

WAR DEPARTMENT FIELD MANUAL

FM 5-31

This manual supersedes chapter 3, chapter 4, section IV of chapter 8, chapter 11, and appendix of FM 5-30, 30 June 1943; TM 5-325, 19 April 1943. Including changes No. 1, 30 July 1943; and appendix of Training Circular No. 62, War Department, 1943.

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LAND MINES

AND
BOoby TRAPS



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WAR DEPARTMENT NOVEMBER 1943

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BRITISH

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MINE FACTS, MINES AND FUEL

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60.01 GENERAL British and American mine-warfare policy is nearly identical in all major respects, and mine danger signs are similar.

60.02 DEFENSE

a. The British base their antitank defense on an antitank gun "screen" with which they closely coordinate their mine fields. Their defense policy is to concentrate intense fire of all arms on an enemy attack in order to slow the attacking infantry from the tanks, thus compelling the tanks to continue the advance along a narrow front. The enemy tanks then are held up in the mine field and destroyed by the antitank gun screen.

b. The defenses are sited in considerable depth, each defended locality being capable of all around defense and able to continue fighting even though surrounded. These defended localities are connected by mine fields running both laterally and from front to rear, so as to canalize and delay any enemy penetration and to give time for launching a counterattack.

60.03 MINE-FIELD MARKING. Mine-field marking is of great importance, and all mine fields are surrounded by wire fences except the most advanced mine fields direct facing the enemy, the front edges of which are not fenced.

60.04 MINE-FIELD RECORDING Mine-field records are kept at corps and army headquarters, where the chief engineer is responsible for maintaining them up-to-date. Units entering a new sector usually obtain mine-field-record data from the chief engineer at corps headquarters.

BRITISH G. S. MARK II MINE



TYPE. Antitank mine

COLOR. Sides and top dark green; bottom yellow, with cross of red and green

CASE. Steel

WEIGHT. 8 $\frac{1}{4}$ pounds

EXPLOSIVE. 4 pounds TNT or baratol

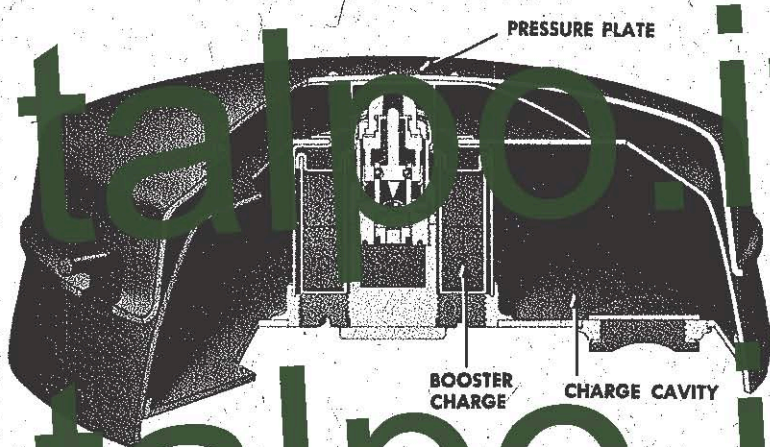
EFFECT

Breaks tracks on light and medium tanks, disables vehicles

PACKING AND TRANSPORTING

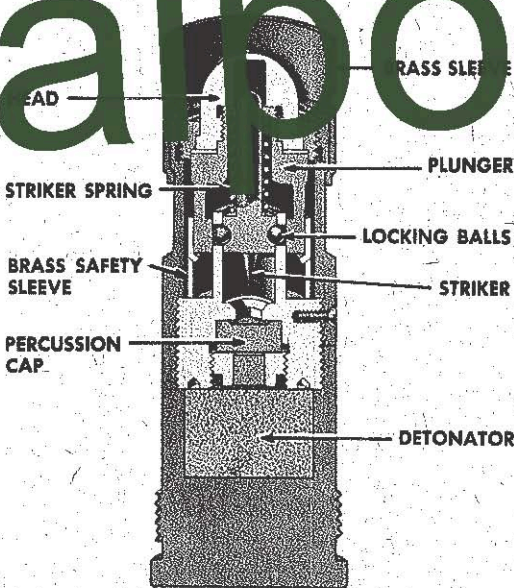
Steel case contains eight mines and eight fuzes.

BRITISH G. S. MARK II MINE



FUNCTIONING

1. Forcing down pressure plate crushes thin-walled brass sleeve.
2. Head and plunger forced downward. Four prongs on brass safety sleeve release grip. Spring compressed.
3. Released balls forced outward into recess.
4. Released striker fires percussion cap—detonator—booster—in charge.



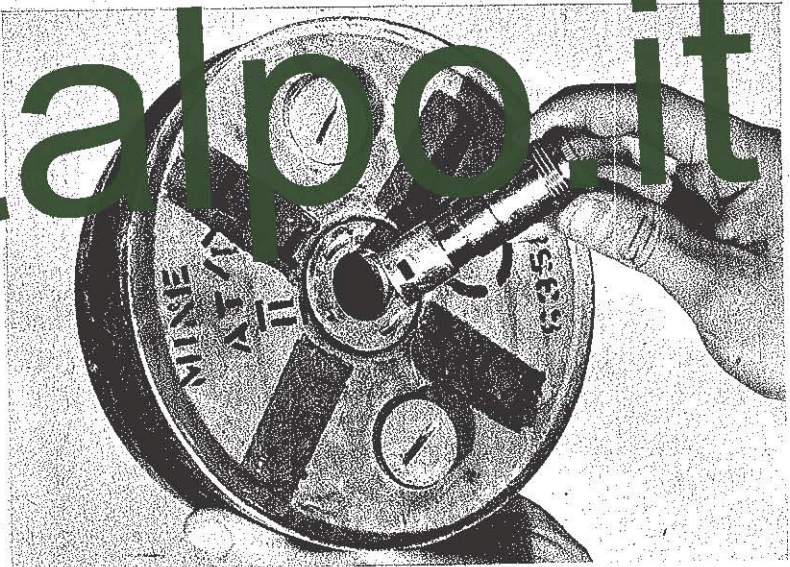
BRITISH G. S. MARK II MINE

INSTALLING AND ARMING

1. Dig hole deep enough so top of mine will be just below ground surface.
2. Lay mine on edge.



3. Unscrew removable plug in center of mine body.



4. Insert fuze and screw it in finger tight.
5. Place mine pressure plate up.
6. Fill hole and conceal.

BRITISH G. S. MARK II MINE

DISARMING

To disarm, defuze.

DEFUZING

Unscrew fuze from bottom and remove.

REUSE

Inspect fuze to see if thin metal boss above has not been crushed.

SPACE OR NOTES

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BRITISH C. S. MARK IV MINE



TYPE. Antitank mine.

COLOR. Khaki-green.

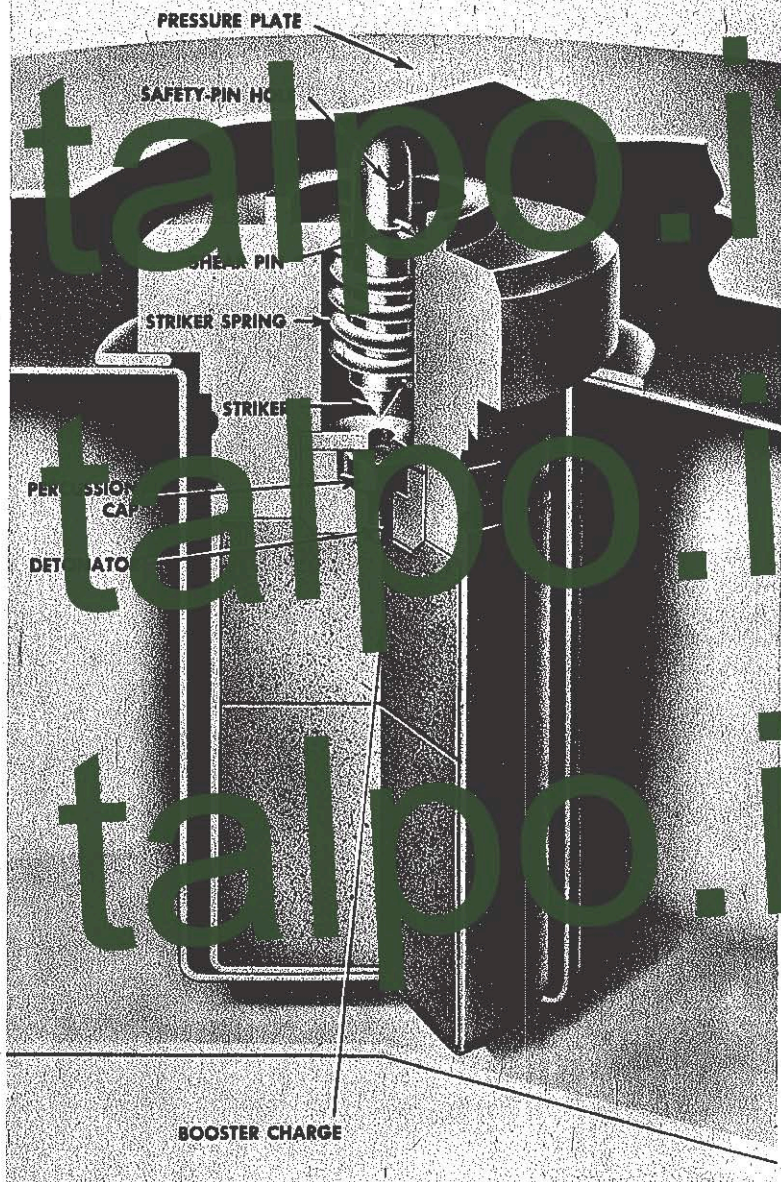
CASE. Steel.

WEIGHT. 12½ pounds.

EXPLOSIVE. 8¾ pounds TNT or baratol.

EFFECT. Disables tanks and vehicles.

BRITISH G. S. MARK IV MINE



FUNCTIONING

1. Pressure forces pressure plate down onto striker.
2. Striker is pushed down, cutting shear pin.
3. Released striker fires percussion cap—detonator—booster—main charge.

BRITISH G. S. MARK IV MINE

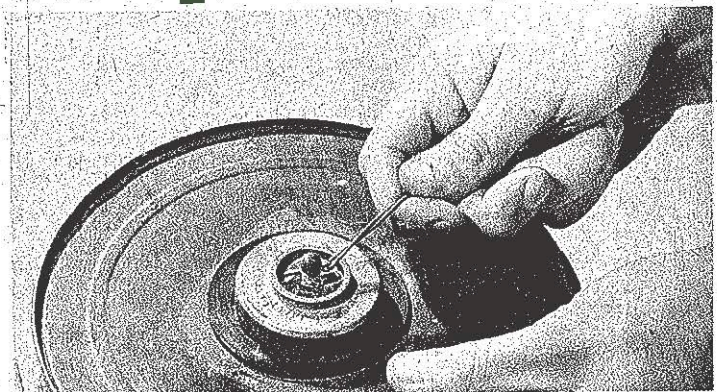
INSTALLING AND ARMING



1. Dig hole deep enough so mine will protrude $\frac{1}{4}$ inch above ground.
2. Remove adhesive tape binding pressure plate to container.
3. Remove pressure plate.
4. Put mine in hole.



5. Remove part which seals top of mine.
6. Make sure wear pin is in position, insert fuze and remove safety pin. The unit should be an easy fit; *do not use force.*



BRITISH G. S. MARK IV MINE



7. Replace pressure plate.
8. Cover with loose earth or sod.

DISARMING

Remove pressure plate, insert safety pin in safety-pin hole.

DEFUZZING

After disarming, take fuze from well. Lift mine. Replace pressure plate. Stack mines and fuzes separately.

PACKING AND TRANSPORTING

Wooden box contains five mines. Fuzes are packed separately, 20 to a wooden box.

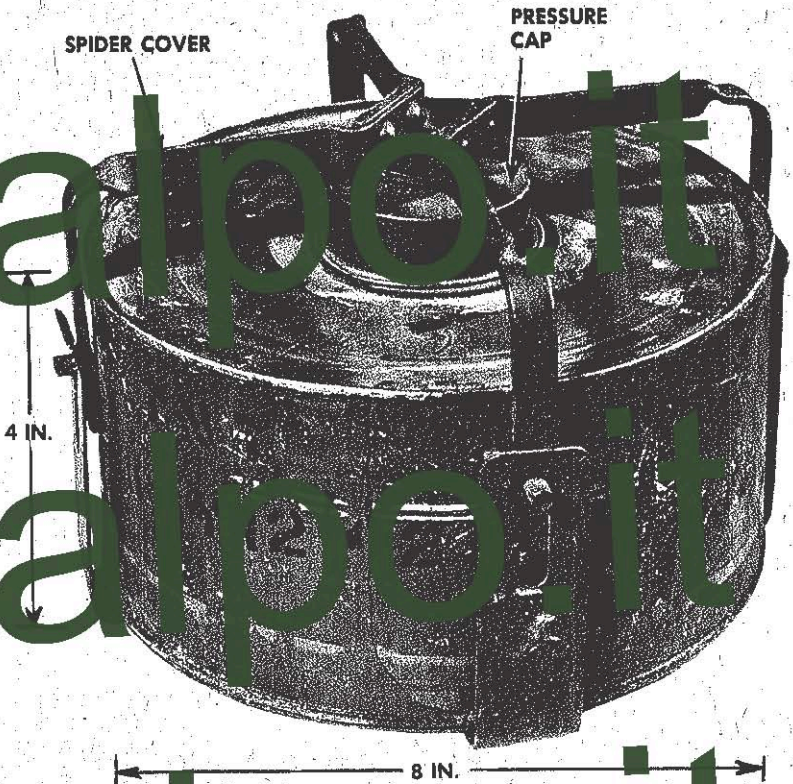
RE-USE

Inspect fuze to see shear pin is in position, and not cut or partially cut.

SPACE FOR NOTES



BRITISH G. S. MARK V MINE



TNT. 4½ pounds
COLOR. Khaki-green
CASE. Steel
WEIGHT. 8 pounds

EXPLOSIVE. 4½ pounds TNT or baratol

EFFECT. Immobilizes tanks and vehicles

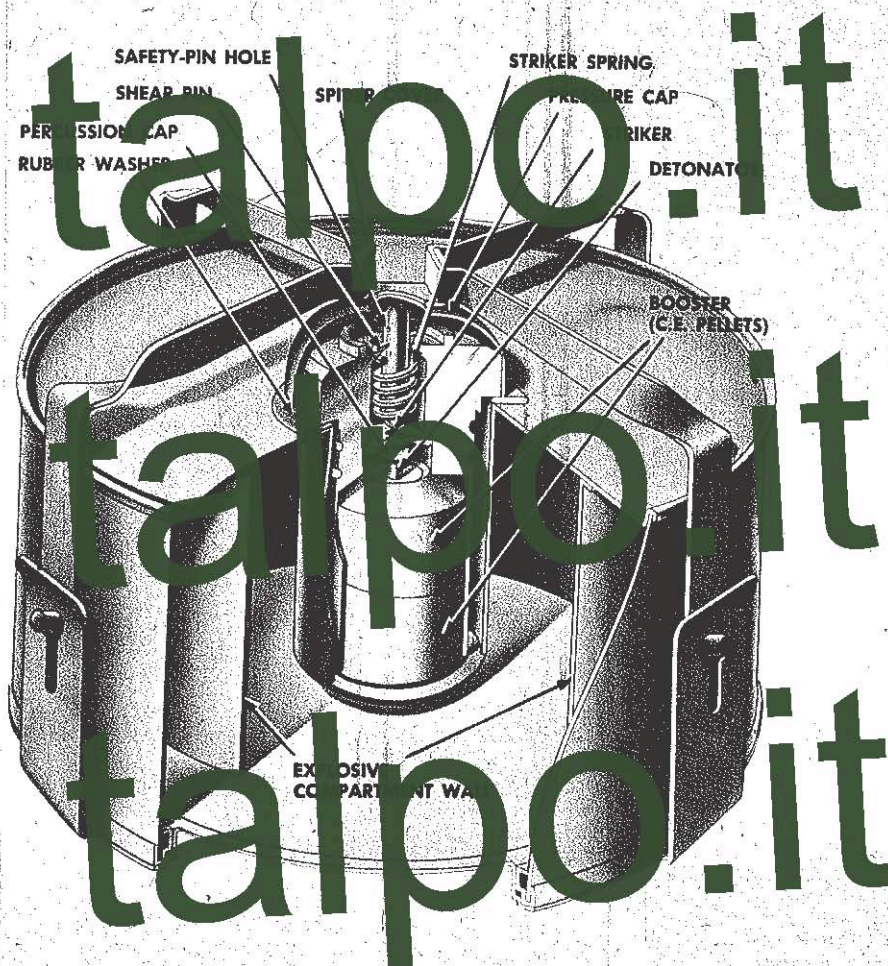
PACKING AND TRANSPORTING

Wooden box contains five mines. Fuzes packed separately, 20 to a wooden box.

DISARMING

1. Remove spider.
2. Lift out pressure cap.
3. Insert safety pin into striker head.

BRITISH C. S. MARK V MINE



FUNCTIONING

1. Pressure forces spider onto pressure cap.
2. Striker is pushed down, cutting shear pin.
3. Released striker fires percussion cap—detonator—booster—main charge.

DEFUZING

After disarming fuze, extract it from well.

RE-USE

Inspect fuze to see shear pin has not been cut, or partially cut. Straighten straps, if bent; see that spider can be fitted on pressure cap without strain.

BRITISH NO. 75 HAWKINS GRENADE MINE, MARK II



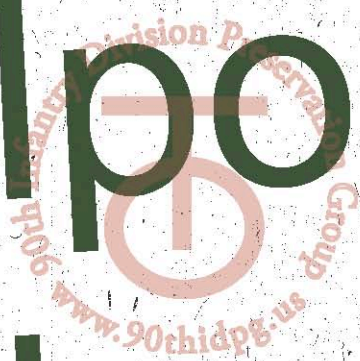
Similar to Hawkins grenade mine, Mark I, with exception that fuze is in one piece and firing pressure is 100 lb.; and the fuze is inclined at an angle to permit easier insertion. For description of Hawkins grenade mine, Mark I, see p. 61.05-a.

SPACE FOR NOTES

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BRITISH SHRAPNEL MINE, MARK II



TYPE. Antipersonnel mine

COLOR. Yellow

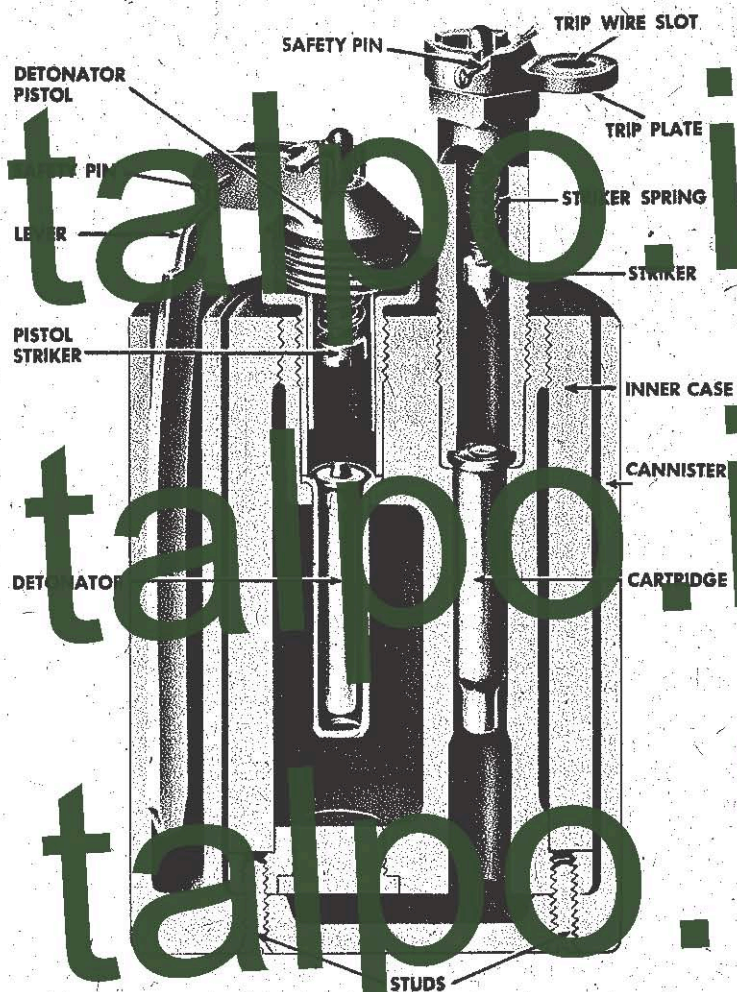
CASE. Steel

WEIGHT. 10 pounds

EXPLOSIVE. 1 pound amatol

EFFECT. Casualties to personnel within 30 yards.

BRITISH SHRAPNEL MINE, MARK II



FUNCTIONING

1. Minimum pull of 4 pounds on trip wire pulls trip plate out of cartridge-pistol.
2. Striker is freed, and driven down by striker spring.
3. Striker fires cartridge.
4. Pressure from explosion shears studs and projects inner case upward.
5. As case leaves cannister, lever on detonator-pistol automatically pulls out of recess and springs outward, releasing striker.
6. Spring drives striker against detonator.
7. Detonator explodes charge when case is about 3 feet above ground.

BRITISH SHRAPNEL MINE, MARK II

INSTALLING AND ARMING

1. Dig hole so mine can be laid upright, with trip plate at ground level.

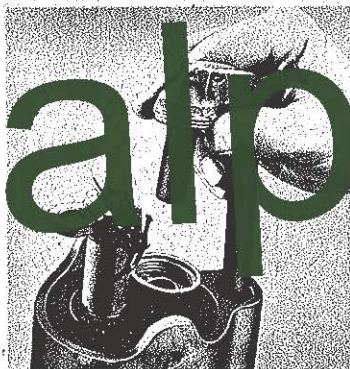
2. Uncrew cartridge-pistol with spanner tool. See that cartridge access is clear.



3. Insert ballistic cartridge and pack with mine.

4. Replace cartridge pistol and screw tight, making sure safety pin is pushed in.

5. Remove detonator-pistol, making certain safety pin is in place. Inspect socket to see if clear.



6. Insert detonator, small end first, so cap end rests on shoulder in socket.

7. Replace detonator-pistol so its firing lever engages in recess. Be sure safety pin is in place.

8. Put mine in hole, and pack earth around it.

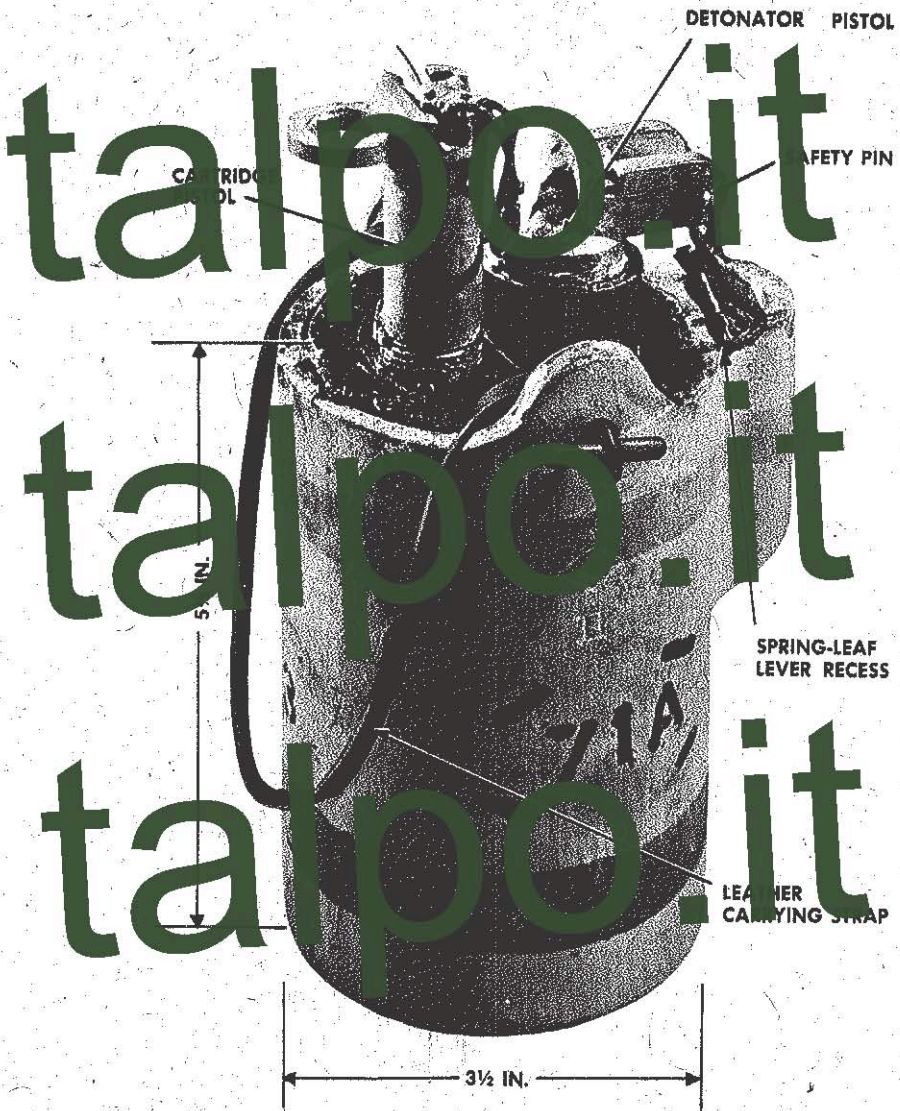
9. Attach loose trip wire.

10. Remove detonator-pistol safety pin.

11. Fill hole.

12. Remove cartridge-pistol safety pin. If safety pin cannot be withdrawn easily, release tension and reset trip plate.

BRITISH SHRAPNEL MINE, MARK I



The Mark I is the earlier issue of the shrapnel mine and differs only slightly from the Mark II (page 62.01-a). These differences are as follows:

1. The Mark I spring leaf lever is shorter, and recess for it does not extend full depth of mine.
2. Mark I has a leather carrying strap.
3. Detonator of Mark I has a slight delay action; that of Mark II has none.

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BRITISH PISTOL GROUND SPIKE



TYPE. Anti-personnel mine

COLOR. Black, olive drab, or aluminum color

CASE. Steel

EMPLOYMENT

This self-contained unit, which discharges a bullet, is sunk into roads and pathways. It is fired by pressure. Bullet will perforate a man's foot or severely damage a pneumatic tire.

DISARMING

Remove cartridge.

PACKING AND TRANSPORTING

Devices, complete with cartridges, are wrapped in waxed paper, packed in flat tin box, and sealed with adhesive tape. Ten per tin. Twenty tins per wooden box 28 by 11 by 8 1/4 inches. Weight, 94 pounds.

BRITISH PISTOL GROUND SPIKE



CAUTION

Never put cartridge into spike except when laid.

FUNCTIONING

1. Slight pressure on top of bullet forces hollow stem of striker over upper catch, releasing sleeve holding spring in compression.
2. Spring forces sleeve upward against striker head.
3. Impact drives striker against cartridge.

TESTING

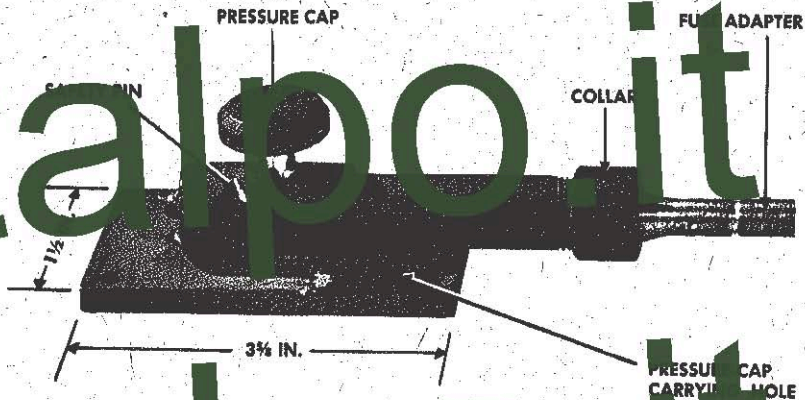
Test by cocking firing sleeve and inserting striker. Depressing striker with unsharpened end of pencil will compress catch, releasing firing sleeve. Impact can be felt in pencil.

INSTALLING AND ARMING

Usually comes cocked ready for use, being kept in position in spike by a cork. If necessary to cock—

1. Push empty barrel into ground to level of flange.
2. Place firing sleeve, rounded end down, over spring, and push down until catch engages.
3. Place cocked mechanism in barrel.
4. Lower striker into barrel.
5. *At arm's length*, lower cartridge gently into barrel point upward. Hold cartridge between fingers; then in case of a premature firing a finger will not be blown off.

BRITISH PRESSURE FUZE NO. 2



TYPE Pressure fuze

COLOR Olive drab

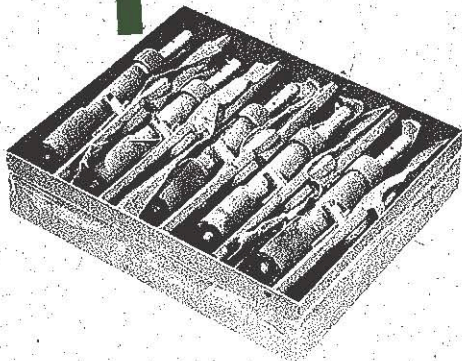
CASE. Brass body and base plate

EMPLOYMENT

Used under boards, door mats, and the like in booby-trap installations where actuation by pressure is desired.

PACKING AND TRANSPORTING

Fuzes, assembled with percussion caps and fuze adapters, are wrapped in wax paper and packed in tens in flat tin boxes sealed with adhesive tape. Twenty tins per wooden box, 6 by 7 1/2 by 8 1/2 inches. Weight 92 pounds.



BRITISH PRESSURE FUZE NO. 2



FUNCTIONING

1. Load of 30 to 40 pounds causes V-shaped cutting edge of shear stud to break striker rod.
2. Striker, driven forward by spring, fires cap.

INSTALLING AND ADMINISTERING

1. Remove pressure cap from base plate, to which it is attached during transport.
2. Insert pressure cap in hole in body, and position it to straddle striker rod. If properly placed, pressure cap cannot be rotated.
3. Unscrew collar and remove fuze adapter.
4. Place fuze in position.
5. Reattach collar and fuze adapter.
6. Remove safety pin.

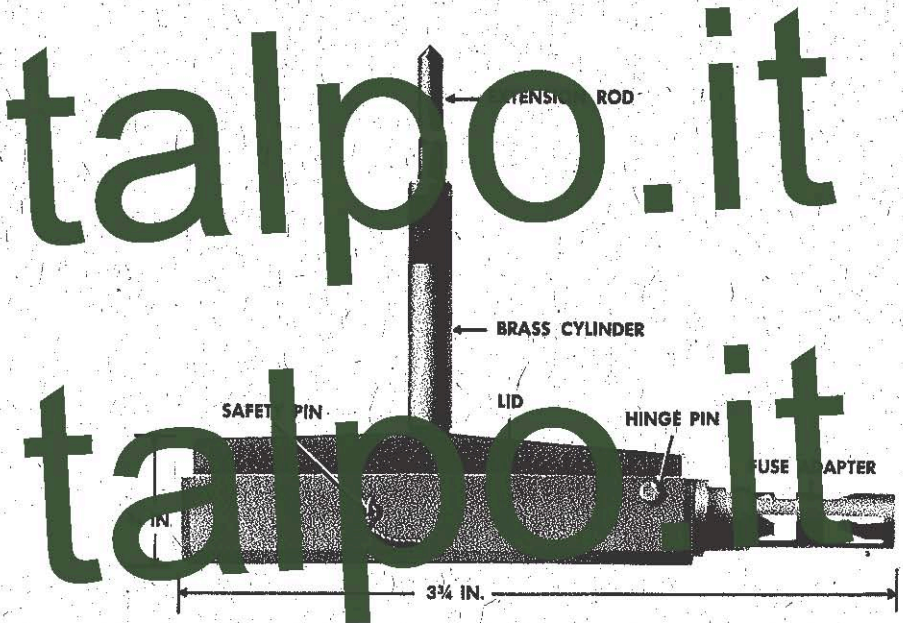
DISARMING

Insert safety pin. Lift pressure cap out of casing. If this is not possible, cut fuze connecting fuze to charge.

RE-USE

Unscrew collar, remove fuze adapter, and make sure striker is in cocked position. If striker rod has been sheared, striker will fall out of barrel and fuze cannot be re-used.

BRITISH PRESSURE FUZE NO. 5



TYPE Pressure fuze

COLOR Dull black

CASE Alloy metal

EMPLOYMENT

To explode body-trap charge by pressure. Adjustable extension rod enables mechanism to be used under railway track.

PACKING AND TRANSPORTING

Two devices, complete with extension rods and adapters, per cardboard carton. Five cartons per tin. Twenty tins per wooden box, 22½ by 11½ by 8¼ inches. Weight, 90 pounds.

RE-USE

TO RECOCK

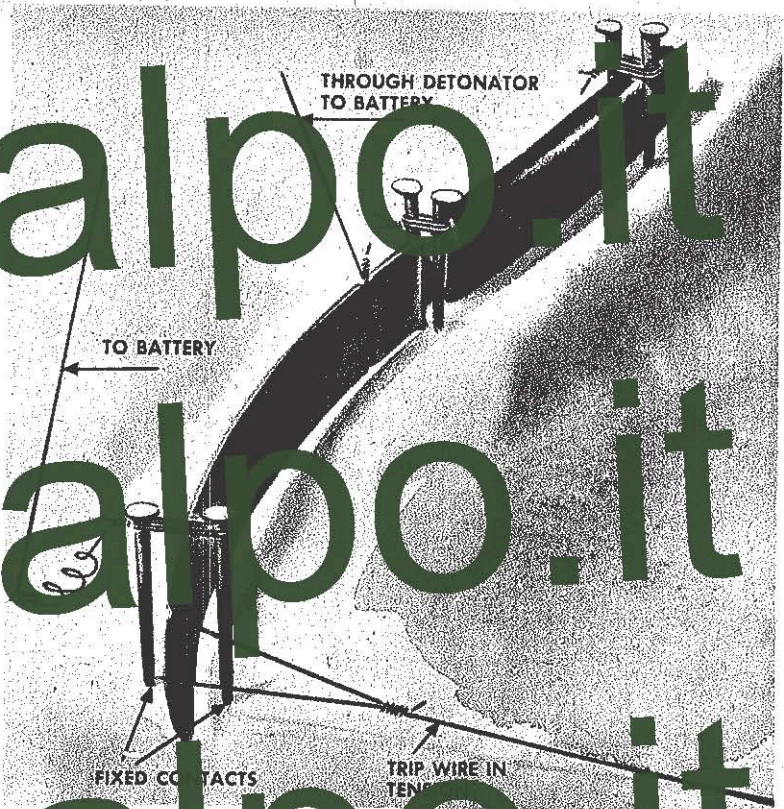
1. Unscrew fuze adapter.
2. Withdraw striker.
3. Reinsert striker and striker spring, notch facing downward.
4. Push back striker with wooden rod until lips of trip lever engage notch.
5. Insert safety pin.

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BRITISH TABLE-KNIFE SWITCH



TYPE. Improved electric contact

EMPLOYMENT

As circuit closer for electrically fired booby-trap charge.

FUNCTIONING

Additional pull or release of tension in trip wire brings knife blade in contact with nail and completes circuit to fire electric cap, sets off main charge.

BRITISH TABLE-KNIFE SWITCH

INSTALLING AND ARMING

1. Attach lead wire and trip wire to knife blade.
2. Secure knife handle firmly in position.
3. Anchor trip wire in tension.
4. Drive nails for fixed contacts.
5. Insert lead wire to connect nails to one terminal of battery.
6. Connect lead wire from knife blade through detonator to second terminal of battery.
7. Connect hair char-

DISARMING

Disconnect battery.

SPACE FOR NOTES

BRITISH WATER-BARREL BOOBY TRAP



CHARGE CAP ELECTRIC WIRES INSULATED ELECTRIC WIRES BATTERY ELECTRIC CONTACTS

FUNCTIONING

When water in main barrel reaches level of two electric contacts, circuit is closed and charge fired.

INSTALLING

Install wiring. Place copper sulphate in barrel. Connect charge cap last.

DISARMING

Disconnect battery and charge.

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