

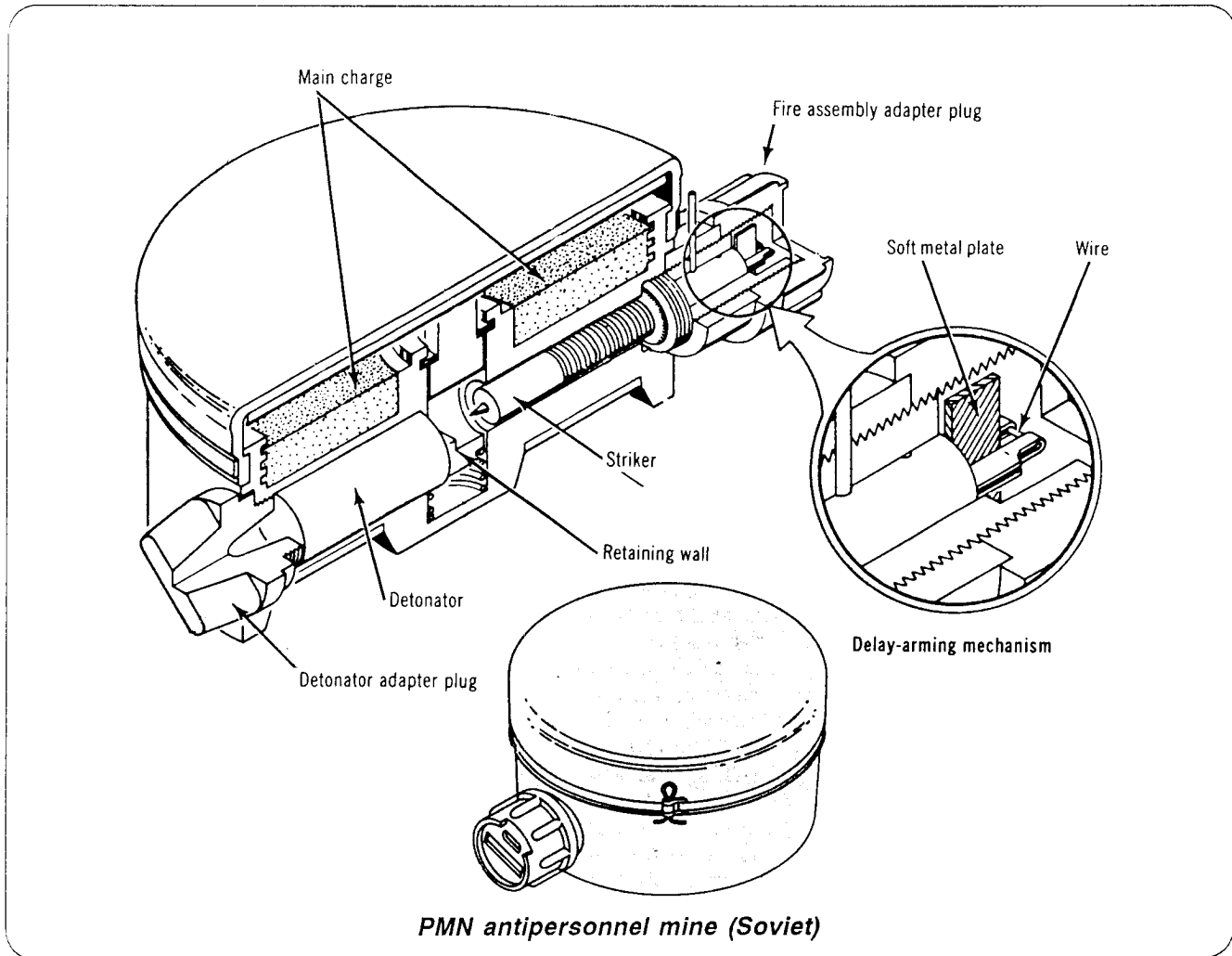
APPENDIX D

FOREIGN MINES

This appendix contains information on mines in use by some communist and free-world countries. The scope of this appendix is limited due to the amount of mine types available throughout the world (obsolete, current, and prototype mines in excess of 2,000 types).

The technical information presented here is primarily for identification purposes and is not intended to provide detailed guidance for disarming the mines. Mines and fuzes can be set up in a number of different configurations, and disarming procedures which may work for a particular mine may not necessarily work for the same mine when armed with a different fuze or antihandling device. Threat mines should be neutralized by destroying them in place using the procedures contained within this manual.

Section I. Antipersonnel Mines



PMN ANTIPERSONNEL MINE (SOVIET)

Characteristics

Height: 56 mm (2.2 in).

Diameter: 112 mm (4.4 in).

Mine Weight: 550 grams (1 lb 3.4 oz).

Explosive Weight: 200 grams (7.1 oz).

Color: Sand or black rubber cover, Bakelite body.

Description

Fuze Type: Delay-armed, pressure-initiated.

Sensitivity: 5 to 8 kg (11.0 to 17.6 lb) pressure.

Detectability: With hand-held metallic detector; fair amount of metal in fuze assembly and cover retainer.

Capability

Type Kill: Blast effect.

Antihandling: None.

Vulnerabilities

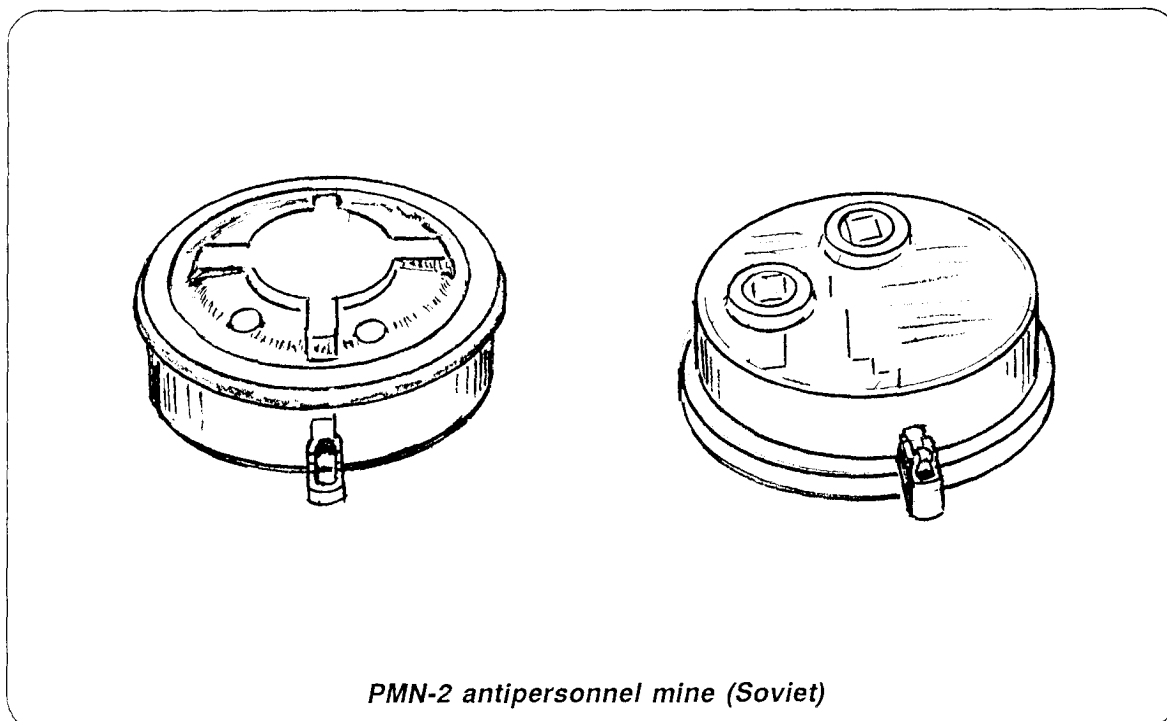
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Blast overpressure readily defeats this simple pressure fuze.

Charge Placement: Adjacent to the PMN.



PMN-2 ANTIPERSONNEL MINE (SOVIET)

Characteristics

Height: 54 mm (2.1 in).

Diameter: 125 mm (4.9 in).

Mine Weight: 450 grams (15.9 oz).

Explosive Weight: 115 grams (4.1 oz).

Color: Black rubber cover, green body.

Description

Fuze Type: Delay-armed, blast-resistant, pressure-initiated.

Sensitivity: 5 kg (11.0 lb) pressure.

Detectability: With hand-held metallic detector; fair amount of metal in fuze assembly.

Capability

Type Kill: Blast effect.

Antihandling: None.

Vulnerabilities

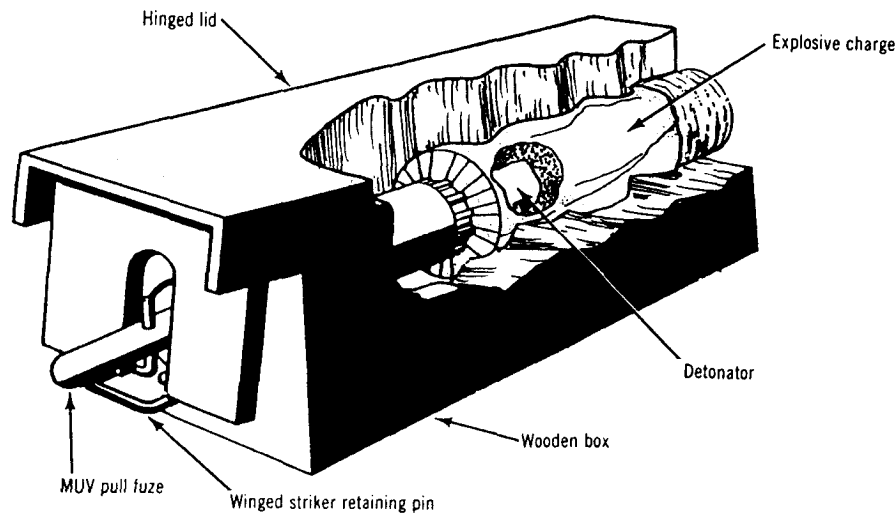
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Drastic reduction in effectiveness against PMN-2 (blast-resistant).

Charge Placement: Adjacent to the PMN-2.



PMD-6, PMD-6M antipersonnel mines (Soviet)

PMD-6, PMD-6M ANTIPERSONNEL MINES (SOVIET)

Characteristics

Length: 196 mm (7.7 in).

Width: 87 mm (3.4 in).

Height: 50 mm (2.0 in).

Mine Weight: 400 grams (14.1 oz).

Explosive Weight: 200 grams (7.1 oz).

Color: Natural wood.

Description

Fuze Type: Pressure-initiated.

Sensitivity: 1 to 10 kg (2.2 to 22.0 lb) (depends upon condition of release pin in MUV fuze).

Detectability: With hand-held detector; fair amount of metal in MUV-type fuze and detonator assembly.

Capability

Type Kill: Blast effect.

Antihandling: None.

Vulnerabilities

None.

Breach Guidance

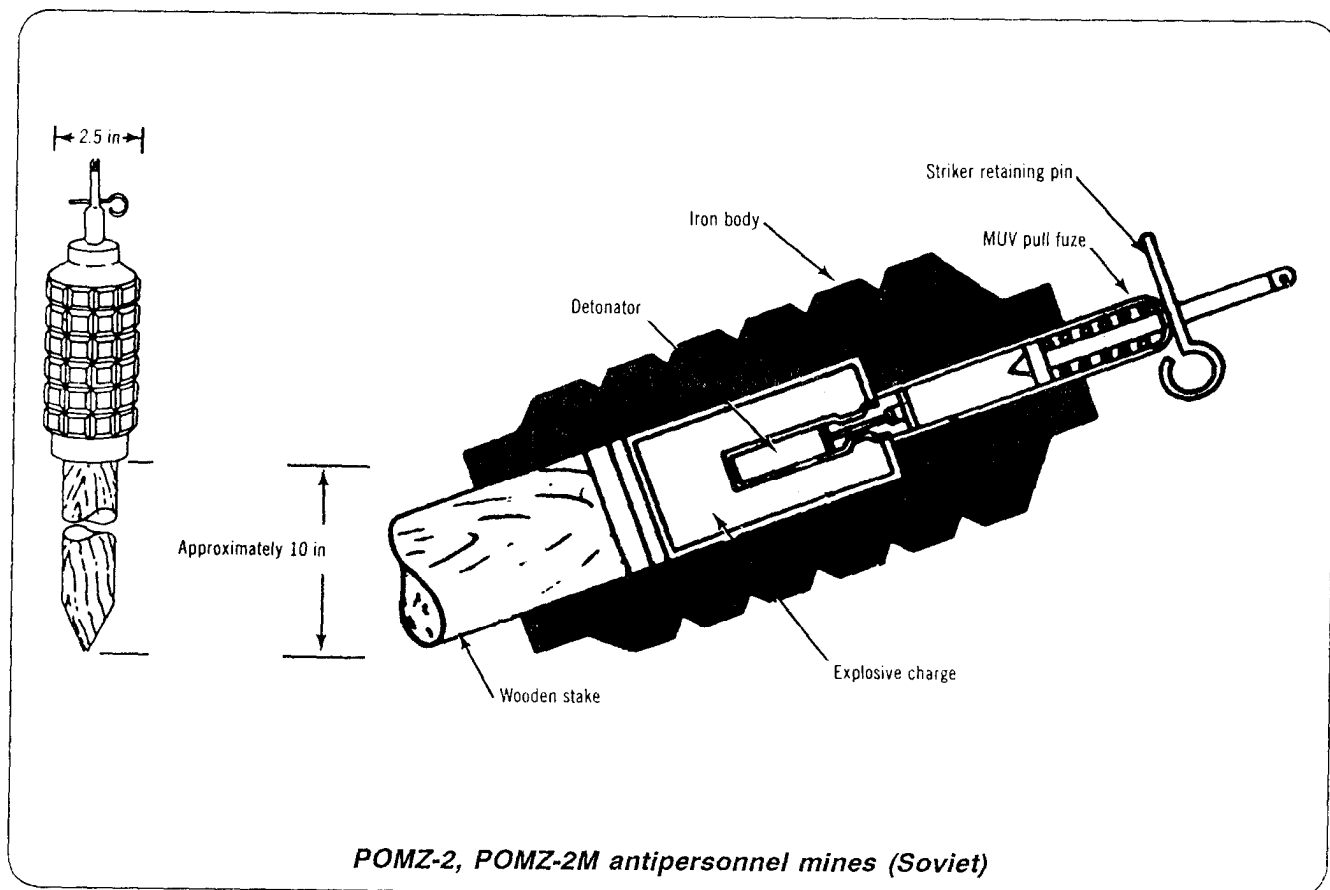
Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Blast overpressure readily defeats a "SHU" type mine.

Charge Placement: Adjacent to the PMD-6 or PMD-6M.

Remarks

Delay-armed if MUV-2, MUV-3, or MUV-4 fuzes used. Probing for small "SHU"-type mines with low pressure thresholds is a very hazardous operation.



POMZ-2, POMZ-2M ANTIPERSONNEL MINES (SOVIET)

Characteristics

Height: 107 mm (4.2 in) (without fuze).

Diameter: 60 mm (approx.) (2.4 in).

Mine Weight: 1,770 grams (3.9 lb) (POMZ-2M).
2,300 grams (5.1 lb) (POMZ-2).

Explosive Weight: 75 grams (2.6 oz).

Color: Olive drab.

Description

Fuze Type: Trip-wire-initiated,

Sensitivity: 2 to 5 kg (4.4 to 11.0 lb) (depends upon condition of release pin in MUV fuze).

Detectability: Visual, stake mounted.

Capability

Type Kill: Fragmentation effect.

Kill Radius: 4 meters.

Antihandling: None.

Vulnerabilities

None.

Breach Guidance

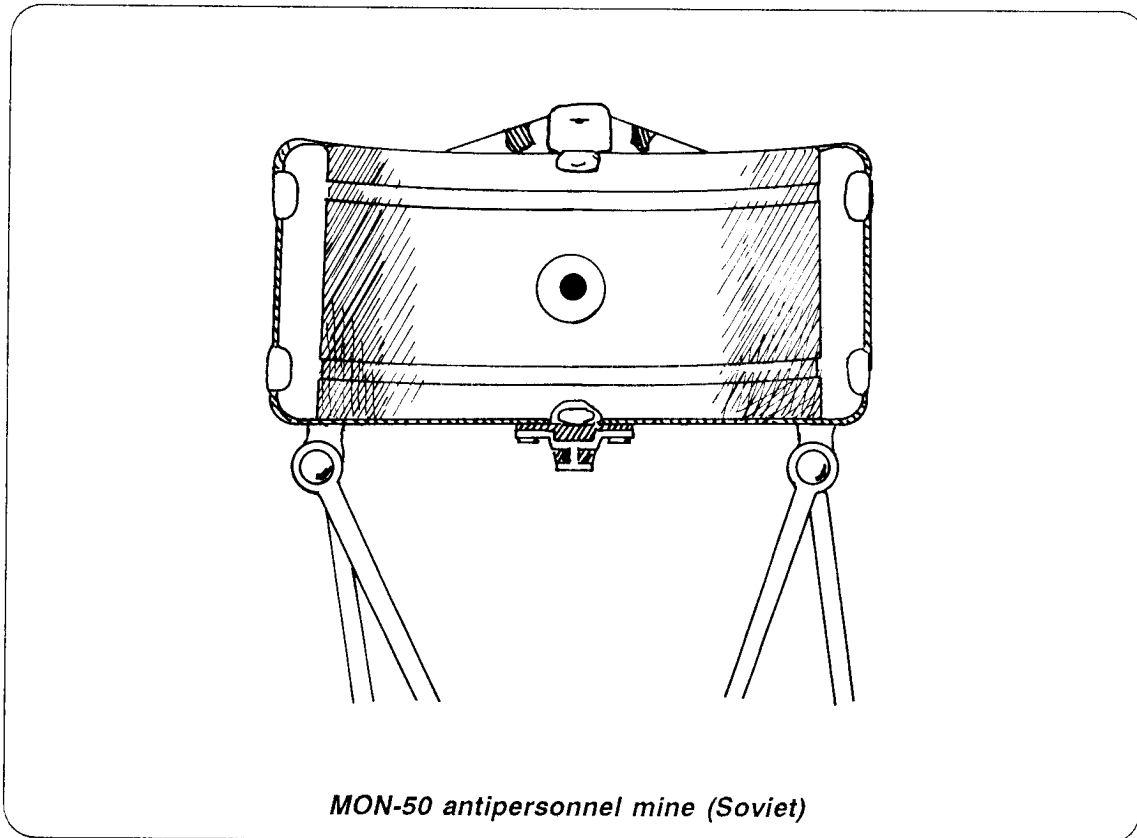
Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Heavy line charges readily defeat trip-wire-initiated mines.

Charge Placement: Adjacent to the POMZ-2 or POMZ-2M.

Remarks

Weathered/rotten mounting stakes (wood) present a hazard to clearance teams (falling POMZ type bodies are heavy enough to initiate MUV fuzes).



MON-50 ANTIPERSONNEL MINE (SOVIET)

Characteristics

Width: 220 mm (8.7 in).

Depth: 45 mm (1.8 in).

Height: 105 mm (4.1 in) (without legs).

Mine Weight: 1,960 grams (4.3 lb).

Explosive Weight: 715 grams (1.6 lb).

Color: Green.

Description

Fuze Type: Trip-wire / command-initiated.

Sensitivity: 2 to 5 kg (4.4 to 11.0 lb) (depends upon condition of release pin in MUV fuze).

Detectability: Visual; stands on own steel legs.

Capability

Type Kill: Directed fragmentation effect.

Kill Radius: 50 meters, 60-degree area of coverage (fragmentation - 455 steel cylinders).

Antihandling: None.

Vulnerabilities

None.

Breach Guidance

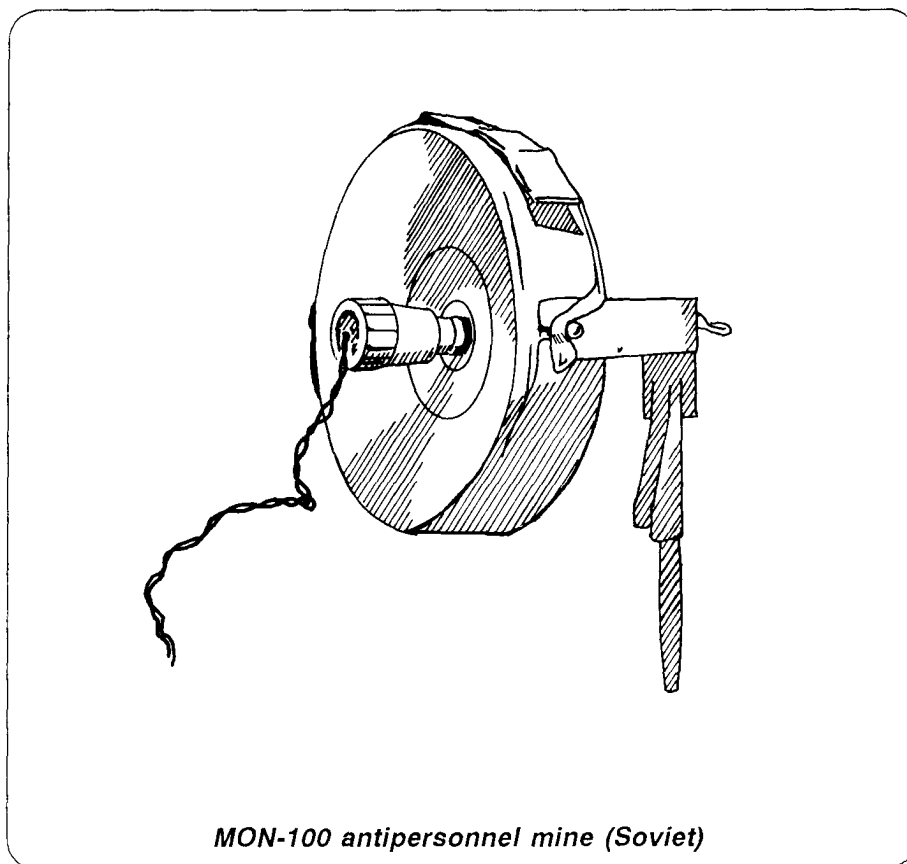
Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Heavy line charges readily defeat trip-wire/command-initiated mines.

Charge Placement: Adjacent to the MON-50.

Remarks

Two fuze wells provide opportunity for multiple trip lines or the use of detonating cord for series connection to adjacent mines. A threaded steel well located at the base of the mine is used in conjunction with a heavy mounting spike for attachment to trees and buildings.



MON-100 ANTIPERSONNEL MINE (SOVIET)

Characteristics

Diameter: 240 mm (9.4 in).

Depth: 80 mm (3.1 in).

Mine Weight: 5,400 grams (11.9 lb) (without bracket).

Explosive Weight: 2,000 grams (4.4 lb).

Color: Olive drab.

Description

Fuze Type: Trip-wire/command-initiated.

Sensitivity: 2 to 5 kg (4.4 to 11.0 lb) (depends upon condition of release pin in MUV fuze).

Detectability: Visual; stands on heavy steel spike.

Capability

Type Kill: Directed fragmentation effect.

Kill Radius: 100 meters, 15-degree area of coverage (fragmentation - 405 steel cylinders, 10 mm x 10 mm).

Antihandling: None.

Vulnerabilities

None.

Breach Guidance

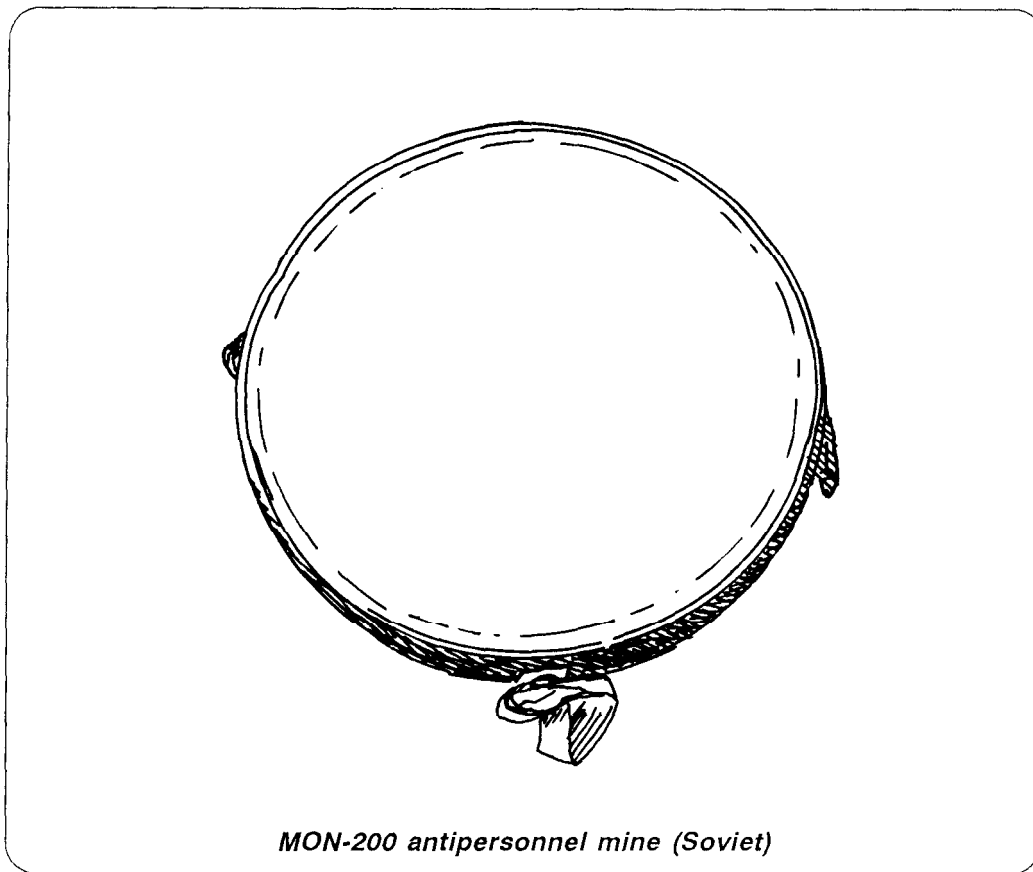
Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Heavy line charges readily defeat trip-wire/command-initiated mines.

Charge Placement: Adjacent to the MON-100.

Remarks

A heavy steel mounting spike is used for attachment to trees and buildings.



MON-200 ANTIPERSONNEL MINE (SOVIET)

Characteristics

Diameter: 450 mm (17.7 in).

Depth: 130 mm (5.1 in).

Mine Weight: 25,000 grams (55.1 lb) (without bracket).

Explosive Weight: 12,000 grams (26.5 lb).

Color: Olive drab.

Description

Fuze Type: Trip-wire/command-initiated.

Sensitivity: 2 to 5 kg (4.4 to 11.0 lb) (depends upon condition of release pin in MUV fuze).

Detectability: Visual; stands on heavy steel spike.

Capability

Type Kill: Directed fragmentation effect.

Kill Radius: 200 meters, 15-degree area of coverage (fragmentation - 910 steel cylinders, 12 mm x 12 mm).

Antihandling: None.

Vulnerabilities

None.

Breach Guidance

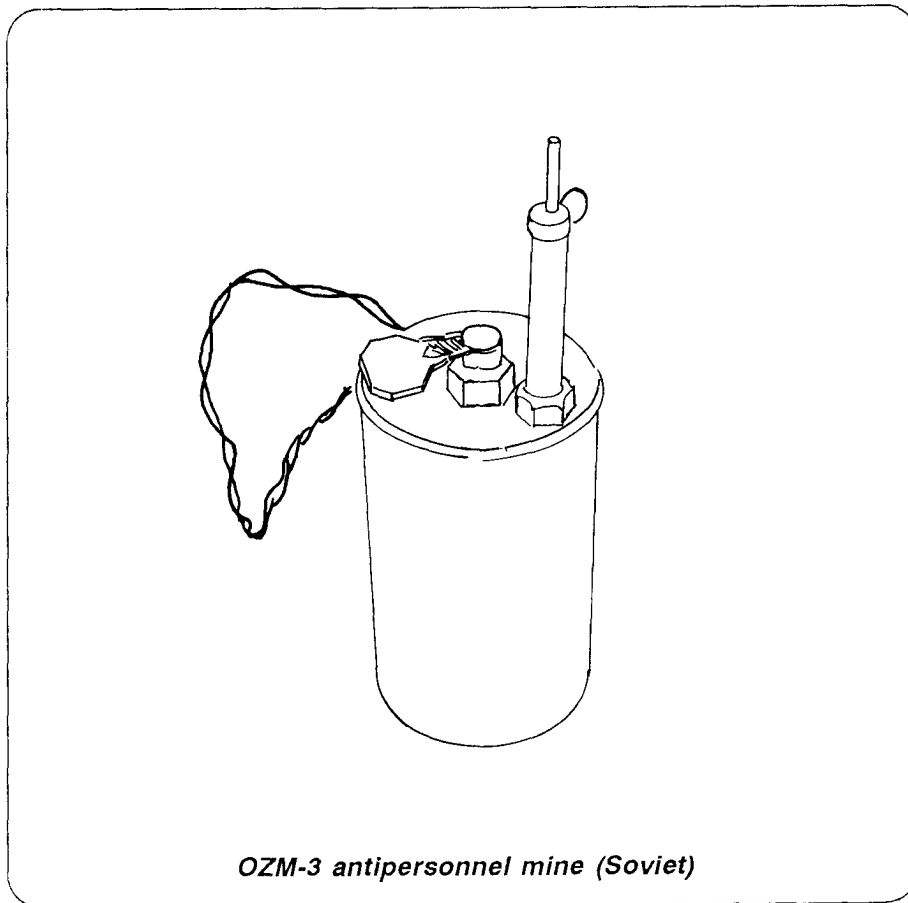
Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Heavy line charges readily defeat trip-wire/command-initiated mines.

Charge Placement: Adjacent to the MON-200.

Remarks

A heavy steel mounting stand is available.



OZM-3 ANTIPERSONNEL MINE (SOVIET)

Characteristics

Height: 120 mm (4.7 in) (without fuze).
 Diameter: 75 mm (3.0 in).
 Mine Weight: 3,000 grams (6.6 lb).
 Explosive Weight: 75 grams (2.6 oz).
 Color: Olive drab.

Description

Fuze Type: Trip-wire/command-initiated.
 Sensitivity: 2 to 5 kg (4.4 to 11.0 lb) (depends upon condition of release pin in MUV fuze).
 Detectability: Visual by identification of trip/command wire; significant metallic mass helps when using hand-held detectors.

Capability

Type Kill: Bounding fragmentation effect.

Kill Radius: 10 meters, 360-degree area of coverage.

Antihandling: None.

Vulnerabilities

None.

Breach Guidance

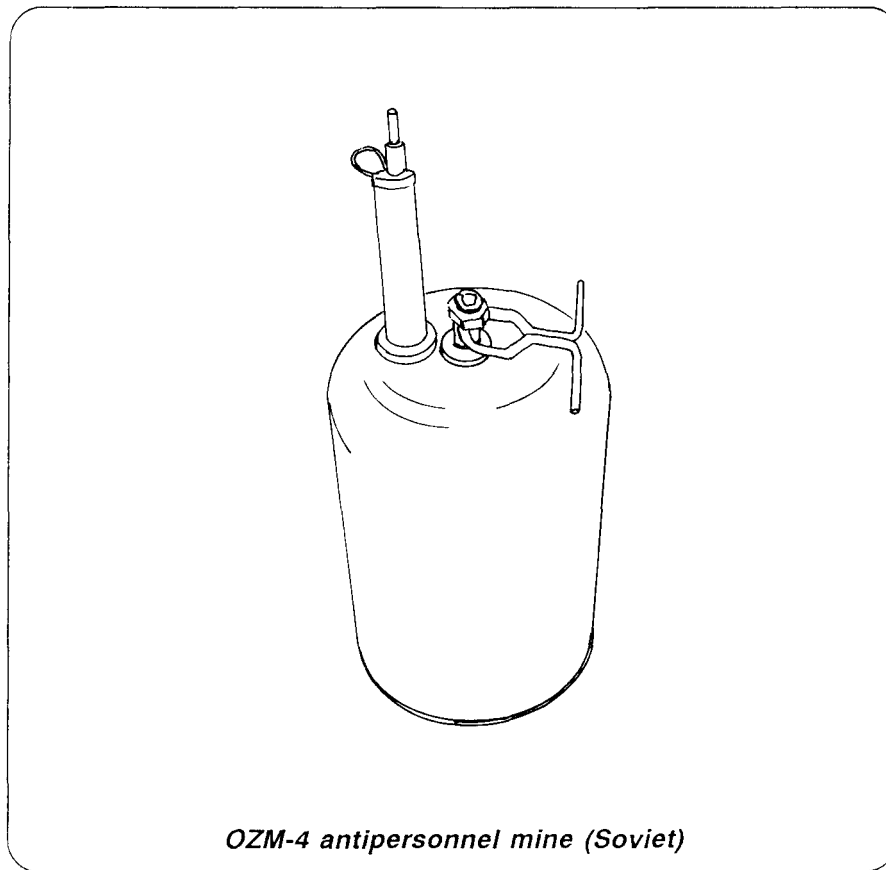
Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Heavy line charges readily defeat trip-wire/command-initiated mines.

Charge Placement: Adjacent to the OZM-3.

Remarks

Delay-armed if MUV-2, MUV-3, or MUV-4 fuzes used.



OZM-4 ANTIPERSONNEL MINE (SOVIET)

Characteristics

Height: 140 mm (5.5 in) (without fuze).

Diameter: 91 mm (3.6 in).

Mine Weight: 5,000 grams (11.0 lb).

Explosive Weight: 185 grams (6.5 oz).

Color: Olive drab.

Description

Fuze Type: Trip-wire/command-initiated.

Sensitivity: 2 to 5 kg (4.4 to 11.0 lb) (depends upon condition of release pin in MUV fuze).

Detectability: Visual by identification of trip/command wire; significant metallic mass helps when using hand-held detectors.

Capability

Type Kill: Bounding fragmentation effect.

Kill Radius: 15 meters, 360-degree area of coverage.

Antihandling: None.

Vulnerabilities

None.

Breach Guidance

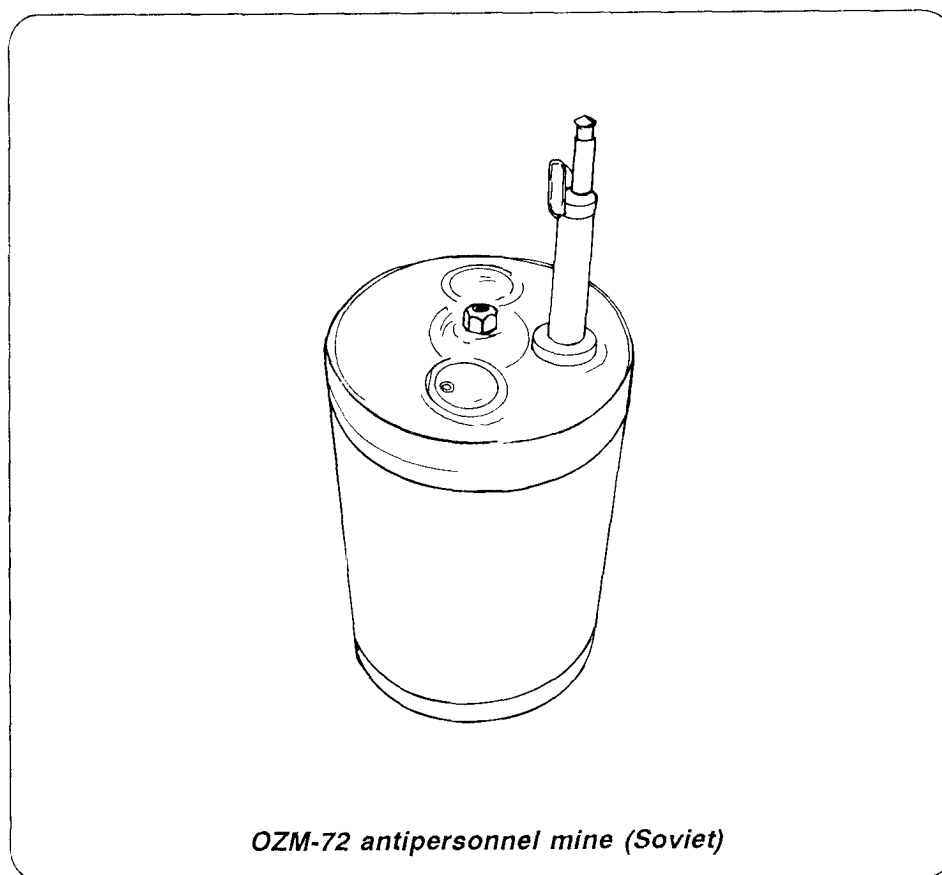
Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Heavy line charges readily defeat trip-wire/command-initiated mines.

Charge Placement: Adjacent to the OZM-4.

Remarks

Delay-armed if MUV-2, MUV-3, or MUV-4 fuzes used.



OZM-72 ANTIPERSONNEL MINE (SOVIET)

Characteristics

Height: 150 mm (5.9 in) (without fuze).

Diameter: 107 mm (4.2 in).

Mine Weight: 5,000 grams (11.0 lb).

Explosive Weight: 700 grams (1.5 lb).

Color: Olive drab.

Description

Fuze Type: Trip-wire/command-initiated.

Sensitivity: 2 to 5 kg (4.4 to 11.0 lb) (depends upon condition of release pin in MUV fuze).

Detectability: Visual by identification of trip/command wire; significant metallic mass helps when using hand-held detectors.

Capability

Type Kill: Bounding fragmentation effect.

Kill Radius: 30 meters, 360-degree area of coverage (fragmentation - 2,300 steel cylinders, 5 mm x 5 mm).

Antihandling: None.

Vulnerabilities

None.

Breach Guidance

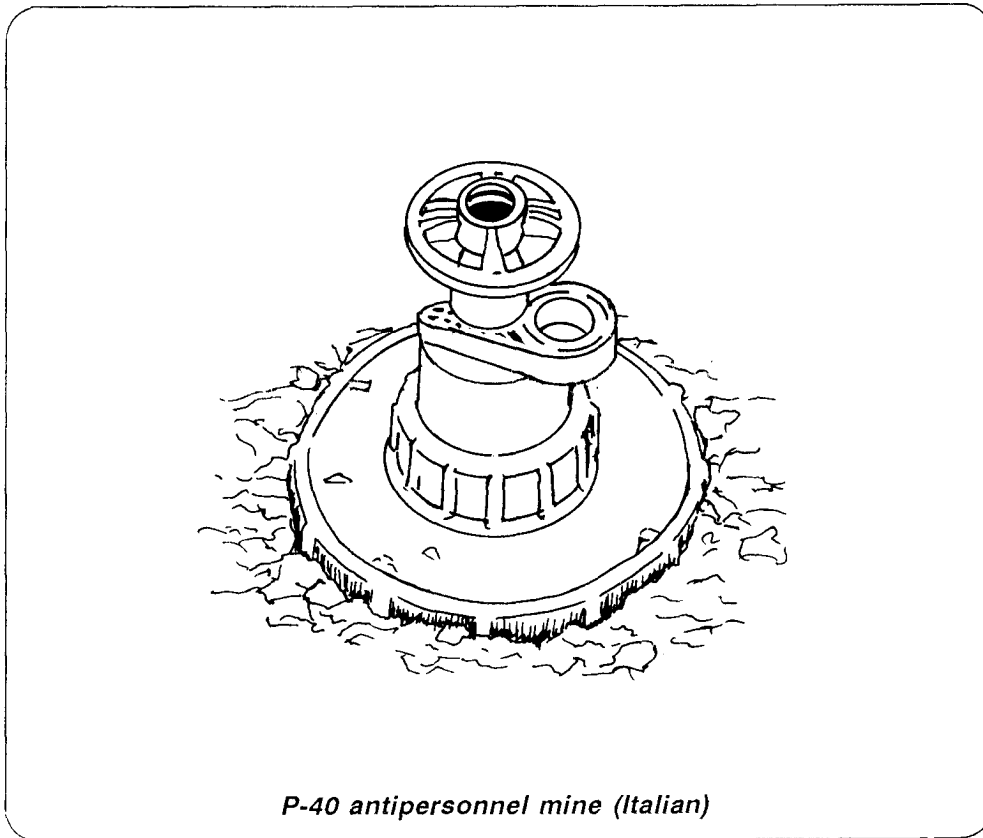
Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Heavy line charges readily defeat trip-wire/command-initiated mines.

Charge Placement: Adjacent to the OZM-72.

Remarks

Delay-armed if MUV-2, MUV-3, or MUV-4 fuzes used.



P-40 ANTIPERSONNEL MINE (ITALIAN)

Characteristics

Height: 200 mm (7.9 in) (with fuze).

Diameter: 90 mm (3.5 in).

Mine Weight: 1,500 grams (3.3 lb).

Explosive Weight: 480 grams (1.1 lb).

Color: Green, sand brown.

Description

Fuze Type: Trip-wire-initiated.

Sensitivity: 5 kg (11.0 lb) tension.

Detectability: Visual by identification of trip wire; significant metallic mass helps when using hand-held detectors.

Capability

Type Kill: Bounding fragmentation effect.

Kill Radius: 22 meters.

Antihandling: None.

Vulnerabilities

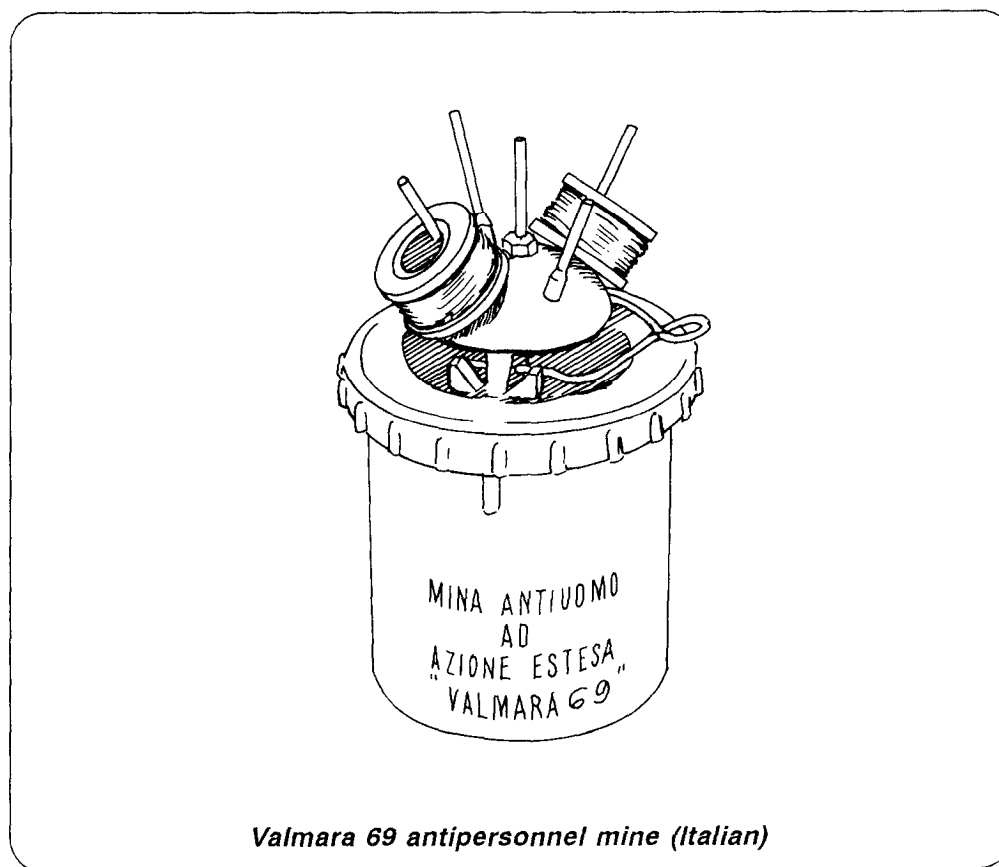
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Heavy line charges readily defeat trip-wire-initiated mines.

Charge Placement: Adjacent to the P-40.



VALMARA 69 ANTIPERSONNEL MINE (ITALIAN)

Characteristics

Height: 205 mm (8.1 in) (with fuze).
 Diameter: 130 mm (5.1 in).
 Mine Weight: 3,300 grams (7.3 lb).
 Explosive Weight: 597 grams (1.3 lb).
 Color: Green, sand brown.

Description

Fuze Type: Trip-wire/pressure-initiated.
 Sensitivity: Pressure - 10 kg (22.0 lb).
 Tension - 6 kg (13.2 lb).
 Detectability: Visual by identification of trip wire; significant metallic mass helps when using hand-held detectors.

Capability

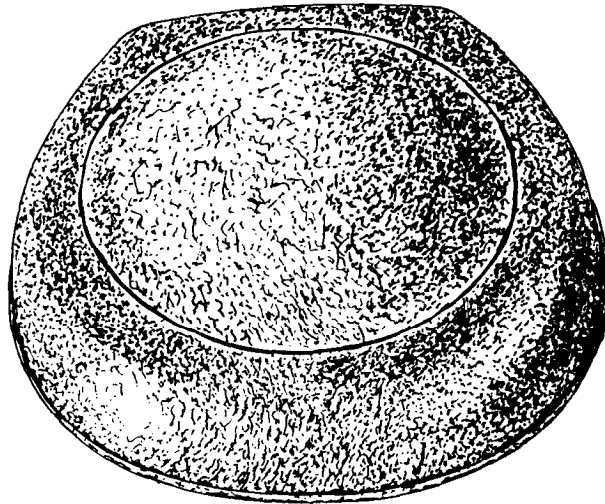
Type Kill: Bounding fragmentation effect.
 Kill Radius: 27 meters, 360-degree area of coverage (fragmentation - 1,200 steel cubes at 5x5x5 mm).
 Antihandling: None.

Vulnerabilities

None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; some will detonate.
 MICLIC: Heavy line charges readily defeat trip-wire-initiated mines.
 Charge Placement: Adjacent to the VALMARA 69.



SB-33, SB-33/AR, EM20 scatterable antipersonnel mine (Italian, Greek)

SB-33, SB-33/AR, EM20 SCATTERABLE ANTIPERSONNEL MINE (ITALIAN, GREEK)

Characteristics

Height: 32 mm (1.3 in).
 Diameter: 88 mm (3.5 in).
 Mine Weight: 140 grams (4.9 oz).
 Explosive Weight: 35 grams (1.2 oz).
 Color: Sand brown, olive drab.

Description

Fuze Type: Blast-resistant, pressure-initiated.
 Sensitivity: 5 to 20 kg (11.0 to 44.1 lb) pressure.
 Detectability: Scattered- visual identification.
 Buried - difficult with hand-held metallic detector (approximately .86 gram metal, all nonmagnetic).

Capability

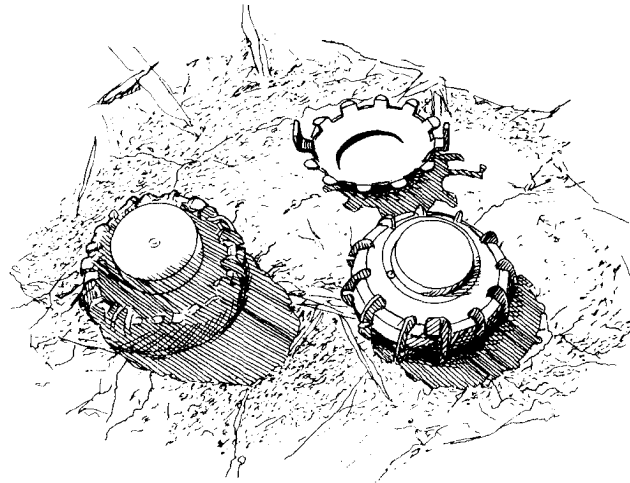
Type Kill: Blast effect.
 Antihandling: Yes; the SB-33/AR version includes an electronic package with antiremoval features.

Vulnerabilities

None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; some will detonate.
 MICLIC: Drastic reduction in effectiveness against SB-33 (blast-resistant).
 Charge Placement: Adjacent to the SB-33.



VS-50, TS-50, T/79 scatterable antipersonnel mines (Italian)

VS-50, TS-50, T/79 SCATTERABLE ANTIPERSONNEL MINES (ITALIAN)

Characteristics

Height: 45 mm (1.8 in).
 Diameter: 90 mm (3.5 in).
 Mine Weight: 186 grams (6.6 oz).
 Explosive Weight: 50 grams (1.8 oz).
 Color: Sand brown, olive drab.

Description

Fuze Type: Blast-resistant, pressure-initiated.
 Sensitivity: 10 to 12 kg (22.0 to 26.4 lb) pressure.
 Detectability: Scattered - visual identification.
 Buried - difficult with hand-held metallic detector (approximately .86 gram metal, all nonmagnetic).

Capability

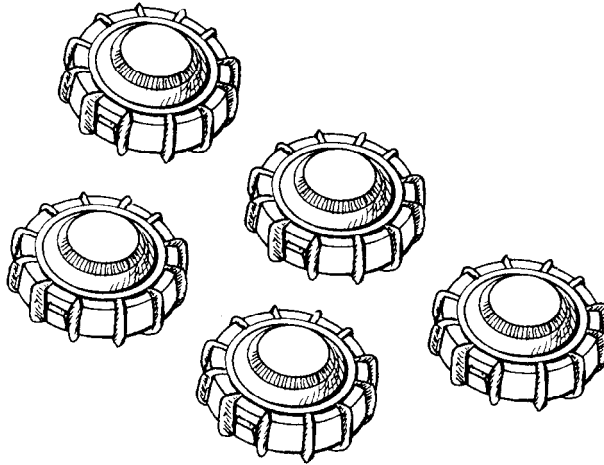
Type Kill: Blast effect.
 Antihandling: Yes; the VS-50-A version includes an electronic package with antiremoval features.

Vulnerabilities

None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; some will detonate.
 MICLIC: Drastic reduction in effectiveness (blast-resistant).
 Charge Placement: Adjacent to the mine.



VS-MK2, VS-MK2-E scatterable antipersonnel mines (Italian)

VS-MK2, VS-MK2-E SCATTERABLE ANTIPERSONNEL MINES (ITALIAN)

Characteristics

Height: 32 mm (1.3 in).
 Diameter: 90 mm (3.5 in).
 Mine Weight: 135 grams (4.8 oz).
 Explosive Weight: 34 grams (1.2 oz) (VS-MK2). 22 grams (0.8 oz) (VS-MK2-E).
 Color: Sand brown, green, olive drab.

Description

Fuze Type: Blast-resistant, pressure-initiated.
 Sensitivity: 10 kg (22.0 lb) pressure.
 Detectability: Scattered - visual identification, Buried - difficult with hand-held metallic detector (approximately .86 gram metal, all nonmagnetic).

Capability

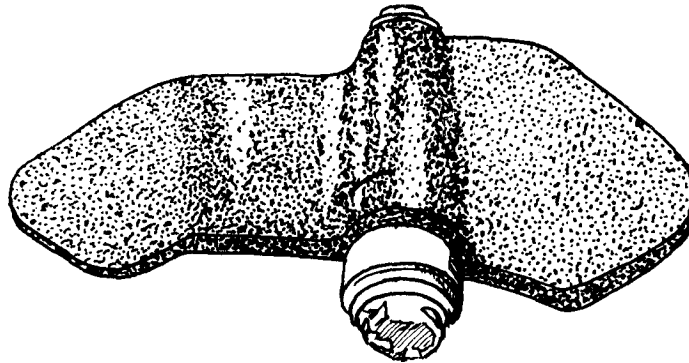
Type Kill: Blast effect.
 Antihandling: Yes; the VS -MK2 -E version includes an electronic package with antiremoval features.

Vulnerabilities

None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; some will detonate.
 MICLIC: Drastic reduction in effectiveness (blast-resistant).
 Charge Placement: Adjacent to the mine.



PFM-1 scatterable antipersonnel mine (Soviet)

PFM-1 SCATTERABLE ANTIPERSONNEL MINE (SOVIET)

Characteristics

Length: 120 mm (4.75 in).

Width: 60 mm (2.4 in).

Height: 20 mm (0.75 in).

Mine Weight: 74 grams (2.37 oz).

Explosive Weight: 40 grams (1.28 oz).

Color: Green, sand, or white.

Description

Fuze Type: Pressure-initiated (delay arming).

Sensitivity: 5 kg.

Detectability: Scattered - visual identification.

Capability

Type Kill: Blast effect.

Antihandling: None.

Vulnerabilities

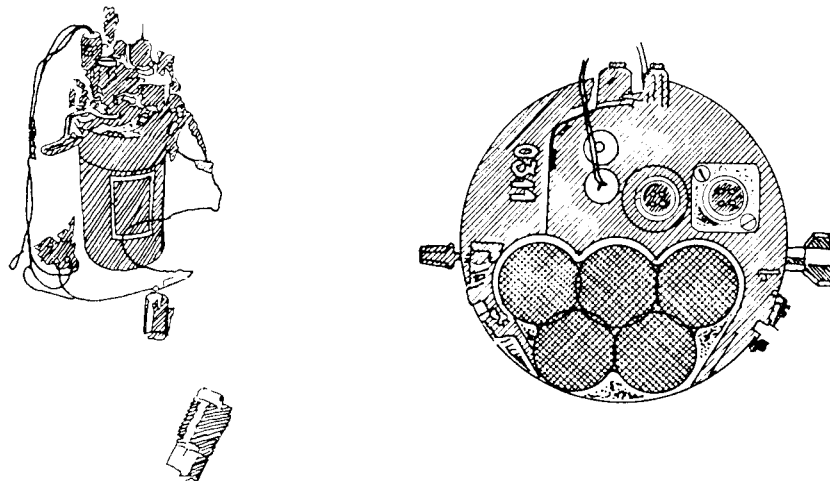
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Blast overpressure will defeat this fuze.

Charge Placement: Adjacent to PFM-1.



VP 12/13 antipersonnel minefield control device (Soviet)

VP 12/13 ANTIPERSONNEL MINEFIELD CONTROL DEVICE (SOVIET)

Characteristics

Diameter: 110 mm (4.3 in).
 Height: 250 mm (9.8 in).
 Mine Weight: 2 kg (4.4 lb).
 Power Source: 6 x 1.5V battery.
 Fuze: MUV-2 or MUV-4.
 Color: Olive drab, white markings.

Description

The VP systems are not mines, but are control and initiation devices for mines. Originally known as the UMK, the first model, the VP4, with its battery pack (VP5), has been succeeded by the VP 12 and VP 13. Both units are essentially similar and employ one or more geophones (seismic sensors) to detect personnel on foot up to 20 meters away. The unit is cylindrical in shape with a plain sheet steel body. The top surface is a complex series of sockets with wires protruding; it is attached to the main body by three steel clips. The geophone has a pointed probe on a cylinder with a wide cap and three attached wires.

Operation

The unit is positioned and the geophone(s) buried nearby. Up to five mines, normally directional or bounding, are connected to wires from sockets on the top surface; they may be up to 25 meters away from the unit. Once set up, a self-destruct charge is normally placed on the unit in a position marked by a white box stenciled on the body. Two wires are provided for this purpose. An MUV-2 or MUV-4 is screwed onto a socket housing a micro switch; this provides the delay to arming. When the micro switch is depressed by the striker, a red light-emitting diode (LED) indicates that the unit is active. The geophones will now register movement on foot, and the VP unit will fire some or all of the mines. When the battery runs down, the unit will automatically self-destruct. Battery life is thought to be up to one year.

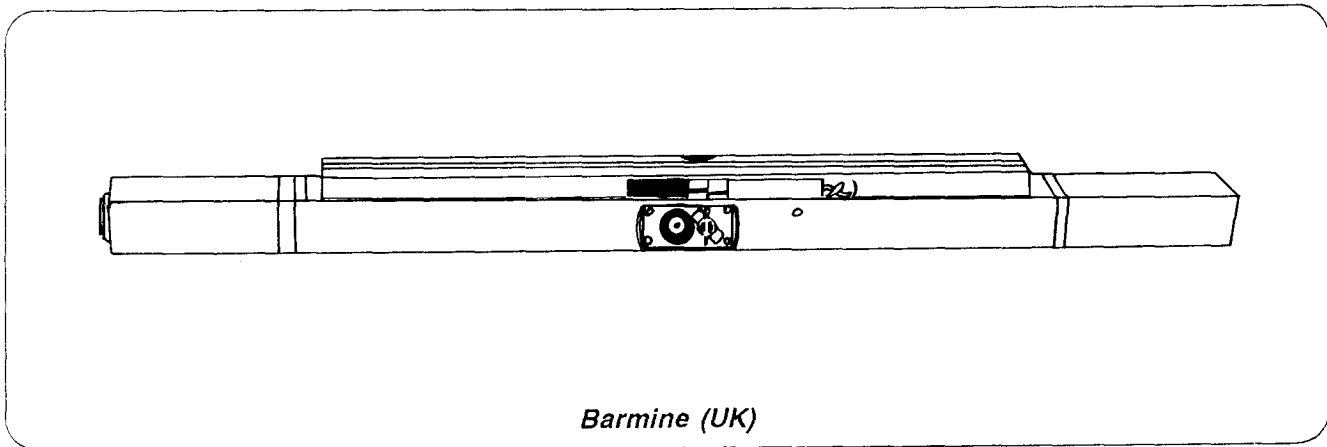
Neutralization

No attempt should be made to neutralize a VP 12 or 13.

Disarming

It is clearly undesirable to approach a VP system under any circumstances. Should clearance be absolutely necessary, all mines must be identified before any action is taken, bearing in mind the range of directional mines (up to 200 meters). The mines may be disarmed one at a time or a remote attack made

on the control unit from a **safe** location: both options would be extremely dangerous if the unit were still active. Should an individual encounter a VP 12 or 13, his best option is to cut the copper-colored wires to the mine, one by one. This practice is not guaranteed to be safe, merely the best alternative

Section II. Antitank Mines*Barmine (UK)***BARMINE (UK)****Characteristics**

Length: 1,200 mm (47.2 in).
 Width: 81 mm (3.2 in).
 Height: 102 mm (4.0 in).
 Mine Weight: 10.4 kg (22.9 lb).
 Explosive Weight: 8.4 kg (18.5 lb).
 Color: Olive drab.

Description

Fuze Type: Both single- and double-impulse pressure fuzes available.
 Detectability: Single-impulse fuze - transparent arming lever.
 Double-impulse fuze - black arming lever.

Capability

Type Kill: Blast effect.

Antihandling: None with above fuzes. However, an additional fuze does incorporate magnetic sensing and antidisturbance.

Vulnerabilities

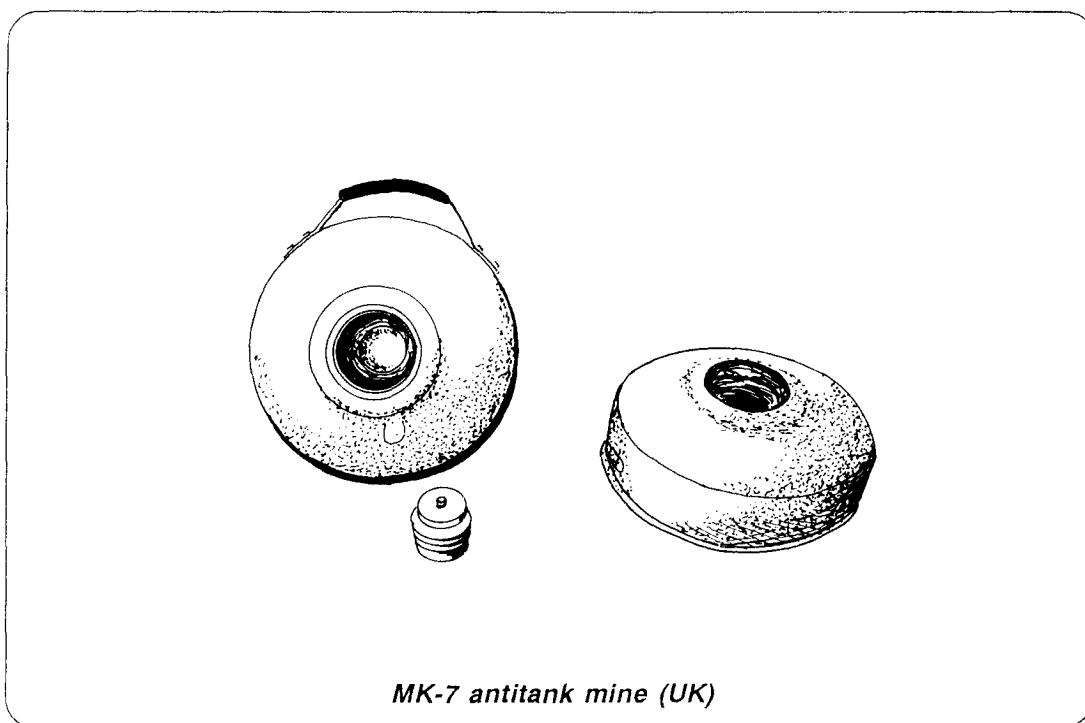
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area;

MICLIC: Single-impulse pressure fuze - none.
 Double-impulse pressure fuze - none.

Charge Placement: Adjacent to the Barmine.
 Minimum Safe Distance: For deliberate grappling - 50 meters.



MK-7 ANTITANK MINE (UK)

Characteristics

Diameter: 325 mm (12.8 in).
 Height: 130 mm (5.1 in).
 Mine Weight: 13.6 kg (30.0 lb),
 Explosive Weight: 8.89 kg (19.6 lb).
 Color: Olive drab, brown.

Description

Fuze Type: Both single- and double-impulse pressure fuzes available as well as a tilt-rod fuze.
 Sensitivity: Pressure - 150 kg (330.7 lb).
 Tilt - 3 to 18 kg (6.1 to 39.7 lb).
 Detectability: Visual for tilt rods; remaining by hand-held metallic detector (significant metallic content in mine body).

Capability

Type Kill: Blast effect.

Antihandling: Secondary fuze well available for booby-trap purposes (located on the bottom of the mine body).

Vulnerabilities

None.

Breach Guidance

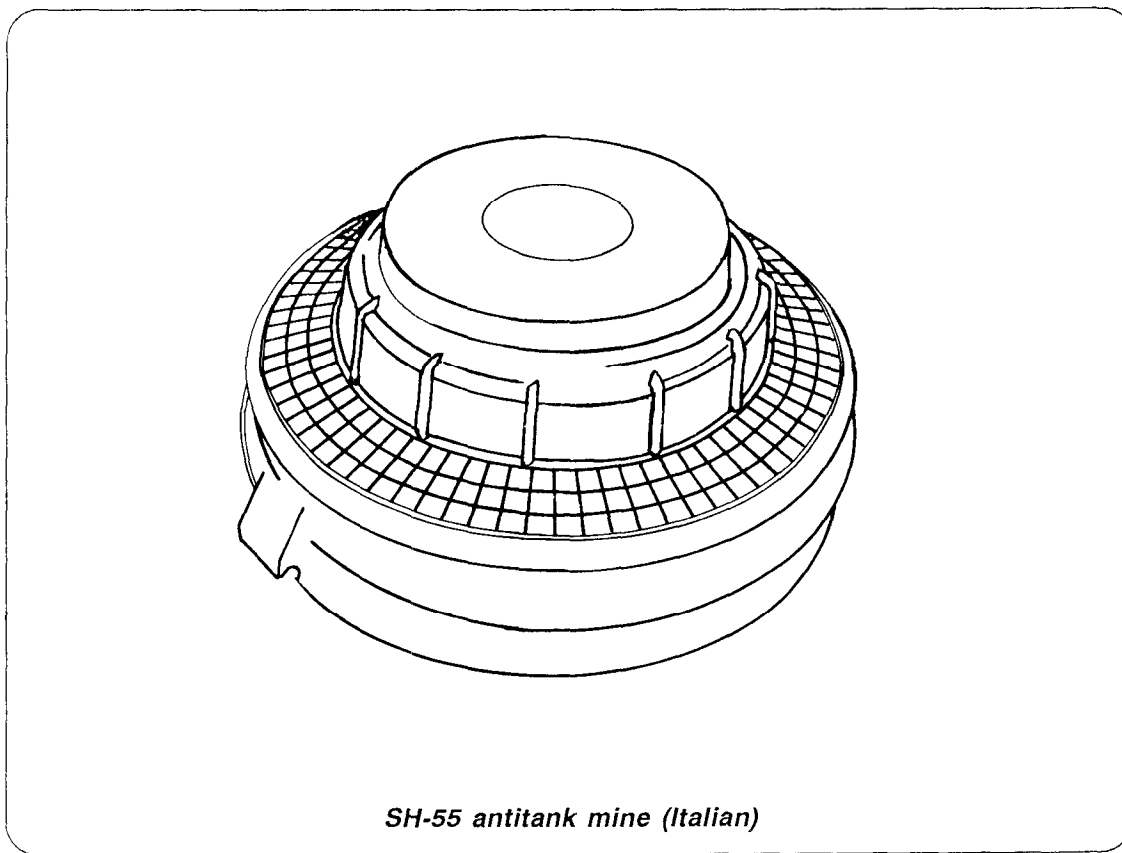
Mine Plow: Removes armed mines from plowed area; detonates booby-trapped mines.

MICLIC: Single-impulse pressure fuze - none.

Double-impulse pressure fuze - none.

Tilt-rod fuze - none.

Charge Placement: Adjacent to the MK-7.



SH-55 ANTITANK MINE (ITALIAN)

Characteristics

Diameter: 280 mm (11.0 in).

Height: 122 mm (4.8 in).

Mine Weight: 7.3 kg (16.1 lb).

Explosive Weight: 5.5 kg (12.1 lb).

Color: Sand brown.

Description

Fuze Type: Blast-resistant, pressure-initiated.

Sensitivity: 185 kg (407.8 lb).

Detectability: Difficult with hand-held detectors (metallic content approximately 5.0 grams; steel striker tip).

Capability

Type Kill: Blast effect.

Antihandling: Two secondary fuze wells available for booby-trap purposes (one each on the side and bottom of the mine case). Additionally, if the VSN/AR-AN fuze is present, then removal of the fuze itself will detonate the mine.

Vulnerabilities

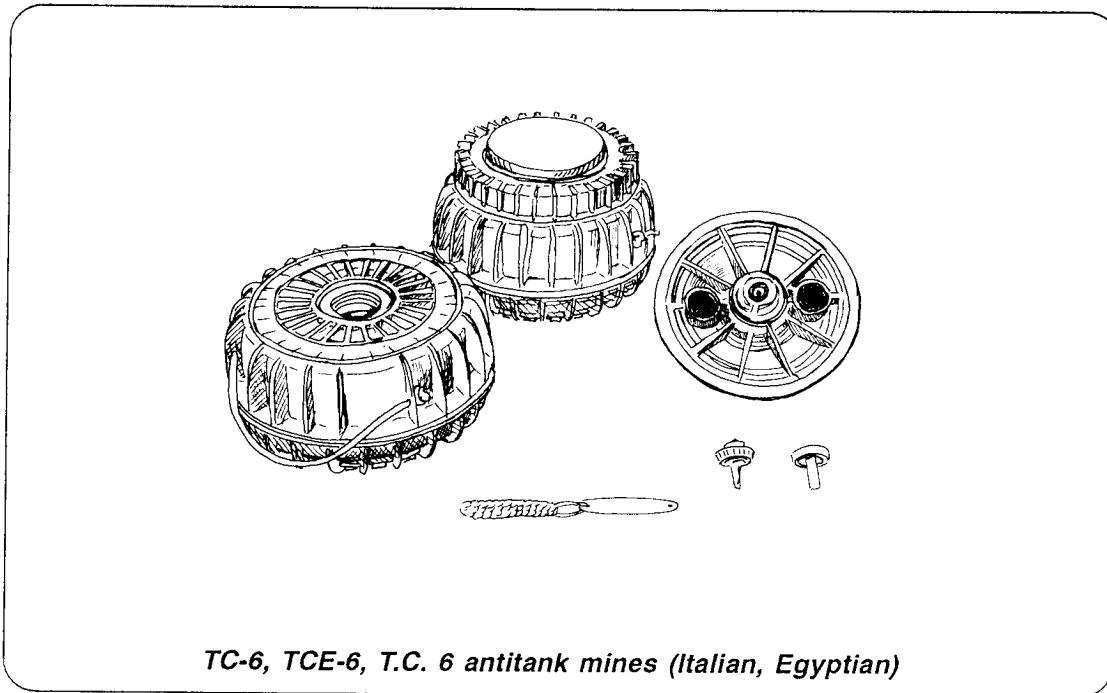
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; detonates booby-trapped mines.

MICLIC: Drastic reduction in effectiveness (blast resistant).

Charge Placement: Adjacent to the SH-55.



TC-6, TCE-6, T.C. 6 ANTITANK MINES (ITALIAN, EGYPTIAN)

Characteristics

Diameter: 270 mm (10.6 in).
 Height: 185 mm (7.3 in).
 Mine Weight: 9.6 kg (21.2 lb).
 Explosive Weight: 6.0 kg (13.2 lb).
 Color: Sand brown, olive drab.

Description

Fuze Type: Blast-resistant, pressure-initiated.
 Sensitivity: 180 kg (396.8 lb).
 Detectability: Difficult with hand-held detectors (metallic content approximately 2.86 grams; stainless steel striker tip and retaining spring). Much easier detection if the "E" version with its electronics package is employed.

Capability

Type Kill: Blast effect.
 Antihandling: Secondary fuze well available for booby-trap purposes (on the bottom of the mine case).

Vulnerabilities

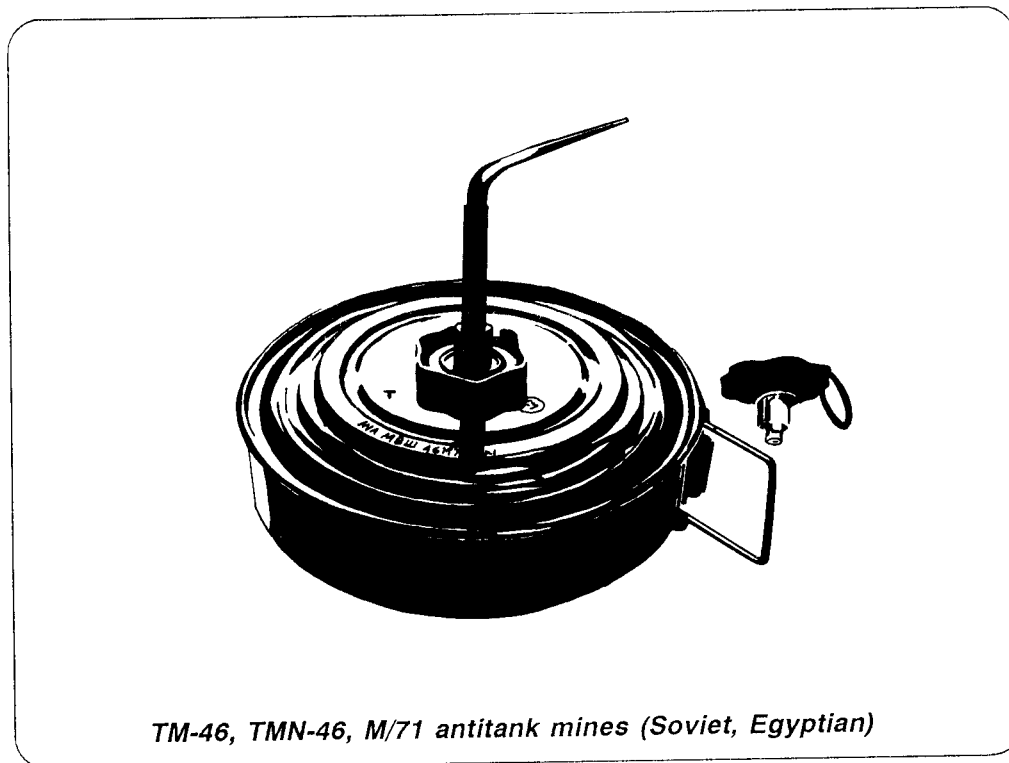
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; detonates booby-trapped mines.
 Charge Placement: Adjacent to the TC-6, TCE-6, or T.C. 6 mines.

Remarks

The "E" version incorporates an electronics package primarily intended for remote activation/deactivation with a hand-held remote controller. Currently, this version does not include antilift/antidisturbance/self-destruct features. However, these are normal options in most Italian electronic fuzes.



TM-46, TMN-46, M/71 ANTITANK MINES (SOVIET, EGYPTIAN)

Characteristics

Diameter: 305 mm (12.0 in).

Height: 108 mm (4.3 in).

Mine Weight: 8.6 kg (19.0 lb).

Explosive Weight: 5.7 kg (12.6 lb).

Color: Sand brown, olive drab.

Description

Fuze Type: pressure-initiated (no delay arming). Truncated tilt rod, contact-initiated.

Sensitivity: 180 kg (396.8 lb).

Detectability: Visually (truncated tilt rods) and hand-held detectors (significant metallic content in mine body).

Capability

Type Kill: Blast effect.

Antihandling: Secondary fuze well (TMN-46 only) available for booby-trap purposes (on the side of the mine body).

Vulnerabilities

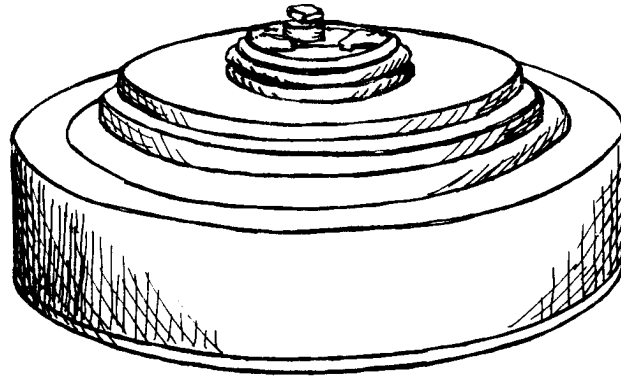
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; detonates booby-trapped mines.

MICLIC: Detonates antitank mines with simple pressure fuzes.

Charge Placement: Adjacent to the mine.



TM-57 antitank mine (Soviet)

TM-57 ANTITANK MINE (SOVIET)

Characteristics

Diameter: 316 mm (12.4 in).

Height: 102 mm (4.0 in).

Mine Weight: 8.47 (18.7 lb).

Explosive Weight: 6.34 kg (14.0 lb).

Color: Olive drab.

Description

Fuze Type: Delay-armed, blast-resistant, pressure-initiated. Truncated tilt rod, contact-initiated.

Sensitivity: 200 kg (440.9 lb).

Detectability: Visually (truncated tilt rods) and hand-held detectors (significant metallic content in mine body).

Capability

Type Kill: Blast effect.

Antihandling: Secondary fuze well available for booby-trap purposes (located on the side of the mine body).

Vulnerabilities

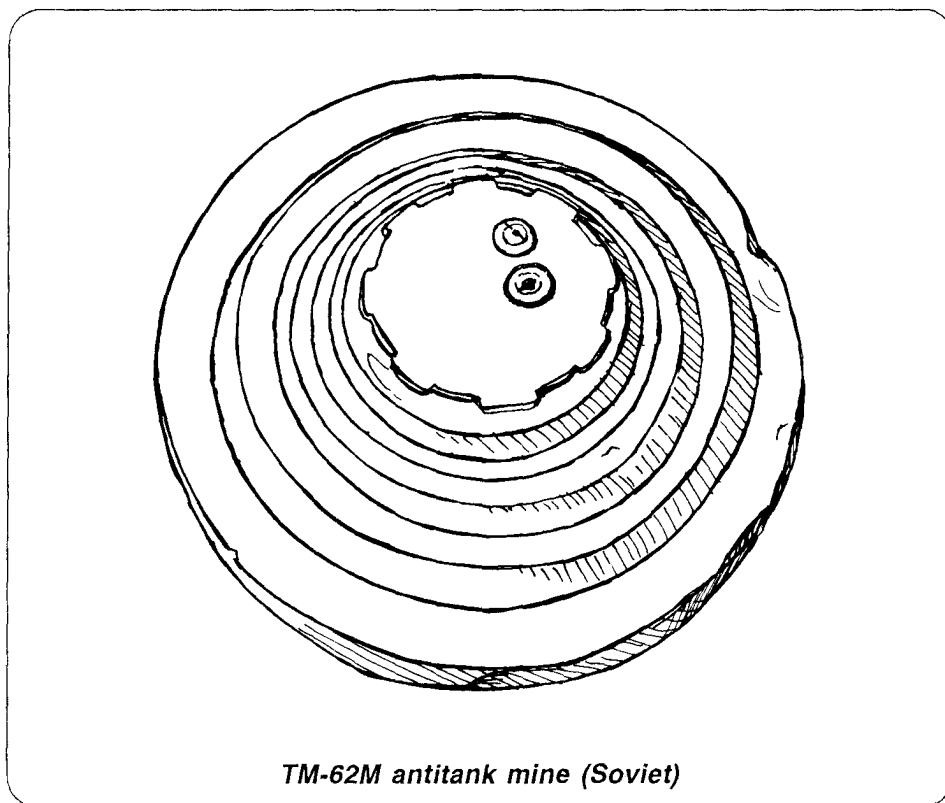
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; detonates booby-trapped mines.

MICLIC: Drastic reduction in effectiveness (blast-resistant).

Charge Placement: Adjacent to the TM-57 mine.



TM-62M ANTITANK MINE (SOVIET)

Characteristics

Diameter: 320 mm (12.6 in).

Height: 102 mm (4.0 in).

Mine Weight: 8.5 kg (18.7 lb).

Explosive Weight: 7.2 kg (15.9 lb).

Color: Olive drab.

Description

Fuze Type: Delay-armed, blast-resistant, pressure-initiated.
 Delay-armed, magnetic-influence fuze type.
 Seismic-influence fuze type.

Sensitivity: 200 kg (440.9 lb).

Detectability: With hand-held detectors; significant amount of metal in mine body.

Capability

Type Kill: Blast effect.

Antihandling: No secondary fuze wells. The magnetic and seismic fuze have inherent antisturbance features. Additionally, antilift devices are associated with the TM-62 series mines.

Vulnerabilities

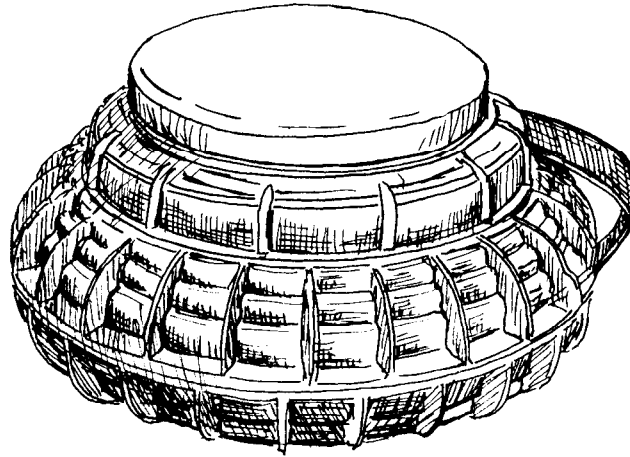
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; detonates booby-trapped mines.

MICLIC: Drastic reduction in effectiveness (blast-resistant).

Charge Placement: Adjacent to the TM-62M mine.



VS-2.2 antitank mine (Italian)

VS-2.2 ANTITANK MINE (ITALIAN)

Characteristics

Diameter: 240 mm (9.4 in).

Height: 120 mm (4.7 in).

Mine Weight: 3.5 kg (7.7 lb).

Explosive Weight: 2.13 kg (4.7 lb).

Color: Sand brown, olive drab, green.

Description

Fuze Type: Blast-resistant, pressure-initiated.

Sensitivity: 180 to 220 kg (396.8 to 485.0 lb).

Detectability: Difficult with hand-held detectors (metallic content approximately 5.0 grams; steel striker tip).

Capability

Type Kill: Blast effect.

Antihandling: Bottom detonator well available for booby-trap devices. Additionally, if the VSN/AR-AN fuze is present, then removal of the fuze itself will detonate the mine.

Vulnerabilities

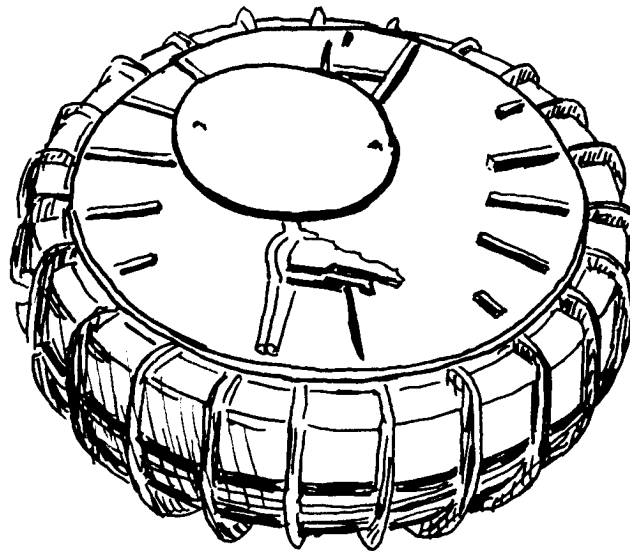
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; detonates booby-trapped mines.

MICLIC: Drastic reduction in effectiveness (blast-resistant).

Charge Placement: Adjacent to the VS-2.2 mine.



SB-MV antitank mine (Italian)

B-MV ANTITANK MINE (ITALIAN)

Characteristics

Diameter: 236 mm (9.3 in).

Height: 101 mm (4.0 in) (with fuze)

Mine Weight: 5.0 kg (11.0 lb).

Explosive Weight: 2.6 kg (5.7 lb).

Color: Sand brown, olive drab.

Description

Fuze Type: Delay-armed, magnetic-influence initiated.

Sensitivity: Changing ambient magnetic fields.

Detectability: By probing and visual identification of camouflage efforts. Operating hand-held mine detectors may detonate this mine.

Capability

Type Kill: Shaped-charge effect.

Antihandling: Both antilift (tilt) and self-neutralization features.

Vulnerabilities

None.

Breach Guidance

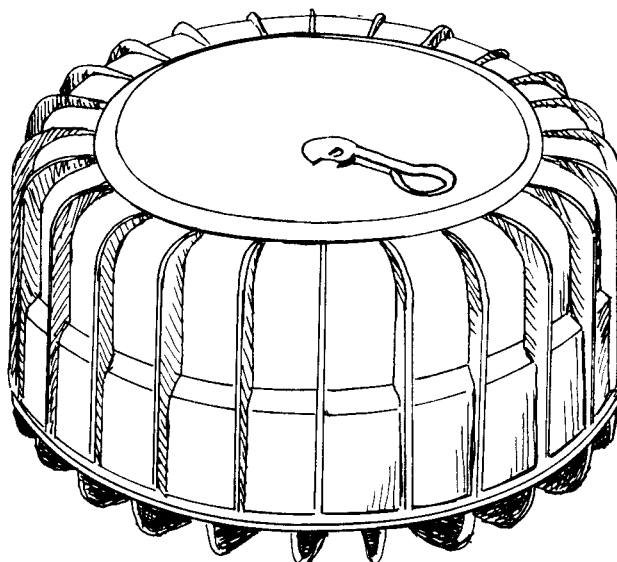
Mine Plow: Removes armed mines from plowed area; all fuzes will detonate, even those under the track area.

MICLIC: Little effectiveness against magnetic fuzes in buried conventional mines.

Charge Placement: Adjacent to the SB-MV mine.

Remarks

Self-neutralization settings are programmable.



VS-HCT antitank mine (Italian)

VS-HCT ANTITANK MINE (ITALIAN)

Characteristics

Diameter: 290 mm (11.4 in).

Height: 108 mm (4.3 in).

Mine Weight: 7.0 kg (15.4 lb).

Explosive Weight: 5.0 kg (11.0 lb).

Color: Sand brown, olive drab.

Description

Fuze Type: Delay-armed, magnetic-influence initiated.

Sensitivity: Changing ambient magnetic fields.

Detectability: By probing and visual identification of camouflage efforts. Operating hand-held mine detectors may detonate this mine.

Capability

Type Kill: Shaped-charge effect.

Antihandling: Both antilift (tilt) and self-neutralization features.

Vulnerabilities

None.

Breach Guidance

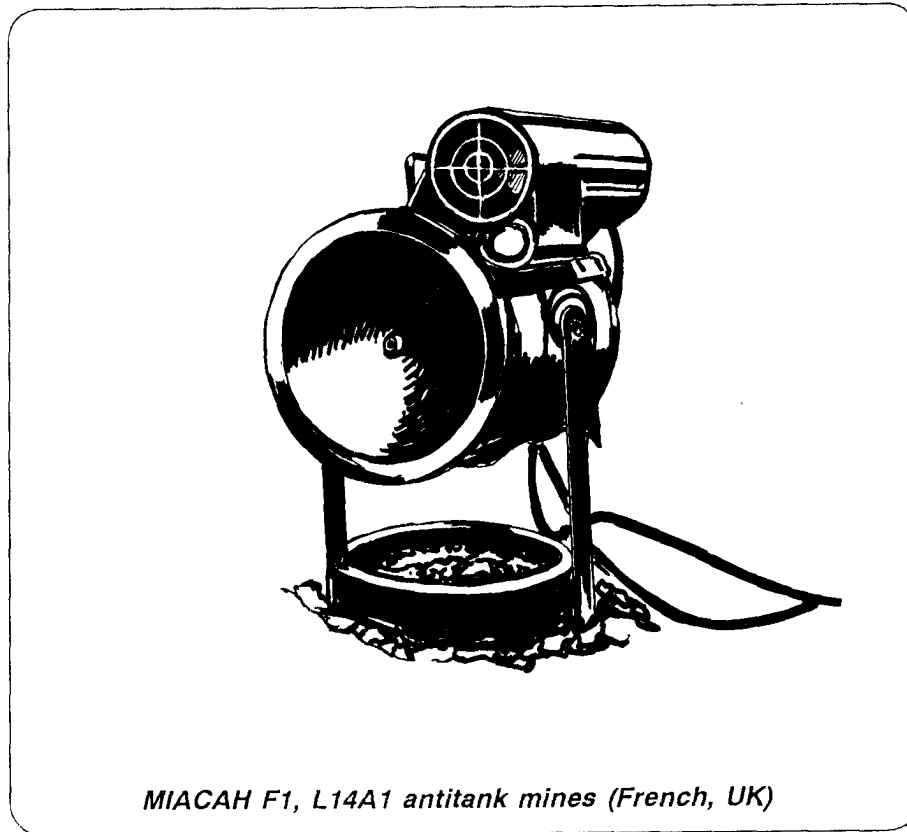
Mine Plow: Removes armed mines from plowed area; all fuzes will detonate, even those under the track area.

MICLIC: Little effectiveness against magnetic fuzes in buried conventional mines.

Charge Placement: Adjacent to the VS-HCT mine.

Remarks

Ten self-neutralization settings ranging from 1 to 128 days.



MIACAH F1, L14A1 ANTITANK MINES (FRENCH, UK)

Characteristics

Length: 260 mm (10.2 in).

Diameter: 200 mm (7.9 in).

Height: 350 mm (13.8 in).

Mine Weight: 12.0 kg (26.5 lb).

Explosive Weight: 5.0 kg (11.0 lb).

Color: Olive drab,

Description

Fuze Type: Break wire, infrared sensor, command detonation initiation.

Sensitivity: Vehicle passage to 80 meters range.

Detectability: Visual identification of break and command wires.
Visual identification of off-route mine location.

Capability

Type Kill: Shaped-charge (horizontal effect).

Antihandling: None; however, command control must be neutralized.

Vulnerabilities

None.

Breach Guidance

Mine Plow: Initiates off-route mines, destroys host vehicle.

MICLIC: Heavy explosive line charge will neutralize break and command wires, as well as overturning those mines fairly close to the line charge. Not effective against infrared sensor unit.

Charge Placement: Adjacent to the MIACAH F1 or L14A1 mines.

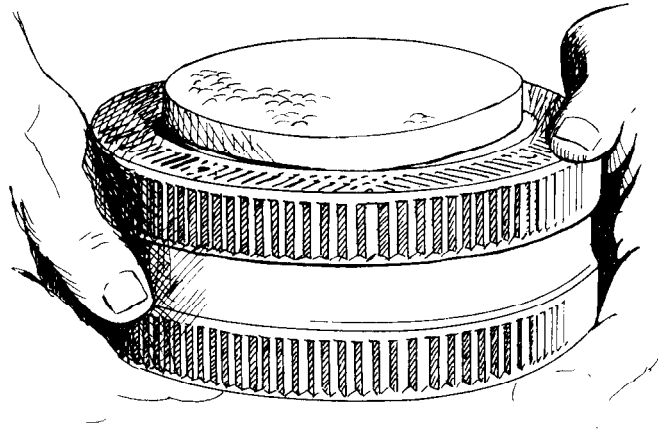


Figure D-29. TC/2.4, M/80 scatterable antitank mines (Italian, Egyptian)

TC/2.4, M/80 SCATTERABLE ANTITANK MINES (ITALIAN, EGYPTIAN)

Characteristics

Diameter: 204 mm (8.0 in).

Height: 108 mm (4.3 in).

Mine Weight: 3.3 kg (7.3 lb).

Explosive Weight: 2.4 kg (5.3 lb).

Color: Sand brown, olive drab.

Description

Fuze Type: Blast-resistant, pressure-activated.

Sensitivity: 180 kg (396.8 lb).

Detectability: Difficult with hand-held detectors (total metallic content is 2.46 grams).

Capability

Type Kill: Blast effect.

Antihandling: Yes; if MUV-type or VS-AR-4 antilift fuze is attached to bottom detonator well.

Vulnerabilities

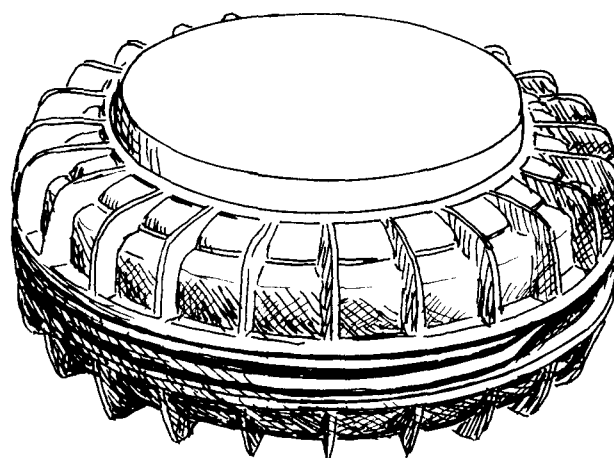
None.

Breach Guidance

Mine Plow: Removes armed mines from plowed area; detonates booby-trapped mines.

MICLIC: Drastic reduction in effectiveness (blast-resistant).

Charge Placement: Adjacent to the TC/2.4 or M/80 mine.



SB-81, SB-81/AR scatterable antitank mines (Italian)

SB-81, SB-81/AR SCATTERABLE ANTITANK MINES (ITALIAN)

Characteristics

Diameter: 232 mm (9.1 in).

Height: 90 mm (3.5 in).

Mine Weight: 3.2 kg (7.1 lb).

Explosive Weight: 2.0 kg (4.4 lb).

Color: Sand brown, olive drab.

Description

Fuze Type: Blast-resistant, pressure-activated.

Sensitivity: 150 kg (330.7 lb).

Detectability: Scattered - visual identification.
Buried - difficult with hand-held detectors (total metallic content of SB-81 is .91 grams).

Capability

Type Kill: Blast effect.

Antihandling:

- Scattered
 - SB-81: No built-in antihandling/self-neutralization.

- SB-81/AR: Has electronics package with options for both antihandling and programmable self-neutralization.

• Buried

- SB-81: Yes; if MUV-type or VS-AR-4 antilift fuze is attached to bottom detonator well.

- SB-81/AR: Has built-in capability for optional antihandling and programmable self-neutralization.

Vulnerabilities

None.

Breach Guidance

Mine Plow:

- Scattered
 - SB-81: Removes armed mines from plowed area.
 - SB-81/AR: Detonates armed mines when moved by plow.

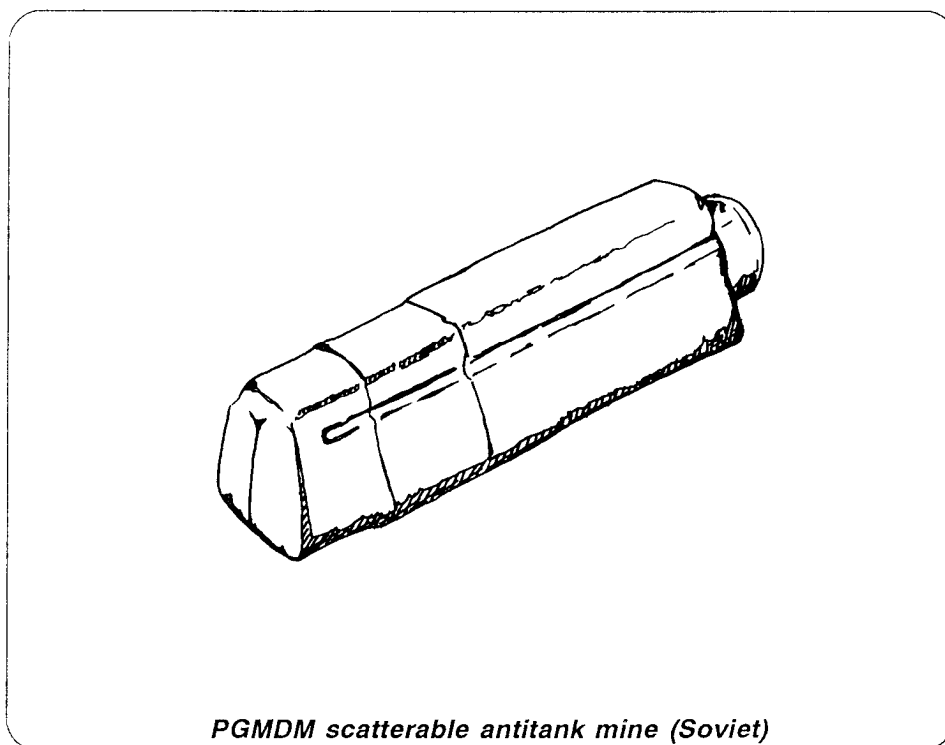
- Buried
 - SB-81: Removes armed mines from plowed area; detonates booby-trapped mines.
 - SB-81/AR: Detonates armed mines when moved by plow.

MICLIC: Drastic reduction in effectiveness (blast-resistant).

Charge Placement: Adjacent to the SB-81, SB-81/AR mine.

Remarks

Both the SB-81 and SB-81/AR antitank mines are helicopter-deliverable by the SY-AT system as well as other compatible Italian mine scattering systems.



PGMDM SCATTERABLE ANTITANK MINE (SOVIET)

Characteristics

Length: 300 mm (11.8 in).

Height: 65 mm (2.5 in).

Mine Weight: 1.7 kg (approx.) (3.7 lb).

Explosive Weight: 1.5 kg (approx.) (3.3 lb).

Color: Green, khaki, white.

Description

Fuze Type: Delay-armed, pressure-activated.

Sensitivity: Single pressure or accumulation of slight pressure - weight unknown.

Detectability: Scattered - visual identification.

Capability

Type Kill: Blast effect.

Antihandling: None; self-destruct 0 - 24 hours.

Vulnerabilities

None.

Breach Guidance

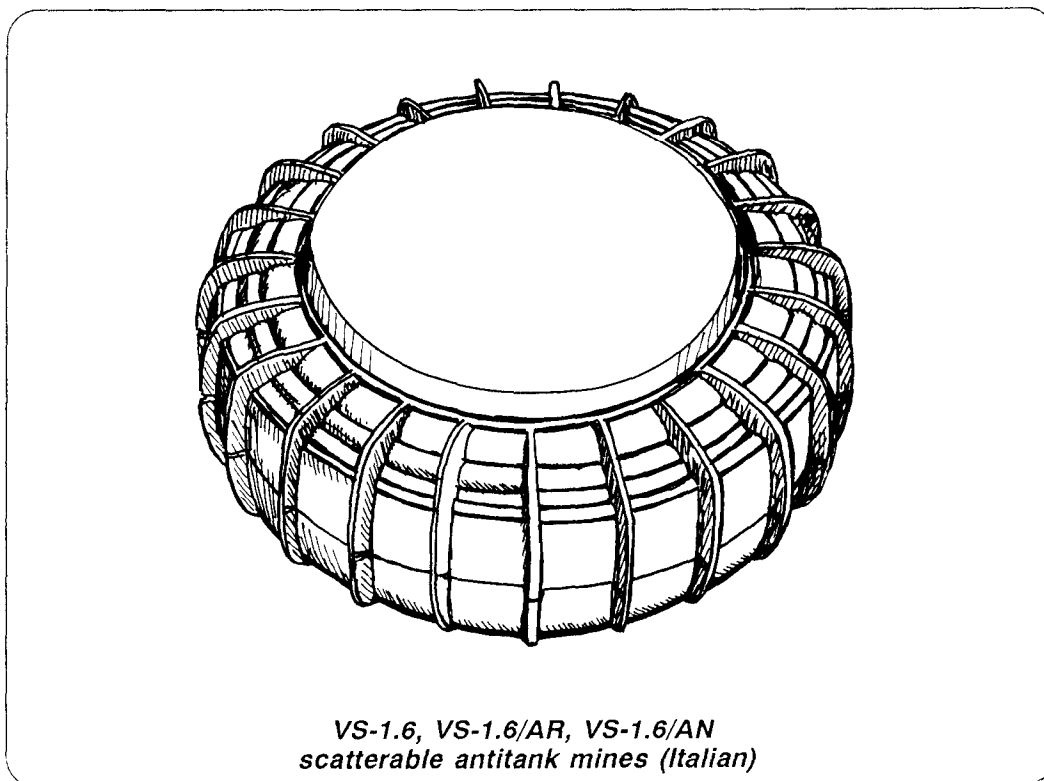
Mine Plow: Removes armed mines from plowed area; some will detonate.

MICLIC: Blast overpressure will defeat this fuze.

Charge Placement: Adjacent to PGMDM.

Remarks

This mine is thought to be extremely sensitive and cannot be disarmed. The mine, therefore, should never be touched and only approached if absolutely necessary after self-destruct period has elapsed.



VS-1.6, VS-1.6/AR, VS-1.6/AN SCATTERABLE ANTITANK MINES (ITALIAN)

Characteristics

Diameter: 222 mm (8.7 in).

Height: 92 mm (3.6 in).

Mine Weight: 3.0 kg (6.6 lb).

Explosive Weight: 1.85 kg (4.1 lb).

Colors: Sand brown, olive drab with black rubber cover.

Description

Fuze Type: Blast-resistant, pressure-activated.

Sensitivity: 190 kg (418.9 lb).

Detectability: Scattered- visual identification.
Buried- difficult with hand-held detectors (total metallic content of VS-1.6 is 2.46 grams).

Capability

Type Kill: Blast effect.

Antihandling:

- Scattered
 - VS-1.6: No built-in antihandling/self-neutralization,
 - VS-1.6/AR: Yes; electronics package with antiremoval.
 - VS-1.6/AN: No; electronics package has self-neutralization.
- Buried
 - VS-1.6: Yes; if MUV-type or VS-AR-4 antilift fuze is attached to bottom detonator well.
 - VS-1.6/AR: Yes; built-in capability for antihandling.
 - VS-1.6/AN: No; but does include self-neutralization.

Vulnerabilities

None.

Breach Guidance:

Mine Plow:

- Scattered
 - VS-1.6: Removes armed mines from plowed area.
 - VS-1.6/AR: Detonates armed mines when moved by plow.
- Buried
 - VS-1.6: Removes armed mines from plowed area; detonates booby-trapped mines.
 - VS-1.6/AR: Detonates armed mines when moved by plow.
 - VS-1.6/AN: Removes armed mines from plowed area; still subject to self-neutralization.

MICLIC: Drastic reduction in effectiveness (blast-resistant).

Charge Placement: Adjacent to the VS-1.6, VS-1.6/AR, VS-1.6/AN mine.

Remarks

All the VS-1.6 antitank mines are helicopter-deliverable by the VS-MD-H system as well as other compatible Italian mine scattering systems.