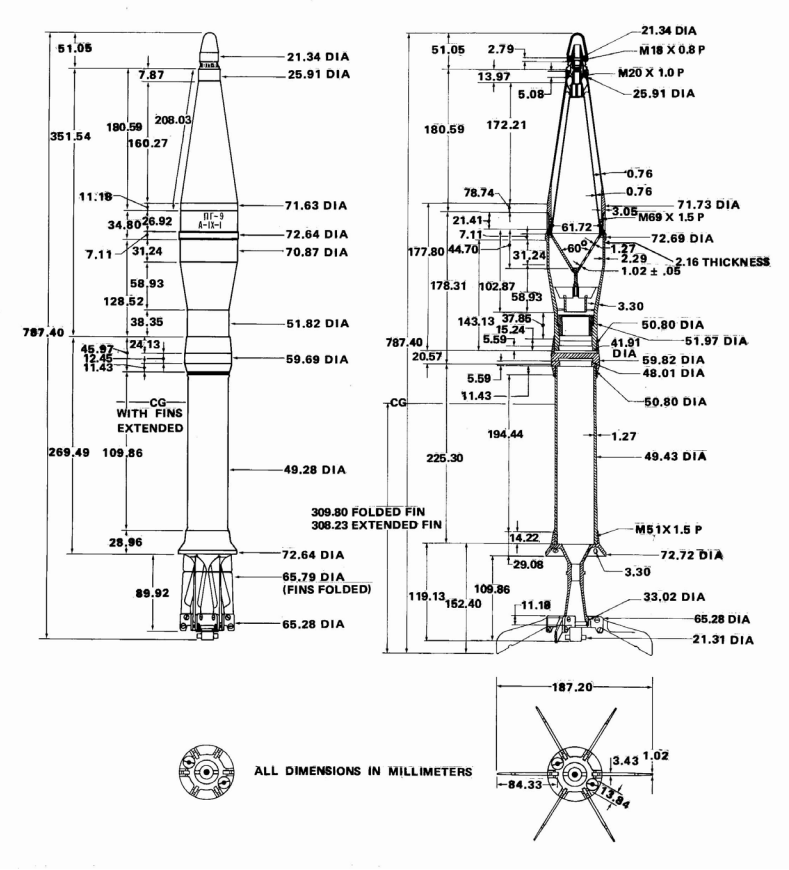
Fuzes used in Ammunition

Fuze Name	Placement
VP-9	

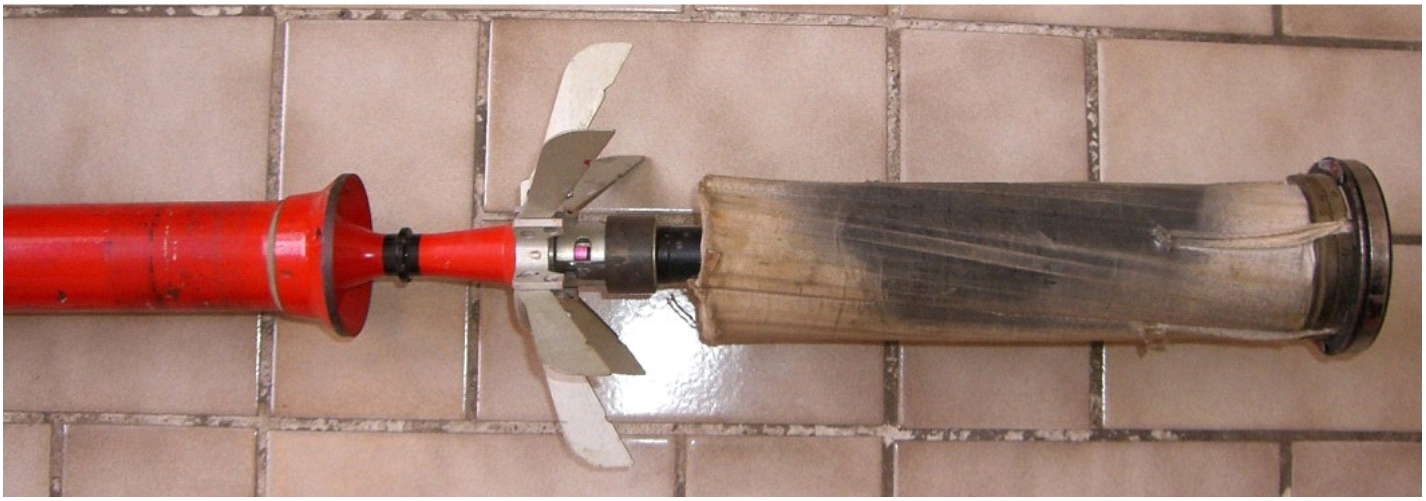
Explosives

Explosives	Weight (g)	Role	Remarks
RDX	322	Main Charge	

Sources;



PG-9



PG-9V (with propellant charge), red color indicates training munition

PG-2

Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	1,800	Length (mm)	670
Caliber	40mm	Weight, Projectile (g)	1,230	Width (mm)	
Function	HEAT	Weight, NEQ (g)	570	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	80
HCC/CG		Weight, Propellant (g	0		

Description

Only one type of grenade, the PG-2 HEAT (High Explosive Anti-Tank), was used in the RPG-2. The propellant, consisting of granulated powder was in a rolled cardboard case treated with wax that had to be attached to the grenade before loading. Once attached to the propellant charge the grenade was inserted into the smooth-bore launcher from the front. A tab on the body of the grenade indexes in a notch cut in the tube so that the primer in the propelling charge aligns with the firing pin and hammer mechanism.

PG-2

Fuzes used in Ammunition

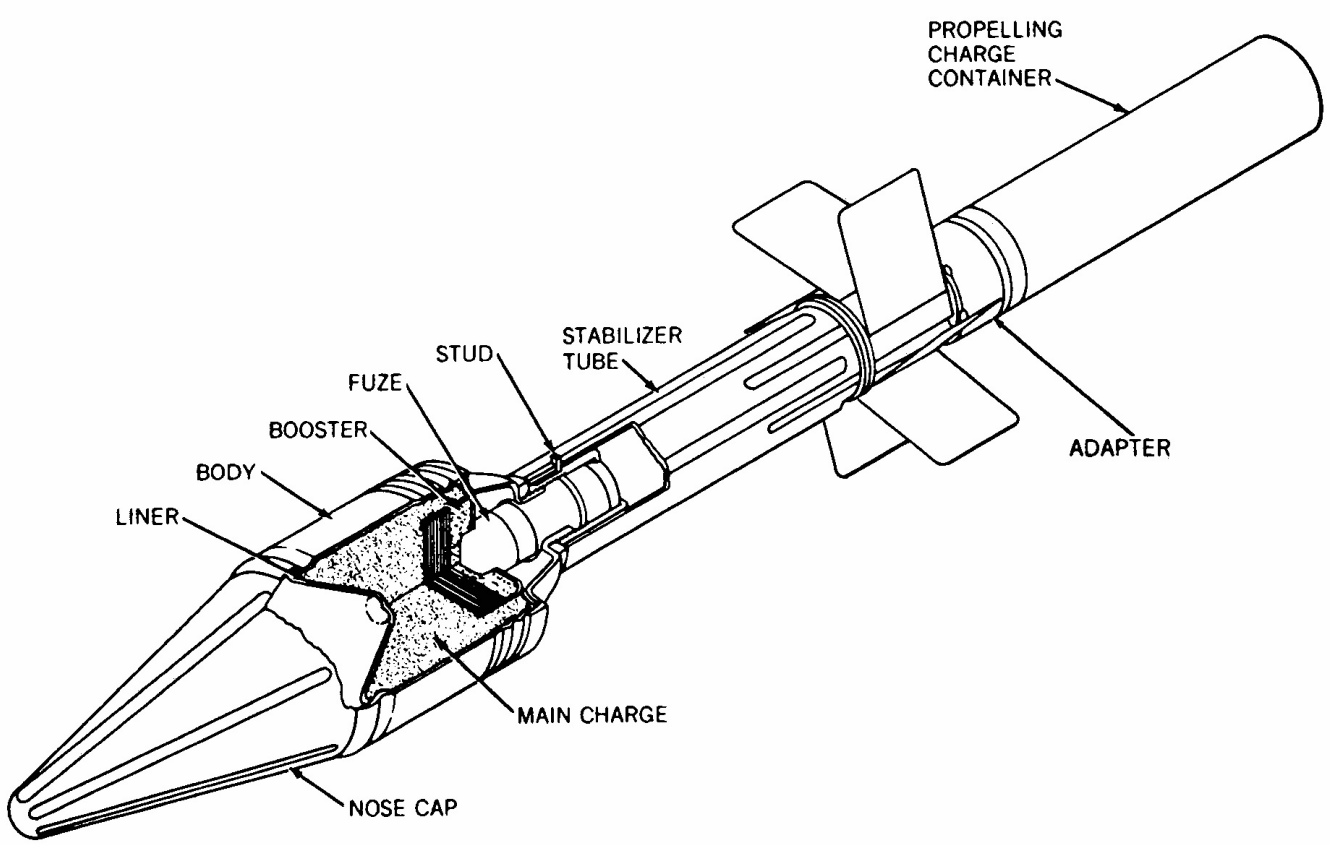
Fuze Name	Placement
DK-4	Base

Explosives

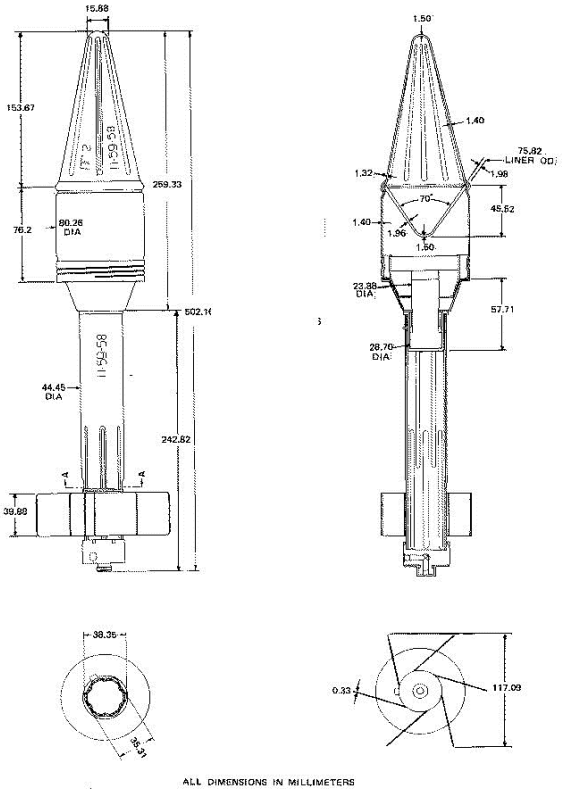
Explosives	Weight (g)	Role	Remarks
RDX/TNT	570	Main Charge	

Sources;

Projectile and Warhead Identification Guide - Foreign, # RB97-5710


PROPELLING
CHARGE
CONTAINER
STABILIZER
TUBE
STUD
FUZE
BOOSTER
BODY
LINER
ADAPTER
MAIN CHARGE
NOSE CAP

PG-2


15.88
153.67
259.33
76.2
80.26
DIA
502.14
44.45
DIA
242.82
39.88
1.50
1.40
75.82
LINER OD
1.32
1.98
70°
45.62
1.40
1.96
1.50
23.98
DIA
57.71
28.70
DIA
38.35
0.33
117.09
ALL DIMENSIONS IN MILLIMETERS

PG-2

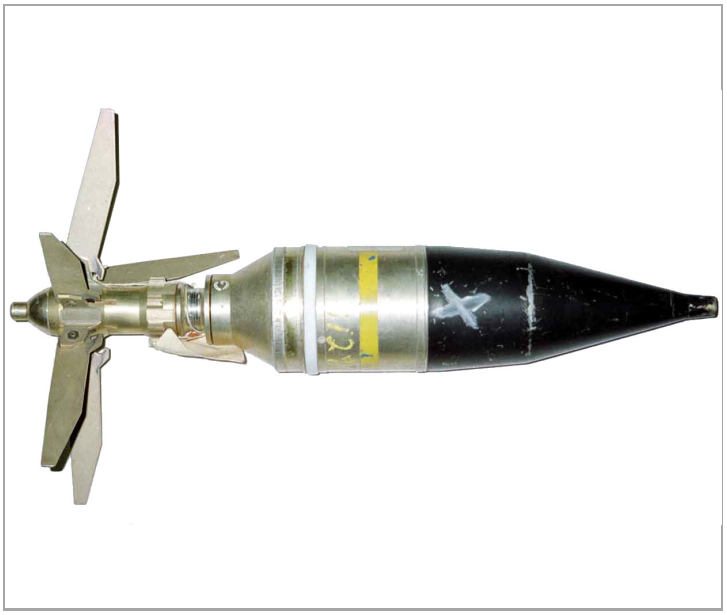
AT-4 HEAT

Rocket; HEAT

Origin Country	Sweden	Tot. Weight (g)	1,800	Length (mm)	460
Caliber	84mm	Weight, Projectile (g)	988	Width (mm)	
Function		Weight, NEQ (g)	457	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	84
HCC/CG		Weight, Propellant (g	355		

Description

The M136 AT4 is a lightweight, self-contained, antiarmor weapon. It consists of a freeflight, fin-stabilized, rocket-type cartridge packed in an expendable, one-piece, fiberglass-wrapped tube.



AT-4 rocket

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Base

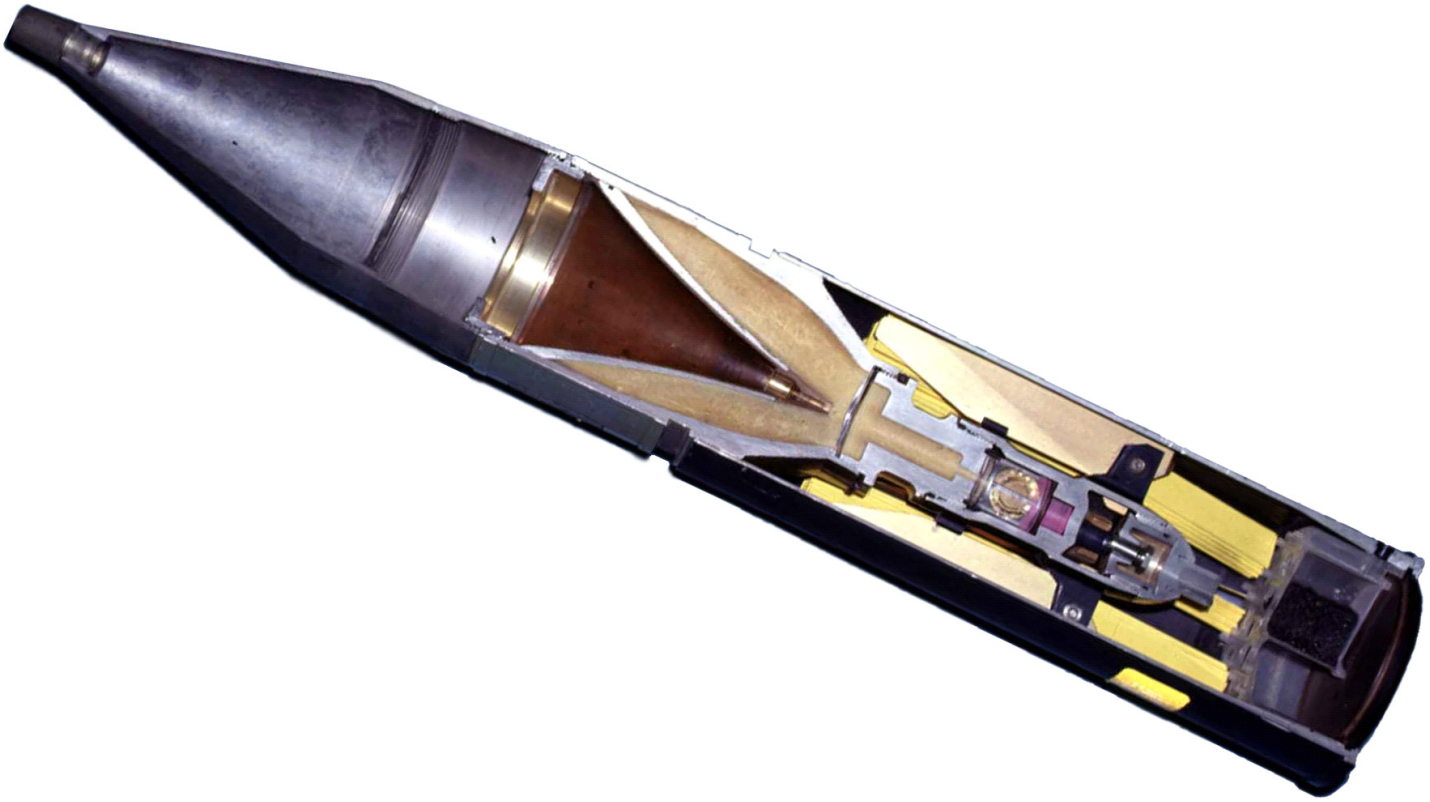
Explosives

Explosives	Weight (g)	Role	Remarks
Octol (HMX/TNT)	440	Main Charge	
RDX	17	Secondary Charge	

Sources;

LIGHT ANTIARMOR WEAPONS, FM 3-23-25

AT-4 Rocket with launcher.



AT-4 rocket Cut through

PG-7V

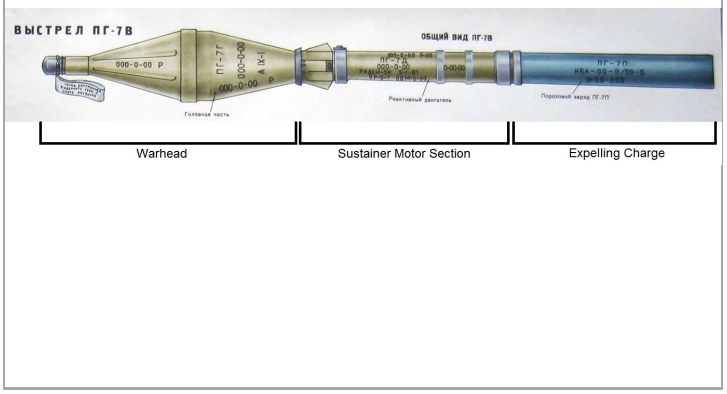
Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	455	Length (mm)	825
Caliber	40/85mm	Weight, Projectile (g)	0	Width (mm)	
Function	HEAT	Weight, NEQ (g)	455	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	85
HCC/CG		Weight, Propellant (g	0		

Description

The standard rocket for the RPG-7.

Versions: PG-7G (includes a tracer element)



PG-7V

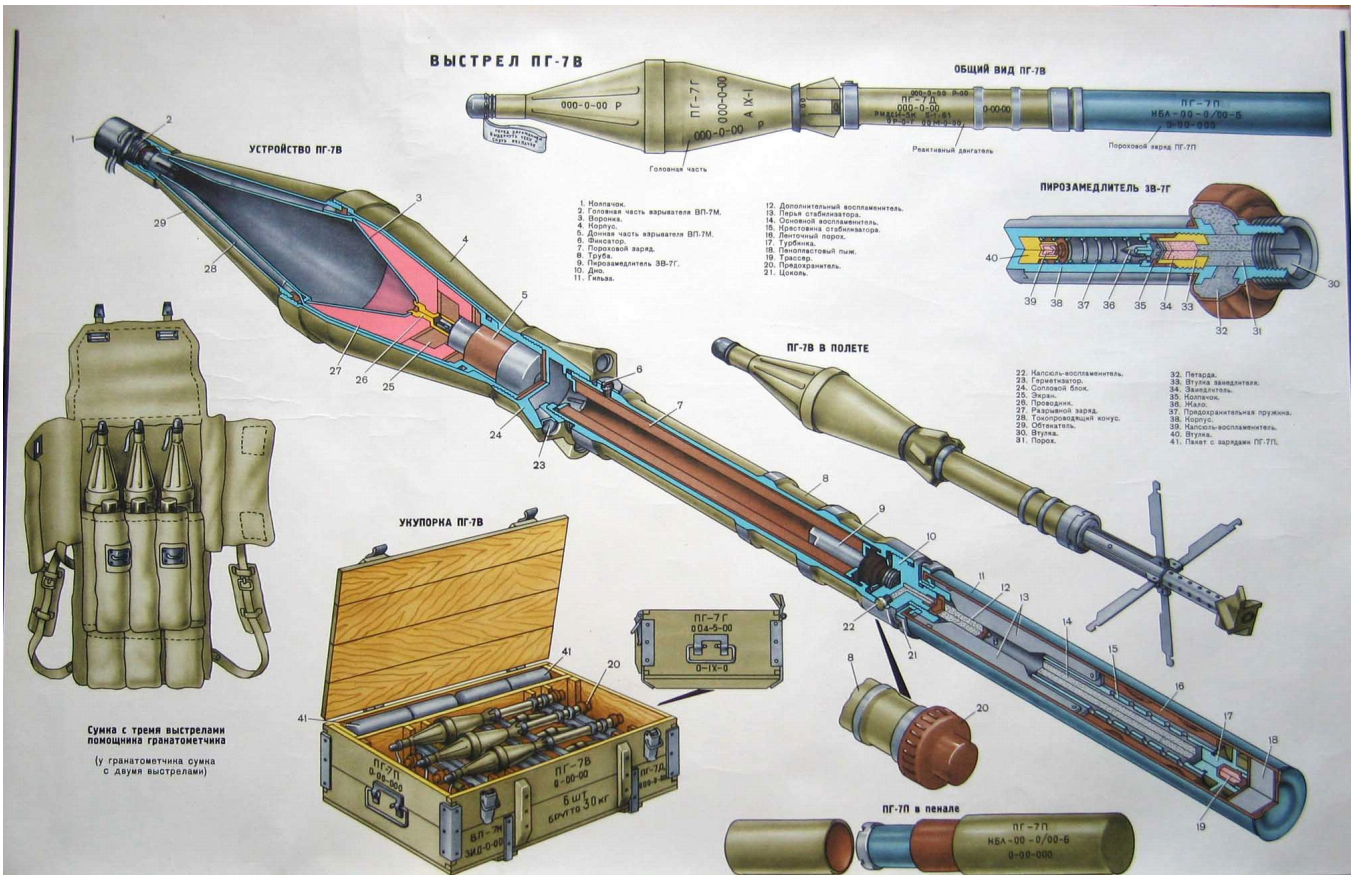
Fuzes used in Ammunition

Fuze Name	Placement
VP-7	

Explosives

Explosives	Weight (g)	Role	Remarks
A-IX-1 (RDX/wax)	455	Main Charge	

Sources;


ВЫСТРЕЛ ПГ-7В
ОБЩИЙ ВИД ПГ-7В
Головная часть
Реактивный двигатель
Пороховой заряд ПГ-7П
УСТРОЙСТВО ПГ-7В
ПИРОЗАМЕДЛИТЕЛЬ ЗВ-7Г
ПГ-7В В ПОЛЕТЕ
УКУПОРКА ПГ-7В
Сумка с тремя выстрелами помощника гранатометчика
(у гранатометчика сумка с двумя выстрелами)
ПГ-7П в пенале

PG-7V

M28A2

Rocket; HEAT

Origin Country	USA	Tot. Weight (g)	4,082	Length (mm)	598
Caliber	89mm	Weight, Projectile (g)	3,030	Width (mm)	
Function		Weight, NEQ (g)	854	Height (mm)	
HCC/HD	1.1	Weight, Cartridge (g)	0	Diameter (mm)	89
HCC/CG	E	Weight, Propellant (g	198		

Description

The M28A2 is a ground-fired fixed-fin rocket, which use a setback-armed, base-detonating (BD), nondelay, impact-inertia-fired fuzes, and a high-explosive antitank (HEAT) shaped-charge warhead.
The rockets are painted olive drab or black, and have the designation and loading information stamped in the body.

M28A2

Fuzes used in Ammunition

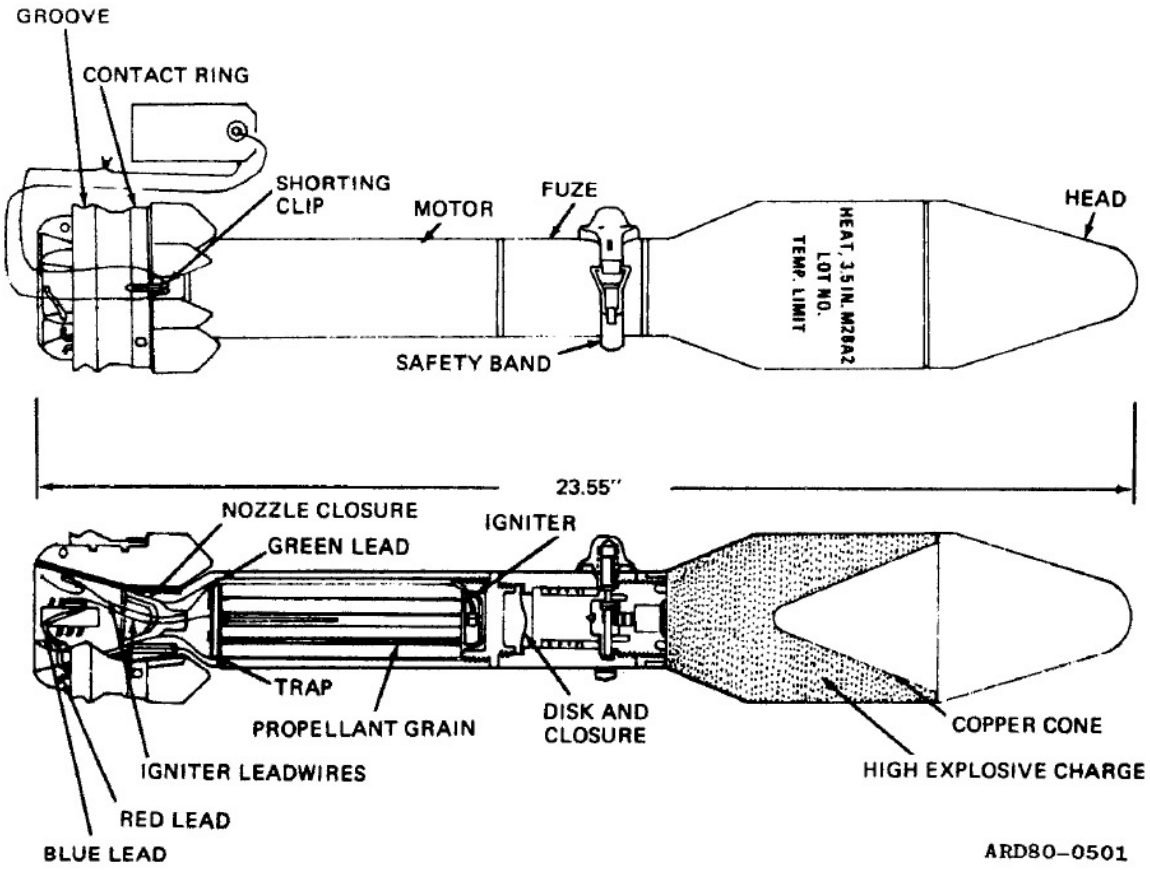
Fuze Name	Placement
UNKN. FUZE	Base

Explosives

Explosives	Weight (g)	Role	Remarks
RDX/TNT	854	Main Charge	

Sources;
ARMY AMMUNITION DATA SHEETS, TM 43-0001-30

UK version of M28A2



M28A2 Diagram

M79

Rocket; HEAT

Origin Country	Former Yugoslavia	Tot. Weight (g)	3,500	Length (mm)	672
Caliber	90mm	Weight, Projectile (g)	3,500	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	90
HCC/CG		Weight, Propellant (g	0		

Description

UNKNOWN EXPLOSIVE WEIGHT/TYPE

M79 Rocket

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Base

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	0	Main Charge	UNKNOWN EXPLOSIVE WEIGHT

Sources;

M79 Rocket (ERW, Damaged warhead)

M79 Rocket containers

PG-7VL

Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	730	Length (mm)	
Caliber	40mm	Weight, Projectile (g)	0	Width (mm)	
Function	HEAT	Weight, NEQ (g)	730	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	93
HCC/CG		Weight, Propellant (g	0		

Description

Improved 93 mm HEAT warhead effective against most vehicles and fortified targets. Replaces the earlier 85mm PG-7V HEAT warhead.

PG-7VL

Fuzes used in Ammunition

Fuze Name	Placement
VP-7	

Explosives

Explosives	Weight (g)	Role	Remarks
Okfol (HMX/wax)	730	Main Charge	

Sources;

PG-7VR

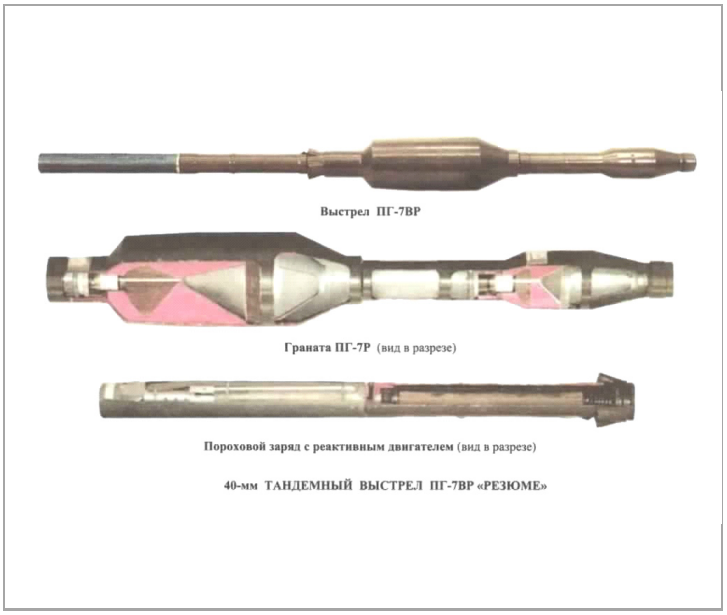
Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	1,430	Length (mm)	
Caliber	40mm	Weight, Projectile (g)	0	Width (mm)	
Function	Tandem HEAT	Weight, NEQ (g)	1,430	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	105
HCC/CG		Weight, Propellant (g	0		

Description

The PG-7VR is a tandem charge RPG warhead designed to penetrate up to 750 mm rolled homogeneous armour equivalence of explosive reactive armor and the conventional armor underneath. It is also capable of penetrating two metres of brick or 1.5m of reinforced concrete; this is the normal penetration of the main charge.

It was designed in 1988 by the Soviet Union weapons company Bazalt and based on the RPG-7 but modified to penetrate explosive reactive armour. The small precursor charge at the tip of the rocket is designed to hit the reactive armour before the main charge and detonate it. The reactive armour plate should deploy, exploding and disrupting the precursor charge's HEAT jet. As reactive armor is single usage only, this renders that particular block of reactive armor useless and unable to protect against the much larger and more powerful main shaped charge, which follows immediately behind. The main charge (filled with 1.43kg OKFOL) then explodes in the unprotected part of the target.



PG-7VR

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
Okfol (HMX/wax)	1,430	Main Charge	

Sources;

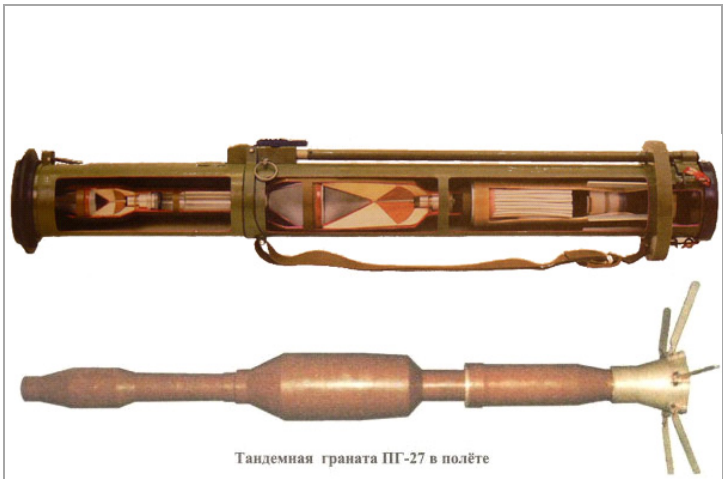
RPG-27

Rocket; HEAT

Origin Country	Russia	Tot. Weight (g)	4,500	Length (mm)	1,135
Caliber	105mm	Weight, Projectile (g)	4,500	Width (mm)	
Function	Tandem HEAT	Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	105
HCC/CG		Weight, Propellant (g	0		

Description

The RPG-27 shares a close resemblance with the previous RPG-26 in that it is a man-portable, disposable anti-tank rocket launcher with a single shot capacity. The RPG-27 has a larger diameter round than the RPG-26 which enables the RPG-27 to achieve higher armour penetration performance. The RPG-27 fin stabilised round is a 105 mm tandem-charge HEAT warhead with a range of 200 meters. The round has a stated penetration capability in excess of 600 mm of RHA (after ERA) and 1500 mm of brick or concrete and 3700 mm of earth. The RShG-1 is very similar in operation to the RPG-27 but carries a thermobaric warhead with a lethal radius of 10 meters and a larger range of 600 meters.



RPG-27, launcher and rocket

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
HMX	0	Main Charge	Unknown amount

Sources;

FFV-597

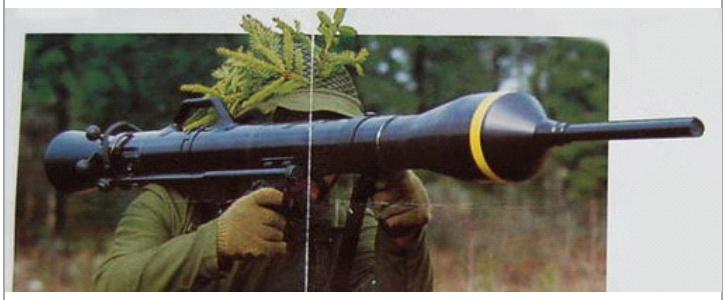
Rocket; HEAT

Origin Country	Sweden	Tot. Weight (g)	7,000	Length (mm)	
Caliber	84mm	Weight, Projectile (g)	7,000	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	132
HCC/CG		Weight, Propellant (g	0		

Description

Projectile used for the Carl Gustav recoilless rifle.
The FFV-597 HEAT uses a much larger warhead than the standard FFV-551.

UNKNOWN EXPLOSIVE/WEIGHT
UNKNOWN FUZE



FFV-597 loaded into Carl Gustav recoilless rifle.

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;

HE-Frag

S-5KO

Rocket; HE-Frag

Origin Country	Russia	Tot. Weight (g)	4,500	Length (mm)	914
Caliber	57mm	Weight, Projectile (g)	2,500	Width (mm)	
Function	HEAT-Frag	Weight, NEQ (g)	2,000	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	57
HCC/CG		Weight, Propellant (g	0		

Description

The S-5KO is also an anti-tank/anti-armour rocket but with an added fragmentation Warhead with 10 notched steel rings creating 220 fragments. The penetrating/fragmentation warhead is activated by a V-5K mechanical contact fuze and is credited with the ability to penetrate 120mm of armour plate.

S-5KO

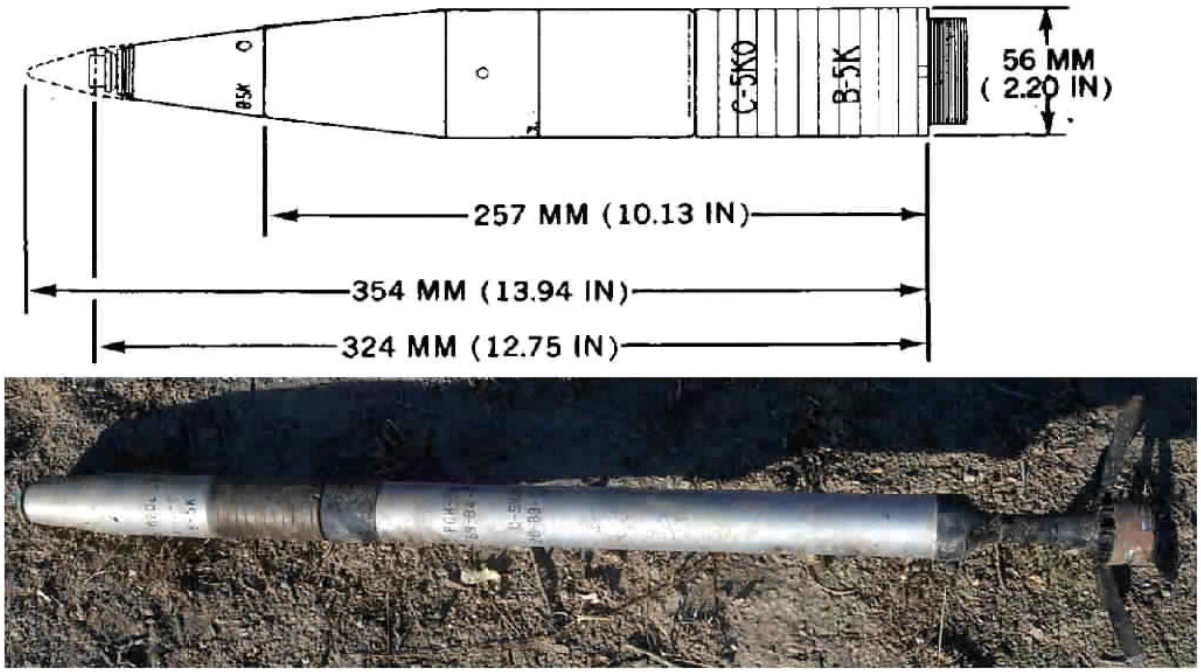
Fuzes used in Ammunition

Fuze Name	Placement
V-5K	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	2,000	Main Charge	

Sources;



S-5KO

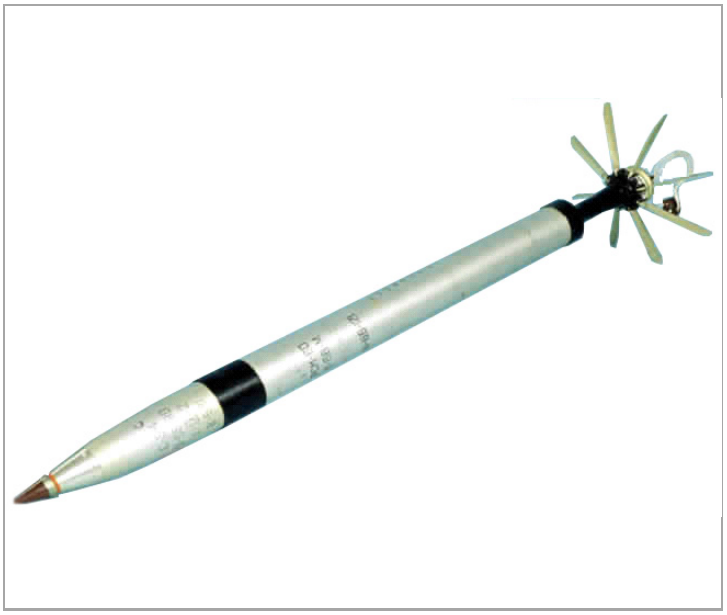
S-5M

Rocket; HE-Frag

Origin Country	Russia	Tot. Weight (g)	3,960	Length (mm)	668
Caliber	57mm	Weight, Projectile (g)	2,570	Width (mm)	
Function	Air-to-Surface	Weight, NEQ (g)	1,390	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	57
HCC/CG		Weight, Propellant (g	0		

Description

This family of air-to-surface rockets, designated S-5 (first designated ARS-57), was developed to provide the Russian, Bulgarian and Romanian armed forces with a series of different rockets to cover a range of ground attack applications. The S-5 is a conventional unguided rocket, comprising a warhead, a solid-propellant motor and eight flip-out tailfins for stability.The fins fold around the rocket when it is stowed in its launch tube, springing back as soon as it leaves the launch tube. The S-5 is a 55mm calibre unguided rocket fired from a 57mm calibre tube. The S-5M is a high explosive, fragmentation rocket used by aircraft against other aircraft in an air-to-air role or against lightly armoured vehicles, installations, material or personnel in an air-to-ground role and produces 75 splinters. Its intended use is for fighter bombers and helicopters but many recent conflicts have seen improvised ground based firing platforms.



S-5M

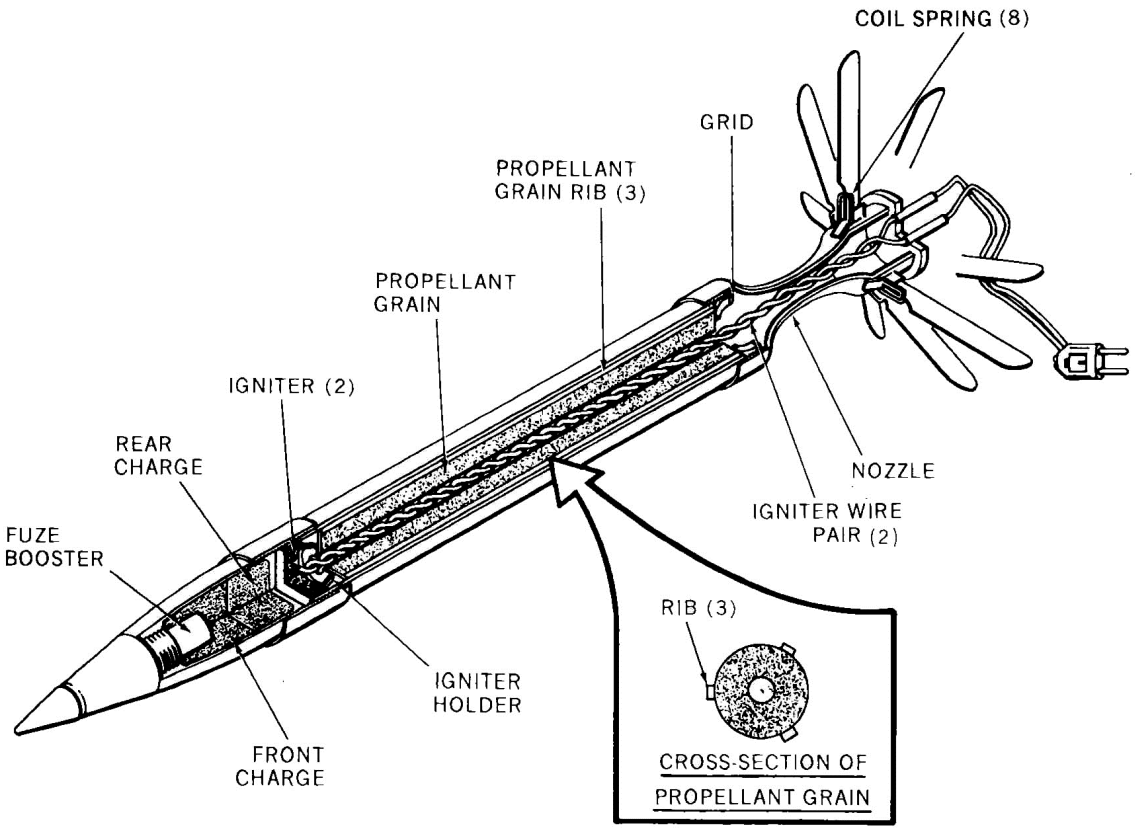
Fuzes used in Ammunition

Fuze Name	Placement
V-5M1	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	1,390	Main Charge	UNKNOWN FILLING

Sources;


COIL SPRING (8)
GRID
PROPELLANT GRAIN RIB (3)
PROPELLANT GRAIN
IGNITER (2)
REAR CHARGE
FUZE BOOSTER
NOZZLE
IGNITER WIRE PAIR (2)
RIB (3)
IGNITER HOLDER
FRONT CHARGE
CROSS-SECTION OF PROPELLANT GRAIN

S-5M

Type 63-2

Rocket; HE-Frag

Origin Country	China	Tot. Weight (g)	18,837	Length (mm)	760
Caliber	107mm	Weight, Projectile (g)	14,077	Width (mm)	
Function		Weight, NEQ (g)	1,260	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	107
HCC/CG		Weight, Propellant (g	3,500		

Description

107 mm artillery rockets were originally developed during the late 1950s by NORINCO and have been exported widely, usually in association with the towed Type 63 12-tube launcher.
NORINCO 107 mm artillery rockets, often referred to as Type 63 rockets, are spin-stabilised by seven venturi in the base to generate a maximum spin rate of 22,000 rpm (366 rps).
They were originally manufactured in two main versions, HE and Incendiary, although updated versions of these have since been produced along with some special purpose rockets.
The Type 63-II HE version is 841 mm long, with a cast-iron warhead weighing 8.33 kg, 1.26 kg of which is the TNT main charge.
This is detonated by a Jiàn-1 point detonating fuze (also referred to as the MJ-1 and a modified version of the Russian V-25), which has optional graze and delayed action functions; proximity fuzes may also be employed.
On detonation, the warhead produces approximately 1,214 fragments spread over a lethal radius of 12.5 m.
Maximum range is 8,500 m and total weight 18.837 kg.
Maximum velocity is 372 m/s after a launch velocity of 32 m/s, with a maximum spin rate of 22,000 rpm.
At maximum range 80 per cent of rockets will fall within an area measuring 150x200 m.

Type 63-2

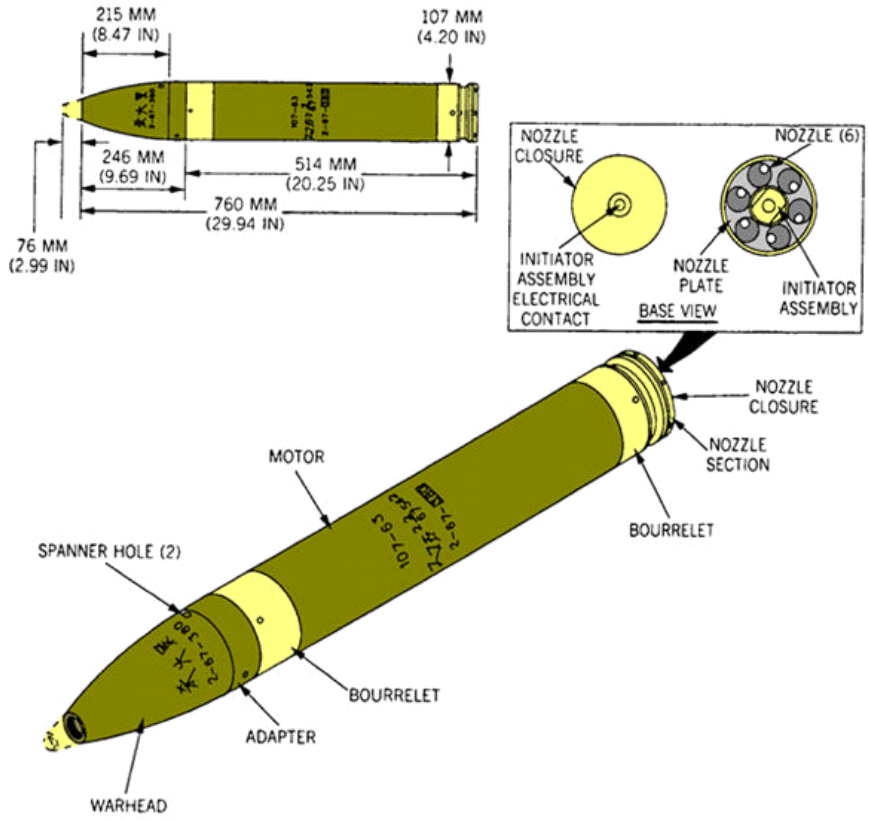
Fuzes used in Ammunition

Fuze Name	Placement
MJ-1	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	1,260	Main Charge	

Sources;



Type 63-2 Diagram

Type 63-2

9M22

Rocket; HE-Frag

Origin Country	Russia	Tot. Weight (g)	26,900	Length (mm)	2,700
Caliber	122mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	6,400	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	122
HCC/CG		Weight, Propellant (g	20,500		

Description

Commonly called Grad rocket (from the launch vehicle BM-21 'Grad')
The 9M22U is an electrically initiated, surface to surface, fin stabilised rocket using an M-21OF or M-21OFM high explosive fragmentation warhead (the WH differ only in the type of HE). The WH is painted light or dark grey and the rocket motor is painted light or silver grey. All markings are black, with the exception of a red stamp symbol 9 on the forward portion of the rocket motor. The folding fins are aluminium (9M22U) or steel (9M22M), the nose plug is plastic. The closure plate is plastic and steel and the remainder of the rocket is steel.The 9M22U rocket may have an optional spoiler ring, either 90 or 112mm (3.5 or 4.4in) in diameter in the circumferential groove and held in place by a snapring. The 9M22M has only been observed with the larger ring. When installed the spoiler ring decreases the range and dispersion of the rockets. The igniter leads of the 9M22U electrically connect the igniter to the closure plate and the nozzle block. The leads extend from the igniter retainer and are routed through the lower propellant grain and the centre hole of the nozzle block. One lead is attached to a nozzle block screw and the other to the closure plate contact screw. The closure plate contract screw attaches the igniter lead to a metal strip moulded into the outer surface of the closure plate. The metal strip covers one-third of the plate rim. It extends across the top and to the centre of the closure plate, where it is attached to the internally mounted contact screw.

9M22

Fuzes used in Ammunition

Fuze Name	Placement
MRV-U	Nose

Explosives

Explosives	Weight (g)	Role	Remarks
TGAF-5 (RDX/TNT/AL)	6,400	Main Charge	

Sources;

9M22 Warheads

S-24B

Rocket; HE-Frag

Origin Country	Russia	Tot. Weight (g)	232,000	Length (mm)	2,120
Caliber	240mm	Weight, Projectile (g)	107,000	Width (mm)	
Function		Weight, NEQ (g)	125,000	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	240
HCC/CG		Weight, Propellant (g	0		

Description

The S-24B is a very large, powerful unguided weapon and one of a handful of successors to the earlier world war II era BETAB-750DS rockets.
The engine consists of seven solid-rocket cartridges which exhaust into a star-shaped array of seven nozzles. The nozzles are slightly tilted as to impart spin on the rocket. If one cartridge fails to start, the rocket will still function.

A S-24B on display at MAKS Airshow 2009.

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks
TNT	125,000	Main Charge	

Sources;

S-24B on pylon.

SAA

HMG

12.7x108mm

SAA; HMG

Origin Country	Russia	Tot. Weight (g)	0	Length (mm)	148
Caliber	12.7mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	13
HCC/CG		Weight, Propellant (g	0		

Description

The 12.7x108 mm cartridge is a heavy machine gun and anti-materiel rifle cartridge used by the former Soviet Union, the former Warsaw Pact, modern Russia, and other countries.

12.7x108mm

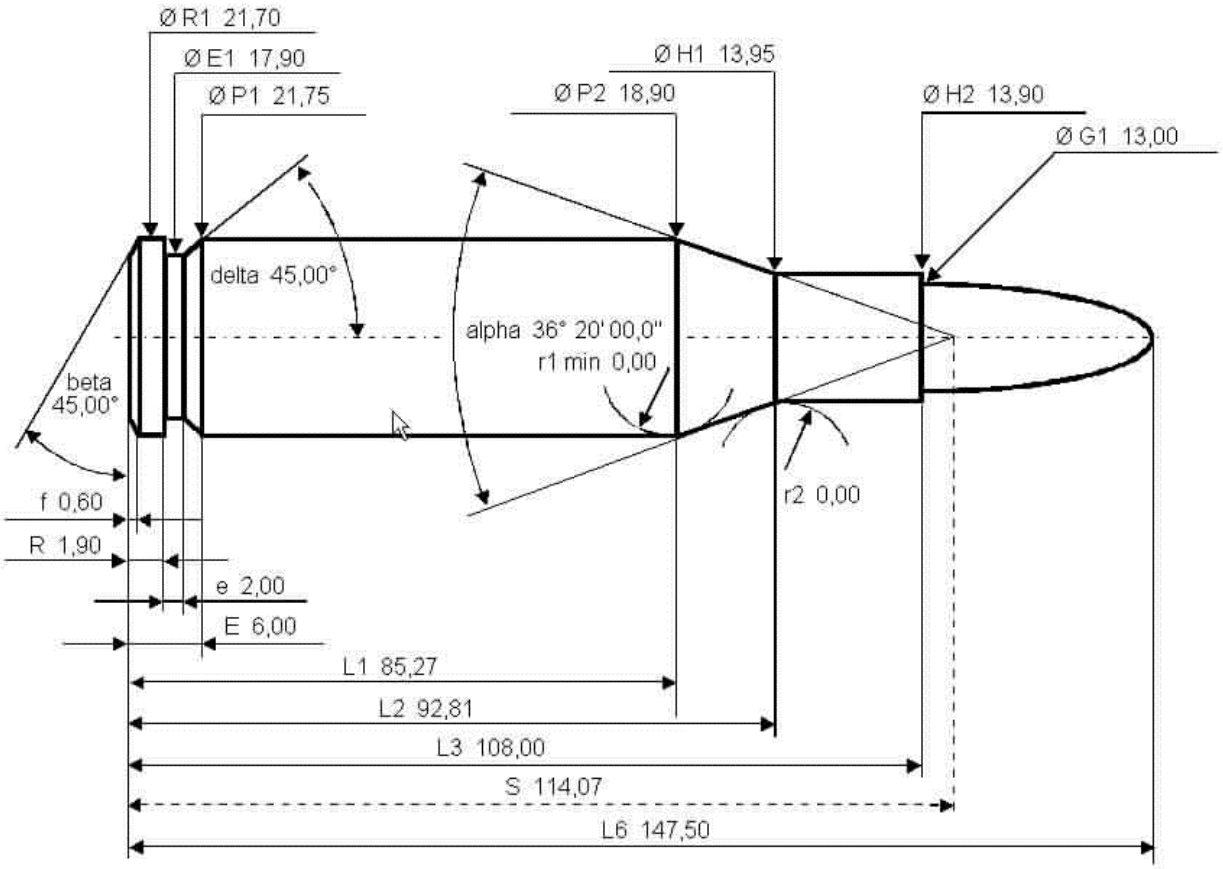
Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;



12.7x108mm. All dimensions in millimeters (mm)

14.5x114mm

SAA; HMG

Origin Country	Russia	Tot. Weight (g)	0	Length (mm)	156
Caliber	14.5mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	15
HCC/CG		Weight, Propellant (g	0		

Description

BS: Armor-piercing incendiary original anti-tank round. The projectile weighs 64.4 grams and is 51 millimeters long with a 38.7 gram core of tungsten carbide with 1.8 grams of incendiary material in the tip. The overall round weighs approximately 200 grams and is 155 millimeters long. The projectile has a muzzle velocity of approximately 1,006 meters per second and can penetrate 40 millimeters of steel at an incidence of 60 degrees at a range of 100 meters, or 32 millimeters at a range of 500 meters.
B-32: Armor-piercing incendiary full metal jacket round with a hardened steel core. Projectile weight is 64 g and muzzle velocity is 1006 m/s. Armour penetration at 500 m is 32 mm of RHA at 90 degrees.
BZT: Armor-piercing incendiary tracer full metal jacket round with a steel core. Projectile weight is 59.56 g and muzzle velocity is 1,006 m/s. Tracer burns to at least 2,000 m.
MDZ: High-explosive incendiary bullet of instant action. Projectile weight is 59.68 g.
ZP: Incendiary tracer round

Dummy round
Cartridges use lacquered steel cases and a percussion primer. Some countries also use brass cartridge cases. The propellant consists of 28.8 g smokeless powder with seven tubes, designated as 5/7NA powder. Two different versions of bullet series are known, the earlier had a conventional bullet jacket with boat-tail. These had a long engraving portion that caused considerable barrel wear. The newer bullet types have a smaller engraving portion with a rounder boat-tail and were used from about 1957 on.

14.5x114mm ammunition has been manufactured in Bulgaria, China, Egypt, Hungary, Iraq, North Korea, Poland, Romania, Russia, and the former Czechoslovakia. Of special note are

14.5x114mm

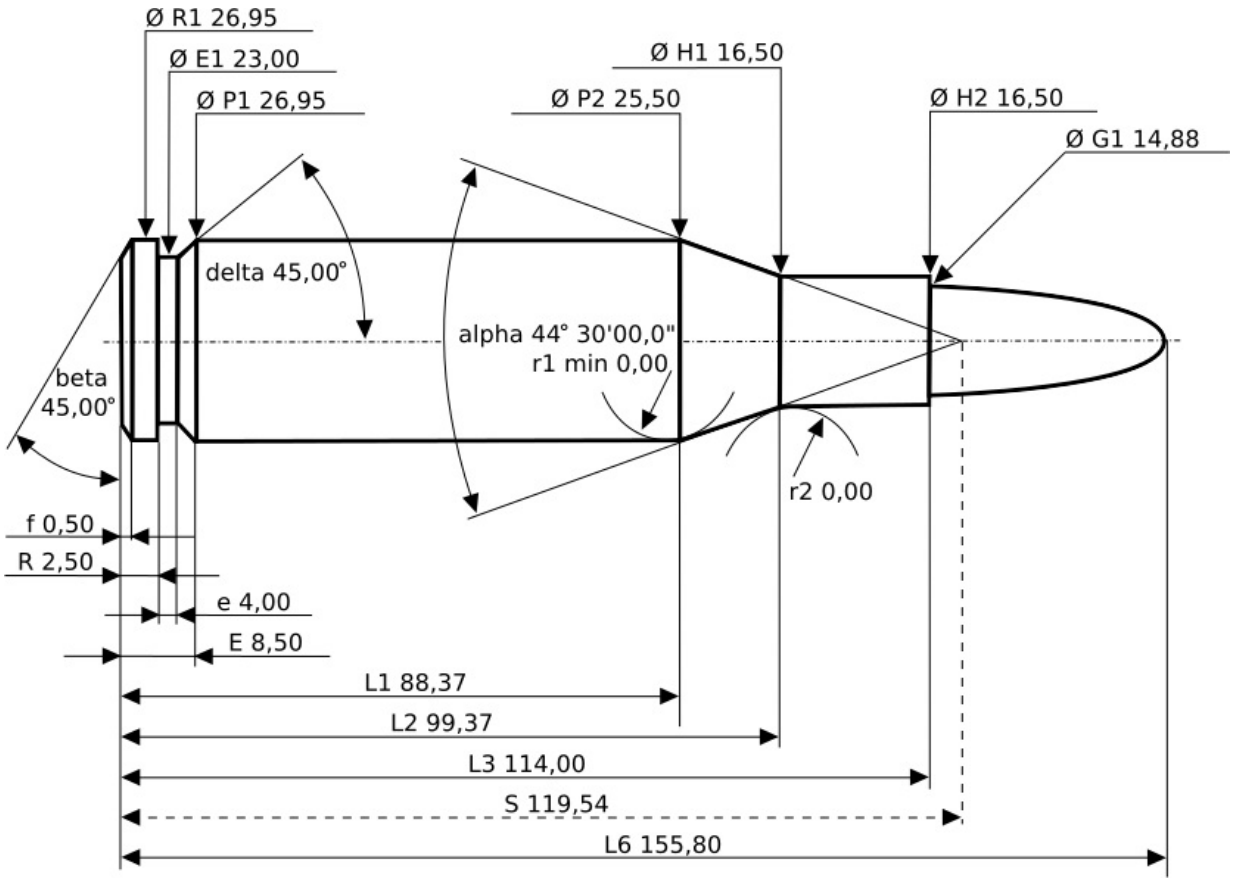
Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;



14.5x114 mm maximum cartridge dimensions. All dimensions in millimeters (mm)

12.7x99mm NATO

SAA; HMG

Origin Country	USA	Tot. Weight (g)	0	Length (mm)	138
Caliber	12.7mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	20
HCC/CG		Weight, Propellant (g	0		

Description

The .50 Browning Machine Gun (.50 BMG) or 12.7x99mm NATO is a cartridge developed for the Browning .50 caliber machine gun in the late 1910s. Entering service officially in 1921, the round is based on a greatly scaled-up .30-06 cartridge. Under STANAG 4383, it is a standard cartridge for NATO forces as well as many non-NATO countries. The cartridge itself has been made in many variants: multiple generations of regular ball, tracer, armor piercing, incendiary, and saboted sub-caliber rounds. The rounds intended for machine guns are linked using metallic links.

12.7x99mm NATO

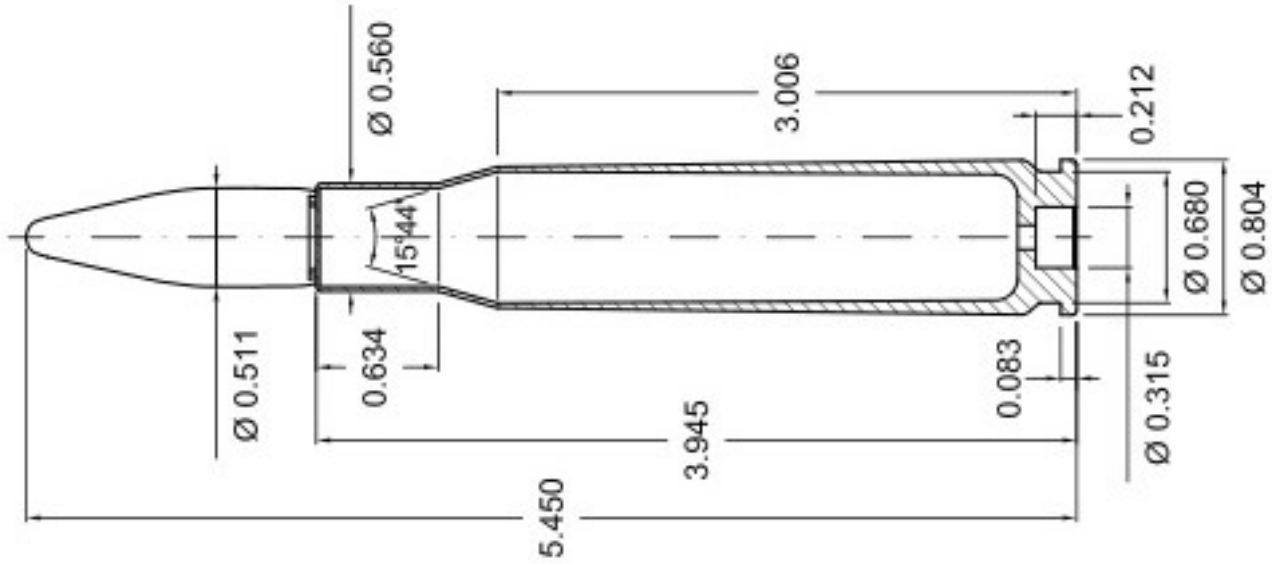
Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;



12.7x99mm NATO. All dimensions in inches.

Pistol

9x19mm Parabellum

SAA; Pistol

Origin Country	Germany	Tot. Weight (g)	0	Length (mm)	30
Caliber	9mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	9
HCC/CG		Weight, Propellant (g	0		

Description

The 9x19mm Parabellum (abbreviated 9mm, 9mmP, 9x19mm or 9x19) cartridge was designed by Georg Luger and introduced in 1902 by the German weapons manufacturer Deutsche Waffen- und Munitionsfabriken (DWM) for their Luger semi-automatic pistol. For this reason, it is designated as the 9mm Luger / 9mm Luger +P by the SAAMI and the 9 mm Luger by the C.I.P. (differentiating it from the 9mm Makarov and 9mm Browning cartridges). Under STANAG 4090, it is a standard cartridge for NATO forces as well as many non-NATO countries.

The name Parabellum is derived from the Latin: Si vis pacem, para bellum ("If you seek peace, prepare for war"), which was the motto of DWM.

Unjacketed (lead), full metal jacket, and hollow point.

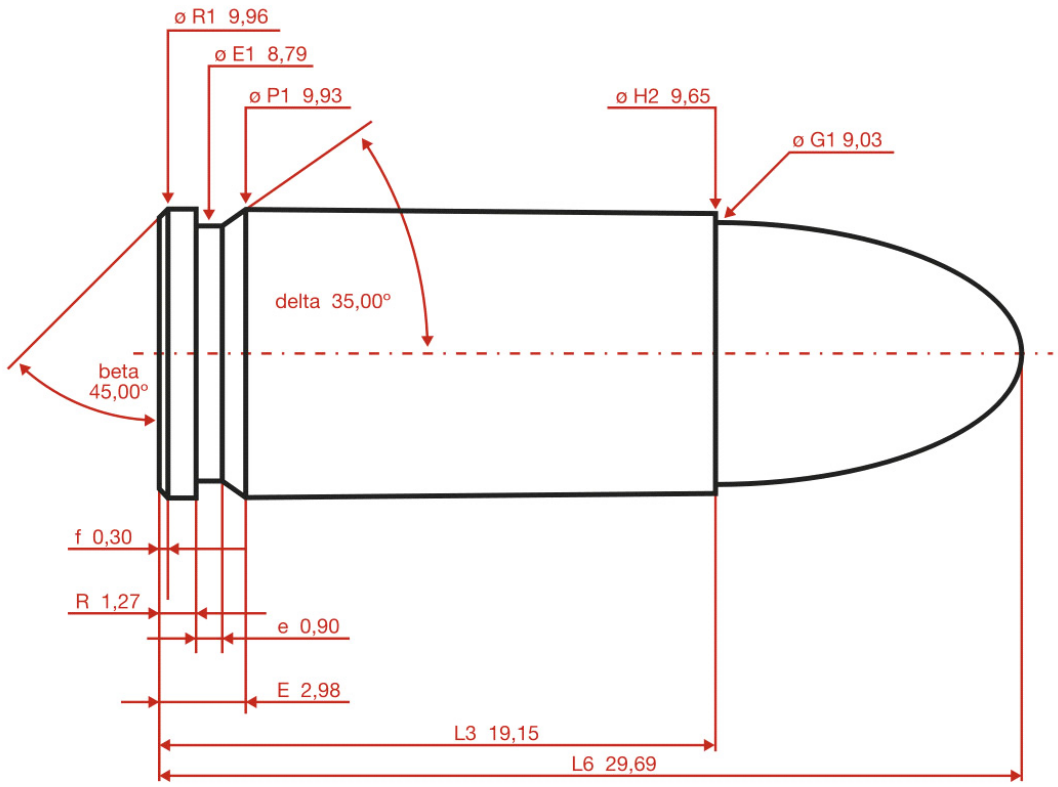
Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;



9x19mm Parabellum maximum C.I.P. cartridge dimensions. All sizes in millimeters (mm).

.45 ACP

SAA; Pistol

Origin Country	USA	Tot. Weight (g)	0	Length (mm)	32
Caliber	11.43mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	11
HCC/CG		Weight, Propellant (g	0		

Description

The .45 ACP (11.43x23mm) (Automatic Colt Pistol), also known as the .45 Auto by C.I.P. or 45 Auto by SAAMI, is a cartridge designed by John Browning in 1904, for use in his prototype Colt semi-automatic .45 pistol and eventually the M1911 pistol adopted by the United States Army in 1911.

Full metal jacket (left) and hollow-point (right).

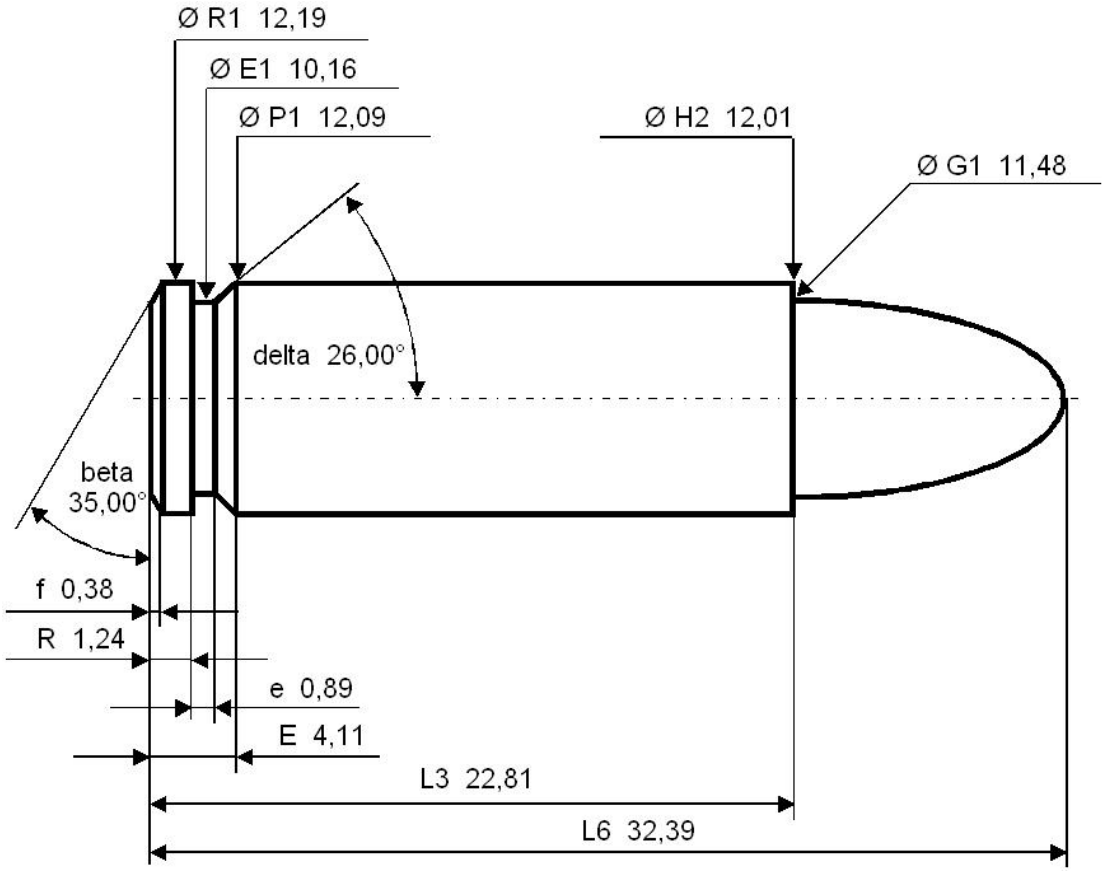
Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;



.45 ACP maximum C.I.P. cartridge dimensions. All sizes in millimeters (mm).

Rifle

5.56x45mm NATO

SAA; Rifle

Origin Country	USA	Tot. Weight (g)	0	Length (mm)	57
Caliber	5.56mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	6
HCC/CG		Weight, Propellant (g	0		

Description

The 5.56x45mm NATO (official NATO nomenclature 5.56 NATO) is an intermediate cartridge developed in the United States and originally chambered in the M16 rifle. Under STANAG 4172, it is a standard cartridge for NATO forces as well as many non-NATO countries. It is derived from, but not identical to, the .223 Remington cartridge.

5.56x45mm NATO

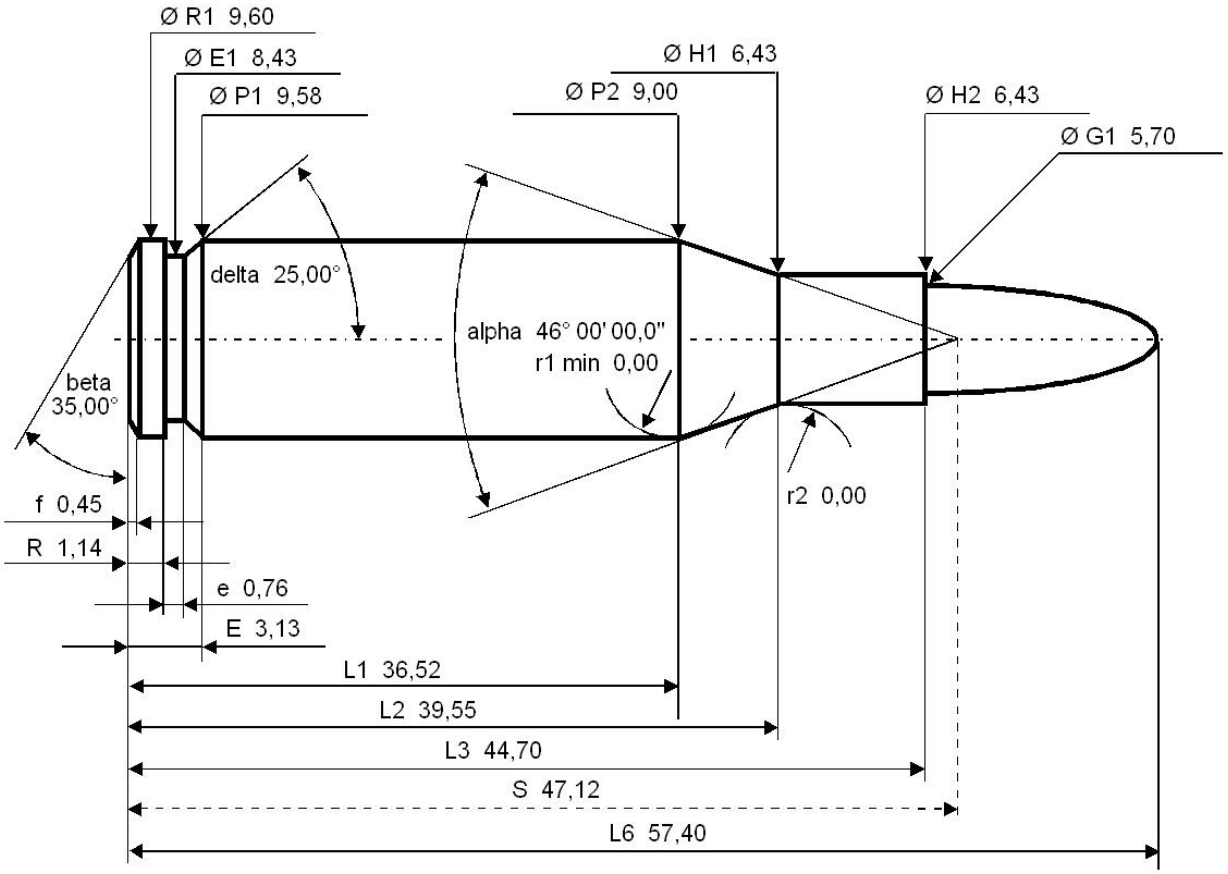
Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;



5.56x45mm NATO maximum cartridge dimensions. All sizes in millimeters (mm).

7.62x39mm

SAA; Rifle

Origin Country	Russia	Tot. Weight (g)	0	Length (mm)	56
Caliber	7.62mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	8
HCC/CG		Weight, Propellant (g	0		

Description

The 7.62x39mm round is a rifle cartridge of Soviet origin that was designed during World War II. It was first used in the RPD. Due to the worldwide proliferation of the SKS and AK-47 pattern rifles, the cartridge is used by both militaries and civilians alike. 7.62x39mm ammunition is purportedly tested to function well in temperatures ranging from -50 °C (-58 °F) to 50 °C (122 °F) cementing its usefulness in extremely cold polar or hot desert conditions.

Steel-cased 7.62x39mm FMJ cartridge.

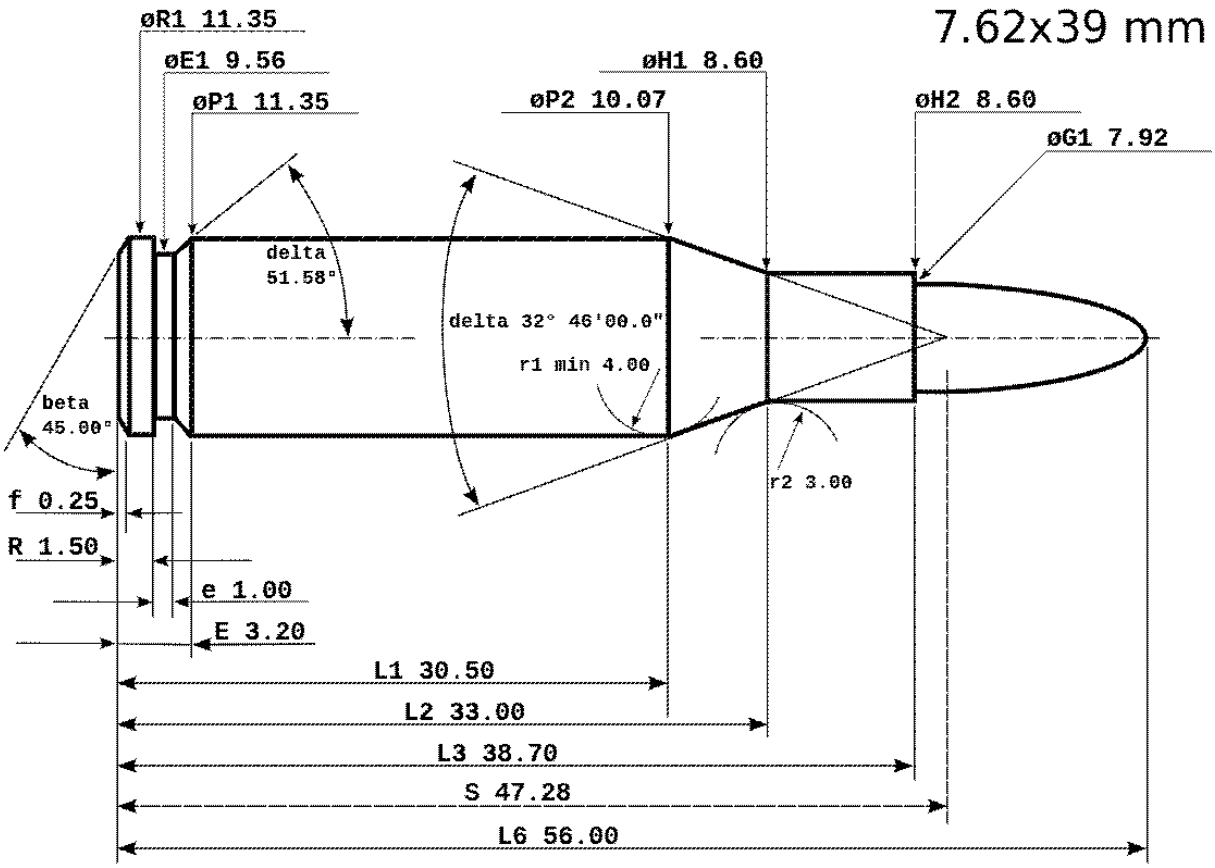
Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;



7.62x39mm maximum C.I.P. cartridge dimensions. All sizes in millimeters (mm).

7.62x51mm NATO

SAA; Rifle

Origin Country	USA	Tot. Weight (g)	0	Length (mm)	70
Caliber	7.62mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	8
HCC/CG		Weight, Propellant (g	0		

Description

The 7.62x51mm NATO (official NATO nomenclature 7.62 NATO) is a rimless bottlenecked rifle cartridge developed in the 1950s as a standard for small arms among NATO countries. It should not be confused with the similarly named Russian 7.62x54mmR cartridge, a slightly longer rimmed cartridge.

7.62x51mm NATO

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;

7.62x54mmR

SAA; Rifle

Origin Country	Russia	Tot. Weight (g)	0	Length (mm)	77
Caliber	7.62mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	8
HCC/CG		Weight, Propellant (g	0		

Description

The 7.62x54mmR is a rimmed rifle cartridge developed by the Russian Empire and was introduced as a service cartridge in 1891. Originally designed for the bolt-action Mosin-Nagant rifle, it was used during the late Tsarist era and throughout the Soviet period to the present day. The cartridge remains one of the few standard issue rimmed cartridges still in military use and has the longest service life of all military issued cartridges in the world.

7.62x54mmR

Fuzes used in Ammunition

Fuze Name	Placement

Explosives

Explosives	Weight (g)	Role	Remarks

Sources;

Sub-Munition

DPICM

A-09

Sub-Munition; DPICM

Origin Country	China	Tot. Weight (g)	0	Length (mm)	
Caliber	88mm	Weight, Projectile (g)	0	Width (mm)	
Function		Weight, NEQ (g)	0	Height (mm)	88
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	
HCC/CG		Weight, Propellant (g	0		

Description

This is new Chinese DPICM first recorded in Libya post revolution.
As to date the Chinese authorities have confirmed to Chris Chivers (NY Times) of its manufacture in China.
Samples have been recovered from a 122mm rocket delivery system.
Please note the port holes in the main body and the wings on the fuze body.
Any additional information, pictures or measurements would be greatly received by the EOD community.
Markings is either 1A-09 or 3A-09
The designation of A-09 has been made by CAT-UXO.

A-09

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	0	Main Charge	UNKNOWN

Sources;
CAT UXO

A-09

122mm Devlivery rocket for A-09

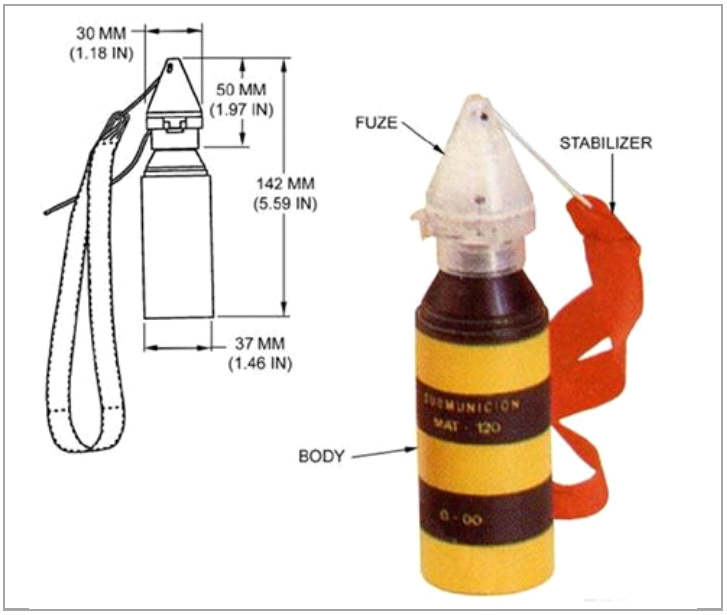
SMM MAT-120

Sub-Munition; DPICM

Origin Country	Spain	Tot. Weight (g)	275	Length (mm)	142
Caliber	37mm	Weight, Projectile (g)	225	Width (mm)	
Function	Dual Purpose	Weight, NEQ (g)	50	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	37
HCC/CG		Weight, Propellant (g	0		

Description

In the late 1980s the Spanish firm Esperanza y Cia, which later became part of Instalaza SA developed a 120mm caliber mortar bomb which contained 21 dual anti-armor/fragmentation submunitions, each of which weighs 275 grams and is 37 millimeters in diameter. What made the 120mm MAT-120s submunition unique is the electrical impact fusing system which for all practical purposes totally eliminated the risk of unexploded duds from subsequently detonating. In addition there is no electrical energy stored in the MAT-120 round during storage, transport and even at the time it is fired from the mortar tube, thus greatly reducing any risk of premature detonation. The MAT-120 submunition's electronic impact fuse operates on a capacitor power source located in each submunition which is charged in flight after being fired by a wind generator located in the nose of the projectile. If for what ever reason the electrical fuse fails to function on impact, approximately 35 seconds later a self-destruction feature causes the submunition to detonate; if the self-destruction mechanism fails, in approximately 15 minutes after impact the electrical charge in the capacitor bleeds out, therefore rendering the submunition's electronic fuse system inoperative, rendering the dud submunition inert, unless the capacitor is deliberately recharged from an outside source.



SMM MAT-120

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Tail

Explosives

Explosives	Weight (g)	Role	Remarks
UNKNOWN	50	Main Charge	

Sources;

SMM MAT-120

SMM MAT-120 Fuze

Frag

AO-2.5RT

Sub-Munition; Frag

Origin Country	Russia	Tot. Weight (g)	2,500	Length (mm)	143
Caliber	90mm	Weight, Projectile (g)	2,197	Width (mm)	
Function	Bounding	Weight, NEQ (g)	303	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	90
HCC/CG		Weight, Propellant (g	0		

Description

AO-2.5RT is an oval shaped High Explosive (Anti-Personnel) Fragmentation bomblet which has a central all-ways acting fuze.
The bomblet is in 2 halves held in place by a central steel ring. The ring has a series of wind vanes which spin the bomb as it drops and arms the fuze.
On impact the fuze functions and a small charge splits the bomblet in 2 and ignites a short pyrotechnic delay. Both halves of the bomb then function separately.
Each bomblet has a kill radius of 30m against material, 20m against unsheltered personnel and 10m against entrenched personnel.
The short delay detonators allow the bomblet to break up into two halves before exploding. This helps increase the area coverage per bomblet. The bomblet body is internally segmented to aid break up into optimum sized fragments.
The AO-2.5RT bomblet is normally dispensed from the RBK 500kg Cluster bomb (108 bomblets per cluster bomb).

AO-2.5RT

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	

Explosives

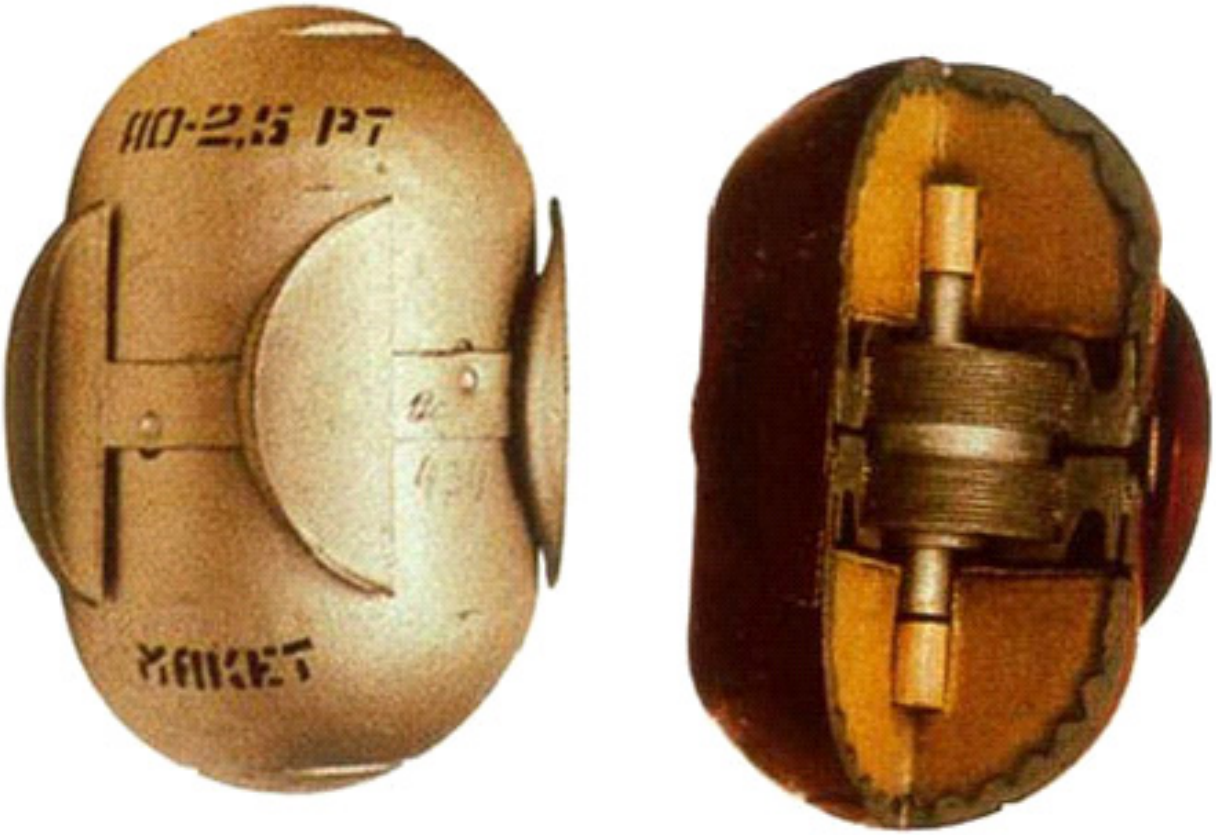
Explosives	Weight (g)	Role	Remarks
RDX/TNT	303	Main Charge	

Sources;

CAT UXO

Cluster weapons – military utility and alternatives, Ove Dullum

AO-2.5RT in cluster bomb



AO-2.5RT Cut through

HEAT

PTAB 2.5M

Sub-Munition; HEAT

Origin Country	Russia	Tot. Weight (g)	2,700	Length (mm)	395
Caliber	69mm	Weight, Projectile (g)	2,246	Width (mm)	
Function		Weight, NEQ (g)	454	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	69
HCC/CG		Weight, Propellant (g	0		

Description

This is a heavy Russian anti-tank bomblet carried by the standard Russian cluster bomb RBK-250-275 and RBK-500. From 30 to 75 bomblets can be carried in a single cluster bomb. Thebomblet has a thick casing, thus giving a considerable anti-personnel effect.
The bomblet has a vane armed PIBD (spitback) fuzing mechanism.
Each bomblet contains a shaped charge for attacking armour vehicles but also gives a fragmentation effect.
The PTAB 2.5M is normally dispensed from the RBK-250 (30 bomblets) and RBK-500 (75 bomblets) tail ejection cluster bombs.

Damaged PTAB 2.5M

Fuzes used in Ammunition

Fuze Name	Placement
UNKN. FUZE	Nose

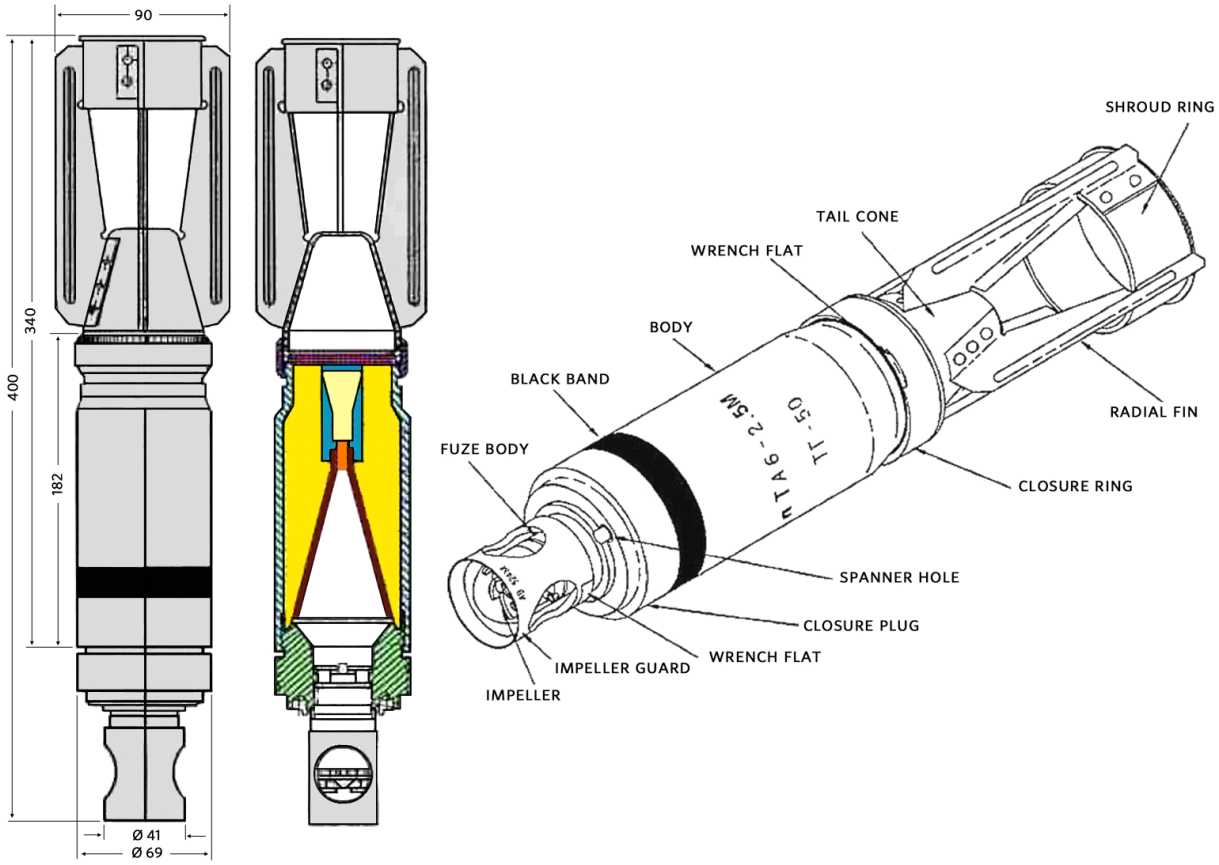
Explosives

Explosives	Weight (g)	Role	Remarks
RDX/TNT	454	Main Charge	

Sources;

CAT UXO

Cluster weapons – military utility and alternatives, Ove Dullum



PTAB 2.5M Diagram

PTAB 2.5M loaded into a RBK-250-270

Incendiary

ZAB 2.5M

Sub-Munition; Incendiary

Origin Country	Russia	Tot. Weight (g)	2,300	Length (mm)	
Caliber	89mm	Weight, Projectile (g)	2,300	Width (mm)	
Function	Incendiary	Weight, NEQ (g)	0	Height (mm)	
HCC/HD		Weight, Cartridge (g)	0	Diameter (mm)	89
HCC/CG		Weight, Propellant (g	0		

Description

Figures based on Variant 1

ZAB-2.5M (ЗАБ-2.5M) Incendiary Bomblet (New Pattern) is normally dispensed from the RBK-250 (48 bomblets) and RBK-500 (117 bomblets) tail ejection cluster bombs.

Variant 1 – weight: 2.3kg; incendiary composition: thermite; approx. burn time: 150 – 180 seconds.
Variant 2 – weight: 2.5kg; incendiary composition: thermite; approx. burn time: 120 – 180 seconds.
Variant 3 – weight: 2.2kg; incendiary composition: thermite + jellied fuel mix; approx. burn time: 3-9 mins.
Variants 2 and 3 also contain a PETN bursting charge, designed to discourage and impede attempts to extinguish the burning submunitions.
In the case of variant 3, this charge has the added effect of dispersing the napalm-like gel over a wide area.

The RBK-250 ZAB-2.5 cluster bomb contains 48 submunitions in total, with 16 ZAB-2.5M variation 1 submunitions, 16 ZAB-2.5M variation 2 submunitions, and 16 ZAB-2.5M variation 3 submunitions.

ZAB 2.5M

Fuzes used in Ammunition

Fuze Name	Placement

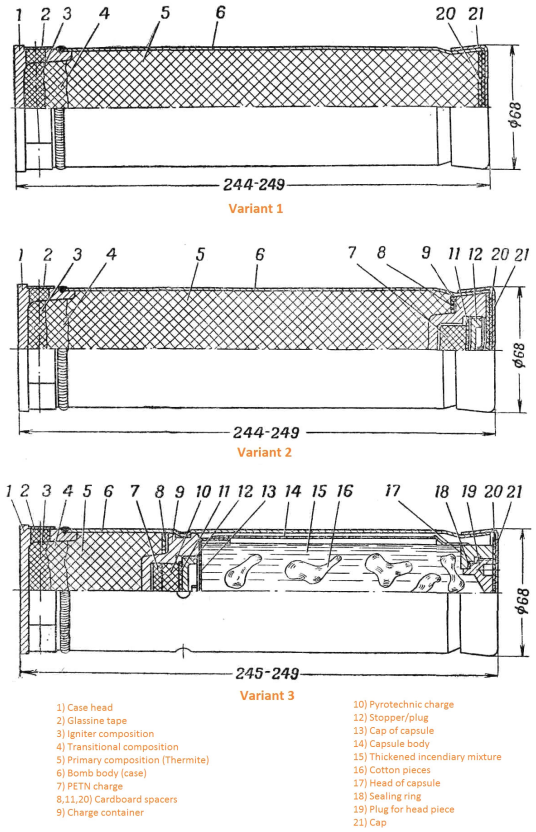
Explosives

Explosives	Weight (g)	Role	Remarks
Thermite		Main Charge	UNKNOWN WEIGHT

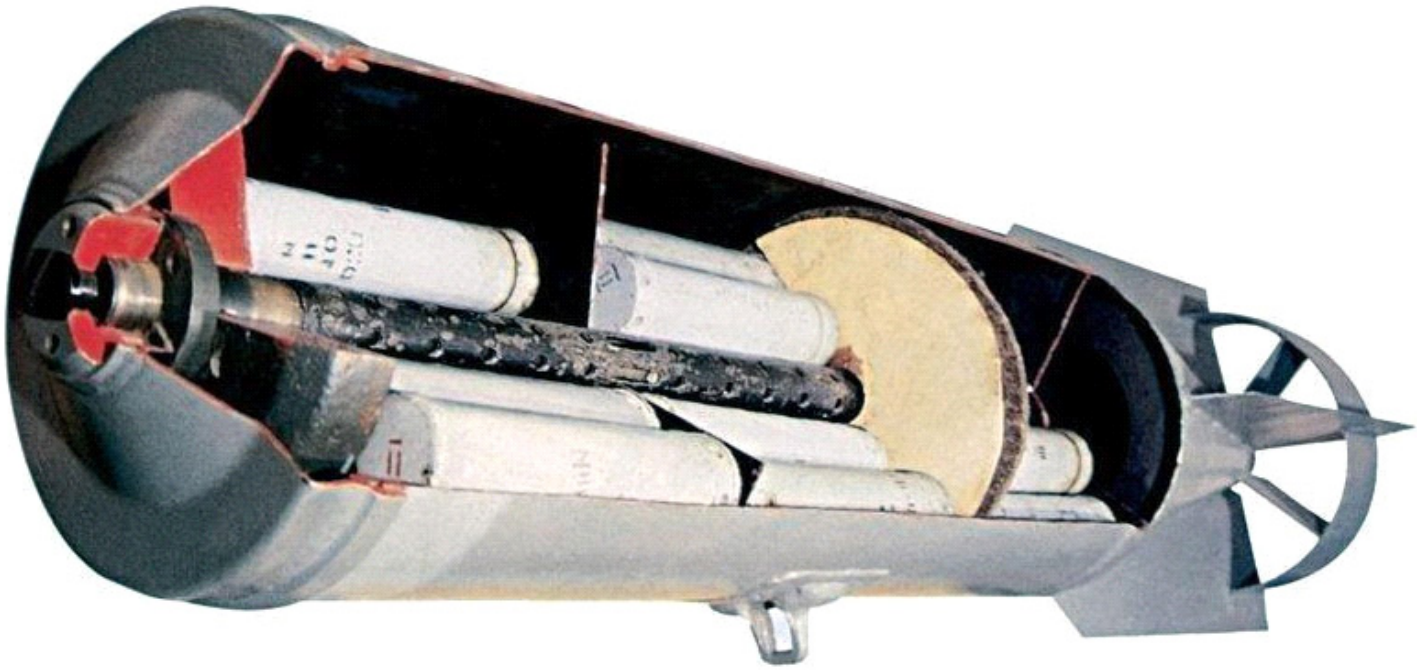
Sources;

CAT UXO

The Rogue Adventurer, ZAB-2.5 INCENDIARY SUBMUNITIONS



ZAB 2.5M



ZAB 2.5M in RBK container

Additions since last edition; *01 March 2015*

Name	Type	SubType
M67	Projectile	HEAT
Type 75	Projectile	HEAT
O-881A	Projectile	HE-Frag