# BOOBYTRAPS

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Appendix 1. References

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*This manual supersedes FM 5–31, 31 January 1956, including C 1, 16 December 1957, and C 2, 28 August 1959.*
CHAPTER 1

CHARACTERISTICS OF BOOBYTRAPS

Section I. INTRODUCTION

1. Purpose and Scope
   a. This manual contains procedures, techniques, and expedients for the instruction of the soldier in the assembly, use, detection, and removal of boobytraps in combat.
   b. Included are descriptions and discussions of the design and functioning characteristics of standard demolition items — firing devices, explosives, and accessories — and missiles, such as hand grenades, mortar ammunition, artillery ammunition, and bombs.
   c. This manual also contains information on a variety of items and indigenous materials useful for improvising firing devices, explosives, and pyrotechnic mixtures for guerrilla warfare applications.
   d. Factory-produced boobytraps (dirty trick devices) are described. Most of these have been developed and used in the field by foreign armies.
   e. Safety measures pertinent to boobytrapping operations are provided for the protection of troops from casualty.
   f. The contents of this manual are applicable to nuclear and non-nuclear warfare.

2. Comments

Users of this manual are encouraged to forward comments or recommendations for changes for improvement. Comments should be referenced to the page, paragraph, and line of text. The reason for each comment should be given to insure proper interpretation and evaluation. Forward all comments directly to the Commandant, U.S. Army Engineer School, Fort Belvoir, Virginia 22060.

Section II. PRINCIPLES OF OPERATION

3. Types of Boobytraps

A boobytrap is an explosive charge cunningly contrived to be fired by an unsuspecting person who disturbs an apparently harmless object or performs a presumably safe act. Two types are in use — improvised and manufactured. Improvised boobytraps are assembled from specially provided material or constructed from materials generally used for other purposes. Manufactured boobytraps are dirty trick devices made at a factory for issue to troops. They usually imitate some object or article that has souvenir appeal or that may be used by the target to advantage.
4. Assembling Boobytraps

A boobytrap consists of a main charge, firing device, standard base (not always used), and detonator. Another item, the universal destructor, is an adapter for installing a firing device assembly in a loaded projectile or bomb to make an improvised boobytrap. Also, firing device assemblies are often attached to the main charge by means of a length of detonating cord.

5. Boobytrap Firing Chain

THE FIRING CHAIN IS A SERIES OF INITIATIONS BEGINNING WITH A SMALL QUANTITY OF HIGHLY SENSITIVE EXPLOSIVE AND ENDING WITH A COMPARATIVELY LARGE QUANTITY OF INSENSITIVE EXPLOSIVE.

- RELEASED STRIKER FIRES PERCUSSION CAP
- PERCUSSION CAP SETS OFF DETONATOR
- DETONATOR (BLASTING CAP) SETS OFF BOOSTER
- BOOSTER DETONATES MAIN CHARGE (NOT ALWAYS USED)
- MAIN CHARGE PRODUCES EXPLOSION
6. Initiating Actions

THE INITIATING ACTION STARTS THE SERIES OF EXPLOSIONS IN THE BOobyTRAP FIRING CHAIN.

A. PRESSURE
WEIGHT OF FOOT STARTS EXPLOSIVE ACTION.

B. PULL
LIFTING THE SOUVENIR STARTS EXPLOSIVE ACTION.

C. PRESSURE-RELEASE
MOVING THE STONE STARTS EXPLOSIVE ACTION.
7. Firing Device Internal Actions

A FIRING DEVICE, WHEN ACTUATED MAY FUNCTION INTERNALLY IN MANY WAYS TO INITIATE THE FIRING CHAIN.

A. ELECTRIC

REMOVAL OF WEDGE BETWEEN CONTACTS CLOSES CIRCUIT AND FIRES ELECTRIC CAP.

B. MECHANICAL

RELEASED STRIKER, DRIVEN BY ITS SPRING, FIRES PERCUSSION CAP.
C. PULL-FRICTION
Pulling the chemical pellet through the chemical compound causes flash that fires the detonator.

D. PRESSURE-FRICTION
Pressure on top of the striker forces its cone-shaped end into the phosphorus and glass mixture in the mating sleeve, causing a flash that fires the detonator.

MODEL 1952
FRANCE
E. CHEMICAL

(1) PRESSURE
PRESSURE ON THE TOP
BREACKS THE VIAL, FREEING
THE SULPHURIC ACID TO MIX
WITH THE FLASH POWDER,
PRODUCING A FLAME THAT
FIRES THE DETONATOR.

(2) DELAY
CRUSHING THE AMPULE RELEASES
THE CHEMICAL TO CORRODE
THE RETAINING WIRE, FREEING
THE STRIKER TO FIRE THE
DETONATOR. THE DELAY IS
DETERMINED BY THE TIME
NEEDED FOR THE CHEMICAL
TO CORRODE THE RETAINING
WIRE.
CHAPTER 2
USE OF BOOBYTRAPS

Section I. BASIC DOCTRINE

8. Tactical Principles

Boobytraps supplement minefields by increasing their obstacle value. They add to the confusion of the enemy, inflict casualties, destroy material, and lower morale. Boobytraps are usually laid by specialists. All military personnel, however, are trained in hand-

9. Authority

a. Army commanders issue special instructions for the use of boobytraps within their command. Supplies are authorized and provided as required to meet boobytrapping needs.

b. Army and higher commanders may delegate authority to lay boobytraps to as low as division commanders. All higher commanders, however, may revoke this authority for a definite or indefinite period, as the tactical situation may require.

c. Records of all boobytraps laid are prepared and forwarded to higher headquarters.

d. Enemy boobytraped areas, as soon as discovered, are reported to higher headquarters to keep all interested troops advised of enemy activities. If possible, all boobytraps are neutralized; otherwise they are properly marked by warning signs.

Section II. PLANNING

10. Tactical Effects

a. The ingenious use of local resources and standard items is important in making effective boobytraps. They must be simple in construction, readily disguised, and deadly. They may produce unexpected results if conceived in sly cunning and built in various forms. Boobytraps cause uncertainty and suspicion in the mind of the enemy. They may surprise him, frustrate his plans, and inspire in his soldiers a fear of the unknown.

b. In withdrawal, boobytraps may be used in much the same way as nuisance mines. Buildings and other forms of shelter, roads, paths, diversions around obstacles, road blocks, bridges, fords, and similar areas are suitable locations for concealing boobytraps.

c. In defense, boobytraps, placed in the path of the enemy at strategic locations in sufficient numbers, may impede his progress, prevent detailed reconnaissance, and delay disarming and removal of minefields.

11. **Basic Principles**

Certain basic principles, as old as warfare itself, must be followed to get the optimum benefit from boobytraps. Knowledge of these principles will aid the soldier, not only in placing boobytraps expertly, but in detecting and avoiding those of the enemy.

### A. APPEARANCES

Concealment is mandatory to success. All litter and other evidences of boobytrapping must be removed.

![Boobytrap concealed in book](image1)

**Boobytrap concealed in book**

### B. FIRING

An obvious firing assembly may distract attention from a cunningly-hidden one.

![Obvious pullwire](image2)

**Obvious pullwire**

### C. LIKELY AREAS

Defiles or other constricted areas are excellent locations.

![Likely areas](image3)

**Likely areas**
D. OBSTACLES
ROAD BLOCKS, FALLEN TREES, LITTER, ETC., ARE IDEAL LOCATIONS

E. GATHERING PLACES
IN BUILDINGS, AT BUILDING ENTRANCES, AND IN SIMILAR PLACES WHERE SOLDIERS MAY MOVE OR GATHER, DELAY CHARGES PAY OFF.
F. APPEAL TO CURIOSITY
BOOBYTRAPS LAID IN
BOLD POSITIONS TO DARE
THE CURIOUS GET RESULTS.

G. BLUFF
DUMMY BOOBYTRAPS, CONSISTENTLY
REPEATED, MAY ENCOURAGE CARELESSNESS.
AN OBVIOUS BOOBYTRAP MAY MASK
ANOTHER AND PERHAPS A MORE
DEADLY ONE.

H. LURES
BOOBYTRAPS MAY BE BAITED. THE
UNEXPECTED DETONATION OF A DELAY
ACTION INCENDIARY OR EXPLOSIVE
BOOBYTRAP MAY SCATTER TROOPS OR
DETOUR THEM INTO A MORE HEAVILY LAID
AREA.

12. Location of Charges

a. Preparation. Small compact boobytraps are the most desire-
able for use in raids in enemy-held territory. Each member of a
team must carry his own supplies and be able to operate independ-
ently. Boobytraps should be assembled, except for the attachment
of the firing device, before entering enemy territory. This will
reduce the work at the site to the minimum.

b. Location. Charges should be placed where they will do the
most damage. A charge detonated against a stone wall will expend
its force in magnified intensity away from the wall. The force of an
explosion on the ground will affect the surrounding air more if the
charge is placed on a hard surface. This deflects the explosive
wave upward. A charge detonating 6 to 10 feet above the ground
will damage a larger area than one laid on or below the surface.

c. Characteristics. Many inexpensive boobytraps, simple to make
and easy to lay, will delay and confuse the enemy more than a small
number of the expensive and complex kind. Complex mechanisms
cost more, require more care in laying, and offer little more advantage than the simple type.

13. **Reconnaissance**

Complete reconnaissance of an area is essential to good planning. Without this and the preparation of a program, boobytraps may not be used effectively. Boobytrap teams are best suited to survey a combat area to determine its boobytrapping possibilities.

14. **Plan of Operation**

a. The commander with authority to use boobytraps coordinates his plans with other tactical plans. Timing of boobytrap operations with movement plans is extremely essential. Boobytraps should not be laid in areas where friendly troops will remain for any appreciable length of time. Plans will indicate what is to be done, where and when it will be done, and the troops to be used. Generally, trained troops are assigned such tasks.

b. The plan authorizes the use of boobytraps and the types and densities required in specified areas, depending on the terrain, time, personnel, and material available. The completion of the detailed plan is delegated to the commander responsible for installation. Materials are obtained from unit supply stocks on the basis of the proposed action.

c. Complete coordination between the troop commander and the officer supervising boobytrap activities is essential. The area should be evacuated immediately following the completion of the job.

d. The commander installing boobytraps prepares a detailed plan indicating the site and the location, number, type, and setting. He assigns boobytrap teams to specific areas and the laying of specified types. The plan covers arrangements for supplies and transportation and designates the location where all preliminary work on boobytraps will be done. Time tables are established to insure completion of the work to comply with withdrawal phases of tactical plans.

e. In hasty withdrawal, when there is no time for planning, each team will be given a supply of material with instructions for making the best possible use of it in the time allowed.

f. Boobytrap planning must give proper consideration to all known characteristics of the enemy. Members of teams should study the personal habits of enemy soldiers, constantly devising new methods to surprise them. Repetitions may soon become a pattern easily detected by an alert enemy.

g. Withdrawal operations are the most desirable of all for laying boobytraps. When an enemy meets a boobytrap at the first obstacle, his progress throughout the area will be delayed even though no others have been laid. A few deadly boobytraps and many dummies, laid indiscriminately, can inspire great caution. Dummies, however, should be unserviceable or useless items. Never throw away material that may return to plague friendly forces!
Section III. INSTALLATION

15. Responsibilities

a. A commander authorized to use boobytraps is responsible for all within his zone of command. He will keep adequate records showing their type, number, and location, and prepare information on those laid and on practices followed by the enemy.

b. Management of boobytrap services may be delegated to the engineer staff officer.

c. Unit commanders must know the location of all boobytraps in their areas and keep all subordinates so advised. Subordinates are also responsible for reporting to higher headquarters all new information obtained on enemy boobytraps.

d. Officers responsible for laying boobytraps prepare plans, supervise preliminary preparations, and direct their installation. They forward to proper authority a detailed report of their progress, advise all concerned when changes are made, and report to engineer intelligence units the discovery of any new enemy devices or low-cunning practices.

e. Engineer and infantry units, with special training, have the responsibility of installing and neutralizing boobytraps. Since adequate numbers of trainees may not always be available, all troops are given familiarity instruction in boobytrapping.

16. Procedures

Like all activities involving explosives, boobytrapping is dangerous only because of mistakes men make. Prescribed methods must be followed explicitly in the interest of personal safety and overall effectiveness.

a. Before assembling a boobytrap, all components should be inspected for serviceability. They must be complete and in working order. All safeties and triggering devices must be checked to insure proper action, and for rust or dents that might interfere with mechanical action.

b. If a boobytrapping plan is not available, one must be prepared on arrival at the site, so that the material obtained will be required items only. A central control point should be established in each boobytrap area where supplies may be unloaded and from which directions may be given. In areas where many boobytraps are concentrated, safe passage routes from the control point to each location must be marked clearly. Lines or tape may be useful where vegetation is heavy. The control man is the key man.

c. Several teams may operate from one control point. Each team (rarely more than two men) is assigned to a specific area and supplies are issued only as needed. Each detail commander must make certain that every man knows his job and is competent to do it. Teams will remain separated so that one may not suffer from the mistake of another. When a job is completed, all teams
must report to control man before going elsewhere.

d. One person in each team is designated leader to direct all work. If possible, members of a team will avoid working close together when a boobytrap is assembled. One member should do all technical work and the other be a helper to carry supplies, provide assistance needed, and learn the skills needed.

e. Boobytraps laid during raids into enemy held territory should be small, simple, and easily installed. Each member of a party must carry the supplies he needs. The use of boobytraps under these conditions, when accurate records are impossible, may be a hazard to friendly troops if raids into the same area should become necessary.

f. Procedure for installing boobytraps is as follows:

1. Select the site that will produce the optimum effect when the boobytrap is actuated.
2. Lay the charge, then protect and conceal it.
3. Anchor the boobytrap securely, with nails, wire, rope, or wedges, if necessary.
4. Camouflage or conceal, if necessary.
5. Teams arm boobytraps systematically, working toward a safe area.
6. Leave the boobytrapped area clean. Carry away all items that might betray the work that has been done, such as loose dirt, empty boxes, tape, and broken vegetation. Obliterate footprints.

17. Reporting, Recording, and Marking

Boobytraps are reported and recorded for the information of tactical commanders and the protection of friendly troops from casualty. Boobytrap installations are reported and recorded as nuisance minefields, whether the area contains both boobytraps and mines or boobytraps alone.

a. Reports

1. Intent. This is transmitted by the fastest means available consistent with signal security. It includes the location of the boobytrapped area selected, the number and type of mines to be laid (if antitank mines are boobytrapped), boobytraps to be laid, the estimated starting and completing time, and the tactical purpose. The report is initiated by the commander authorized to lay the field and forwarded to higher headquarters.

2. Initiation of Laying. This report is transmitted by the fastest means available consistent with signal security. It contains the location and extent of the field, total number of mines and boobytraps to be laid, and estimated time of completion. The commander of the unit installing
RECORD OF BROADCAST PLACED

SCHOOL A
3 TIMES PLACED
1. Pressure release device and RFP placed under front door and operated by opening door.
2. Pressure release device and RFP placed under ground edge of shuttle box placed in front door and operated by pressure
3. RFP under center of lobby floor, connected to light switch, operated by turning on switch of entrance.

CITY HALL A
3 TIMES PLACED
1. Pressure release device and RFP in ground shuttle box and operated by hitting lid of shuttle box.
2. Pressure release device and RFP under base shuttle box and opersted by pressure on shuttle box.

All permanent means removed at 30/1000

John R. Tylar
1st Lt.

SCALE 1 = 50,000
the field sends the report to the commander that directed
him to lay it.

(3) Completion. The report of completion is transmitted by
the fastest possible means. It contains the number and
type of boobytraps laid, location and extent of the field
or area and the time of completion. The report is for-
warded to army level. When boobytraps are laid, either
alone or with mines, the report of intent and the report
of initiation of laying will include the estimated number
of boobytraps to be placed and the report of completion,
the number placed.

b. Records. Boobytraps are recorded as nuisance mine fields on
the standard mine field record form. It is filled in as follows:

(1) The general locations are shown on the sketch, using the
appropriate symbol. Boobytrapped areas or buildings are lettered
serially, "A" being the nearest to the enemy.

(2) The number, types, locations, and methods of operation of
boobytraps are entered in the NOTES section of the form. If space
is lacking, additional sheets may be attached. If the boobytrap can-
not be adequately described in a few short sentences, a sketch of
minimum details will be included.

(3) The record is prepared simultaneously with the laying of
the boobytrap and forwarded through channels to army level with-
out delay. If a standard form is not available, the data required
must be entered and submitted on an expedient form.

(4) Nuisance mine fields containing both mines and boobytraps
are recorded as prescribed in FM 20-32. When the specific locations
of boobytraps and manufactured devices cannot be accurately re-
corded (scattered laying in open areas) their number and type are
entered in the notes section of the form and identified by grid coor-
dinates.

c. Marking. Boobytraps are marked by special triangular signs
painted red on both sides. On the side facing away from the danger
area, a 3-inch diameter white disc is centered in the triangle and
the word BOOBYTRAPS is painted in white across the top in 1-
inch letters. The STANAG or new sign is similar except for the 1-
inch white stripe below the inscription. Signs may be made of metal,
wood, plastic, or similar material. They are placed above ground,
right-angled apex downwards, on wire fences, trees, or doors, win-
dows, or other objects or by pushing the apex in the ground. These
working signs are used by all troops to identify friendly boobytraps
during the period preceding withdrawal from an area, or to warn
friendly forces of the presence of active enemy boobytraps.
d. Abandonment. When abandoning a boobytrapped area to the enemy, all markers, wire, etc., are removed.

e. Signs. Signs are also used to mark enemy boobytraps or booby-trapped areas.
CHAPTER 3
BOOBYTRAPPING EQUIPMENT

Section I. FIRING DEVICES

18. Introduction
Many triggering devices are available for use in boobytraps. They include fuzes, igniters, and firing devices. All U.S. standard firing devices have the following advantages over improvisations; established supply, speed of installation, dependability of functioning, resistance to weather, and safety. All have a standard base coupling by which they may readily be attached to a variety of charges. For more detailed information see TM9-1375-200.

19. M1A1 Pressure Firing Device
   a. Characteristics.

<table>
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<tr>
<th>Dimensions</th>
<th>Metal</th>
<th>Color</th>
<th>D</th>
<th>L</th>
<th>Internal Action</th>
<th>Initiating Action</th>
</tr>
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<td></td>
<td>OD</td>
<td>2% in</td>
<td>2 3/4 in</td>
<td>Spring-driven striker with keyhole slot release</td>
<td>20 lb pressure or more</td>
<td></td>
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</tbody>
</table>

| Safety clip and positive safety pin | 3-pronged pressure head and extension rod | Five units with standard boxes packed in cardboard carton. Thirty cartons shipped in wooden box. |

   b. Functioning.
A pressure of 20 pounds or more on the pressure cap moves the trigger pin downward until the striker spindle passes through the keyhole slot. This releases the striker to fire the percussion cap.
c. Installing.

(1) Remove protective cap from base and crimp on a non-electric blasting cap. Crimping jaws should be placed no farther than 1/4 inch from open end of blasting cap.

(2) Assemble 3-pronged pressure head and extension rod and screw in top of pressure cap, if needed.

(3) Attach firing device assembly to standard base.

(4) Attach firing device assembly to charge.

d. Arming. Remove safety clip first and positive pin last.