

# CHAPTER 13

## BOOBY TRAPS

### *Section I. Setting*

Booby traps are cunning devices and are usually explosive in nature. They are actuated when an unsuspecting person disturbs an apparently harmless object or performs a presumably safe act. Booby traps are designed to kill or incapacitate. They are actuated by using specially designed military enhancement and standard service ammunition, or they are improvised by using any suitable material.

Booby traps cause unexpected, random casualties and damage. They create an attitude of uncertainty and suspicion in the enemy's

mind; thereby, lowering his morale and inducing a degree of caution that restricts or slows his movement.

In conventional operations, most booby traps in the combat zone are constructed by using military equipment and ammunition. Improvised traps are used during counterinsurgency missions in low-intensity conflicts.

The corps commander is the employment authority for booby traps. He can delegate this authority to the division commander.

### TACTICS AND PLANNING

Booby traps are a psychological weapon. They make the enemy cautious and slow him down. These actions, in turn, cause enemy casualties. Do not waste time attempting to set elaborate traps that are undetectable or impossible to disarm. Also, do not waste time developing difficult sites. Simple traps usually have the same chance of catching the enemy. Even if booby traps are detected and cleared, their aim is achieved.

Booby traps and nuisance mines cannot be considered in isolation. Principles governing their use are identical, so consider using them in conjunction with each other. They have characteristics which make them suitable for use in different situations: (1) Mines are quicker to lay and safer to use than booby traps. They are suited for use in outside locations where they can be buried. (2) Booby traps are particularly suited for use in urban areas, in structures, and in places where mines are easily detected.

Booby traps and nuisance mines are used in offensive and defensive operations. Although booby traps can be used in offensive operations, they are not suited to the attack. Exercise caution when using them in offensive operations because they can hinder the operation. In advance and pursuit operations, booby traps are primarily used by patrols and raiding parties. They slow down enemy follow-up action and hinder their repair and maintenance teams after raids.

Booby traps and nuisance mines are particularly suited for defensive operations. They are used to—

- Slow enemy advance.
- Deny the enemy use of facilities and material.
- Warn of enemy approach.
- Deter the enemy from using ground not covered by direct fire.

In offensive operations, booby traps and nuisance mines are set on an opportunity basis during raids and patrols. Formal instruction is not usually issued by the staff. The following considerations pertain to defensive operations, but many of them are relevant to offensive operations and must be considered when briefing troops.

Booby trapping is rarely given a high priority and is usually peripheral to other engineer tasks. Nuisance mines are more cost-effective than booby traps, unless booby traps are used in situations that allow their full potential. If nuisance mines can be used more easily, use them instead of booby traps.

To maximize the effect of booby traps and nuisance mines, the staff provides engineer commanders with the following information, if possible:

**Purpose.** Booby traps are time-consuming and dangerous to set. Do not waste time and effort setting traps that are unlikely to be actuated or are not specifically designed to achieve the required aim. For example, if traps are used against troops, small, simple traps designed to incapacitate will achieve the desired result just as well as complicated traps with large charges. If you aim to destroy vehicles, then use mines.

**Location.** The precise location of booby traps and nuisance mines is determined by the setting unit. Areas must be precisely delineated and recorded so there is no threat to friendly forces in the event of reoccupation.

**Time the setting starts and amount of time available for setting.** The setting start time affects other engineer tasks, and the length of time available for setting governs the number of men required.

**Number of safe routes required.** Safe routes are important during general withdrawals where authority has been given to booby-trap positions as they are evacuated. They provide safe avenues for the covering force to withdraw and safe areas for them to launch counterattacks.

**Likelihood of reoccupation.** Even if the enemy has not detonated booby traps, they might have interfered with them. Therefore, do not set booby traps when areas are being vacated to meet short-term tactical requirements and reoccupation is expected soon.

### Intelligence

Intelligence personnel provide information to assist the setting unit in maximizing the effect of booby traps. The nature and types of traps required depend on the enemy unit. For example, while paying particular attention to dead space and defilade positions, use mines or widely dispersed traps (with large charges) against a mechanized enemy. Conversely, use small traps and AP mines (in places that afford cover) against an infantry enemy.

### Recording

Booby traps and nuisance mines are reported and recorded on DA Form 1355 as discussed in Chapter 5.

## SITING

If the first obstacle or installation the enemy strikes is booby-trapped or nuisance-mined, he is delayed while he clears it. The enemy is further delayed by an increased degree of caution. His troops know that additional traps or mines can be encountered.

Booby traps and nuisance mines are usually located in areas such as—

- In and around buildings, installations, and field defenses.
- In and around road craters or any obstacle that must be cleared.
- In natural, covered resting places along routes.
- In likely assembly areas.

- Near stocks of fuel, supplies, or materials.
- At focal points and bottlenecks in roads or rail systems (particularly the ones that cannot be bypassed).

The setting party commander is responsible for the detailed siting and design of booby traps. Consider all information about the enemy soldier and his operating procedures when selecting places and objects to trap. Also,

consider the traps from the enemy's point of view, and assess the courses open to the enemy when he encounters them. This can expose weaknesses in the initial plan and bring about changes to the proposed layout, or it can result in a different location being selected. In addition, determine the effort required by the enemy to bypass the traps. This shows whether the imposed delay justifies the effort required to set booby traps in the selected location.

## TYPES OF TRAPS

Booby traps are designed to: (1) be actuated by persons carrying out their normal duties, or (2) take advantage of human nature. The first cannot be specifically guarded against because there is nothing about them or their situation to cause suspicion. The second can often be detected because they are designed to make a person do something. The following traps fall in the second category:

**Bait.** Usually consists of objects that arouse someone's interest. They often consist of attractive or interesting items that have apparently been left behind or discarded during a rapid evacuation.

**Decoy.** The most common decoy consists of two traps—one designed to be detected, and the other designed to be actuated while the

first is being dealt with. The first trap can be a dummy. A classic form of decoy is to place booby traps or nuisance mines in locations from which the decoy mine can be pulled.

**Bluff.** A bluff is a hoax and usually consists of a dummy trap.

**Double bluff.** A double bluff only appears to be a bluff. The person clearing traps thinks the trap is safe or can be disarmed. For example, the enemy can set a number of traps that are disarmed when the detonating cord is removed from the charge. The double bluff is achieved by setting another trap that appears to be the same, but it actually explodes when the detonating cord is removed from the charge. Double bluffs rely on a reduced awareness and alertness caused by repetition.

## COMPONENTS AND PRINCIPLES

There are two types of explosive booby traps—electric and nonelectric. Both types can be constructed using many different firing devices. Firing devices can be secured to the charge (direct connection) or located some distance from it (remote connection). They are actuated by one or more methods. It is impossible to describe every booby trap that can be encountered; however, most are constructed and operated by using components and principles similar to those listed below. Figure

13-1, page 13-4, shows how typical electric and nonelectric traps can be made.

- Firing device.
- Power source (battery, for example).
- Connection (usually detonating cord or electric wire).
- Blasting cap.
- Main charge.

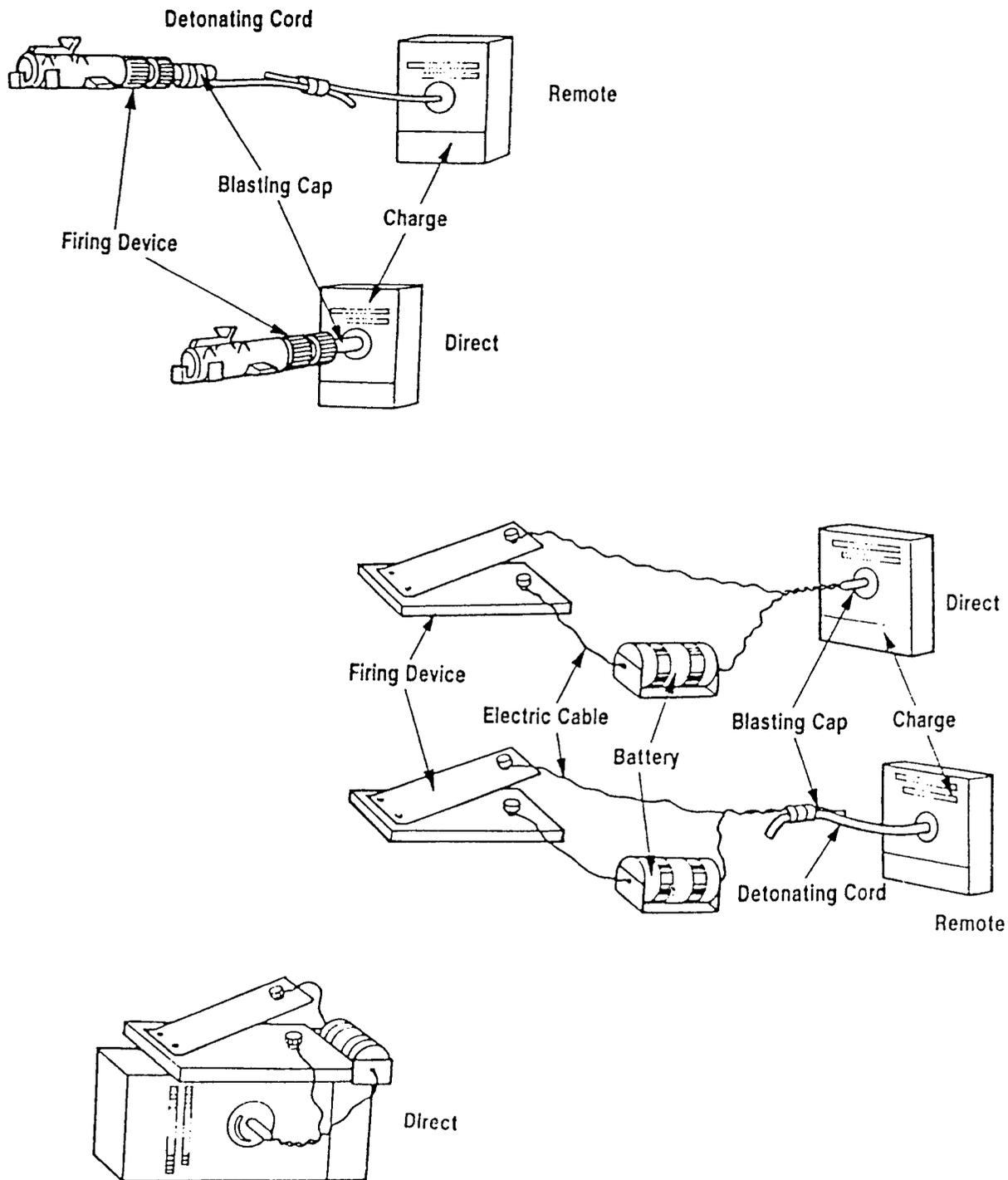
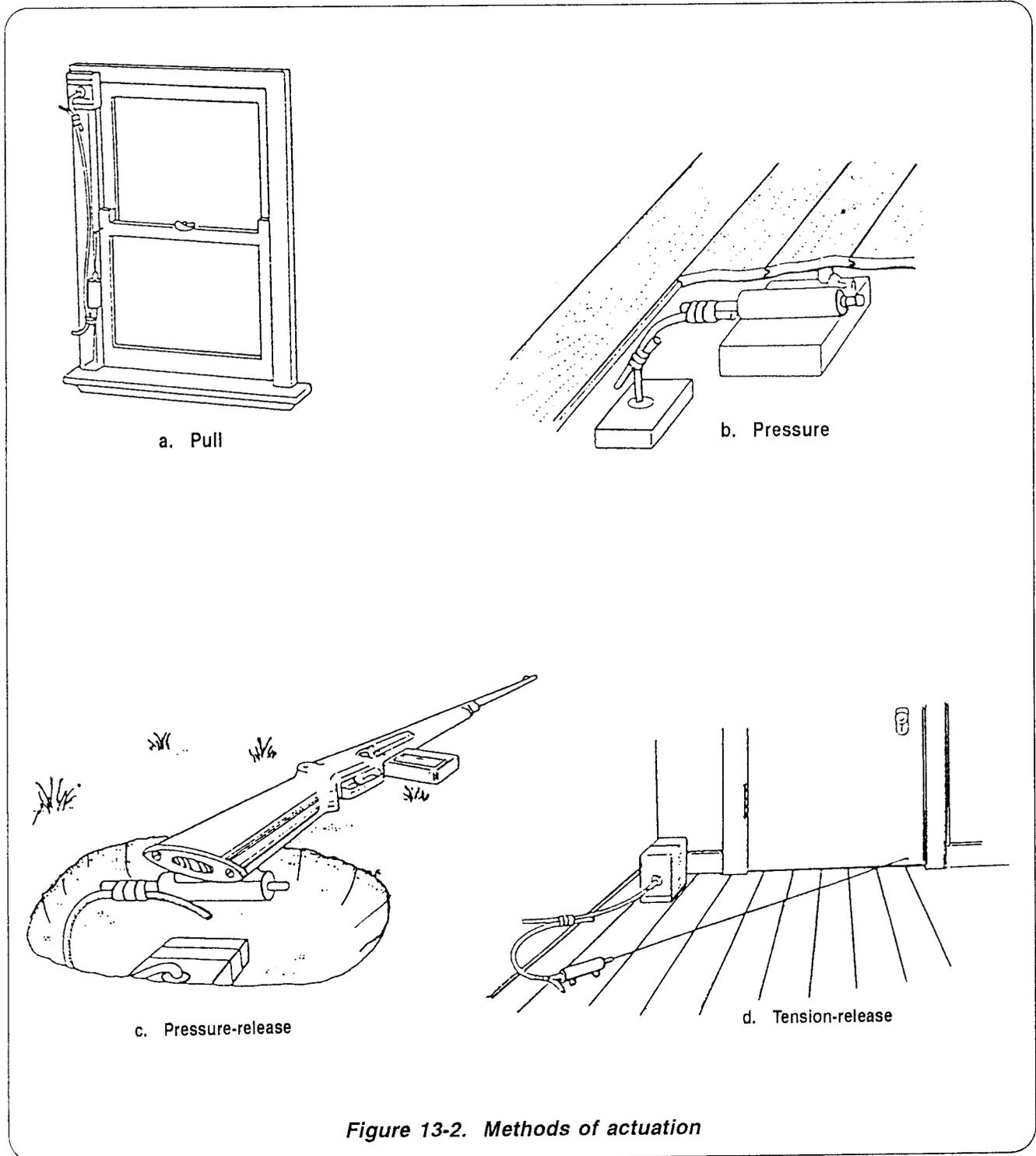


Figure 13-1. Typical electric and nonelectric booby traps

### ACTUATION METHODS

Occasionally, booby traps are actuated by electric devices that detect interrupted light beams, variation in acoustic levels, or magnetic influence. Most firing devices found in the com-

bat zone are simple mechanisms designed to be actuated by pull, pressure, pressure release, or tension release (Figure 13-2).



## CONNECTION METHODS

Procedures can be varied when it is safer to do so. For example, instead of connecting the firing device to a charge already in position, preconnect trap components and then position the trap.

Small charges (up to 2 pounds) are sufficient for AP traps, but larger quantities can be used to increase their effect. Shrapnel can be produced by packing stones, scrap metal, nails, or other material around the charge. AT traps require large charges—up to 15 pounds for wheeled vehicles and 25 pounds or more for tracked vehicles.

### Remote

Follow the procedures listed below when assembling a remotely connected trap using an M 142 firing device (similar to the illustration in Figure 13-3).

1. Design trap and collect necessary materials.
2. Test M 142 firing device.
3. Lay detonating cord from the charge location to the firing device location.
4. Position charge.
5. Connect detonating cord to charge.
6. Prepare coupler.
7. Tape a length (18 inches, minimum) of detonating cord to the coupler's blasting end.
8. Prepare and position the M 142, set it to operate in the desired manner, and remove the round- or square-headed pin.
9. Ensure the two detonating cords are not touching but can be conveniently connected when necessary.
10. Remove materials and other signs of laying. Fully camouflage the area.
11. Arm firing device by removing the positive safety pin.
12. Arm trap by connecting the two detonating cords.

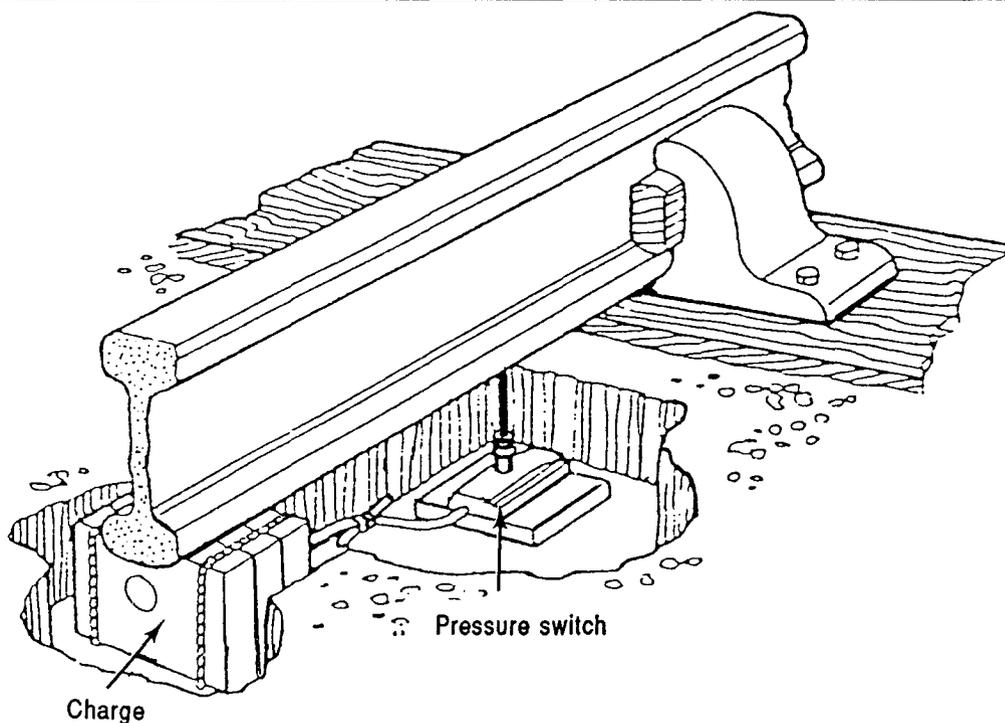


Figure 13-3. Remotely connected traps

### Direct

Follow the procedures listed below when assembling a nonelectric, directly connected trap using an M 142 firing device (similar to the illustration in Figure 13-1, page 13-4).

1. Design trap and collect necessary materials.
2. Test M 142 firing device.
3. Prepare and position charge for coupling to the firing device: prepare explosive to receive a blasting cap.
4. Prepare coupler and insert it into the charge.

5. Prepare M142, set it to operate in the desired manner, and remove the round- or square-headed pin.

6. Remove materials and other signs of laying. Fully camouflage the area.

7. Arm trap by removing the positive safety pin.

#### DANGER

**Do not attempt to further camouflage an area after trap is armed.**

## PLANNING, SETTING, AND RECORDING

### Timeliness

It is important that setting party commanders be given all available information and sufficient time to carry out a reconnaissance. This enables their plan and soldier's briefing to be as complete as possible.

### Orders/Briefing

Once the commander has finished his reconnaissance, he makes a detailed plan, prepares his orders, and then briefs his men. The following points are covered:

- Enemy intelligence.
- Number and type(s) of traps to be set.
- Location and design of traps (precise or general).
- Tasking and allocation of areas.
- Recording, marking, and arming procedures.
- Control measures.
- Timings.

- Material/equipment availability.
- Rehearsal and stores preparation.

### Rehearsal

Whenever possible, a complete rehearsal is performed. Thoroughly exercise control and safety measures so any flaws in the system are discovered. Lay practice traps and carry out arming and recording procedures. If a rehearsal cannot be conducted at the trap location, hold it in a similar area.

### Organization and Procedure

Setting booby traps is a dangerous task, and it must be carefully controlled. Exact drills cannot be prescribed, but the following procedures should be followed as closely as possible.

**Control point.** The commander must establish a control point upon arrival at the trap area. The control point forms a headquarters and material holding area. Also, safe routes start at the control point. If a rehearsal was conducted at another area, assemble troops at the control point before setting starts. At this time, relate the ground to the plan, confirm control measures, and check firing devices and equipment for serviceability and adequacy.

**Controlling parties.** A Setting party consists of one or two men. Clearly define the area in which each party will work (use tape, if necessary). Position traps so accidental detonation will not cause friendly casualties. Strictly control entry to the areas in which traps are being set. In most situations, only the commander, setting parties, and recorder enter these areas. Troops who are not assigned tasks should remain at the control point unless otherwise authorized by the commander.

**Marking.** As with nuisance minefield, mark booby-trapped areas until they are evacuated. Whenever possible, use standard booby trap signs (Figure 13-4). When signs are not available, use temporary marking (any barrier or fence) to clearly indicate a booby-trapped area. Remove the temporary marking after the area is evacuated and before the enemy reconnoiters the area.

**Setting.** Setting parties transport required explosives and material to the site. They do not arm firing devices or traps until ordered to do so. If a setting party consists of one man, he remains with the trap until it is armed or until the commander directs him to leave. In a two-man party, one man returns to the control point and reports completion of the task. Setting parties enter and leave areas by the same route. If the route is not clearly apparent, they lay tapes to guide the commander and recorder to their position.

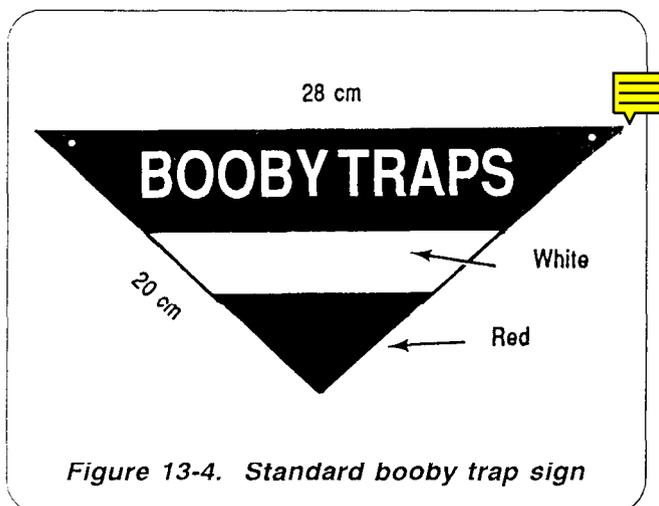


Figure 13-4. Standard booby trap sign

**Inspecting and arming.** The setting party commander inspects traps for safety and camouflage before giving the order to arm them. He devises a plan for arming the traps that enables the setting parties to withdraw to the control point in a safe and logical manner. For example, in open areas, start arming the traps furthest from the control point; in buildings, arm from the top down.

### Reporting and Recording

Booby traps do not distinguish between friend and foe. Correct reporting and recording procedures must be observed to avoid friendly casualties. The procedures for recording booby traps are the same as those for recording nuisance mines. (See Chapter 5.) When traps are set in areas occupied by the enemy, they are not recorded. In this case, it is sufficient to note their location and type in after-action reports.

**Tactical reports.** Information about booby-trapped areas must be provided in stages from the time they are established until they are cleared. This procedure allows up-to-date trap information to be annotated on operational maps at all concerned units and headquarters. (See Table 13- 1.)

**Booby trap records.** The setting party commander compiles records for all booby-trapped areas on DA Form 1355 (Figures 13-5a through 14-5c, pages 13-10 through 13-12). Strictly observe the instructions printed on the back of the form. Booby trap records provide detailed information about the composition of an area. They allow the area to be cleared quickly and with minimum casualty risk. They contain complete information on the number and types of traps set, as well as accurate and precise details on the location and design of individual traps. If a single record is not large enough to record all traps set in a definable area, clearly note this fact and reference serial numbers of adjacent records. Submit the completed DA Form 1355, in triplicate, to the next higher headquarters.

**Table 13-1. Tactical reports**

Serial	Reports	By Whom and When Initiated	To Whom Forwarded	Details to Be Included
(a)	(b)	(c)	(d)	(e)
1	Intention to set	Divisional commander, on deciding to set booby traps.	a. Corps HQ. b. Formation HQ controlling.	1. Purpose. 2. General area to be booby trapped (by grid coordinates). 3. Estimated number and types of traps. 4. Estimated starting date and time. 5. Estimated completion date and time.
(Required)				
2	Siting	a. Setting unit, on completion of reconnaissance. b. Division ordering setting (only if materially different from Intention report).	a. Division ordering setting. b. Next higher formation HQ.	1. Boundaries of booby-trapped area (by grid coordinates). 2. Numbers and approximate positions of safe routes, if any. 3. Estimated number of traps and types of traps; for example, antipersonnel.
(Optional)				
3	Start of setting	a. Setting unit when setting starts. b. Division order setting.	a. Division HQ ordering setting. b. Next higher formation HQ.	1. Time setting started. 2. Estimated time of completion. 3. Numbers and types of traps being set. 4. Any change to the detail given in the siting report and whether as a result of orders or not.
(Required)				
4	Completion	a. Setting unit, when setting is completed. b. Division HQ ordering setting.	a. Division HQ ordering setting. b. Next higher formation HQ.	1. A trace on the largest scale map available, showing the boundaries of the trapped area. 2. Full details of area and buildings trapped with sketch maps. 3. Full details of traps set including design and location. 4. Full details of all safe routes. 5. Full details of any marking. 6. Total number and type of traps. 7. Time and date of completion.
(Required)				
5	Changes	Division HQ ordering change, if the trapped area is changed in any way.	a. Next higher formation HQ. b. Any other formation holding information on existing trapped traps.	Full details of change.
(Required)				





**TABULAR DATA** (Numbers correspond to numbered blocks on front of form)

1. Enter complete data on authority of laying and on the laying unit. OIC blanks will include name, rank, and SSN.
2. Enter date-time groups for starting and completion times. Recorder blanks will include name, rank, and SSN.
3. Enter copy and sheet numbers. Number of copies will depend upon unit SOP and the classification of the minefield. The number of sheets will depend upon the length and the depth of the minefield versus scale.
4. Enter minefield number as follows:
 

Designation of unit authorizing installation _____	_____
Number of obstacle _____	_____
Status of obstacle _____	_____
(E=Executed, P=Proposed, U=Under Construction),	3/147-Inf2E
5. Enter map data as stated on map(s) used.
6. Enter complete data on at least two landmarks with 8 digit grid coordinates. Cross out unused blocks.
7. Enter description(s) of any intermediate markers used. When a landmark is more than 200 meters from the minefield or the strip/row reference stake cannot be seen from the landmark, an intermediate marker must be used. If possible, the intermediate marker should not be closer than 75 meters to the strip/row reference stake. Cross out unused blocks.
8. Enter the word "Standard" when the standard marking fence is used; describe the boundary marking if other than the standard marking fence is used.
9. Enter the number of strips/rows laid other than IOE. Describe the strip/row markers (Line out words not applicable).
10. Enter the width, marking, and closing provisions for each lane; when appropriate, give the type and number of mines for closing. The location of these mines is described in the "Notes" (Line 12). Patrol lanes are 1 meter wide, one-way vehicular lanes are 8 meters and two-way vehicular lanes are 16 meters. Cross out unused blocks.
11. Enter type of minefield by crossing out lines not needed. Indicate method of laying by marking out incorrect descriptions. Enter types of mines as AT, APF, APB. (Enter chemical mines under AT mines). For each type of mine, enter number of mines and anhandling devices installed in the IOE and in each Strip or Row. Strips or Rows will be lettered serially, starting with the first one laid. Enter totals. Cross out unused blocks.
12. Enter under Notes information which would be useful to personnel clearing the minefield. Appropriate items include location of chemical mines, location of AT mines with anhandling devices, location AP mines with tripwires, clusters in IOE which contain mines, where safety devices are buried, strip cluster composition and numbered omitted clusters in regular strips.
13. OIC enters signature, rank and date.
14. Enter arrows for the direction of the enemy and magnetic north. The enemy arrow should always point within the top 180 degrees of the paper; the north arrow should follow one of the lines of the graph.
15. Enter scale of sketch for standard pattern minefields the sketch should be drawn to a scale of about 1 cm=10 meters.
16. Sketch in the following, as applicable:
  - Show directional arrows as follows:
    - Landmarks (or intermediate markers) to strip markers at starting and finishing points of the last strip laid or to the nearest or farthest mine in a group.
    - From landmarks (or intermediate markers) to fence or boundary markers.
    - From landmarks to intermediate markers, if used.
  - For each straight line section of a lane centerline.
  - Between markers of starting points of adjacent strips, including IOE, and between finishing points of adjacent strips, including IOE.
  - For each segment of a strip or of the IOE, label all directional arrows with magnetic azimuth in degrees and distance in meters. Express as a fraction (247 degrees/90 meters). Recorded from friendly to enemy side and from right to left/or left to right.
  - Show approximate location of protective fence or boundary markers.
  - Show length and depth of minefield in meters. These dimensions indicate the extremities of the minefield.
  - Show a grid intersection and give grid coordinates.
  - Show trace of shoreline and direction and approximate rate in meters per second of water current, for mines laid underwater.
17. Enter security classification of the form. (If the form is used for training, enter the word SAMPLE.)
18. OIC enters signature and rank.

**MINEFIELD REQUIREMENTS COMPUTATION FORMULA**

<p>Desired Density _____</p> <p>IOE Representative Cluster _____</p> <p>Front _____ meters</p> <p>Depth _____ meters</p> <p>AHD _____ %</p> <p>*1. No. of IOE Clusters = Front x 9 _____</p> <p>2. No. of IOE clusters = IOE Representative Cluster _____</p> <p>3. Mines in Minefield = Front x Desired Density _____</p> <p>4. Subtotal of Mines Required = Line 2 - Line 3 _____</p> <p>*5. Mine Rejections, Strip Length Variances = Line 4 x .1 _____</p> <p>6. Total AT Mines Required = Line 4 + Line 5 _____</p> <p>7. Add a + b + c of "Desired Density" * _____</p> <p>*8. Line 7 x .6 = _____</p> <p>9. AT Mine "Desired Density" x 3 = _____</p> <p>10. No. of Regular Strips = Highest No. of Line 8 or 9 _____</p> <p>*11. No. of AHD = % AHD x Total AT Mines (Line 6) _____</p> <p>12. Strip Cluster Composition = Desired Density x 3 _____</p> <p>* NOTE: Round up to the next whole number.</p>	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"><b>STRIP</b></td> <td style="text-align: center;"><b>AT</b></td> <td style="text-align: center;"><b>APF</b></td> <td style="text-align: center;"><b>APB</b></td> <td style="text-align: center;"><b>ROW TOTAL</b></td> </tr> <tr> <td style="text-align: center;">A</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> <tr> <td style="text-align: center;">B</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> <tr> <td style="text-align: center;">C</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td 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**COMPOSITION**

**TABLE**

Figure 13-5c. Booby trap record - sample DA Form 1355 (back side)

## Section II. Clearing

All soldiers must be aware of the threat presented by booby traps. They must also receive sufficient training to recognize locations and items that lend themselves to booby trapping. Avoid overemphasis and strike a balance between what is possible and what is probable. For example, in medium-level operations, overemphasis of booby-trap threat can

be counterproductive by slowing momentum. This causes casualties that might otherwise have been avoided. In low-intensity conflicts, on the other hand, where the use of booby traps and improvised explosive devices are probably widespread, training must be given high priority and emphasized at all levels.

### SITES

Although many booby-trapped sites are similar, the items selected, reason for their use, and scale of the threat are quite different. In medium-level conflicts, booby traps are mainly used in recently contested areas. Items selected and reasons for using traps are the same as those taught to our own troops. Therefore, by anticipating the presence of traps, it is possible to isolate and bypass trapped areas. If this is not practicable, you can plan countermeasures such as avoiding convenient and covered resting places along routes where mines can be located. At bridge or ferry sites

that cannot be avoided, you must ensure they are free of traps.

In low-intensity conflicts where booby traps are used to cause casualties, delays, or disruptions, no items or areas can be considered safe. Quality collective training in booby trap awareness is necessary for all units. Rapidly disseminate booby trap incident reports to all levels. This allows personnel to develop an understanding of the enemy's method of operation and a feel for what might or might not be targets.

### SAFETY

**The following rules and safety procedures can save your life and the lives of others. Learn and remember them!**

- Suspect any object that appears to be out of place or artificial in its surroundings. Remember, what you see might well be what the enemy wants you to see.
- Examine mines and booby traps from all angles, and check for alternative means of firing before approaching them.
- Only one man works on a booby trap.
- Do not use force. Stop if force becomes necessary.
- When tracing trip wires, check for further traps located along and beneath them.
- Do not touch a trip wire until both ends have been investigated and all devices are disarmed or neutralized.
- Treat all parts of a trap with suspicion because each part can be set to actuate the trap (see Figure 13-6, page 13-14).
- Wait at least 30 seconds after pulling a booby trap or mine. There might be a delay fuze.
- Mark all traps until they are cleared.
- Expect constant change in enemy techniques.
- Never attempt to clear booby traps by hand when pulling or destructing in place is possible and acceptable.



Figure 13-6. Traps with multiple means of initiation

## CLEARING SEQUENCE

The method used to neutralize or disarm a trap depends on whether it is electric or non-electric, its design, and the accessibility of its components. Remember, a trap cannot be considered safe until the blasting cap or detonating cord has been removed from the charge. This is your first objective and is particularly important for electric traps, which can contain a collapsing circuit.

Use the safest method to neutralize a trap. For example, if the firing device and detonating cord are accessible, it is usually safer to cut the detonating cord. This method does not actuate the trap, but inserting pins in the firing device might.

## INDICATIONS

Successful booby trap detection depends on two things: (1) be aware of what might be trapped and why, and (2) be able to recognize evidence of setting. The first requirement demands a well-developed sense of intuition; the second, a keen eye. Intuition, like mine sense, is gained through experience and an understanding of the enemy's techniques and habits. A keen eye is the result of training and practice in recognizing things that indicate the

presence of a trap. The presence of booby traps or nuisance mines is indicated by—

- Disturbances of ground surface or scattered, loose soil.
- Wrappers, seals, loose shell caps, safety pins, nails, or pieces of wire or cord.

- Improvised methods of marking traps, such as piles of stones or marks on walls and trees.
- Evidence of camouflage, such as withered vegetation or signs of cutting.
- Breaks in the continuity of dust, paint work, or vegetation.
- Trampled earth/vegetation or foot marks.
- Lumps or bulges under carpet or in furniture.

## DETECTION

Detection methods depend on the nature of the environment. In open areas, methods used to detect mines can usually detect booby traps. Look for trip wires and other signs suggesting the presence of an actuating mechanism. In

urban areas, mine detectors are probably of little use. You have to rely on manual search techniques and, if available, special equipment.

## COMBAT CLEARANCE

Engineers have primary responsibility for clearing booby traps and nuisance mines in the area of operations. Therefore, engineer advice is important during the planning stages of any operation where booby traps are likely to be encountered or where mine clearance is necessary. Intelligence regarding the possible presence and types of traps must be provided to engineer units as soon as possible. This allows the unit time to take necessary action and provide relevant training. Booby trap clearance can not be undertaken as a secondary task. Engineer clearing teams might require protection necessitating combined arms training. Before engineer planning can start, the staff provides commanders with the latest intelligence and, if possible, the following information:

- Amount of clearance required.
- Acceptable damage.
- Timings.
- Availability of special equipment.
- Security requirements.

### Intelligence

Intelligence regarding the possible nature, density, type, and location of traps has a direct bearing on the number of clearing parties and

the degree of protection required, if any. For example, in built-up areas where traps will likely be in buildings that offer protection from enemy fire, direct protection is usually provided by the normal combat situation. On the other hand, in open areas where clearing parties are required to clear traps covered by direct enemy fire, protection arrangements have to be more specific.

### Timings

Engineer commanders must be aware of the time needed to clear various types of traps in differing terrain situations. Remember, increasing the number of clearing parties does not necessarily reduce the time required to clear traps. This is particularly true when traps are set closely together or set deeply along a narrow front that is the only available route.

### Extent and Degree of Clearance

Initially, clear areas of immediate tactical importance or traps presenting a specific threat. For example, clear only the portion of a building required for observation and those traps presenting an immediate hazard. This enables clearing parties to concentrate on other areas of tactical importance.

### Acceptable Damage and Security

Clearing traps by hand is the only way damage can be avoided and security guaranteed. This should only be attempted when it is vital to maintain silence (and thus conceal the operation from the enemy) or to avoid equipment or structure damage. It is often necessary to balance the requirement to remain silent and avoid damage with the requirement to maintain momentum.

### Equipment

When traps are being cleared in direct support combat situations, they normally have to be dealt with by using unit resources and locally manufactured or acquired aids. Specific equipment is rarely available. Equipment varies with each situation but usually consists of selected items from Table 13-2. In areas with a high incidence of booby traps, assemble and reserve special clearing kits.

*Table 13-2. Mine-clearance equipment*

Serial	Item	Remarks
(a)	(b)	(c)
Unit Equipment		
1	Mine detector	
2	Mine probe/knife/bayonet	
3	Eye protection	
4	Body armor	Flak jacket, Kevlar helmet
5	Booby trap signs	
6	Mine marking tape	
7	Mine markers	Chalk, felt-tip pens
8	Electrician's adhesive tape	
9	Flashlight	
10	Tape measure	
11	Mine marking cones	
12	Tradesman's tools	Saws, pliers, hammer, screwdrivers
13	Instant camera	
Locally Manufactured/Acquired		
1	Trip-wire feeler	
2	Grapnel and cable	
3	Hand mirrors	
4	Pins, wire, nails	For use as safety pins
5	Meat hooks	For use as block and tackle

## CLEARANCE IN SECURE AREAS

### Policy and Planning

Formal clearing procedures must be followed in secure areas. This type of clearance can be done by engineer or EOD personnel. It is subject to time constraints when traps or suspected traps are located in urgently required installations or facilities (such as fuel supply dumps and telecommunications centers).

Commanders reconnoiter their areas of responsibility, make detailed plans, prepare orders, and brief their men. The following points are covered:

- Intelligence.
- How the operation is to be conducted (include acceptable damage and method(s) of clearing).
- Action on finding traps.
- Marking.
- Disarming procedures.
- Tasking and allocation of areas.
- Equipment available.
- Control measures.
- Timings.
- Rehearsal and equipment preparation.

### Control Point

The operation commander establishes a control point upon arrival at the area to be cleared. The control point functions as the headquarters and material holding area. It is also the point from which all clearance starts. Its suitability might not have escaped the enemy's notice, so it must be cleared before it can be used.

### Control and Size of Parties

The size of clearing parties varies depending on the location being cleared. The following rules apply:

- Each party is controlled by an NCO.
- Only one party works in a particular sub-area.
- The distance between parties is sufficient so detonation in one area does not endanger persons in other areas.
- The NCOIC of each party is in visual, radio, or voice contact with every person in his party.
- Only one person works on each booby trap.

### Marking

Booby traps and nuisance mines can be placed in diverse locations. It is impossible to standardize a method for marking areas, individual traps, or safe routes. Any form of prominent, permanent marking can be used.

**Uncleared areas.** Perimeter marking of un-cleared areas can take any clearly recognized form. Standard minefield or booby-trap signs suspended from a single-strand fence are recommended. The spacing of the signs is the same as standard minefield marking. (See Chapter 7.) As the area is cleared, progressively move the fence.

**Individual traps.** Because booby traps can have more than one means of actuation, do not attempt to place a cone or other marker over any part of a trap. Use sufficient signs to ensure the trap can be detected and accurately located. In buildings, clearly mark rooms containing traps and, where possible, indicate the exact location of traps.

**Internal marking.** The internal marking system depends on the area being cleared. One

good system is to divide the total area into subareas, clear and mark safe lanes between the subareas, and then use the lanes as safe routes from which clearing parties can operate.

### Clearing of Open Areas

Roads, road shoulders, bridges, obstacles, and other structures must be cleared in open areas. The main threat comes from nuisance mines, so regard each potential site as a nuisance minefield and use established minefield clearing procedures. After the site is cleared, adapt the drill to suit the situation.

### Clearing of Buildings

Buildings are excellent locations for enemy booby traps. They are concentrated inside the building, so carefully organize searching and clearing procedures. In most cases, buildings are required for use and excessive damage must be avoided.

A two-man clearing party can clear an average-size structure. No one else enters the building until it is cleared. In very large buildings, two or more parties can be employed if they work as far apart as possible and have clearly defined boundaries. As a general rule, two walls or two floors is the minimum distance between parties.

### Exterior Reconnaissance and Entry

Before approaching a building, check the surrounding area for booby traps and nuisance mines. The team leader then carries out a reconnaissance to determine the point of entry and clears the way to it. When selecting the point of entry, consider the following points:

**Doorways.** Never consider doorways to be safe, unless the door is fully open and the entrance is clear. For example, if a house is built on a concrete slab, it is not likely to have a pressure firing device located in the floor.

**Windows.** Windows are excellent locations for booby traps. Pay particular attention to the ground outside and the floor inside because

they are classic sites for pressure firing devices. Use the following procedures if access must be gained through a window:

- Pull the window if it is unsecured and can be moved. If it is secure, use a small charge or a heavy object to break the glass.
- If there is a choice between a window that can be opened and one that cannot, select the latter.
- Deal with blinds and curtains in a manner similar to procedures used for windows.

**Mouse holes.** If you decide not to enter the structure through a door or window, use explosives (if possible) to make a mouse hole in the wall, roof, or floor. This offers a remote, safe method of creating an access point, but it can also detonate nearby traps. Exercise caution if entering through the roof of a two-story building because it is far more difficult to clear booby traps while going down stairs than it is while going up them.

### Search Techniques

It is impossible to establish a search drill that is suitable for use in all buildings. It is essential, however, for each working party to develop its own drill and follow it. Domestic dwellings should be searched in the following order:

1. Floors and furniture.
2. Walls (including doors, windows, fireplaces, and cupboards).
3. Fittings (including light switches and pictures).
4. Ceilings.

Mark each area or item *safe* as it is cleared. This can be conveniently done by using chalk or a thick, felt-tipped pen.

### Precautions During Search

**Use the following techniques and precautions when searching buildings. They can save your life; learn and remember them !**

- Check both sides of a door before opening it. This can be done by drilling a hole through the door and using a mirror to check the other side. Doors can be further checked or opened by pulling or by blowing the lock and hinges with a small charge.
- Examine floor coverings for signs of disturbance. The presence of firing devices is often indicated by loose floorboards, bulges/tears in carpets, or loose tiles.
- Use a pulling cable to move furniture and to open cupboard doors and drawers.
- Check upholstered furniture and beds by remotely dropping a heavy object onto them.
- Since electrical wiring provides a ready-made circuit for booby traps, treat every switch with suspicion. To explode all traps connected to the normal power supply, disconnect the power at the fuze board, turn all switches on, and then reconnect the power. Repeat the procedure with the switches turned off in case the switch has been reversed. Remember, this procedure will not disclose traps that use a battery. Exercise caution when using switches, even if the power is disconnected.
- After doors, windows, cupboards, and drawers have been cleared, leave them open.
- Clearly mark all routes, areas, and items that have been cleared.
- Check plumbing by remotely turning on all water taps and allowing the water to run for at least one minute.
- Check toilet tanks before flushing.
- In dark places, such as attics and chimneys, beware of light-sensitive devices.
- After pulling anything, allow at least 30 seconds for an explosion because there might be a delay fuze.

## Clearing Installations and Facilities

Clearing by hand is necessary in installations and facilities (such as fuel dumps, ammunition dumps, and electric substations) where an explosion will result in the loss of resources. In other situations, the item's importance or the resulting damage might not be obvious. For example, a small charge placed against the penstock control valves of a dam or against the main cable entering a telephone exchange results in unforeseen damage that can take days to repair. Therefore, you should seek a specialist's advice, if possible, when clearing booby traps in industrial areas and unfamiliar locations.

## Clearing Obstacles

If an enemy has time to create obstacles, he also has time to set booby traps and lay nuisance mines. The obstacle itself must be clear of traps to encourage a false sense of security and lead troops into more dangerous areas. Therefore, regard all obstacles as trapped until proven otherwise. Untrapped obstacles must also be regarded with suspicion. The simplest, safest way to deal with movable obstacles is to pull them; or if you know the area is clear of mines, drive an armored vehicle through them. Before an obstacle can be pulled, you must first clear the area from which the pull will be made.

## Clearing Secure Areas

When clearing secure areas and time is not a major factor, use specialized clearance equipment as much as possible. The following equipment might be available for use:

- Cameras. Cameras have a wide range of applications. They can be used with different types of film, such as infrared and ultraviolet, to disclose evidence that is indiscernible to the naked eye. For example, infrared photography reveals differences in the heat emitted by objects and can often disclose recent digging and buried or concealed objects.

- Explosive detector dogs (EDDs). Although EDDs can detect minute quantities of explosives and the presence of trip wires, they are trained to detect the charge and not the firing device. This extremely limits their usefulness in detecting booby traps. They also tend to become confused if the area contains explosive odors other than those emitting from booby traps.
- ECM. ECM can be used to explode electric booby traps and to prevent remotely controlled, improvised explosive devices from being detonated by radio.
- Robots. In their simplest form, robots can be used to detonate or neutralize booby traps. More sophisticated models can be remotely controlled to carry out simple tasks such as videotaping or cutting wires.
- Body armor.
- Electric meters.
- X-ray equipment.

## CLEARANCE METHODS

**Pulling.** This method uses a cable and grapnel to pull the trap. It is used when the resulting damage is acceptable. It is the safest method and is particularly applicable to traps set in open areas. Do not disturb any part of a booby trap when placing the grapnel and pulling the cable. Carefully select the site from where the pull is to be made because it might be mined or trapped. When a booby trap is pulled and does not explode, wait at least 30 seconds before approaching it in case delay devices have been used. Disposal of unexploded traps depends on their condition when inspected. The procedure for pulling booby traps is similar to that for pulling mines. (See Chapter 9.)

- Trip wires. Check the cover area for AP devices before proceeding. Place the grapnel hook as close as possible to the trip wire. Do not touch the trip wire until the pulling party is behind cover.
- Pull and release. Pull away objects that conceal and operate pull and release mechanisms.
- Pressure mechanism. Pull pressure mechanisms out from under objects that conceal and operate them. If this is not possible, blow them in place.
- In many cases, it might be easier to pull the charge than the firing device. Take extreme care when attempting this. Additional mechanisms are often concealed in or under the main charge.

**Destructing in place.** When destructing booby traps in place, explode a small charge near the booby trap's charge. Again, use this method only if damage from the explosion is acceptable. When it is impossible to place the explosive close enough to ensure actuation of the main charge, carefully place it alongside the mechanism. Do not assume the main charge is safe to handle just because the mechanism has been destroyed. Actuate pressure mechanisms by suspending one-half pound of explosive above the pressure plate.

**Clearing by hand.** This method involves neutralizing, disarming, removing, and disposing traps without causing damage. It is extremely hazardous and should only be used when pulling or destructing traps in place is impossible or unacceptable. Carefully examine all aspects of the trap before deciding how to clear it.

**Explosive line charge.** Using this device produces quick results when only a narrow path is required through a booby-trapped area. It only gives clearance for the same distance to either side, as it will against mines, and then only where it is in contact with the ground.

**Armor.** This method is used where traps with small charges (designed as AP devices) are located in open areas. Armored vehicles track back and forth over the area. This shortens the clearing time with little risk of casualties.

**Fire.** If traps are set in grass or dense vegetation, fire can be used to burn away camouflage material and expose traps. In most cases, sufficient heat is generated to burn or explode the traps. Unexploded traps are considered extremely sensitive and must not be cleared by hand.

**Animals.** You can drive a herd of animals through a trapped area to clear mines. This provides a comparatively safe path, and the size can be increased by repeatedly traversing the herd through the area.

## IMPROVISED TRAPS

In low-intensity conflicts, there is a high incidence of enemy improvised mines and booby traps. It is impossible to provide a complete list of firing devices and improvised demolition material that can be used. However, most improvised traps are variations of those described below.

An electric firing device only requires a current to be passed between two contacts. The ways in which this can be achieved are limited only by the imagination. Examples of simple electric firing devices that can be manufactured using household items or appliances are illustrated

in Figure 13-7, page 13-22. Examples of improvised mechanical firing devices are shown in Figures 13-8 and 13-9, pages 13-23 and 13-24.

The simplest and most accurate method of incorporating delay is to use some form of clock or timer. However, any mechanism or chemical reaction that takes a measurable time to complete its function can be used. Examples of simple improvised delay devices are shown in Figures 13-10 and 13-11, pages 13-25 and 13-26.

## NONEXPLOSIVE TRAPS

Nonexplosive traps are typically used in tropical or rain forest regions. Ideal construction materials abound, and concealment in surrounding vegetation is relatively easy. No prescribed procedures exist for clearing nonexplosive traps. Each trap must be cleared according to its nature. The following nonexplosive traps have been encountered:

**Punji.** The punji (Figure 13-12, page 13-27) is one of the simplest traps. It is normally made from locally available material such as sharpened stakes, nails, or heavy gauge wire. It is placed in concealed pits or in places that give cover from fire. The enemy normally smears the spikes or cutting edges with excrement or poison. You should immediately sterilize cuts and abrasions received while clearing a punji and see a medical officer as soon as possible.

**Closing trap.** The side-closing trap (Figure 13-13, page 13-27) consists of two wooden slats that are studded with spikes. The slats slide

along a pair of guide rods controlled by heavy bands. When the prop holding the slats apart is dislodged, the slats spring together implanting the spikes into the portion of the body passing between them.

**Spike board.** The spike board (Figure 13-14, page 13-27) is used in a pit and consists of a treadle board with one end spiked. When a man steps on the board, the spiked end flies up striking him in the face or chest.

**Venus fly trap.** The venus fly trap consists of a rectangular framework with overlapping barbs emplaced in a pit. The one illustrated in Figure 13-15, page 13-27, is made from a metal container, sunk into the ground until the top is flush. It is then covered with grass and/or leaves. The barbs inflict injury, especially when the victim attempts to withdraw his leg from the trap. These traps are typically located on tracks and along road edges.

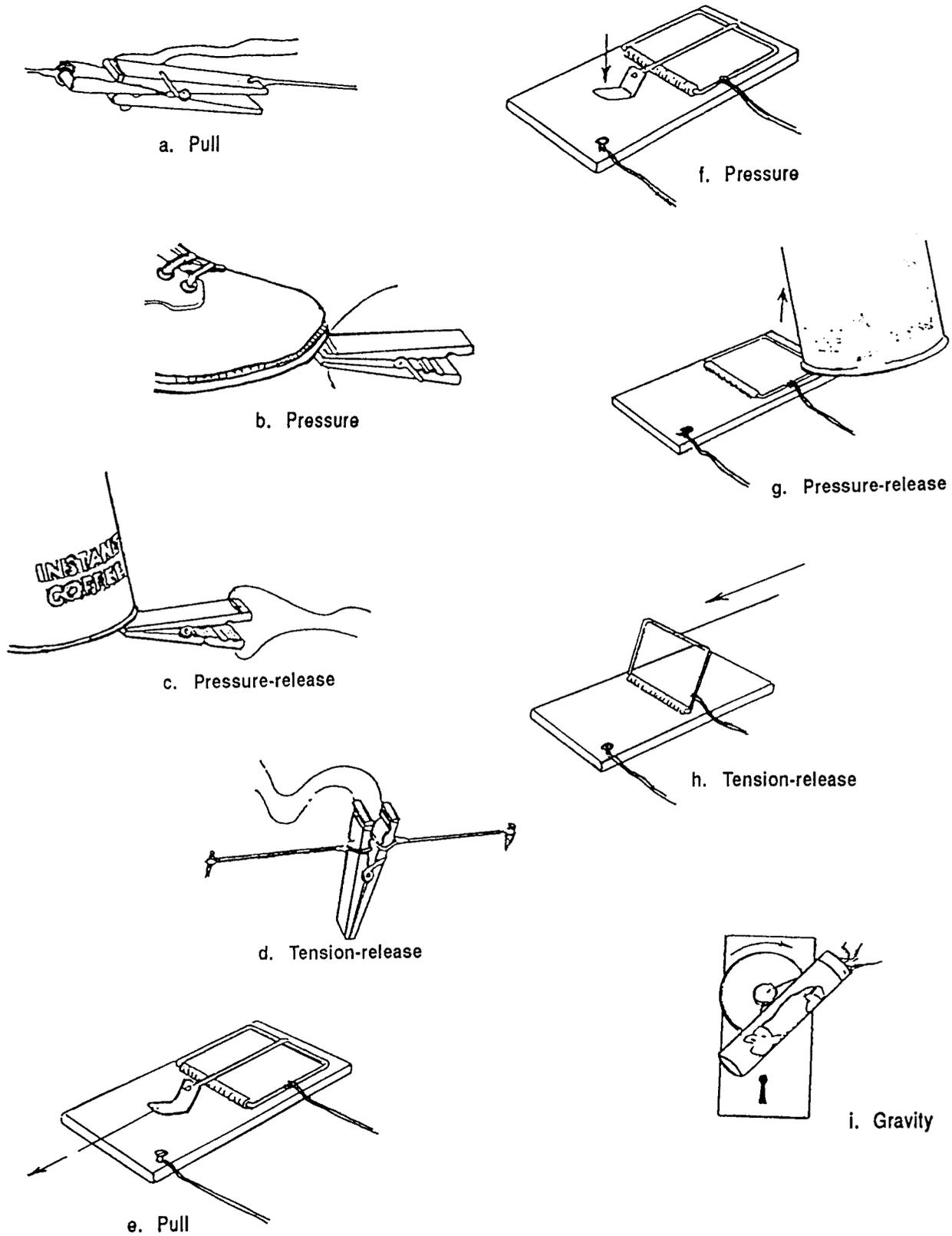
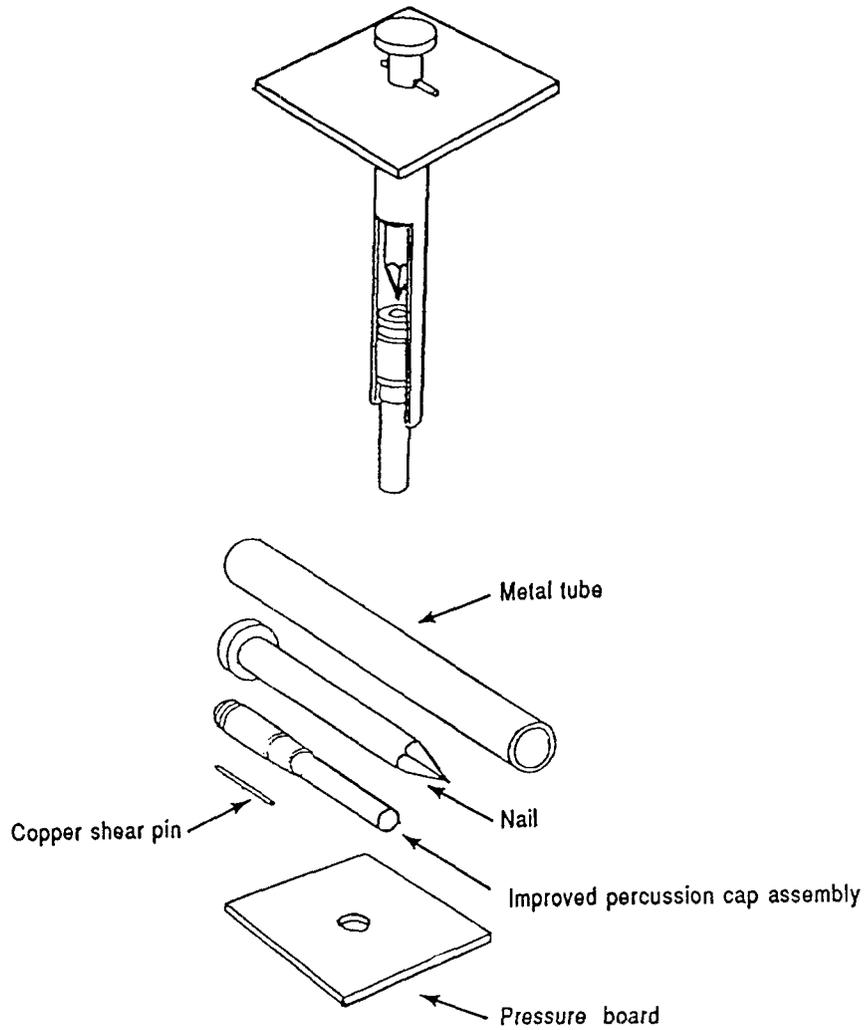


Figure 13-7. Improvised electrical firing devices



NOTE:  
Improved percussion cap assembly consists of small arms round and a nonelectric blasting cap.

*Figure 13-8. Improvised nonelectric firing devices (shear-pin operated)*

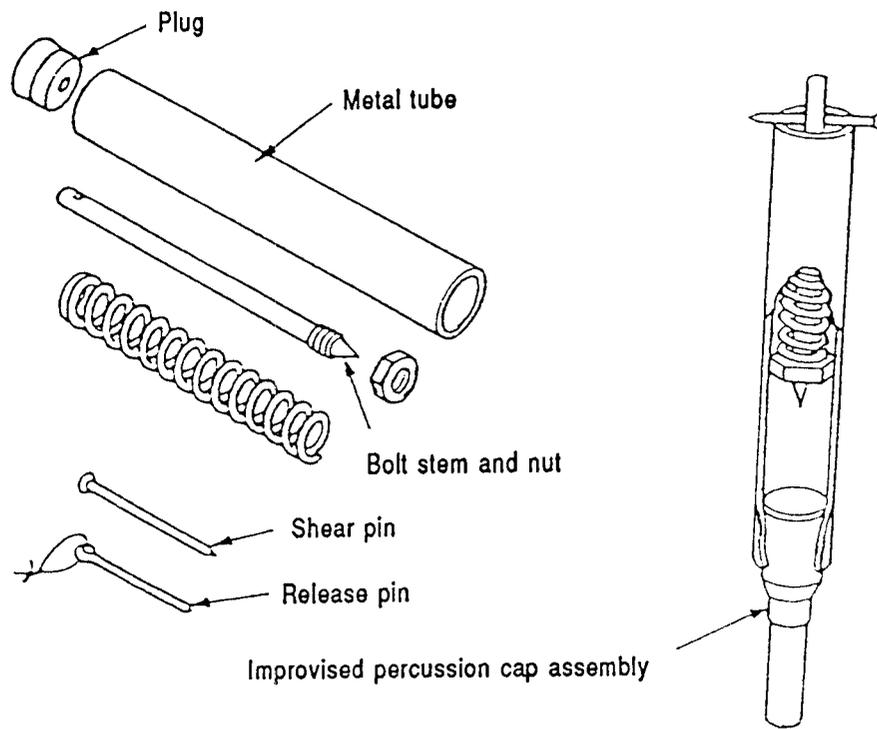


Figure 13-9. *Improved nonelectric firing devices (spring-operated)*

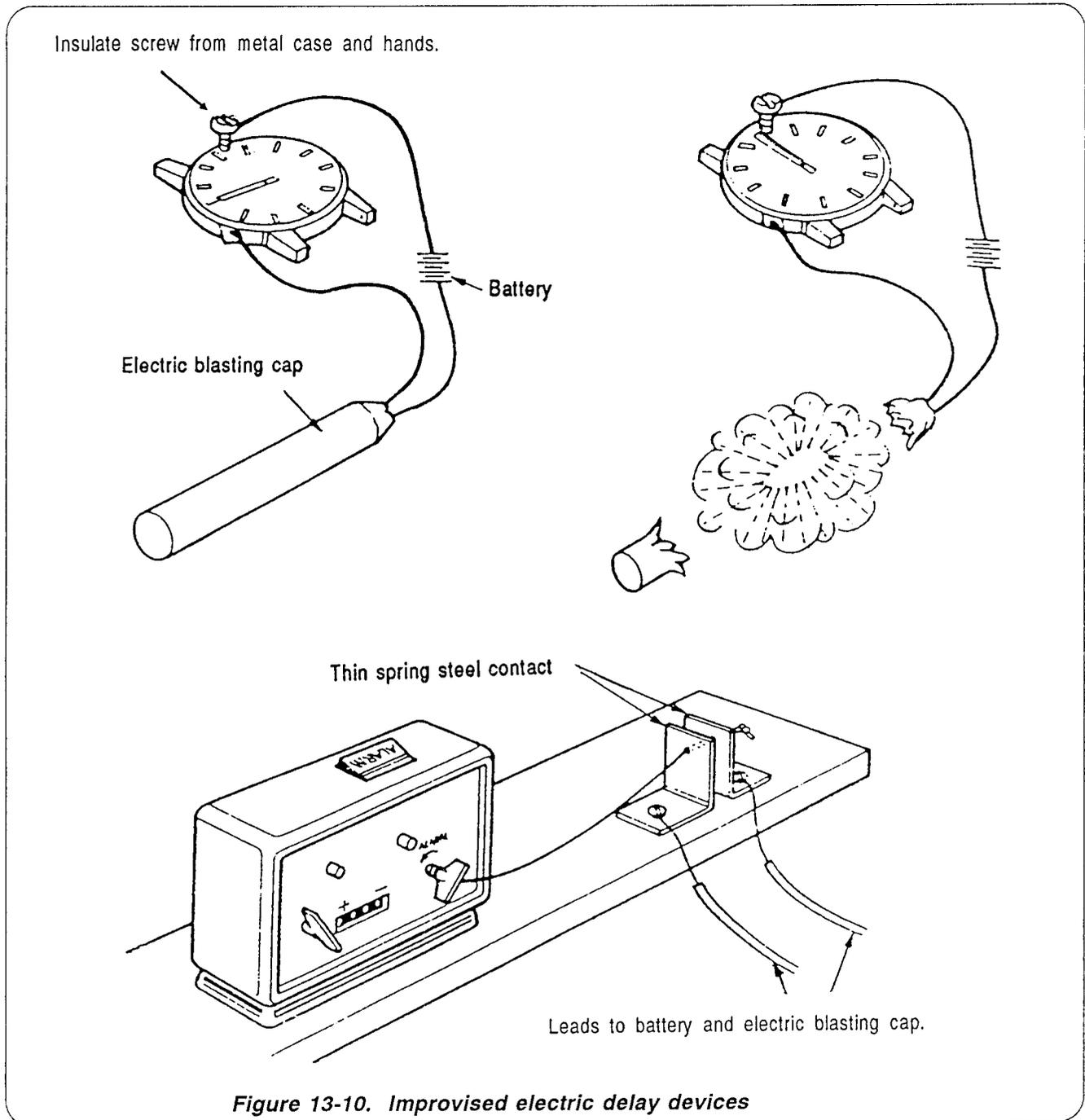


Figure 13-10. Improvised electric delay devices

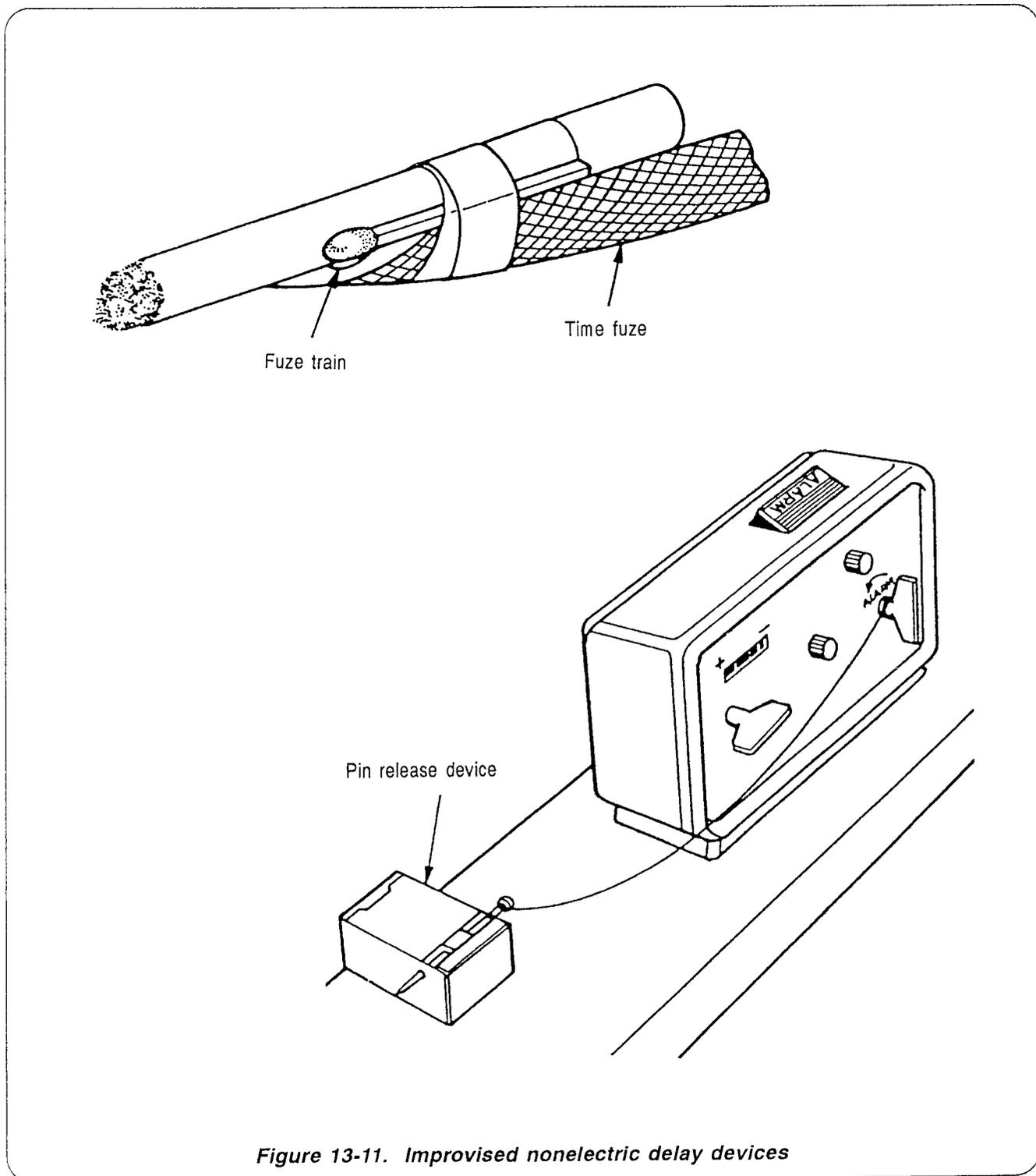


Figure 13-11. Improvised nonelectric delay devices

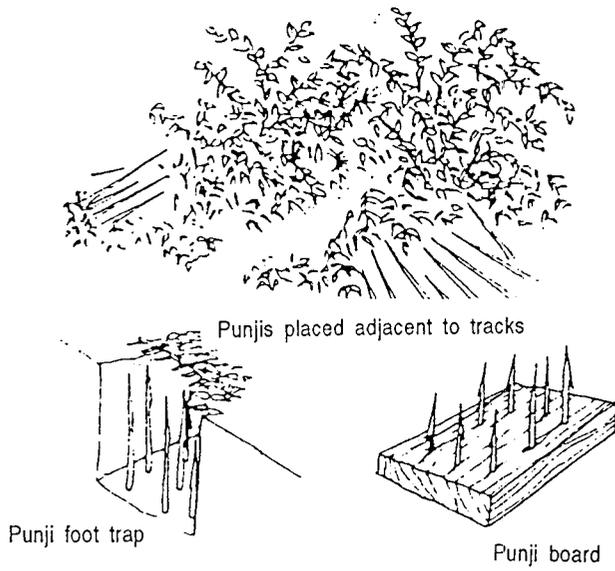


Figure 13-12. Typical punjis

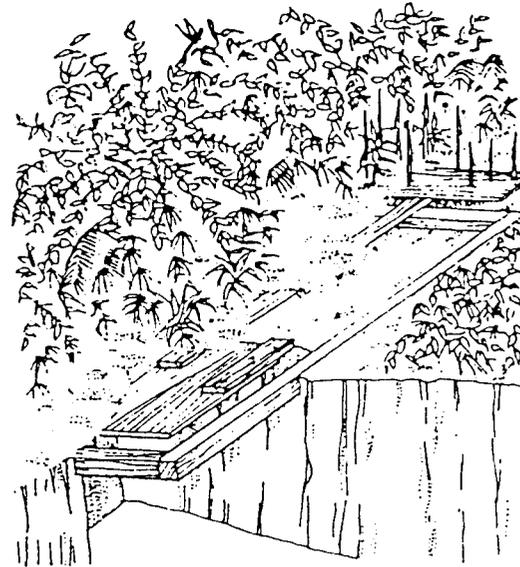


Figure 13-14. Spike board

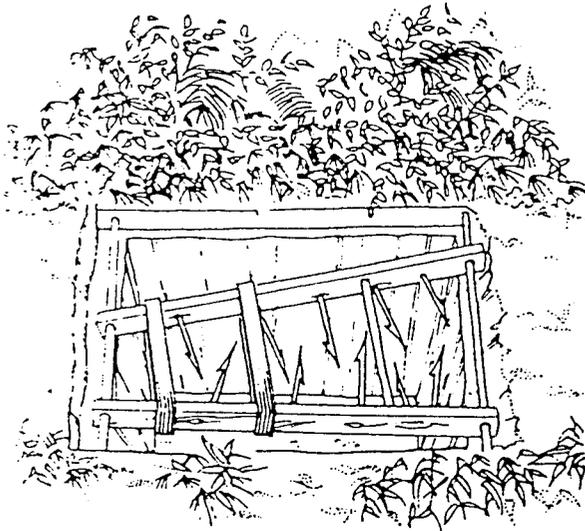


Figure 13-13. Side-closing trap



Figure 13-15. Venus fly trap