



Battlefield Engineering Wing



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- There is a need constantly to update information on mines including:*
- Mines encountered in theatre, including pictures in any form.
 - Use, technical, habits, marking and recording systems.
 - Any technical data: eg pamphlets, drawings etc.
- All information sent to the UK landmine focal point, the UK MITC, will be put to good use.*

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MINE HANDBOOK CONGO



JUN 03

CONGO - MINE THREAT

Gathering info on the landmine and UXO threat in the Congo is difficult, it is certain that mine warfare has been a feature in all the various conflicts and that most of the belligerents have laid, and are still laying landmines extensively. The country is not known to be a mine producer or exporter. Landmines have generally been laid along confrontation lines, defensive positions and to prevent access to specific strategic areas or installations. In addition, numbers of UXO are scattered in many localities where fighting took place.

Confirmed areas of heavy mines UXO contamination are the border with Angola, particularly Cabinda, the north eastern areas around Kisangani and Bunia, full details of mined areas can be found in the Landmine Monitor Report webpage.

www.ictl.org/lin/2002/DEM_congo.html

Further detailed information on the current mines threat should be obtainable in country from the UN Mine Action Coordination Centre (UNMACC) located in Kinshasa.

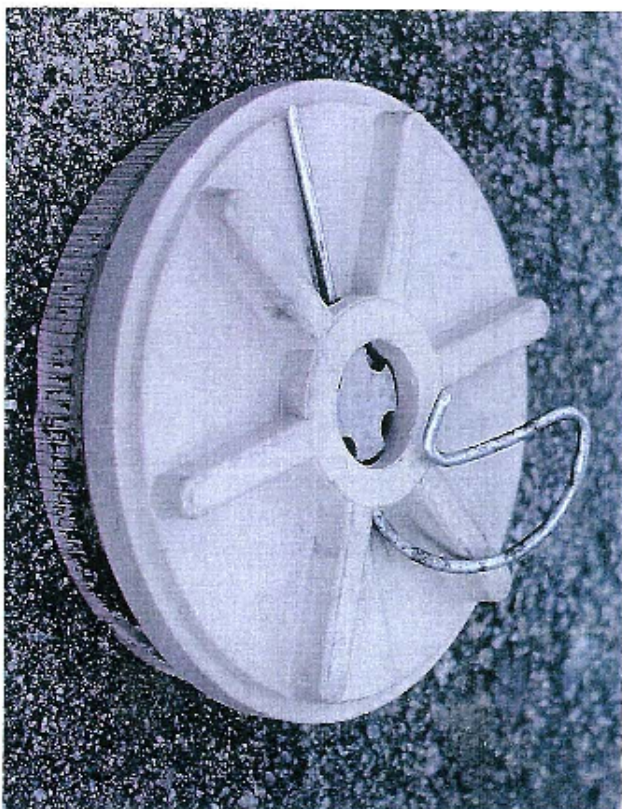
ANTI PERSONNEL MINES

- NR 409
 - PPM 2
 - PMA 2
 - VS 50 / TSS0
 - MON 50
 - PMD 6
 - PMN / PMN 2
 - POMZ 2
 - M2 Series
 - PRB M3
 - P2 Mk2
 - M7A2
 - DM11
 - MK 7
 - PT-Mi-Ba II / PT Mi Ba III
 - PT-Mi-K
 - TM 46 / TM 57 / TM62
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 - M80
 - M15
- PRB M35
 - NR413
 - Type 72
 - PP-Mi-St
 - M14
 - R2M1/ R2M2
 - Mini MS 803
 - M18A1 / No2 Shrapnel Mine

ANTI TANK MINES

ANTI PERSONNEL MINE - BLAST

NR 409



DESCRIPTION

The Belgian NR 409, also known as PRB M409, is a minimum-metal Anti-Personnel (AP) blast mine also produced in Portugal as the M 411. The mine body has a small spigot protruding from the centre, but otherwise has an unusually low profile. The main charge is cast into a ring shape around the central mechanism and in contact with the detonator. Until armed, the mine is fitted with a ribbed safety cap that is secured to the spigot by a steel pin. Minimum metal content makes the mine hard to detect.

TECHNICAL DETAILS

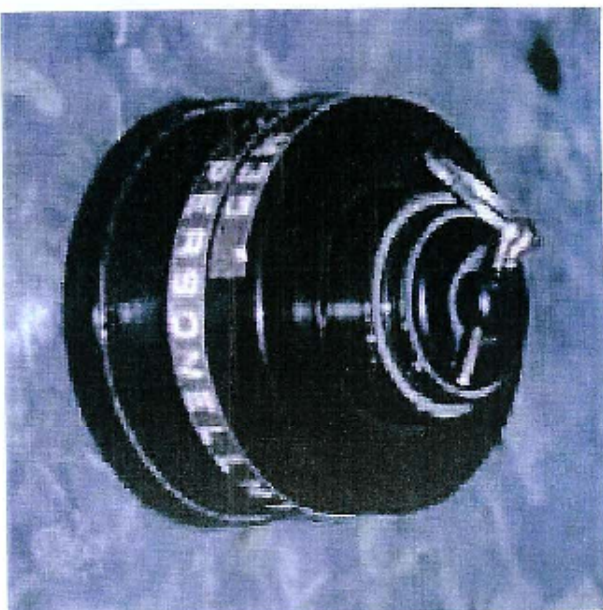
Length (mm):	28	Effective range (m):	-
Height (mm):	-	Material:	Plastic
Width (mm):	82	Colour:	Green/sand/brown
Diameter (mm):	183	Operation:	Pressure 8 - 30kg
Gross weight (g):	80	Fuze:	Internal flash
Explosive (g):	80	Markings:	Nil

Alternative designators - M411 or MAPS Date Introduced/Recovered:

Manufacturing country: Belgium

ANTI PERSONNEL MINE - BLAST

PRB M35



DESCRIPTION

The Belgian PRB M35 is a plastic-cased AP blast mine. The sealed mine body contains the main charge; it has a central threaded fuze well to accept the M5 fuze. The fuze has a pressure plunger in the centre of the flexible top surface; this is secured with a safety pin to prevent movement until the mine is armed. Beneath the plunger is a collar that retains two horizontal spring-loaded steel strikers. The collar, which has two apertures, contains steel sensitive igniters. Below this is the protruding detonator assembly, externally threaded to fit into the mine body. Minimum metal content makes the mine hard to detect.

TECHNICAL DETAILS

Length (mm):	-	Effective range (m):	-
Height (mm):	60	Material	Plastic
Width (mm):	-	Colour	Green/Black
Diameter (mm):	64	Operation	Pressure 9-14kg
Gross weight (g):	158	Fuze	M5
Explosive (g):	100	Markings	Nil

Alternative designators: Date introduced/recovered:

Manufacturing countries: Belgium

ANTI PERSONNEL MINE - BLAST

TS - 50



DESCRIPTION

The Italian TS - 50 is a resilient plastic-cased scatterable Anti-Personnel (AP) blast mine. The mine is constructed from three main assemblies: the top and bottom screw onto a central section housing the fuze mechanism. The rubberised pressure pad reinforced with either a metal or plastic plate seals the cavity in the top of the mine. In the central section, the fuze has a spring-loaded striker retained by two balls in a collar. The base section holds the main charge and has a central threaded detonator well. During transit a blue plug is fitted; this is replaced by the body-coloured static-sensitive M41 detonator assembly during arming. Waterproof to 1m. The mine has a rigid plastic safety cap. Practice (smoke) and training variants have also been made. The mine is easy to detect when fitted with the metal reinforcing plate, otherwise very difficult.

TECHNICAL DETAILS

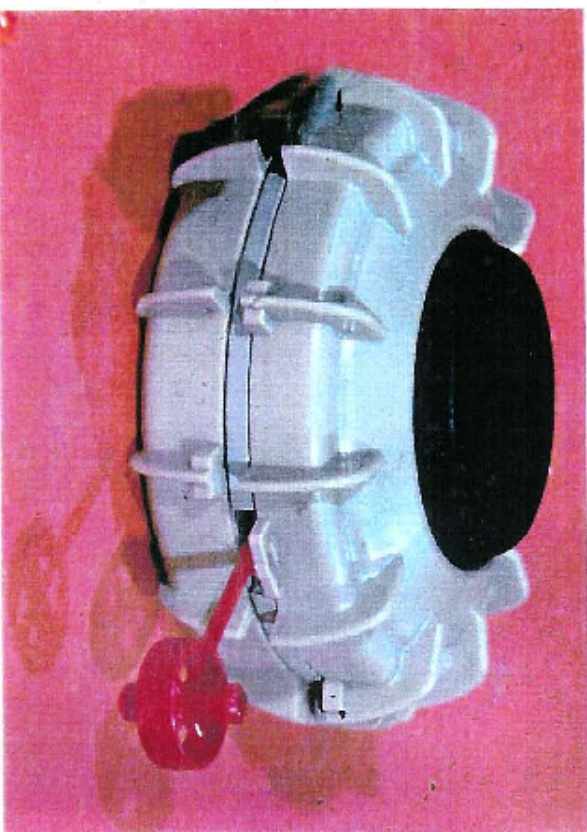
Length (mm):	-	Effective range (m):	-
Height (mm):	45	Material	Plastic
Width (mm):	-	Colour	Olive green/sand
Diameter (mm):	90	Operation	Pressure 12kg
Gross weight (g):	186	Fuze	Percussion (integral)
Explosive (g):	50	Markings	TS - 50 embossed on pressure plate

Alternative designators: Similar to VS50 Date introduced/recovered:

Manufacturing countries: Italy, Egypt, Singapore

ANTI PERSONNEL MINE – BLAST

VS – 50



DESCRIPTION

The Italian VS-50 is a resilient plastic-cased scatterable Anti-Personnel (AP) blast mine. The mine is constructed from three main assemblies: the top and bottom screw onto a central section housing the fuze mechanism. The black neoprene pressure pad, reinforced with either a metal or plastic plate, seals the cavity in the top section of the mine. In the central section, the fuze has a spring-loaded striker retained by a bar on a pivoted shutter. There is also a small inflatable bladder and a red plastic safety pin to prevent the shutter from pivoting. The base section holds the main charge and has a central threaded detonator wall. During transit a blue plug is fitted; this is replaced by the body-coloured stab-sensitive M41 detonator assembly during arming. An electronic anti-handling version of this mine (VS50 E03) is also produced. The mine is easy to detect when fitted with the metal reinforcing plate, otherwise very difficult. Waterproof to 1m. Practice (smoke) and training variants have also been made.

TECHNICAL DETAILS

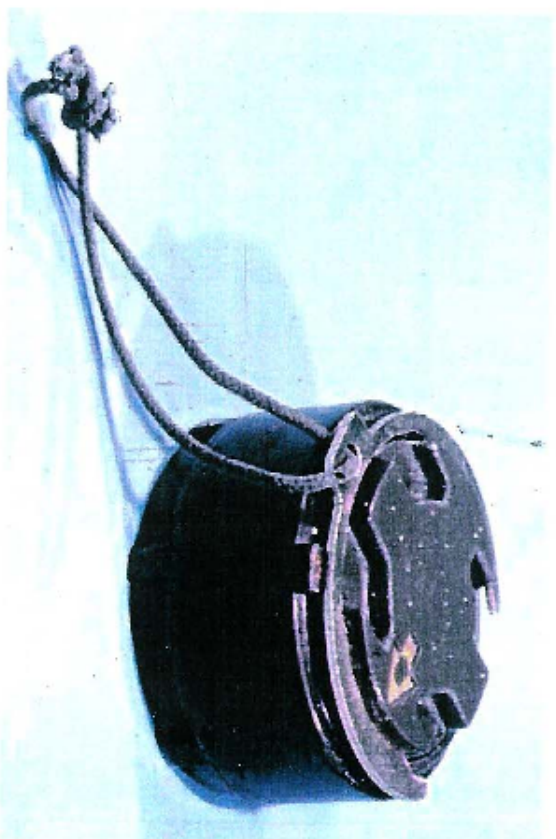
Length (mm):	-	Effective range (m) :	-
Height (mm):	45	Material	Plastic
Width (mm):	-	Colour	Green, sand and other options.
Diameter (mm):	90	Operation	Pressure 10kg
Gross weight (g):	185	Fuze	M41 detonator
Explosive (g):	49	Markings	Nil

Alternative designators: SPM-1, T779, Similar to TS 50 Date introduced/recovered: -

Manufacturing country: Italy, Singapore, Egypt

ANTI PERSONNEL MINE – BLAST

M14



DESCRIPTION

The American M14 is a plastic-bodied Anti-Personnel (AP) blast mine. The top section of the mine has a pressure plate, beneath which is a plunger and a Belleville spring with a striker. The bottom section contains the main charge and detonator assembly. The pressure plate is marked with a yellow arrow and rotates between safe and armed positions (marked S and A) on the mine body. During transit, a horseshoe-shaped steel clip with a short length of cord attached secures the pressure plate. Beneath the metal striker tip is the M48 detonator assembly, which screws into the central base fuze well. The copper detonator capsule and the steel firing pin are the metallic components once the safety clip has been removed. The main charge has an inverted conical upper surface that focuses the blast upwards during detonation. M14 normally has a cord attached through a hole in the base of the body, and is coloured olive green. Difficult to detect unless buried with safety clip.

TECHNICAL DETAILS

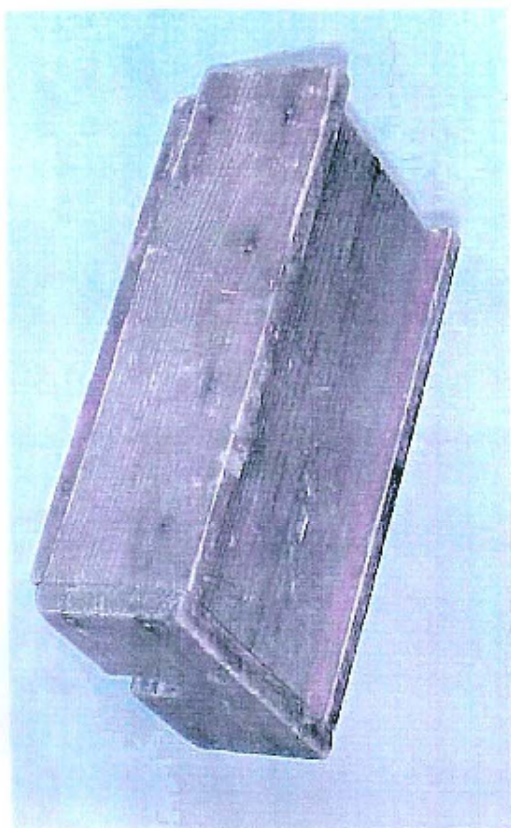
Length (mm):	-	Effective range (m) :	-
Height (mm):	40	Material	Plastic
Width (mm):	-	Colour	Olive green
Diameter (mm):	56	Operation	Pressure 9 – 16kg
Gross weight (g):	100	Fuze	M48 detonator
Explosive (g):	29	Markings	Yellow arrow A & S

Alternative designators: AP NM M14, MN-79, MD-82B, M58 Date introduced/recovered: -

Manufacturing countries: USA, India, Turkey, Vietnam, Denmark

ANTI PERSONNEL MINE – BLAST

PMD-6



DESCRIPTION

The Russian PMD-6 is one of a range of "shoe box" mines developed before WW2, with a number of variations since. The mine consists of a wooden box with a hinged lid that overlaps the sides. The MUV series fuze is inserted into a hole in the end of the box opposite the hinge. The detonator rests in a 200g block of TNT housed inside the box. The lid of the mine is deeply slotted to fit over the fuze, allowing the lid to rest on the striker-retaining pin, some mines have a steel leaf spring on the underside of the lid to increase operating pressure. Some mines have a safety rod to prevent premature detonation. Specifications of these mines may vary, particularly when manufactured in the field. Similar CIS variants include the PMD-6M, PMD-7, PMD-7Is, PMD-57.

TECHNICAL DETAILS

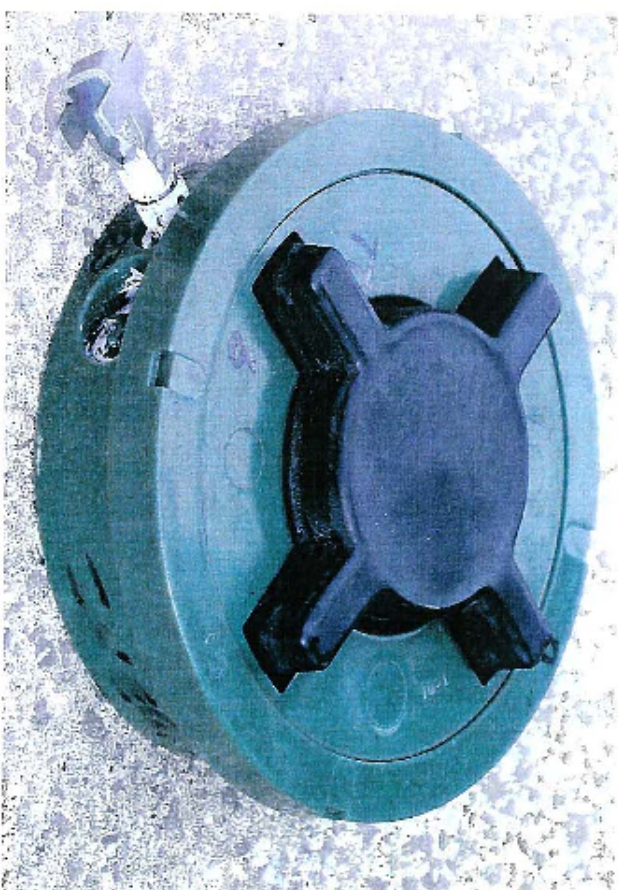
Length (mm):	200	Effective range (m) :	-	Material :	Wood
Height (mm):	65	Colour :	Natural wood/green	Operation :	Blast pressure
Width (mm):	90	Markings :	MUV, MUV-2, MUV-4	Explosive (g):	200
Diameter (mm):	-				
Gross weight (g):	500				
Explosive (g):	200				

Alternative designators: PPrm-D, Type 59, PMD-1 Date introduced/recovered: -

Manufacturing countries: Russia, Czech, China, FRG, FR, Y.

ANTI PERSONNEL MINE – BLAST

PMN 2



DESCRIPTION

The Russian PMN 2 AP blast mine has a cylindrical shaped body made from olive drab polycarbonate. It is generally very similar to the PMN, though a little smaller. The pressure plate on this mine is a large rubber cross instead of the rubber circular mantle on the PMN, thereby increasing the mines resistance to blast. The detonator is enclosed by the fuzing mechanism, however a plug in the base gives access to the booster. A removable metal arming handle protrudes from the side of the body. This mine has no integral anti handling devices, however a variant designated the PMN 3 has been found fitted with an anti-handling capability in Chechnya. The mine has an arming delay of 2-3mins.

TECHNICAL DETAILS

Length (mm):	-	Effective range (m) :	-	Material :	Plastic/rubber
Height (mm):	53	Colour :	Green	Operation :	Pressure 15kg
Width (mm):	-	Markings :	Integral	Explosive (g):	100
Diameter (mm):	120				
Gross weight (g):	420				
Explosive (g):	100				

Alternative designators: NI Date introduced/recovered: -

Manufacturing country: Russia

ANTI PERSONNEL MINE – BLAST

PMN



DESCRIPTION

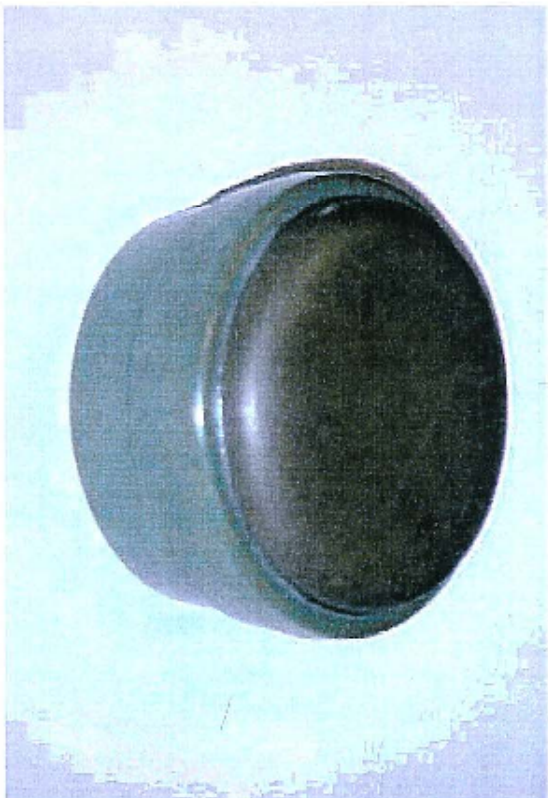
The Russian PMN AP Blast has been in service since the late sixties, both in the former WF forces and China. The case is made from bakelite, with a black rubber cap secured by a thin metal clasp that may be removed to make detection harder. The fuze runs transversely through the mine body, with the arming assembly and safety pin protruding from one side and the detonator from the other. Once the mine has been positioned, removing the safety pin begins the arming process. The spring-loaded mechanism takes 15-20 minutes to cut through a lead retaining strip, after which the mine is armed. Once armed, the firing pin assembly is held in place by a central cylinder known as a retaining wall, and is released when pressure is applied to the top plate. This mine has no integral and handling devices.

TECHNICAL DETAILS			
Length (mm):	-	Effective range (m) :	-
Height (mm):	56	Material :	Bakelite
Width (mm):	-	Colour :	Green, Brown, Black
Diameter (mm):	112	Operation :	Pressure 8-25kg
Gross weight (kg):	550	Fuze :	Integral MD9 Det Assbly
Explosive (g):	240	Markings :	-
Alternative designators: Type 58, GYATA 64		Date introduced/recovered: -	
Manufacturing countries: Russia, China, Hungary			

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ANTI PERSONNEL MINE – BLAST

TYPE 72



DESCRIPTION

The Chinese Type 72A is a pressure operated blast mine, though two electronic anti-handling variants have also been manufactured and designated the Type 72 B and C. The Type 72 A can only be distinguished from the other variants by the circular ring on its arming pin, the B has a triangular one and it is reported the C is round as well. The upper section of the Type 72 is plastic casing and has a soft rubberised pressure plate cover which screws into the plastic lower section. Beneath the internal pressure plate of the Type 72A is a Belleville spring with a small metal firing pin in the centre. The lower section houses the main charge and a stab sensitive igniter, and has a threaded well in the centre of the base to accept the booster. Three groups of alignment marks are embossed at regular intervals around the edge of the top section, until armed the single mark aligns with the centre mark of the group of three. In not climates the soft rubber pressure plate often perishes, leaving the buff coloured plastic pressure plate exposed.

TECHNICAL DETAILS			
Length (mm):	-	Effective range (m) :	-
Height (mm):	38	Material :	Plastic
Width (mm):	-	Colour :	Green
Diameter (mm):	78	Operation :	Pressure 5-10kg
Gross weight (g):	140	Fuze :	-
Explosive (g):	51	Markings :	Black stenciling on base
Alternative designators:		Date introduced/recovered: -	
Manufacturing country: China			

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ANTI PERSONNEL MINE – BLAST

PMA-2



DESCRIPTION

The Yugoslavian PMA-2 is a minimum-metal AP blast mine. The main body is a cylindrical plastic casing filled with TNT. The threaded central fuze well is sealed by a plug during transit and has a small pellet of RDX at the bottom to act as a booster. The fuze assembly has a six-pronged plunger protruding from the fuze body. Beneath the base of the plunger is a friction-sensitive composition, and below that a small detonator. The detonator, which has a thin aluminum casing, is attached to the fuze body by a threaded plastic cap, which is bonded into place. A safety pin, attached to a length of string, runs through the fuze body and plunger to prevent initiation. The use of a pronged plunger gives this mine a high degree of blast resistance. The plunger and mine body are normally olive green, though some have been manufactured in white and black.

TECHNICAL DETAILS

Length (mm):	-	Effective range (m):	-
Height (mm):	61	Material	Plastic
Width (mm):	-	Colour	Green, White, Black
Diameter (mm):	68	Operation	Pressure 7-15kg
Gross weight (g):	135	Fuze	UPMAH-2
Explosive (g):	100	Markings	Trg Variant - Yellow Stripe
Alternative designators:	Date introduced/recovered:	-	-
Manufacturing country: Former Yugoslavian			

ANTI PERSONNEL MINE – BLAST

R2M1 + R2M2



DESCRIPTION

The S. African R2M1 is a pressure operated minimum metal AP blast mine. The mine has a ribbed plastic pressure plate and main body containing an explosive charge. The two assemblies are joined by a flexible tubular sidewall and the gap between them is filled with foam rubber. The main body of the R2M1 is one piece with a smooth base. (The R2M2 is very similar but has a two piece body and a ribbed base). The integral fuze runs vertically through the centre of the mine and uses a spring-loaded striker held in place by three retaining balls. To prevent movement until armed, the plunger is held in place against a rigid collar by a slotted plate, this in turn is secured by a safety pin that runs through the domed centre of the pressure plate. Directly below the striker is a stab sensitive LZY detonator. Below this is a booster sealed with an O-ring so the mine is waterproof. The main charge is housed in the bottom half of the mine. There have been practice mines produced. Very difficult to detect.

TECHNICAL DETAILS

Length (mm):	-	Effective range (m):	-
Height (mm):	57	Material	Plastic
Width (mm):	69	Colour	R2M1 - Green / R2M2 - Beige
Diameter (mm):	69	Operation	Pressure 3-7kg
Gross weight (g):	128	Fuze	Integral
Explosive (g):	58	Markings	R2M2 Yellow markings on side

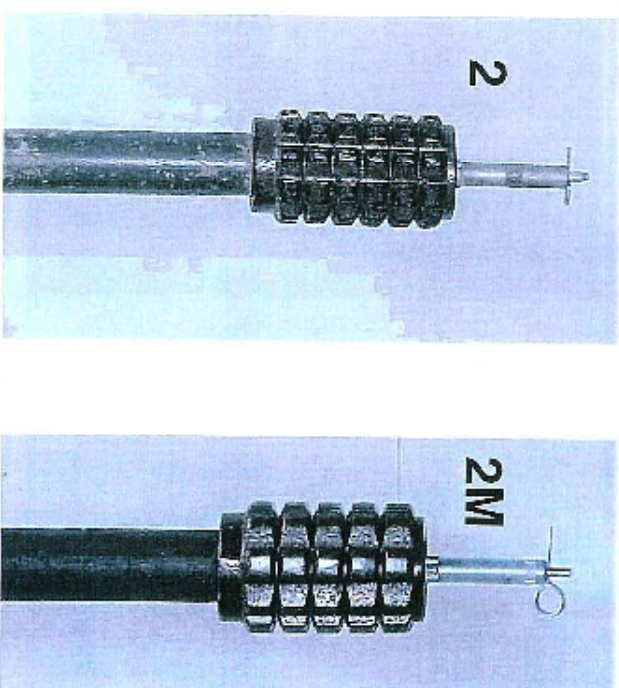
Alternative designators: -

Date introduced/recovered: -

Manufacturing country: South Africa

ANTI PERSONNEL MINE – STAKE FRAGMENTATION

POMZ 2 + POMZ 2M



DESCRIPTION

The Russian POMZ 2 dates from the 1940s and consists of a cast iron fragmentation body containing a cylinder of cast TNT, mounted on a wooden stake. The POMZ 2 has six rows of fragmentation and an unthreaded fuze well. The POMZ 2M, a later development is slightly shorter and lighter and has only five rows of fragmentation and a threaded fuze well. The hollow bodies house a cylindrical main charge, which has a central detonator cavity. The top surfaces of the mine bodies are raised into a fuze well, which accepts a fuze of the MUV mechanical family. The open ends of the mine bodies are hollowed to receive a wooden stake. Harsh climates and insects often cause the stake to deteriorate to the point where the mines fall over or become separated from their stakes. The POMZ 2 and 2M are normally laid in clusters of four or more mines with interlinking trip wires.

TECHNICAL DETAILS 2 2M

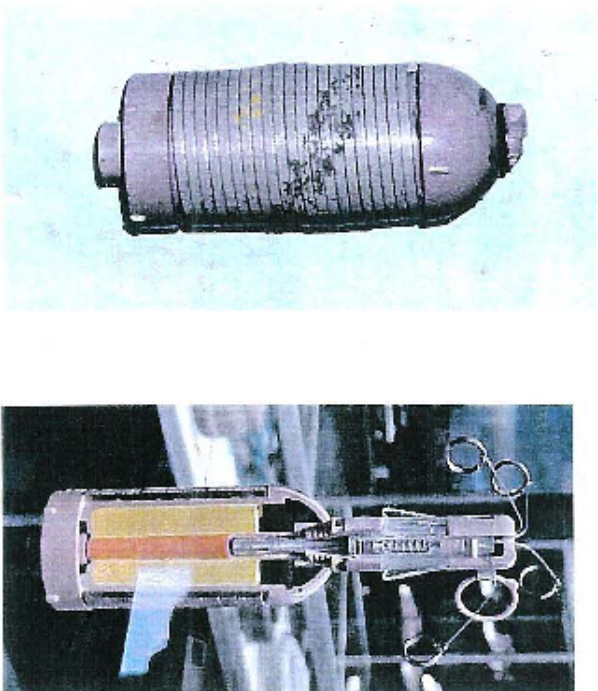
Length (mm):	-	Effective range (m):	50m
Height (mm):	130	Material	Metal
Width (mm):	107	Colour	Green, Brown
Diameter (mm):	-	Operation	Pull 0.5-6kg Fuze dependant
Gross weight (kg):	60	Fuze	MUV Series
Explosive (g):	2,3	Markings	-
	75		

Alternative designators: Type 58, PMFH-1 PPMI-SK, PMR-1, PMR-2A, MAP, MBV-78A1

Manufacturing country: Russia, China, Cuba, Czech, FRY, Korea, Vietnam

ANTI PERSONNEL MINE – STAKE FRAGMENTATION

NR-413



DESCRIPTION

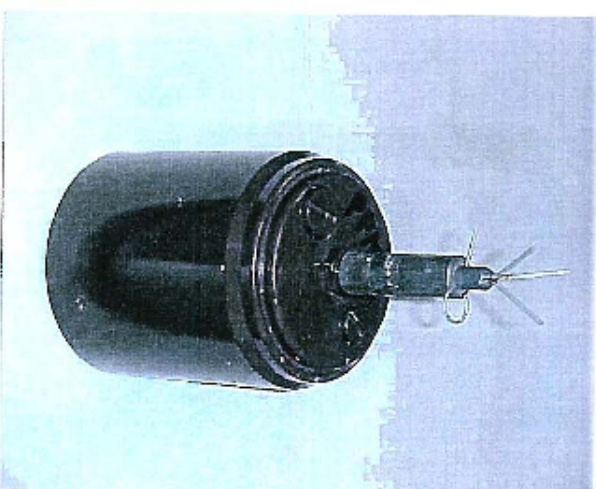
The Belgian NR-413 is an AP stake fragmentation mine designed for use with the NR-410 tripwire fuze. The bottle shaped plastic body has a threaded fuze well at the top and contains a cylindrical main charge. At the base of the detonator well, in the centre of the main charge, are booster pellets. Around the body is a coil made from square section steel, internally notched for consistent fragmentation. The plastic base section, which screws onto the main body has a central recess to fit onto the metal stake. The NR-410 fuze contains a spring-loaded striker held within a collar by two retaining balls. The collar is attached to four short wires, each fitted with a ring, which protrude through the rounded top of the fuze body.

TECHNICAL DETAILS

Length	(mm):	-	Effective range (m) :	50
Height	(mm):	114	Material	: Combination of metal + plastic
Width	(mm):	-	Colour	: Green, Light Brown
Diameter	(mm):	46	Operation	: Pull
Gross weight	(g):	640	Fuze	: NR-410
Explosive	(g):	100	Markings	: Body stenciling in yellow
Alternative designators: NR-109 is the flare version of the NR-413, it has a smooth body case				
Manufacturing country: Belgium				

ANTI PERSONNEL MINE – BOUNDING FRAGMENTATION

PP Mi-Sr



DESCRIPTION

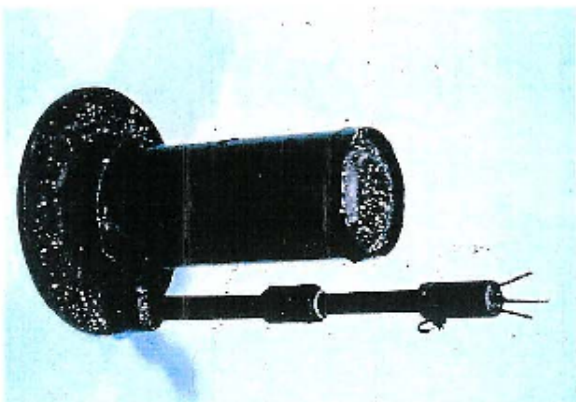
The Czech PP Mi-Sr is a steel cased AP bounding mine. On the top surface there are two slotted screw heads and a central fuze well. The larger of the two screws is the filler plug, while the smaller one seals the detonator into position. Beneath the central fuze well is a tube that houses a delay element and propelling charge; this leads into a chamber at the base of the mine that contains a feather wire. The fragments, small chopped pieces of steel are housed around the main charge in a cylindrical cavity. Both the propelling charge assembly and the detonator assembly are removable.

TECHNICAL DETAILS

Length	(mm):	-	Effective range (m):	50
Height	(mm):	152	Material	: Metal
Width	(mm):	-	Colour	: Brown, Green
Diameter	(mm):	102	Operation	: Pull/Pressure 3.8kg.
Gross weight	(kg):	3.2	Fuze	: Electric
Explosive	(g):	360	Markings	: RO-1, RO-8, MUV Series Black stenciling on body
Alternative designators: -				
Date introduced/recovered: -				
Manufacturing country: Czech Republic and Slovakia				

ANTI PERSONNEL MINE – BOUNDING FRAGMENTATION

M2 Series



DESCRIPTION

The American M2 series are obsolete bounding frag mines, with designations M2, M2A1, M2A2, M2A3 and M2A4 indicating successive modifications. The main section is a cylindrical tube that houses a 60mm mortar bomb body; this has a pyro delay and detonator fitted, but no fuze or tail. The mortar sits in the tube; nose down with the mouth of the tube covered by a pressed steel cap. Early mines have wide circular bases while more recent mines have smaller more irregular shaped bases. The fuze assembly is positioned on a spigot to the side of the main body and allows initiation by either pressure, or pull on a tripwire. The fuzes most commonly used with this mine are the M2, M2A1 and M6A1. The fuzes have three pressure prongs on a sprung plunger, with a spring-loaded striker running through the centre. Until armed, safety pins pass through the protruding top of the striker and the end of the retaining plate to secure both. Wooden boards have been known to be placed over the fuze prongs when buried to increase the surface pressure area.

TECHNICAL DETAILS

Length	(mm):	-	Effective range (m):	50
Height (fuzed)	(mm):	244	Material	Metal
Width (max)	(mm):	104	Colour	Green
Diameter	(mm):	-	Operation	Pressure 9kg / Pull 1.5 – 3kg
Gross weight	(kg):	2.95	Fuze	M2, M2A1, M6A1
Explosive	(g):	154	Markings	Black or Yellow markings

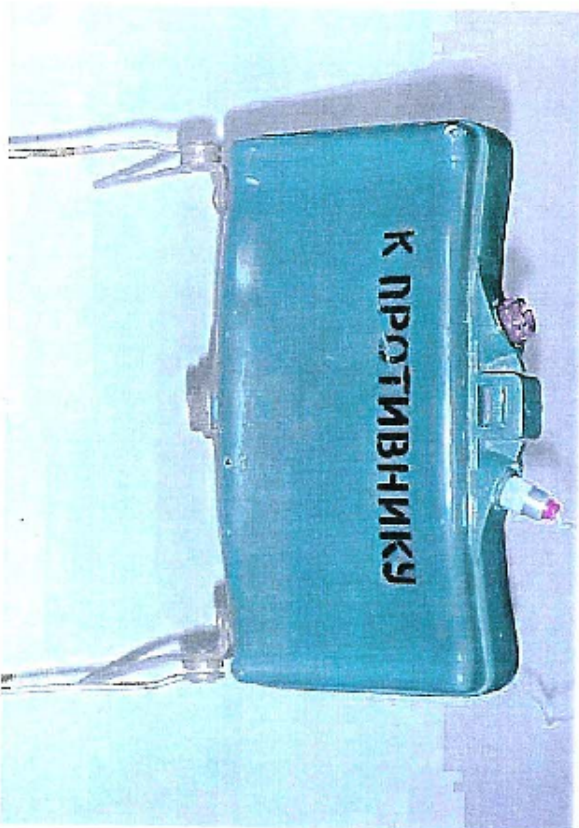
Alternative designators: FRB M966, M/966

Date introduced/recovered: -

Manufacturing country: USA, Belgium, Portugal

ANTI PERSONNEL MINE – DIRECTIONAL FRAGMENTATION

MON-50



DESCRIPTION

The MON 50 is the smallest of the Soviet directional anti-personnel mines used in the defensive and ambush roles. The mine consists of a moulded plastic rectangular case with 2 pairs of scissor legs; the casing is convex from the front. The casing contains the internal fragmentation matrix of either 540 ball bearings or 485 pieces of 5mm chopped steel rod set in resin, which is backed by plastic explosive. The mine has two angled fuze wells on top, either side of the peep sight. On the mine underside are folding steel scissor legs and a mounting bracket which enables the mine to be emplaced by using a clamp or a tree spike. The mine covers a 60-degree arc to the front, out to 50m; there is a secondary danger area from blast to the rear. The mine can be fired electrically or by tripwire using a mechanical fuze. Mines may also be connected together using det cord.

TECHNICAL DETAILS

Length	(mm):	226	Effective range (m):	50
Height	(mm):	156	Material	Plastic, metal (legs + frag)
Depth	(mm):	66	Colour	Green
Diameter	(mm):	-	Operation	Pull, Electric
Gross weight	(kg):	2	Fuze	MUV series, VPF, EDPr,
Explosive	(g):	700	Markings	NM

Black stencilling

Alternative designators: M18, Type 66, No 6, K-440, P5 Mk 1, No2, Model 12, M18A1, MDH-C40

Manufacturing country: Russia, Chile, China, Israel, Korea, Pakistan, S. Africa, Sweden, USA, Vietnam

ANTI PERSONNEL MINE – DIRECTIONAL FRAGMENTATION

Mini MS-803



DESCRIPTION

The South African Mini MS-803 is a directional fragmentation AP mine; a smaller simpler version of the No2 Shrapnel Mine, which is based on the M18A1 'Claymore'. The body of the mine is polystyrene with the convex face housing 300 cylindrical steel fragments each 6 x 8mm. Raised white arrows at each end of the top surface also indicate firing direction. Behind this is the main charge of PETN (C4), plastic explosive and a PETN booster. On the top surface is a single detonator well that accepts an S4 snout electric detonator, sealed during transit with a plastic plug. The mine is normally electrically commanded detonated using the M57 firing device as supplied with the No2 Shrapnel Mine. Tripwire initiation is also possible using an appropriate MUV type pull switch. Protruding brackets at each end of the mine accept simple wire legs, but can also be used to stack mines on top of one another.

TECHNICAL DETAILS

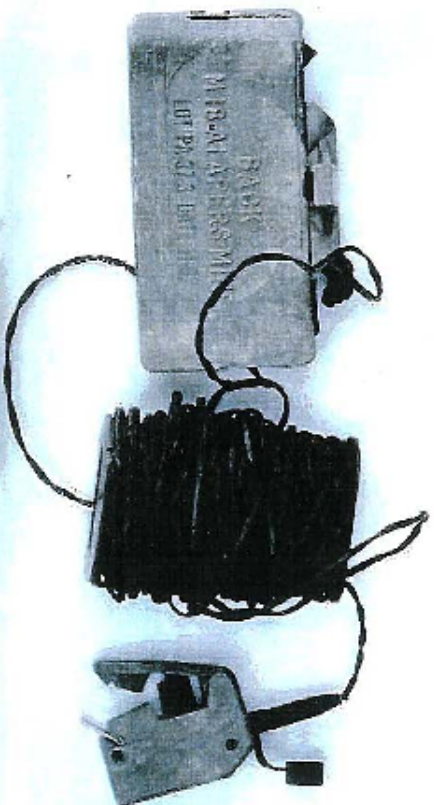
Length	(mm): 220	Effective range (m):	50
Height	(mm): 70	Material	Polystyrene, metal (frag)
Width	(mm): 35	Colour	Green, Brown
Diameter	(mm): -	Operation	Pull, Electric
Gross weight	(kg): 1	Fuze	S4 electric detonator or other
Explosive	(g): 460	Markings	Raised lettering on front.

Alternative designators:

Manufacturing country: South Africa, as MON 50 for other manufacturers

ANTI PERSONNEL MINE – DIRECTIONAL FRAGMENTATION

M18A1 + No2 Shrapnel Mine



DESCRIPTION

The S. African No2 Shrapnel mine is a copy of the American M18A1 'Claymore' AP directional fragmentation mine. Both mines fitted with steel legs are supplied with a handroller, electric detonator with 33m of cable, exploder and test unit. The bodies of the mines are glass-reinforced polystyrene with the convex face housing 700 steel balls in a resin matrix. Behind is the main charge of plastic explosive. On the top surface are two threaded detonator wells, sealed with L-shaped plastic plugs; between these is either a peep sight or knife-edge sight, to aid alignment. The mine is normally detonated electrically using the hand dynamo provided, though a second detonator well is available for tripwire initiation or linking mines with detonating cord. There are embossed letters on the front and rear surfaces of the mines.

TECHNICAL DETAILS M18 No2

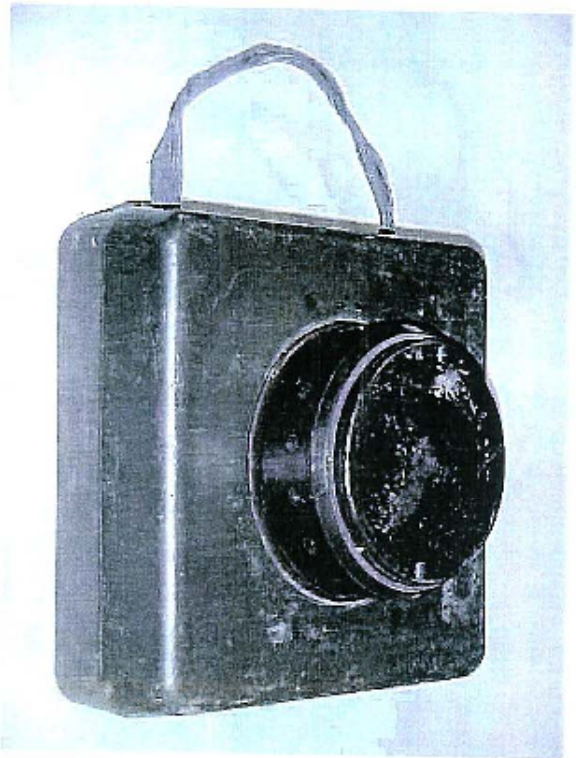
Length	(mm): 216 220	Effective range (m):	50
Height	(mm): 82.5 140	Material	Plastic, metal (legs + frag)
Width	(mm): 35 60	Colour	Green, Brown
Diameter	(mm): -	Operation	Pull, Electric
Gross weight	(kg): 1.58 1.5	Fuze	M4 electric det or other
Explosive	(g): 682 690	Markings	Black stencilling

Alternative designators: See MON 50 (page 17) for other designations

Manufacturing country: South Africa-No2, USA -M18A1, as MON 50 for other manufacturers

ANTI TANK MINE – BLAST

PRB M3



DESCRIPTION

PRB M3 is a large, resilient, plastic-bodied Anti-Tank (AT) blast mine. The mine body, which contains a central booster and the main charge, has a webbing-carrying handle on one side and a single threaded well in the centre of the top surface, into which the M30 fuze fits. Once the fuze has been inserted, the cylindrical plastic pressure plate assembly is screwed into the threaded well. This large assembly is made from Bakelite and consists of a central plunger that is secured inside a collar by shear pins. The fuze contains two opposing spring-steel wire strikers separated by a plastic collar, much like the Belgian NR 409. The detonator assembly protrudes from the base of the fuze and sits within the booster of the main body. Metal content is confined to the igniter capsules, detonator tube and steel strikers, making this a minimum-metal mine. PRB M3 is waterproof and may be used in shallow water.

TECHNICAL DETAILS

Length (mm):	230	Effective range (m):	-
Height (mm):	130	Material	Plastic
Width (mm):	230	Colour	Green, sand
Diameter (mm):	-	Operation	Pressure 250kg
Gross weight (kg):	6.8	Fuze	M30
Explosive (kg):	6	Markings	Nil

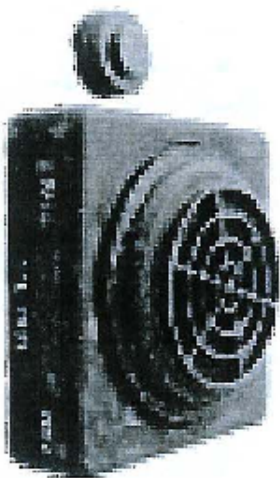
Alternative designators:

Date introduced/recovered:

Manufacturing country: Belgium

ANTI TANK MINE – BLAST

P2 MK2 (AT)



DESCRIPTION

The Pakistani P2 MK2 is a minimum metal AT mine. The mines have a plastic casing with a large removable pressure plate. Beneath the ribbed pressure plate is a cavity to accept an AP mine. The base of the mine houses the main charge, and is fitted with an auxiliary fuze well for body-trapping. Pakistan AT mine variants have round, ribbed pressure plates and may have either square bodies or round ones. A steel detector disc is supplied with these mines but is seldom used. If the pressure plate is not fitted, then the pressure required to initiate the AP mine fuze can initiate the whole assembly.

TECHNICAL DETAILS

Length (mm):	270	Effective range (m):	-
Height (mm):	130	Material	Plastic
Width (mm):	270	Colour	Brown
Diameter (mm):	-	Operation	Pressure 180-300kg
Gross weight (kg):	6.5	Fuze	AP mine
Explosive (kg):	5	Markings	White or Yellow stencilling

Alternative designators: P2 MK2 is also designation of Pakistan AP mine

Manufacturing country: Pakistan

ANTI TANK MINE – BLAST

M7A2



DESCRIPTION

M7A2 is a small metal cased pressure operated mine used during the Second World War and based on the British 'Hawkins grenade'. The casing has a central fuze well in the top surface and an auxiliary fuze well at one end for a booby-trapping. A sheet-steel cover is attached to the mine by two studs and this cover acts as a pressure plate and protects the fuze. Early models were fitted with a M601 chemical fuze, later models were replaced with the M603 mechanical fuze. This fuze has a small pressure plate bearing on a Belleville spring, which is fitted with a firing pin. The detonator assembly is housed within the fuze body directly above the booster charge. During transit, the fuze is fitted with a spring-steel safety clip, which fits around the fuze body beneath the lip of the pressure plate to prevent downward movement.

TECHNICAL DETAILS

Length	(mm):	178	Effective range (m):	-
Height	(mm):	64	Material	: Metal
Width	(mm):	114	Colour	: Green, Black
Diameter	(mm):	-	Operation	: Pressure 60-110kg
Gross weight	(kg):	2.2	Fuze	: M601 Chemical, M603 Mech
Explosive	(kg):	1.62	Markings	: Yellow stencilling

Alternative designators:

Date introduced/recovered:

Manufacturing country: USA

ANTI TANK MINE – BLAST

DM 11 (AT)



DESCRIPTION

The DM 11 is a minimum-metal, pressure-operated AT blast mine, very similar in appearance to the French M 51. The body is made from explosive mixed with 5% polyester resin for added strength. The plastic DM 46 friction fuze fits into a well in the centre of the mine, covered by a plastic fuze cap. There is also an auxiliary fuze well for booby-trapping and a carrying handle in the side of the mine. A training version of this mine is designated the DM 30.

TECHNICAL DETAILS

Length	(mm):	-	Effective range (m):	-
Height	(mm):	95	Material	: Explosive +5% resin
Width	(mm):	-	Colour	: Yellowy Brown
Diameter	(mm):	300	Operation	: Pressure 150-400kg
Gross weight	(kg):	7.4	Fuze	: DM 46 Friction Fuze
Explosive	(kg):	7	Markings	: DM11 embossed on top

Alternative designators:

Date introduced/recovered:

Manufacturing country:

ANTI TANK MINE – BLAST

Mk 7



DESCRIPTION

The British Mk 7 is a large pressure operated Anti-tank blast mine. The mine is round with a dome shaped top that has a threaded central fuze well sealed with a heavy steel cap, in the centre of a sprung pressure plate. At the base of the fuze well is an 650g Terry booster surrounded by the main charge. The fuze system used is the No5; it is of two-piece construction one half telescoping into the other. It can be either set as double or single impulse initiation. The base of the fuze is sealed with a brass plug that incorporates and protects a stab sensitive detonator. A large assembly bolt protrudes from the fuze top and a spring safety clip keeps the two halves apart. A metal carrying handle is attached to the side of the mine. The mine is normally brown in colour and modern versions have a waterproof membrane bonded onto the top surface. The mine can be used with a tilt rod.

TECHNICAL DETAILS

Length	(mm):	-	Effective range (m):	-
Height	(mm):	130	Material	Metal
Width	(mm):	-	Colour	Brown (Blue : Training)
Diameter	(mm):	325	Operation	Pressure 150-275kg
Gross weight	(kg):	13.6	Fuze	No5 Double Impulse
Explosive	(kg):	8.89	Markings	-

Alternative designators:

Date introduced/recovered:

Manufacturing country: United Kingdom

ANTI TANK MINE – BLAST

PT-Mi-Ba II



DESCRIPTION

The Czech PT-Mi-Ba II is a large AT blast mine. The lid of the mine is removable, normally held in position by lock pins inserted through the corners. During transit the lid is placed upside down on the body and the mine is housed in a wooden crate. During arming, two pressure plungers are placed through holes in the raised portion of the lid; these protrude well above the mine to give it a distinctive appearance. Beneath each of the plungers is a RO-7-II fuze with its detonator assembly resting in the booster. The base section of the mine is mostly filled with the TNT main charge. The mine has a webbing handle fitted. The lid can easily be fitted with anti-lift body-traps. The mine is usually buried slightly deeper than normal AT mines because of the length of the pressure plungers.

TECHNICAL DETAILS

Length	(mm):	395	Effective range (m):	-
Height	(mm):	135	Material	Bakelite
Width	(mm):	230	Colour	Brown
Diameter	(mm):	-	Operation	Pressure 200-450kg
Gross weight	(kg):	9.6	Fuze	RO-7-II
Explosive	(kg):	6	Markings	-

Alternative designators:

Date introduced/recovered:

Manufacturing country: Czech Republic and Slovakia

ANTI PERSONNEL MINE - BLAST

PT-MI-Ba III



DESCRIPTION

The Czech PT-MI-Ba III is a large AT blast mine. 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 centre of the pressure plate is a knurled Bakelite fuze cover that 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 charge is located in the lower part of the body. The mine is usually used with the R1-2 fuze that contains a spring-loaded striker, the end of which is retained by a brittle plastic cap. The mine is minimum metal and is hard to detect. The base of the mine has a central plug that retains the booster charge. A plastic carrying handle is located on the side of the mine and it slides out from a transit position. The fuze deteriorates in hot climates making the mine unpredictable and dangerous.

TECHNICAL DETAILS

Length	(mm):	-	Effective range (m)	:	-
Height	(mm):	101	Material	:	Bakelite
Width	(mm):	-	Colour	:	Brown
Diameter	(mm):	330	Operation	:	Pressure 200-450kg
Gross weight	(kg):	9.9	Fuze	:	HO-2 (RC-7-I)
Explosive	(kg):	7.2	Markings	:	-

Alternative designators: PTM-Ba III

Date introduced/recovered: -

Manufacturing country: Czech Republic and Slovakia, Bulgaria

ANTI TANK MINE - BLAST

TM-46



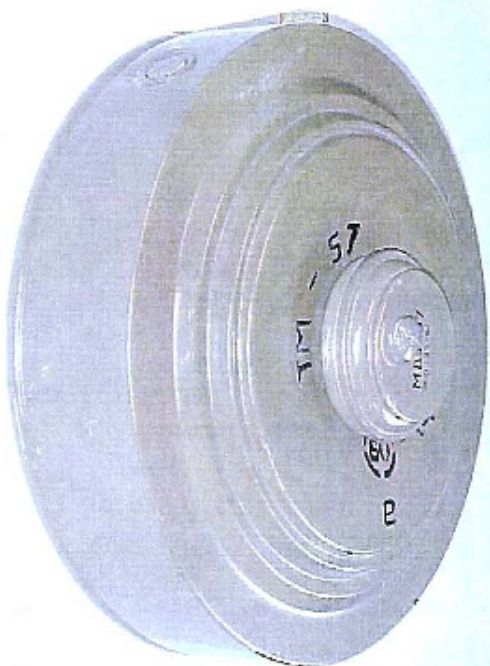
DESCRIPTION

The Russian TM - 46 is made of thin sheet steel with an obvious seam joining the top pressure plate assembly to the lower body. The top plate has concentric stiffeners and a central fuze well. The pressure plate is a two-stage diaphragm and is reinforced in the centre by a 2mm plate that is spot-welded to the cover assembly skin. The fuze well has a threaded cap with a knurled edge. In addition to conventional pressure fuzes (MV-5 and MVM), the mine accepts a tilt rod to increase reliability in certain ground conditions. There is a rigid metal carrying handle that is mounted around the filler plug on the side of the mine. The TMN - 46 has an auxiliary fuze well located on the underside of the case intended for the use of anti lift devices. The base of the mine is stamped with five stiffening ribs at regular intervals.

TECHNICAL DETAILS	
Length (mm):	-
Height (mm):	108
Width (mm):	-
Diameter (mm):	305
Gross weight (kg):	8.6
Explosive (kg):	5.7
Effective range (m) :	-
Material :	Metal
Colour :	Khaki, green
Operation :	Blast pressure, tilt, 120-400kg (21kg tilt)
Markings :	MV-5, MD-2, MD-SM, MD-6, MVM-MD6, MVSh-MD-10 Black stenciling
Alternative designators: Type 59, M/71, No6, ATM-46, ATM-46N	
Manufacturing countries: Russia, China, Egypt, Israel, Korea	

ANTI TANK MINE - BLAST

TM-57



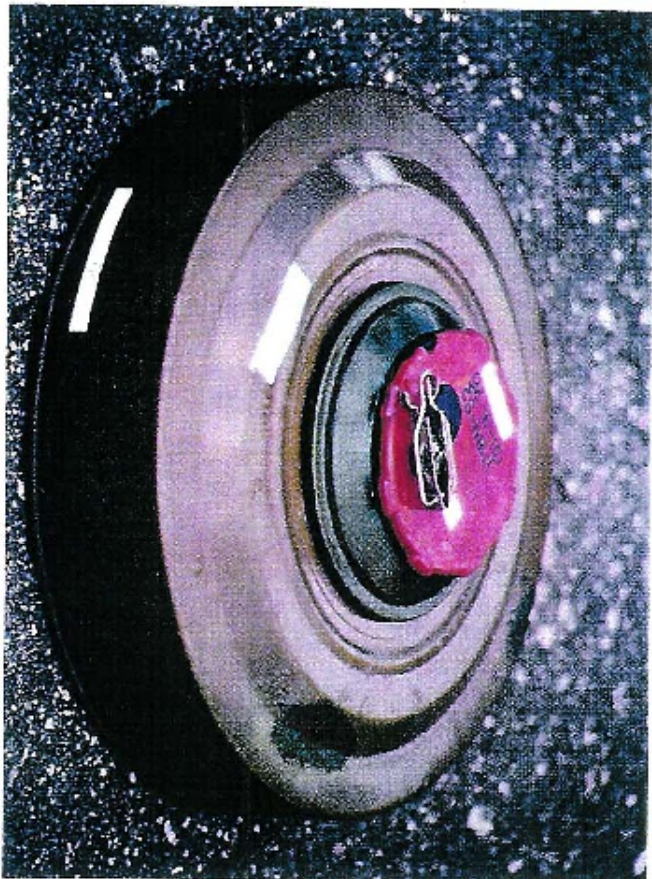
DESCRIPTION

The Russian TM-57 AT blast mine was developed from the TM-46 to incorporate a larger charge and improved fuzeing. In addition to the normal pressure fuze MVZ-57, the mine accepts a tilt rod fuze MVSh-57. The cylindrical body has a stepped pressure plate with a central threaded fuze well, sealed with a threaded plug during transit. The lower section of the body contains the main charge around a large central booster. On the side of the mine is an auxiliary fuze well with a booster, threaded to accept MUV or VPF type fuzes to give the mine an anti lift capability. The base of the mine has several stamped reinforcing ribs, a steel carrying handle and one or two filling plugs.

TECHNICAL DETAILS	
Length (mm):	-
Height (mm):	102
Width (mm):	-
Diameter (mm):	316
Gross weight (kg):	8.47
Explosive (kg):	6.34
Effective range (m) :	-
Material :	Metal
Colour :	Olive drab, light/dark green
Operation :	Blast Pressure 120-400kg Tilt
Markings :	MVZ-57, MVSh-57 Black stenciling
Alternative designators: Date introduced/recovered: -	
Manufacturing countries: Russia	

ANTI TANK MINE - BLAST

TM-62



DESCRIPTION

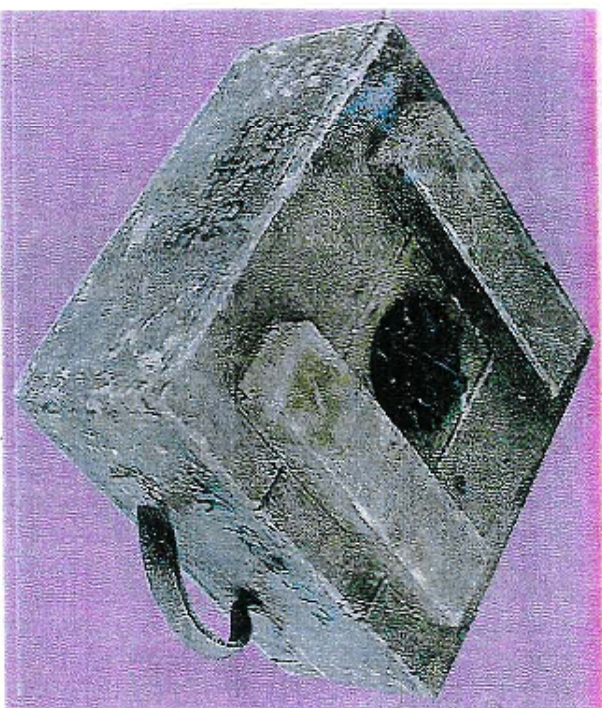
The Russian TM-62 AT blast mine is a further development of the TM-46 and TM-57 AT mines and is the name given to a family of mines each of differing slightly in their construction (TM-62M: Metal casing, TM-62P: Plastic casing, TM-62D: rectangular wooden case, TM-62B: waterproofed cardboard casing. In addition to the conventional pressure fuze MVCh-62 the mine accepts a variety of other fuzes including the MVN-72 and MVN-80 magnetic influence fuzes. The cylindrical body has a stopped top surface with a central threaded fuze well, sealed with a threaded plug during transit. At the base of the fuze well is a large booster in a metal carrier. Of all the TM-62 series mine and fuze combinations, the most widely used is the TM-62M with the MVCh-62 fuze.

TECHNICAL DETAILS TM-62M

Length (mm):	-	Effective range (m) :	-
Height (mm):	128	Material	Metal
Width (mm):	-	Colour	Green
Diameter (mm):	320	Operation	Pressure 150-550kg
Gross weight (kg):	9.5	Fuze	MVZ-62, MVCh-62, MVN-62, MVN-72, MVN-80, VM-62Z, MVP-62
Explosive (kg):	7.5	Markings	Black stenciling
Alternative designators:	Date introduced/recovered:		
Manufacturing countries:	Russia		

ANTI TANK MINE - BLAST

TMD-44



DESCRIPTION

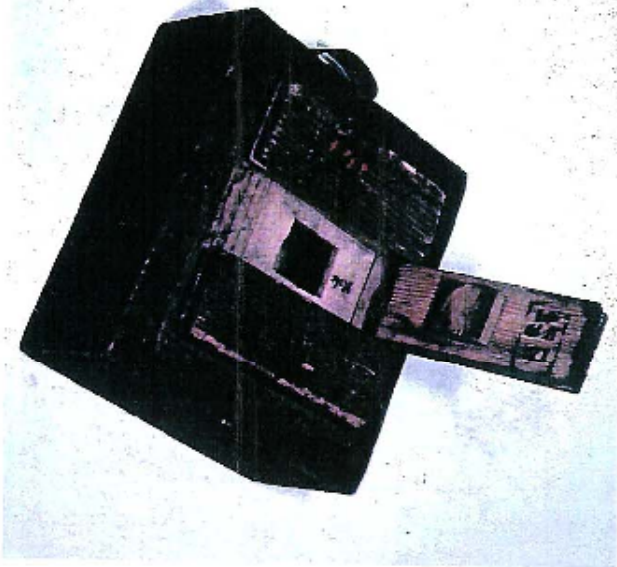
The Russian TMD-44 AT blast mine is a simple wooden box that contains an explosive charge and a central cylindrical cast booster block supported by an internal wooden framework. The booster has a central detonator well which accepts an MV-5 fuze fitted with an MD-2 stab sensitive detonator. The fuze assembly rests in the booster, retained only by the Bakelite cap of the fuze well. The fuze cap is located centrally on the top surface of the mine and protected by two wooden blocks. Cutting slots into the underside of the wooden boards normally weakens the top surface of the mine. The explosive main content is usually cast TNT blocks wrapped in paper, however picric acid has also been used. Charge weights and dimensions can vary as the mine is often assembled in the field. A webbing carrying handle is attached to one side of the box.

TECHNICAL DETAILS

Length (mm):	320	Effective range (m) :	-
Height (mm):	160	Material	Wood
Width (mm):	290	Colour	Unpainted, Green
Diameter (mm):	-	Operation	Pressure 200-500kg
Gross weight (kg):	9-10	Fuze	MV-5
Explosive (kg):	5-7	Markings	Black stenciling
Alternative designators:	Date introduced/recovered:		
Manufacturing country:	Russia, FRY		

ANTI TANK MINE - BLAST

TMD-B



DESCRIPTION

The Russian TMD-B AT blast mine is a simple wooden box that contains an explosive charge and a central cast TNT booster block. The booster has a central detonator well which accepts an MV-5 fuze fitted with an MD-2 stab sensitive detonator. The fuze assembly rests in the booster, retained only by the wooden board above it. On the top surface of the mine are three boards, the centre one hinged to allow access to the fuze well. The hinged board is locked into place by a wooden strip that runs through grooves cut into the ends of all three boards. The mine relies on the strength of the wooden strip to achieve the activation pressure suitable for an AT mine (MV-5 fuze pressure is 10-50kg). The explosive main content is usually cast TNT blocks wrapped in paper, however picric acid has also been used. Charge weights and dimensions can vary as the mine is often assembled in the field. A webbing carrying handle is attached to one side of the box.

TECHNICAL DETAILS

Length (mm):	320	Effective range (m) :	-
Height (mm):	160	Material :	Wood
Width (mm):	290	Colour :	Unpainted, Green
Diameter (mm):	-	Operation :	Pressure 200-500kg
Gross weight (kg):	9-10	Fuze :	MV-5
Explosive (kg):	5-7	Markings :	Black stenciling

Alternative designators: Similar to TMD-44 and FRY TMD-1
 Manufacturing countries: Russia, FRY

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ANTI TANK MINE - BLAST

M/80



DESCRIPTION

The Egyptian M/80 is a minimum metal pressure operated AT blast mine. Designed to be laid by hand, mechanically or scattered. The circular body of the mine is completely waterproof and non buoyant and is designed for lying in fresh and salt water, or in marshy ground. A long detonator assembly screws into a well in the base of the mine; this contains four booster pellets beneath the stab sensitive detonator. The detonator well is sealed with a blue transit plug until the mine is armed. A carrying handle is attached to the side and there is provision for an anti-lift device to be fitted.

TECHNICAL DETAILS

Length (mm):	-	Effective range (m) :	-
Height (mm):	108	Material :	Plastic
Width (mm):	-	Colour :	Sand, Brown
Diameter (mm):	204	Operation :	Pressure 180-310kg
Gross weight (kg):	3.5	Fuze :	-
Explosive (kg):	2.4	Markings :	-

Alternative designators: TC/2.4
 Date introduced/recovered: -
 Manufacturing country: Egypt, Italy

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ANTI TANK MINE – BLAST

NOTES

M15



DESCRIPTION

The American M15 is a heavy, pressure-operated AT blast mine. The sheet-steel case has a large pressure plate with a threaded central well to accept the M4 arming plug; auxiliary fuze wells are provided in the side and base. The arming plug has a central lever and three settings around the outside marked ARMED, DANGER and SAFE. The pressed steel pressure plate is sprung using a conertina spring around the central fuze well. The M603 mechanical fuze used with the mine has a small pressure plate, beneath which is a Belleville spring fitted with a striker. During transit, the fuze is fitted with a spring-steel safety clip, which fits around beneath the lip of the pressure plate to prevent downward movement. The M45 detonator assembly is housed within the fuze body, sitting directly above the M120 booster when the fuze is fitted in the mine. The mine fired with an adaptor ring can also offer full-width attack using the M624 fit rod fuze. The mine is fitted with a metal carrying handle.

TECHNICAL DETAILS

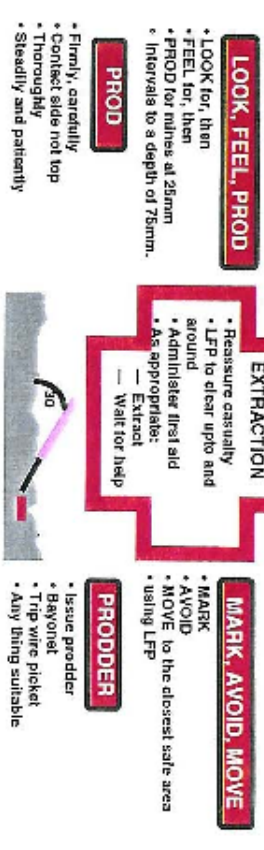
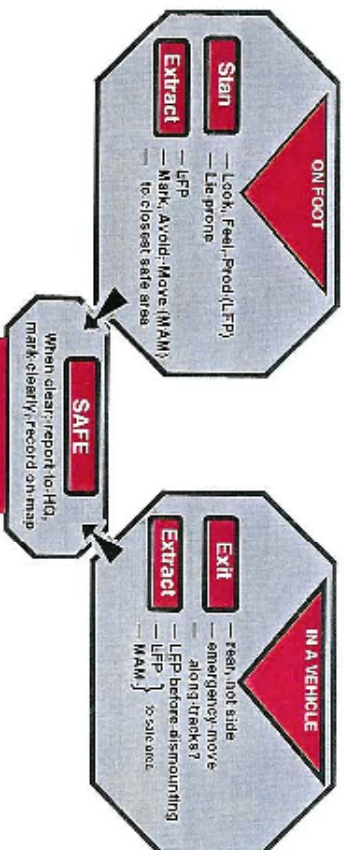
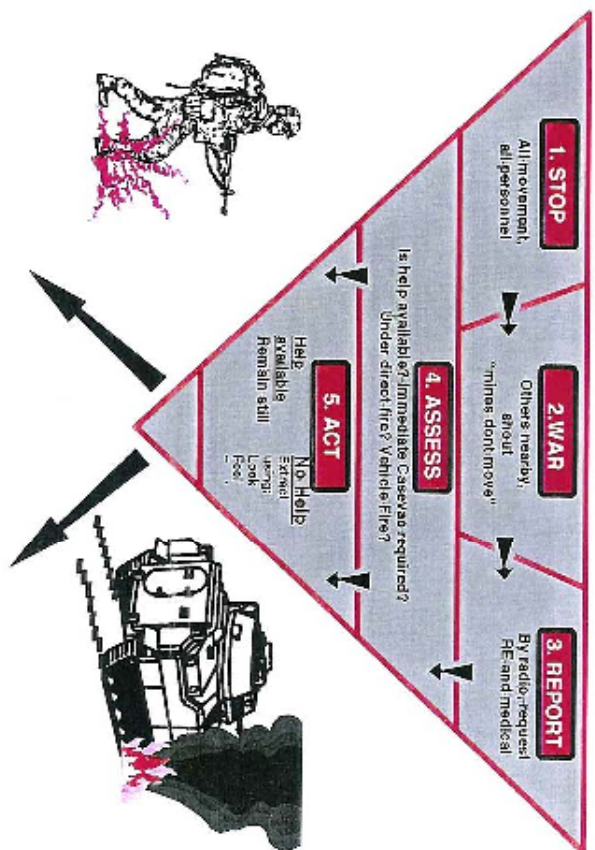
Length (mm):	-	Effective range (m) :	-
Height (mm):	150	Material :	Metal
Width (mm):	-	Colour :	Olive green
Diameter (mm):	333	Operation :	Pressure 160-340 kg
Gross weight (kg):	14.3	Fuze :	M603
Explosive (kg):	10.3	Markings :	Yellow or black stenciling

Alternative designators: Similar to M6A2

Date introduced/recovered:

Manufacturing countries: USA

MINE ENCOUNTER - IMMEDIATE ACTION



MINE DATA

FROM TO DTG	LOCATION: MAP DETAILS: GRID REF.	TYPE	COLOR	SHAPE	MARKING	QUANTITY	REMARKS
		APERS					
		ATTANK					
		UXO					
		UNKNOWN					
ACTION TAKEN							
NOTE	Mined location removed from page 8-107						



MINE AWARENESS

MINE INFORMATION & TRAINING CENTRE



- MINES - WHERE?**
- Contamination lines
 - Routes, gravel roads
 - Military establishments
 - Road blocks/obstacles
 - Strategic areas
 - Abandoned equipment
 - Abandoned buildings
 - Defensive positions
 - Field fortifications
- INDICATORS**
- Wire signs
 - Blast signatures
 - Mine casulthas
 - Mines debris
 - Mine packaging
 - Undeclared fields
 - Disturbed ground
 - Trip wires and cables
 - Mined areas may not be marked
- PRECAUTIONS**
- Attend mine awareness training
 - Obtain mine information
 - Use local knowledge
 - Stick to approved routes
 - Stay on known safe areas
 - Stay on known safe areas
 - Stay on known safe areas
 - Avoid verges
 - Plan routes
 - Think mines
- ASSISTANCE**
- Mine cable
 - Advice
 - Training
- UK MITC**
- Telephone: 01292 853828
 Military UK ATN 94261 3623
 Facsimile: 01292 853828
 Email: mitc@mitc.com
 Website: www.mitc.org.uk

DON'T TOUCH MINES/UXO