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Purpose

THIS pamphlet is a guide for naval personnel on booby traps and how to avoid them. Information is given on various types of traps which Germany and Japan have been using in the past and which they very likely will be using in the future.

The material in these pages was prepared with the cooperation of the United States Navy Bomb Disposal School, Washington, D. C.; the Mine Warfare Section, Base Maintenance Division, Naval Operations; M4 (Engineer) Section, Division of Plans and Policies, Headquarters, United States Marine Corps; and the Army Engineer Board, Fort Belvoir, Va.

It is intended that this information receive wide circulation among personnel concerned.

WHY YOU SHOULD KNOW ABOUT ENEMY BOOBY TRAPS

THERE'S no need to tell you that booby traps are concealed explosive devices to catch the unwary. They are laid in such a way as to be unintentionally set off by personnel causing casualties. These fiendish mechanisms used by the retreating enemy are not new in warfare. The Trojan horse was certainly a bombshell, and it worked.

All the major wars have used booby traps. Their use in the strictly modern sense started near the end of World War I. Many of the trenches which changed hands rapidly were not only being mined, but mined in deceptive fashion.

In the interim between that war and the present one, gangsters became more resourceful. They did not stop by popularizing the submachine gun. If you did not pay your cut, you could step on the starter and the car would blow up; open the writing desk and be shot by your own cleverly concealed weapon; lift the lid of the cigar box and go to glory.

Our international gangsters have added more refinements, the Germans describing their intentions thus: "It should not be safe for him (meaning you and me) when in an occupied community to press a door latch, to move a wagon, to close a window, to clear away debris, to disturb a wire, to cross a street—without causing the explosion of a mine."

First report of use of booby traps in this war came in 1939. French patrols which had gone on scouting missions into enemy-held territory never returned. Several groups were annihilated before it was found that the Germans had strung thin wire traps through no man's land. Such devices are now widely used by Germany and to a considerable extent by Japan. Even a trained bomb disposal officer is a wary and cautious man until he is sure that every possible trap has been safely removed or exploded.

If you are an aviator forced down, a Seabee clearing a harbor, a member of a naval beach or shore party, or a wanderer upon a foreign strand, you should understand the whole subject of booby traps, so that the enemy's disastrous intent will be nullified to petty annoyance. You should be wary but not afraid.

You should gather confidence after you learn:

1. What mines and booby traps are.
2. How booby traps work.
3. Why they are used.
4. Common types employed by Germany and Japan.
5. Where to look for the booby trap.
6. How to detect booby traps.
7. What to do if you find one.

UNDERLYING PRINCIPLES OF BOOBY TRAP EMPLOYMENT

WHAT THEY ARE

First are *antivehicle mines*, designed for effect against tanks, trucks, boats, and other vehicles. Second are *antipersonnel mines*, designed for effect against personnel and used to perform definite military missions such as the laying of mines in wire entanglements. Third are *booby traps*, designed to function by themselves, to delay, confuse, and destroy individuals or small groups of the enemy.

While antipersonnel mines and booby traps use the same detonating devices and charges, they do differ in two respects. In the first place, booby traps are not used for tactical purposes. Secondly, in contrast with antipersonnel mines, they may involve all sorts of schemes and devices which are employed to set off the detonator.

The demolition expert will tell you, as we have just pointed out, that the mine is one thing, the booby trap another. It is true that there is nothing hit or miss about mines, which may be as close together as one every 5 yards, and laid in patterns

as geometrical as a French forest. But since the enemy booby-traps his own mines and even ours (if he knows they are temporary and soon to be lifted) and since such things as butterfly bombs and UXP's (unexploded projectiles to you) will kill you just as dead, let us not haggle. Let us discuss anything you should stay away from.

HOW THEY WORK

Booby traps and mines are explosive charges hooked to an igniter. The igniter has a cocked trigger which must be actuated in some manner, usually by:

1. *Pressing down*.—Stepping on a trigger (e. g., walking on a board under which an igniter is placed).

2. *Pulling trigger*.—Tripping a concealed wire or cord (e. g., opening a door to which a wire is attached).

3. *Releasing pressure*.—Lifting some apparently harmless obstacle which holds trigger down (e. g., moving an oil drum which holds down a trigger placed by the enemy in the road).

4. *Release of tension*.—Cutting a taut wire which fires the device (e. g., breaking a wire strung across your path).

5. *Automatic time device*—(a) *Mechanical*.—This actuates itself independently of any human agency, like an alarm clock, at a predetermined time (up to 50 days).

(b) *Chemical*.—This also actuates itself independently; breaking of a glass container releases acid which eats through wire-releasing a striker.

To beat the booby trap you should not step on anything, pull or slide anything, or release anything. That is the general idea, but to be more specific:

1. Before opening doors or windows or making use of service facilities, careful search should be made of any building recently in the hands of the enemy.

2. Investigate both ends of all wires and cords.

3. Do not move furniture or equipment until a check has been made for concealed explosives.

4. Suspect loose boards and other movable objects under which pressure igniters might have been placed.
5. Examine carefully all equipment around a building, such as machinery or gasoline tins.

You can never be certain where traps have been placed.

Remember your first mistake will probably be your last. Develop suspicion of all harmless looking objects. And keep in mind that a booby trap may be actuated by any of a number of things—a concealed wire, an innocent piece of string, a phone cord, a light switch, a door, a table, a chair.

The illustrations in this pamphlet show you a number of the more common ways in which booby traps are set. Study these carefully and remember them. They will help you to locate these or similar traps when in enemy areas in which you may be travelling.

WHY BOOBY TRAPS ARE USED

The first reaction you will have to the booby traps is that it is a silly waste of time. Consider the pistol ground spike. If you step on it, one single bullet is sped upward. And ponder the five or more expensive mines one abandoned house may contain—surely the enemy can spend his powder to better advantage. What a waste of time!

YOUR time, yes; right into eternity. The first use of the booby trap is psychological; and here is about how it works—

(The squad leader comes across a nice German Luger pistol lying on the ground, just waiting to be picked up.)

SQUAD LEADER. "Do not touch it, men. It is booby-trapped. Watch me!" (He bends down, carefully attaches a cord to the tripper guard, and backs away toward a convenient foxhole.)

SQUAD LEADER. "Take cover, men. When I move the Luger, it will explode. Here we go!" (He is right. He steps into the foxhole, where the enemy, anticipating his line of reasoning, has put a couple of bounding mines set for pressure.)

Four purposes.—The whole purpose of these fiendish devices which Nazis and Japs are equally adept at using is fourfold:

1. To confuse and demoralize us all—by killing some of us—even when the enemy is miles away.
2. To slow our advance by making us clear the way before we proceed, whether we are demoralized or not.
3. To make us disclose our whereabouts by the noise of the explosion.
4. The fourth and last use is minor indeed, but you can defend a position better with booby traps than with sentries.

Notice that all of these uses are best suited for retreating, and that is just what we have got our enemies doing—retreating.

Psychological effect.—The effect on your state of mind is considered more important by the enemy than any bodily injury which might come to you. Traps are set so as to go off unexpectedly when you are relaxed or busying yourself with a routine job. And the only limit to their variety and location is the ingenuity of the enemy. Your best defense against these devilish devices is to learn as much as you can about them before going into enemy territory. If you desire more information than is contained in this pamphlet, read some of the references given in the bibliography at the back. Fortified with the facts, and alert to any evidence of trap installation by the enemy, you can move into newly captured territory with confidence.

Some idea of the effectiveness of mines and booby traps can be gathered from the testimony of the British 8th Army, whose advance from El Alamein to Tripoli was greatly slowed by the necessity of cleaning out mines and traps before proceeding. It took around 300 trained men to “delouse” 15 miles of road a day, lifting on the average 18 mines per mile. Even deserted airfield yielded around 450 telemines and 250 “S” (for “Shrapnel”) mines. In addition to the mines themselves, every fake mound of earth, as well as each bottle, can, or bit of iron found by the detectors, had to be investigated.

But slow or not, the job has to be done, and the more you know the better you can help.

COMMON TYPES USED BY GERMANY AND JAPAN

Elsewhere in this pamphlet all the known devices which are used to set up booby traps are shown in illustrations so that you can recognize them, report them, and pass by another way. For present purposes it will be sufficient to de-

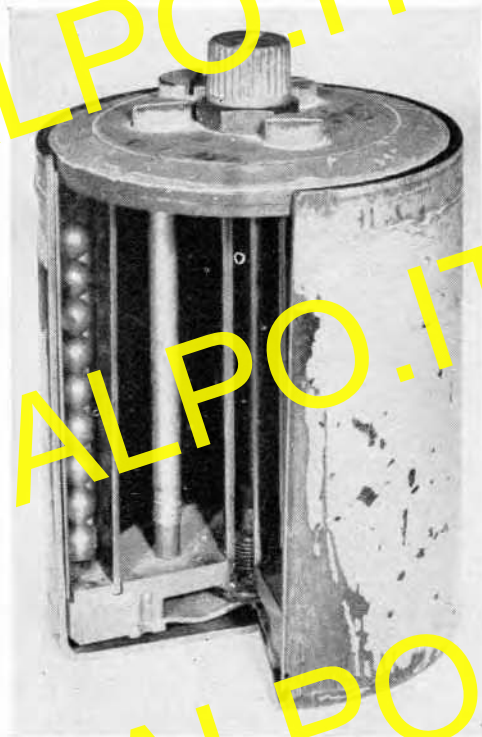


Figure 1. A cross section of an "S" mine revealing the interior of the mine. Notice the row of steel balls. These surround the entire mine, flying in all directions when the mine explodes.

scribe a few of the common varieties used by Germany and Japan. Unless you are a specialist in explosives, it may be as

well for you not to trade on your limited knowledge anyway, for the appearance of the traps will change from time to time. Furthermore, anything that can hold an explosive charge may be a booby trap: a piece of iron pipe, a hand grenade, one of our own unexploded bombs or one of our own projectile "duds," a wooden box with the lid slightly open waiting for you to step on it, a 40-gallon drum, a bottle of wine—even an old shoe.



Figure 2.—"S" mine buried in ground with three-prong igniter projecting above surface. Pressure on the prongs causes explosion of mine. This is a commonly used trap. Watch out for it in shore or inland areas recently held by the enemy.

Remember your responsibility is to detect and avoid booby traps. The job of neutralizing and removing them belongs to the Navy bomb disposal man and the Army or Marine Corps engineer, or other authorized personnel.

"S" Mine

Of the manufactured varieties, the German "S" mine is the most deadly and most often encountered of the anti-personnel booby traps. It resembles in size and shape a family sized can of pork and beans. (See fig. 1.) The British



Figure 3. Three types of firing devices for "S" mines.

Mine on left of picture has three-prong pressure device as in figure 2.

Mine in center of picture has a Y-adaptor and two ball igniters.

Mine on right of picture has an igniter bridge, to which can be attached two strings of electric igniters (one in this picture). Each string consists of nine igniters connected in parallel. Pressure on any one igniter releases a striker which breaks a glass vial containing acid. The latter then comes into contact with two plates, creating an electric current, this firing an electric detonator in igniter bridge.

Remember the "S" mine is used as an antipersonnel device and is likely to be found in most all types of circumstances.

“shrapnel” mine, the American “bounding” mine, and the Italian B-4 are first cousins. Sometimes called the silent soldier, the “S” mine is made in two parts; the deadly portion is contained in a cylinder, the walls lined with 350 bullet-like slugs, the size of small steelies which boys treasure in their marble bags. The death-dealing cylinder fits smoothly into an outer case.

When the igniter of the “S” mine is set off, either by stepping on a hidden or partially exposed pressure-trigger (see fig. 2) or by tripping a pull-igniter in stumbling over a concealed wire, a charge of black powder underneath the cylinder will propel it upward (see fig. 3 for types of igniters). At the same time a charge of TNT will detonate the mine when it has jumped from 3 to 3 feet into the air. All together this takes about 3 or 4 seconds—just time enough for the mine to jump up, and for you, if you are caught, to proceed down. The pellets are shot outward laterally, showering annihilation to a range of 25 yards, and causing flesh wounds at 200 yards.

The German, British, and American varieties of these jack-in-the-box mines are buried, but the Italian cousin is usually laid above ground, so that it scatters its shrapnel without any pop-up. Maintained in the open, the Italian one will quite likely be tied to a tree, a short stake or fence post, a telephone pole, or to the sides of entrances to dugouts.

There is one sure way to outwit the man-mowing mine. Let him who is nearest the mine itself, probably the one who set it off, listen for the swoosh, like the spewing sound of our Fourth of July rocket, the noise made by the black powder. In that moment of grace a wisp of grey smoke will arise from the ground. If any one yells “S mine!” you are shot before you *are* shot. The little bullets fly outward, rarely downward, so your chances are better if you are low to the ground.

Pistol Ground Spike

Another antipersonnel device called the pistol ground spike is the contrivance our boys have nicknamed the “castrator.”

Actually this trap is British, but numbers were captured in Africa and are now being used by the Germans against the Allies. The device is easy to plant and hard to detect, as little ground is disturbed. (See figure 4.) The castrator is a miniature mortar. The six inch hollow spike is driven into the ground flush with the surface of the earth and a bullet dropped



Figure 4. Keep your eyes peeled for the pistol ground spike. Pressure of your foot on the bullet which projects slightly above the ground will release a hammer which fires the bullet. Cigar at left shows relative size of ground spike.

in, nose up. Stepping on the bullet exerts enough pressure (4 pounds is the minimum) to release a spring that drives the striker hand against the cartridge cap. The bullet may travel upward through your foot or thigh. Anyway you look at it it is dirty business.

The Tellermine

The tellermine, named after the German word for *plate*, is the example of a dozen "mushroom" varieties. (See fig. 5 for three examples.) Even the British mines resemble the tellermine somewhat. All are similar in principle.

A tellermine is a German light anti-tank mine about a foot in diameter and 3 inches thick, and resembles the top of a garbage can, or more exactly, the top of an old-fashioned ice-cream freezer. Though it holds 11 pounds of TNT, it weighs only 20 pounds, which makes it easy to transport. You can expect



Figure 5. Tank mines used by the Germans. Watch for these on roads and along the sides of roads. Pull igniters of two mines in foreground are connected so that moving of either mine will set off both of them. Pressure igniters have been removed from two of the mines.

to find this tellermine anywhere, and set to be detonated in all sorts of ways.

As an example, a tellermine used by the Axis in the Mediterranean theater was found balanced on one branch of a tree by means of a long stick. A pull igniter was attached to a second branch, the idea being that someone would jar the stick that balanced the mine, thereby allowing it to fall and explode in the air.

Usually the tellermine is found in roadways or roadblocks, pressure-ignited as shown in figure 6. When set to catch vehicles, it takes 300 pounds weight on the lid to detonate it, but do not conclude therefore that a stroll through the minefield is indicated. Picking a tellermine up is always asking for it, because wells in the side and bottom give ample opportunity for

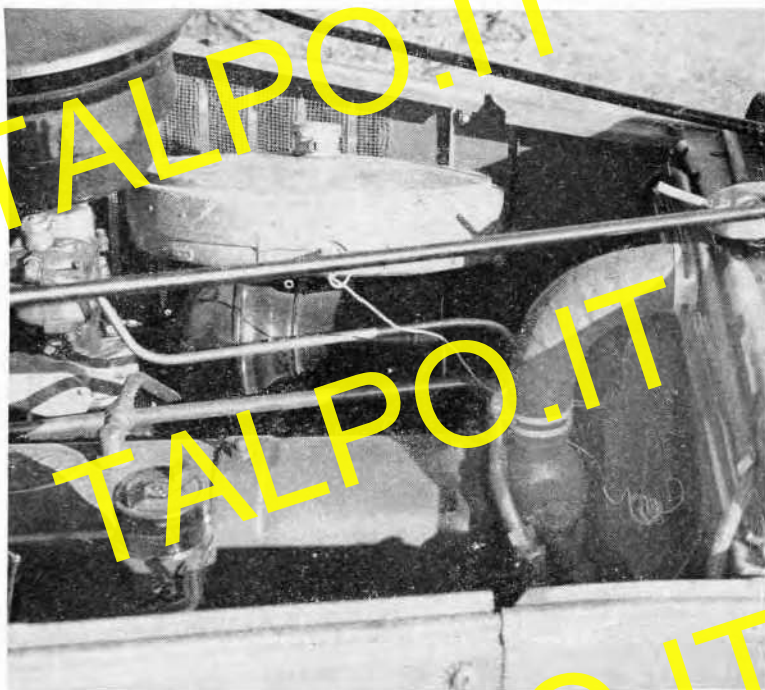


Figure 6. Tellermine located under hood of truck with trip wire attached to fan blade. When motor starts, revolving of fan belt will set off pull igniter, thus exploding the mine.

booby-trapping (that is, rigging it with a pull igniter fastened down below so that when you lift the mine you "pull the trigger".) Some wise guys have tried shooting at tellermine with rifle fire at close range (25 feet). If you are a good shot and hit

the mine right, you are likely to be rewarded, but only in heaven. Shooting at mines is something to outgrow right away.

The CVP (circular, variable pressure) is often considered to be an Italian mine used by the Germans. Actually it was man-



Figure 7. CVP is a Hungarian anti-tank mine used by the Germans. It can also be set as an antipersonnel mine. It is generally placed along roadways and in mine fields. Downward pressure at any point on the cover (thrown back in picture) will cause fuse to operate.

ufactured in Hungary. It resembles the tellermine very closely in appearance (see fig. 7), but a circular plate has been added on top. The CVP is smaller than the tellermine. Do not let

that lessen your respect for it. The mechanism may be touchy at 77 pounds pressure, which makes it antipersonnel, or sluggish at 777 pounds. It can also be used for booby-trapping by employing a trip wire.

Italian Long Metal Box Types

These two Italian mines are elongated metal boxes, usually gray-green in color. The B-2 is slightly over a yard long, 5 inches wide, and 5 inches deep. Although the M-5 is just as long, it's only half as wide and deep. The two of them are primarily intended for use against vehicles, but do not touch them. They are so dangerous to handle that the Nazis, who still use captured Italian material, employ them only if nothing else is available.

German "Butterfly Bomb"

The "butterfly bomb" is the German's favorite bomb against personnel on beaches, in camps, and against airfields. It is small and light, and can be dropped in great numbers from airplanes. One plane can carry several hundred of these deadly little devices with no trouble at all. As each bomb descends, the fist-sized iron ball full of explosives swings free at the bottom of a rod about the size of a lead pencil. The unfolded fins on the top of the pencil-rod are whirling in the air and turning the rod, thus arming the bomb.

Some "butterfly bombs" explode in the air just above ground, some on hitting the ground, and some incorporate delayed action (about 8 to 30 minutes) which makes everything just dandy for the persons who have to come out after the raid to fight fires. See figs. 8 and 9. That should be enough, but the end is not yet. Part of the crop of "butterflies" will not go off at all until someone disturbs them—picks them up, treads on the wings, or the like. Often the bodies of the bombs will have buried themselves in the soft earth. The only part visible will be the brightly colored (green and red, or green and yellow) upturned wings, like the lovely discarded shells of some crabs or lobsters. What a memento for the office desk back home—but pick it up and you won't get back home!

As an example of how the "butterfly" can let you down: One night last spring in North Africa the Germans raided a forward area of ours where there happened to be a P. O. W. (prisoner of war) cage full of Germans we had captured that



Figure 8. Danger lurks for the inquisitive in the form of the German anti-personnel bomb known as the "butterfly." Here is one of these bombs, lying as you might find it in the field.

day. Jerry dropped hundreds of "butterfly bombs" and one of them drifted into the P. O. W., settling to earth without going off. Naturally the German prisoners were greatly relieved and shied clear of their own infernal machine. But

next morning was a different story. Three of our allied soldiers guarding the P. O. W. came across the little yellow wings, and the pencil rod, and the iron ball.

"A-ha!" said one of the guards to his pals. "Something new has been added."

And while the other two held onto the little iron ball, he tried to unscrew the yellow wings, and up went all three—the German prisoners, watching from a distance, were delighted.

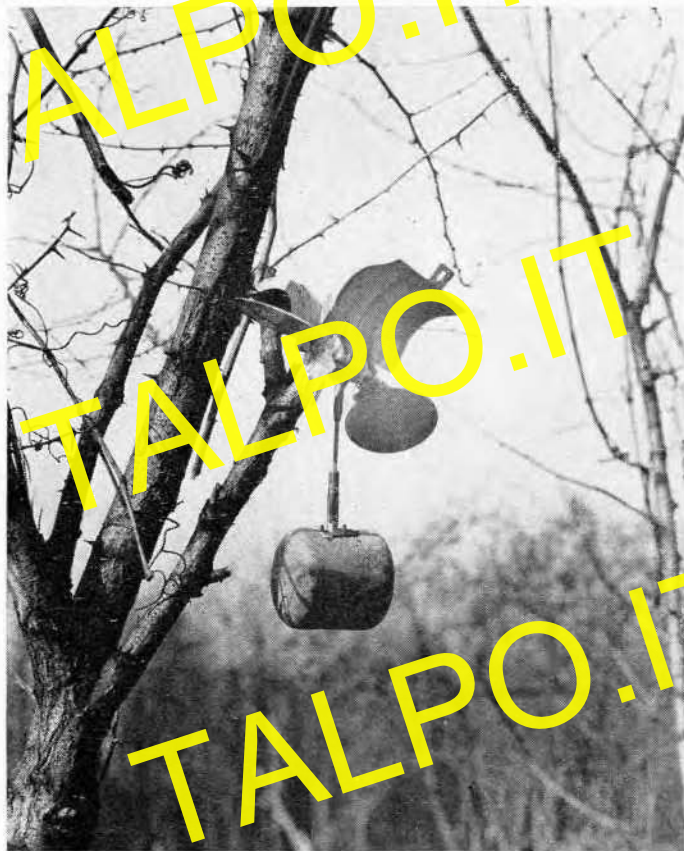


Figure 9. "Butterfly" in tree. Stay away from this kind of a situation. The bomb may explode through a time device or as a result of any disturbing pressure.

The "Thermos" Bomb

An Italian bomb in the shape of an ordinary thermos bottle. This type can be dropped from planes in great quantities. It can also be timed for delayed action. A dangerous feature is a little ball inside, which on being disturbed may roll in any direction and cause the charge to explode. The bomb is easy to detect. (See fig. 10.) Do not pick up or touch any quart-



Figure 10. More deadly even than the "butterfly" the thermos bomb is likely to be found around airfields, in evacuated cities, on roads, and in open fields. Keep your distance from this bomb for it is designed to go off on slightest movement or disturbance.

sized thermos bottle you may see lying about. It is a "thermos" bomb. And you had better mark it off and report it, for it is set to go off in a matter of hours, whether anyone touches it or not.

Japanese "Sandman" and Other Types Used by Japan

The Jap has used four types of mines in the Solomons, not counting improvised wooden traps. The first two he loves to hide in the sand of beaches, or under a palm leaf.

1. *Anti-vehicle type*, resembling the German tellermine but only about half as large, contains two pounds of high explosive. (See fig. 11.)

2. *Anti-personnel—Dutch*, captured in some quantities in Java, has a dome-shaped cover, is 8½ inches in diameter



Figure 11. Three types of mines used by the Japanese—(1) anti-vehicle type (left) (2) anti-personnel—Dutch (center) (3) antitank magnetized (right).

and 3½ inches thick as shown in figure 11. Fifty pounds of pressure will detonate it.

3. *Antitank magnetized* resembles a khaki hot water bag with its dun-colored cover, or possibly a snapping turtle with all four legs stretched out from under its shell. (See figs. 11 and 12.) These four legs are square magnets designed to hang on like a leech to any metal, whether tank or gun carriage. If a tank passes over a foxhole which contains one Jap and one magnetic mine, the tank will be crippled 5 seconds later.