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Memo	Lovell to Donovan	10-13-43	A
Report	OSS Weapons	10-43	A

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OFFICE OF STRATEGIC SERVICES

INTEROFFICE MEMO

TO: General William J. Donovan  
FROM: Stanley P. Lovell  
SUBJECT: New Weapons for Sabotage

DATE: 13 October 1943

1. Aunt Jemima

This is a flour which can be made into bread, biscuits or cake and eaten. Saboteurs can use it dry, as dough, or in baked form. It has a greater explosive force than TNT. For example, a handful of dough will blow a hole through a 1 3/4" steel plate.

2. Silencers

We have developed a silencer for stalking sentries which makes no noise other than the noise of the trigger.

3. Caccolube

This is a small package, easily concealed in the hand, which, introduced into the lubricating oil of any engine, airplane, tank, passenger car or stationary, will ruin the engine beyond repair in 30 minutes.

4. Hedy

This is a panic creator which simulates the sound of a falling bomb and subsequent explosion. 4" x 3/4" tubes

5. Stinger, Thermite Well, Firefly and Pocket Incendiary are described in the catalog.

Projects under development are typified by:

1. Anerometer

This device, inserted into the inspection ports of an enemy plane will blow the tail off the plane upon reaching an altitude of 5,000 feet.

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NARA PMH Date 5/18/12

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General W. J. Donovan

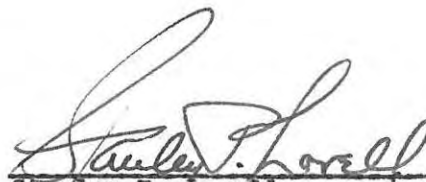
- 2 -

13 October 1943

Projects under development (continued)

2. Beano

This is a hand grenade, the exact size and shape of a baseball, which arms itself during flight and which fires upon impact. The Japanese are throwing back the Mills grenade, but will be unable to field "Beano".



Stanley P. Lovell

Director

Research and Development

SPL:MAC

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# OSS WEAPONS



OFFICE OF STRATEGIC SERVICES  
WASHINGTON



OCTOBER 1943

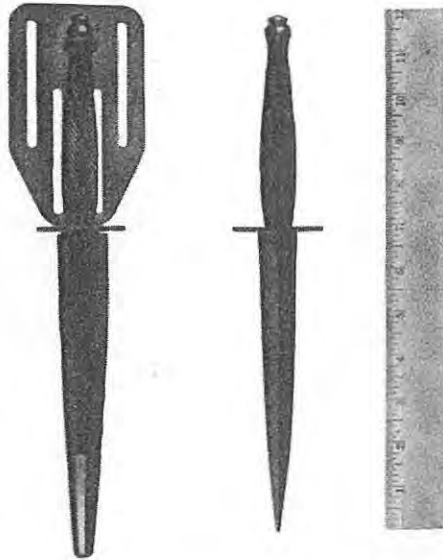
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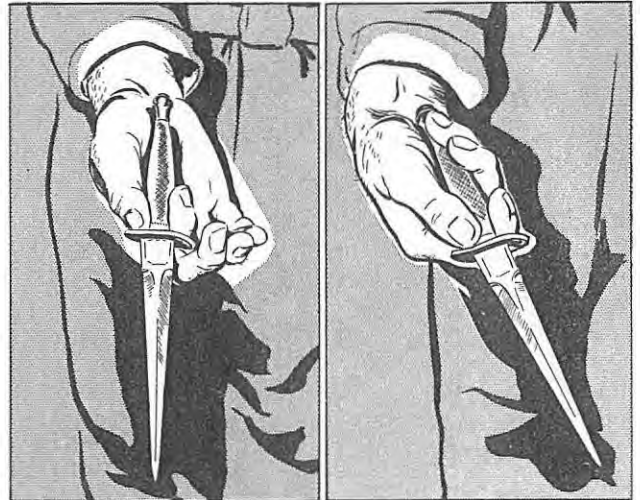


**DESCRIPTION:** The blade, of high grade steel, is diamond shaped from the hilt to the point. The blade extends through the length of the handle and is threaded on the handle end. The hilt, handle, and knob are made of three separate pieces of brass, which are assembled onto the blade. The knob is threaded and is screwed onto the threaded end of the blade, holding the hilt and handle securely in place. The knife is carried in a special sheath (extreme left) designed so that it may be worn in numerous positions, depending upon the personal tastes and needs of the user.



## FIGHTING KNIFE

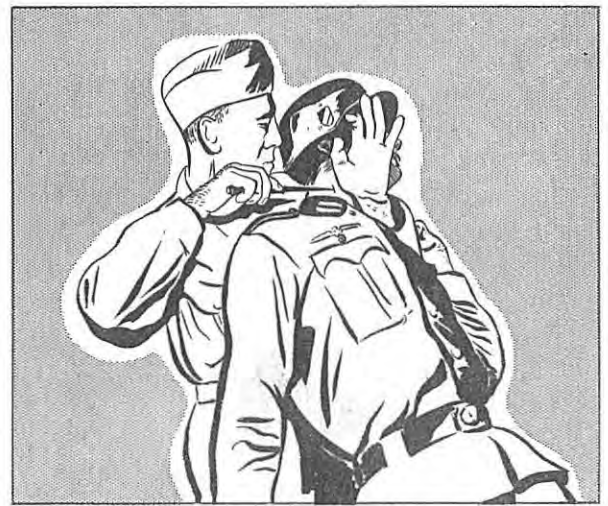
**PURPOSE:** The Fighting Knife is a close combat weapon. It may supplement firearms or it may be used by an operator as his sole means of defense or offense. Since the knife is double-edged, it may be used for either penetration or cutting.



**HOLD KNIFE** lightly between thumb and next finger, end of handle lying between fatty tissues of palm.



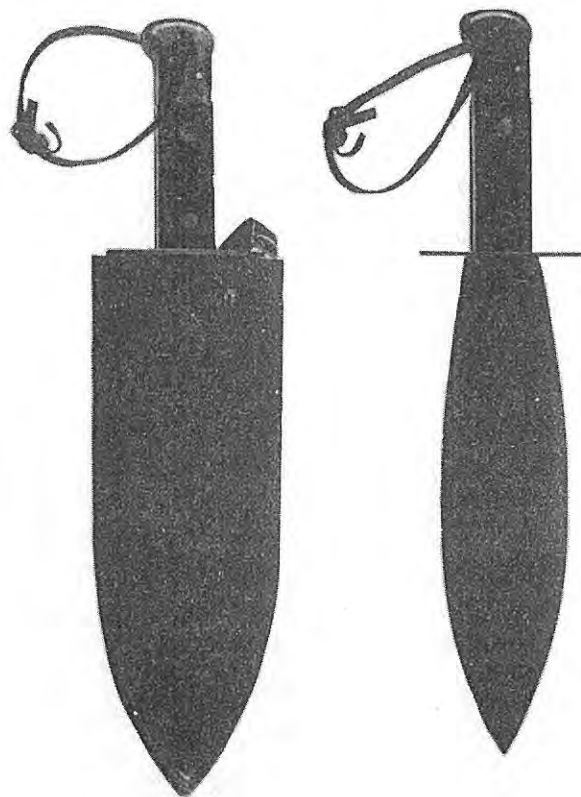
**THE FAIRBAIRN SYSTEM** is the most widely known technique of knife fighting among American combatants today. It embodies various slashing operations, with aim directed



at vulnerable arteries at side of neck, lower center of stomach, heart, below shoulder blade, above wrist, or at arm joint.

**PURPOSE:** The Smatchet is a close combat weapon. The single-edged blade is extremely sharp and of a high quality steel. When properly used, it will readily penetrate thin sheets of metal, such as is used in the ordinary steel helmets.

The knife consists of a high tempered, high carbon steel blade, and a handle of either wood or molded bakelite, topped by a pommel of metal. The knife is sheathed in a



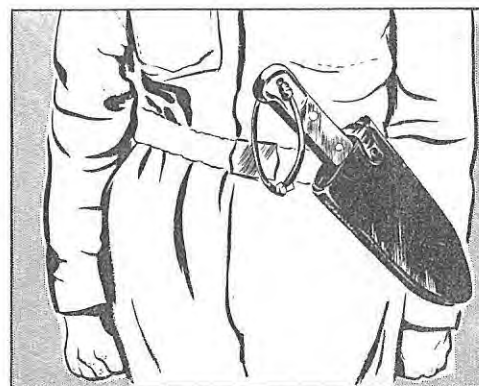
ONE FOOT IN LENGTH, the weapon should be worn so that the user has complete freedom of movement in squatting, climbing, etc. For most users, the ideal position for the scabbard is attached to the belt, high on the left side. (See illustrations at right.) No other weapons should be worn on the left side when the Smatchet is in use.

Tight knots close to each side of the pommel prevent pivot and hold the Smatchet in proper position for instantaneous use. The ends of the thong are tied so that loop fits wrist securely, but may be slipped off with ease.

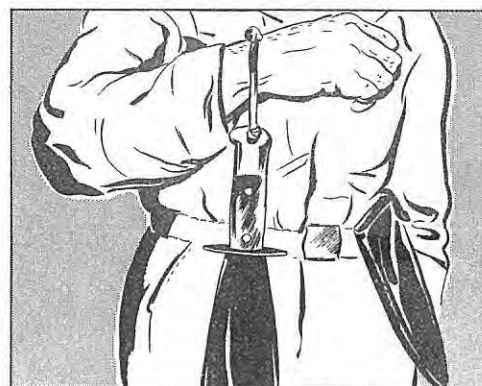
The handle is gripped close to the guard, with pommel and cutting edge pointing downward.

## SMATCHET

leather-covered wood scabbard, fitted with a leather strap for holding the knife in place at all times, even when he wearer is upside-down. The handle may be shaped to fit the user's hand.



WEAR IT HIGH ON LEFT WAIST



ALLOW FOR SLIPPING IT OFF EASILY



KNOT ON TOP, EDGE DOWNWARD



SMASH UP UNDER THE CHIN WITH THE POMMEL.

METHODS OF USE

Note: In all these operations, left foot is kept forward, with weight thrown upon it.

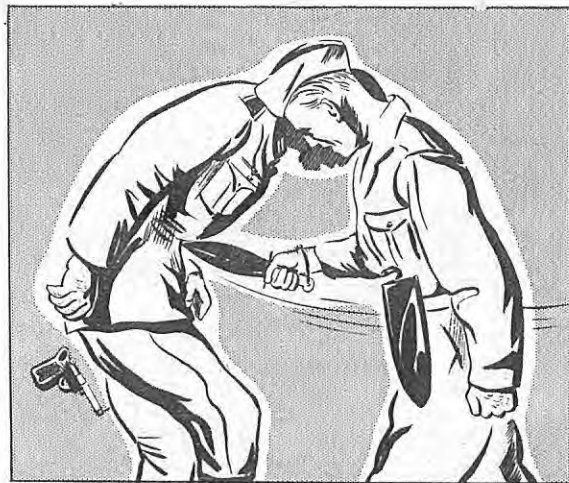


CUT AT INNER ELBOW, OR SLASH JUST ABOVE WRIST.



SABRE SLASH TO RIGHT OR LEFT LOW ON NECK.

PLUNGE DEEP INTO STOMACH.



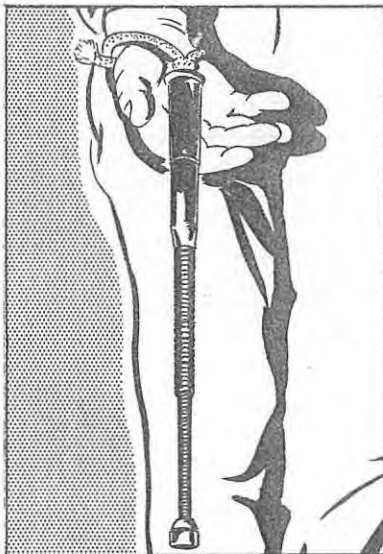
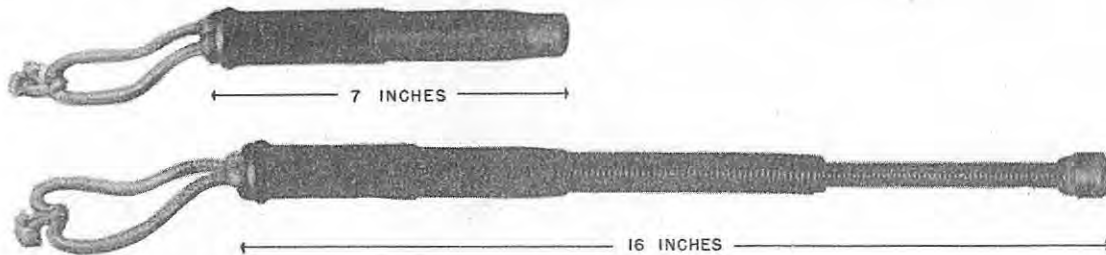


# SPRING COSH

**PURPOSE:** The Spring Cosh is used like any club, but it is designed for easy concealment on the person. The Cosh is essentially a plainclothes weapon for a specific mission. An important advantage of the Cosh is that it embodies an element of surprise. As it is swung, two sections emerge from a short tube, extending to a club of sizeable length.

The Cosh is constructed of two heavy concentric springs encased in a tubular steel handle with a leather covering to which a thong is attached. At the end of the smaller spring is a heavy metal knob, which is the chief striking element.

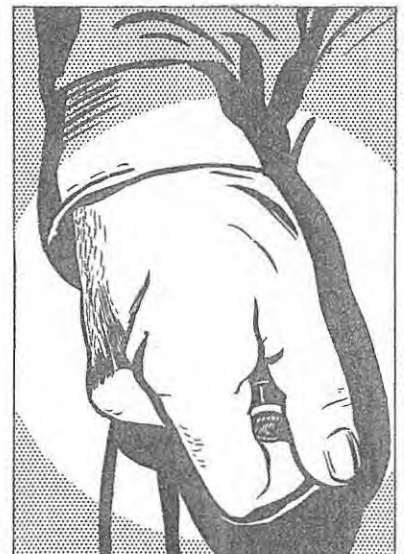
When telescoped, the Cosh is 7 inches long; fully extended it measures 16 inches. Normally it is carried concealed up the sleeve of the operator, held so that the head lies in the center of right palm; the tip shows between thumb and next finger. (See illustration bottom right).



Cord tied to fit wrist securely but to slip off with ease. Knot lies atop wrist.



Weapon may be concealed up sleeve or in any other part of clothing.



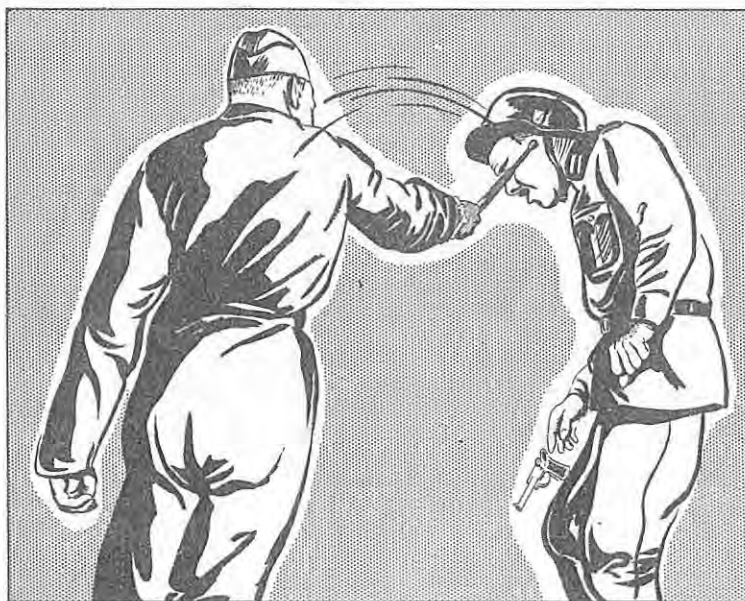
Ready for action, cosh and cord are up sleeve. Tip shows but is not gripped.





FOR MAXIMUM STRIKING FORCE, the operator moves his left foot forward, throwing his weight on it, about two feet from his objective. Sudden swinging of the arm causes the

knob and spring sections to extend. Blow should be aimed at time arm motion is started downward.



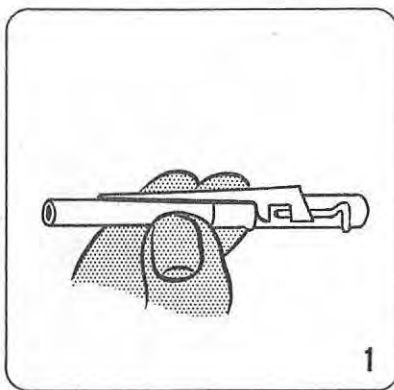
OPERATOR AIMS for temple, swings full from shoulder in fast baseball throw. Fully extended, the Cosh is sufficiently long and flexible so that when swung above the opponent's

head from behind, the knob will extend beyond the rim of his helmet and strike him on the face or neck.

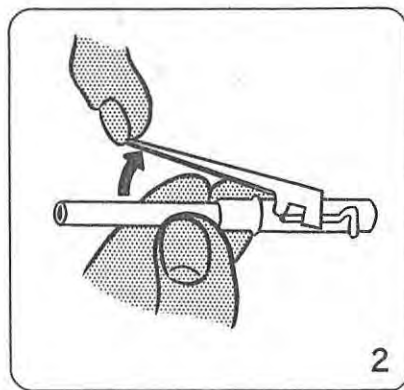
# STINGER

**PURPOSE:** The stinger is a tiny, easily concealed .22 caliber gun for short-range use by operators whose lives are in imminent danger, or who have opportunity of doing away with adversaries without attracting too much attention. It may also be used for the limited arming of patriots. It lends itself beautifully to camouflage.

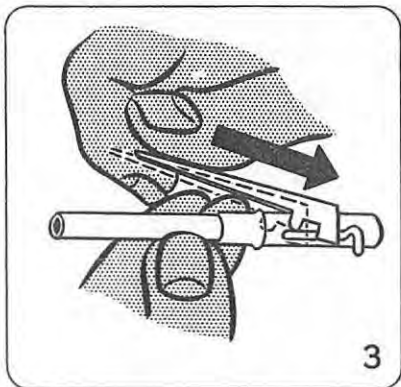
The Stinger is a one-shot weapon and cannot be reloaded. Its range is restricted since it cannot be sighted readily, as it is ordinarily fired from a concealed position. It can be cocked and fired with one hand.



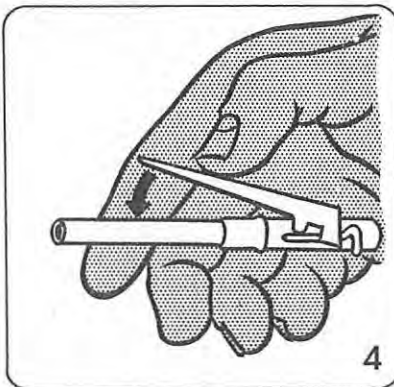
In carrying position, trigger is down.



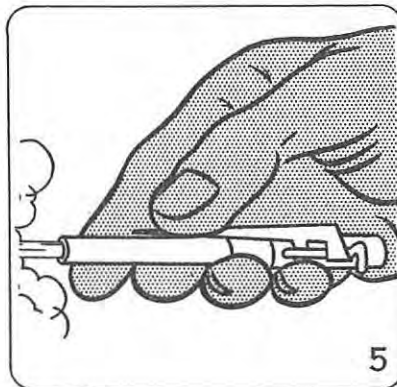
First step in cocking is to raise trigger.



Next, shift trigger back as far as it will go.



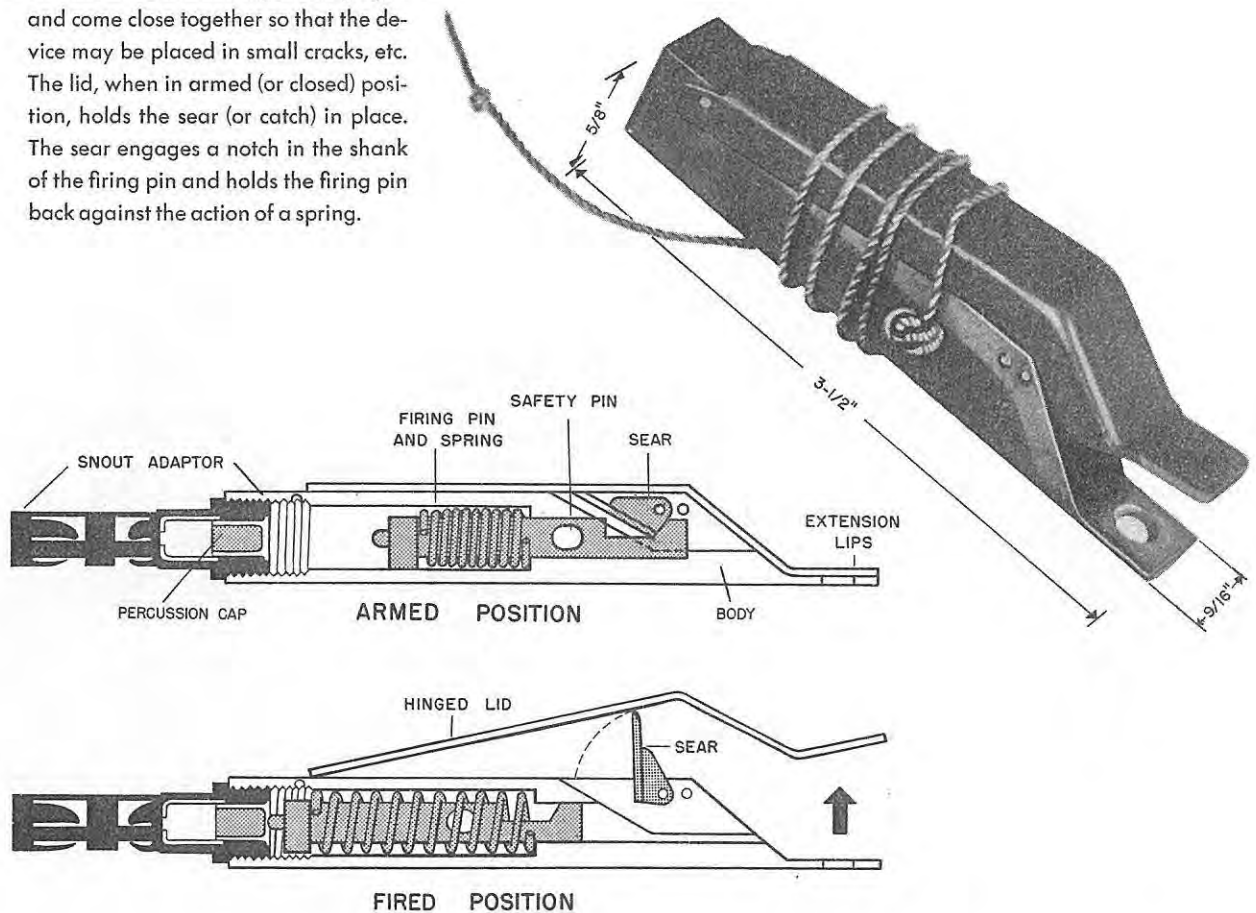
Fire by pressing down trigger.



Stinger fires a single bullet.

**PURPOSE:** This device is used to set off an explosive charge by the removal of an already fixed pressure from its upper surface. It is, in effect, a self-contained booby trap, not requiring a wire to set it off. It is effective against enemy personnel and equipment. It may also be used as a booby trap in offices, homes, theaters, and similar places.

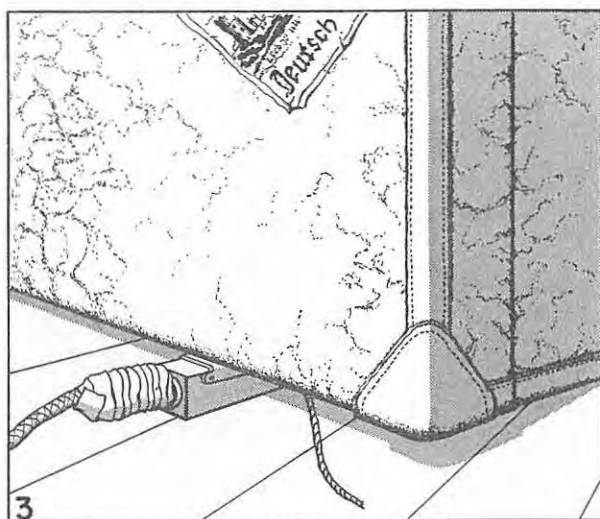
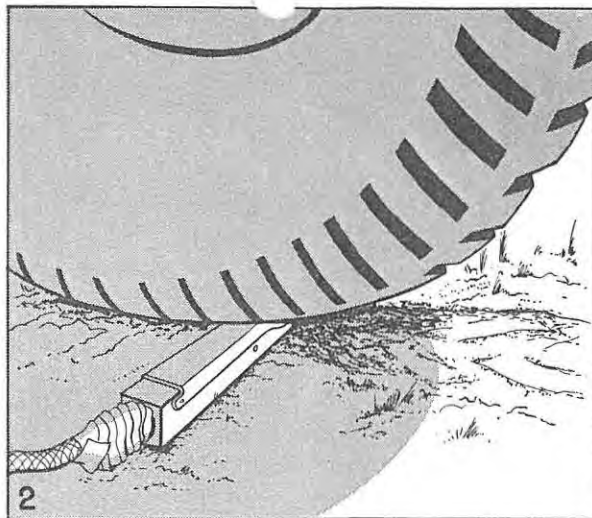
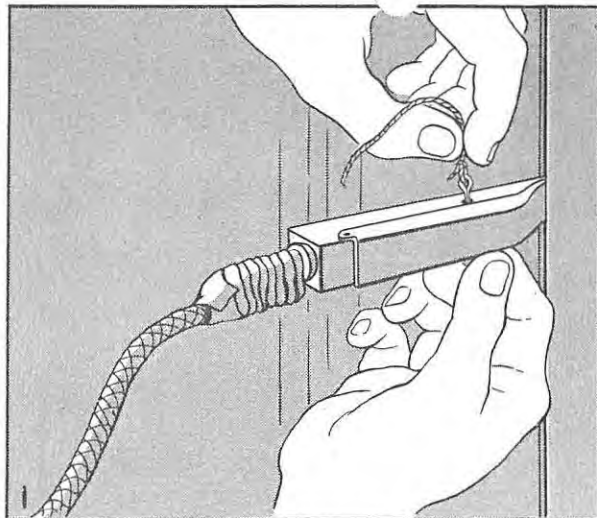
The device is constructed of a die-cast housing with a hinged lid. Both are provided with extension lips that project and come close together so that the device may be placed in small cracks, etc. The lid, when in armed (or closed) position, holds the sear (or catch) in place. The sear engages a notch in the shank of the firing pin and holds the firing pin back against the action of a spring.



**THE DEVICE FIRES** when pressure is removed, where-upon the lid flies open, the sear pivots and releases the firing pin. The pin moves forward and strikes a percussion cap.

The snout adaptor, which holds the percussion cap, is removable in order that the operator may inspect and check the firing mechanism for functioning just prior to use.

When the device is not in use, a safety pin is inserted through holes in the body, lid, and firing pin. To the safety pin is attached a length of cord so that the pin may be withdrawn by the operator after the device has been placed in position.



METHODS OF USE: The device is particularly effective as a booby trap. These pictures show typical applications.

1. In a door jamb. Will fire when door is opened.
2. Under a vehicle wheel. Will fire when vehicle is moved.
3. Under a case. Will fire when case is moved.
4. In use with a crude, improvised time delay. The pail of

water is punctured, allowing water to drip out slowly. When the remaining water, plus the pail, weighs less than one pound, the device will fire, if the pail has been placed to cover just the extension lips. If higher operating pressures are desired, place the pail nearer the hinge. The nearer the hinge the weight is placed, the heavier it must be to keep the mechanism closed.

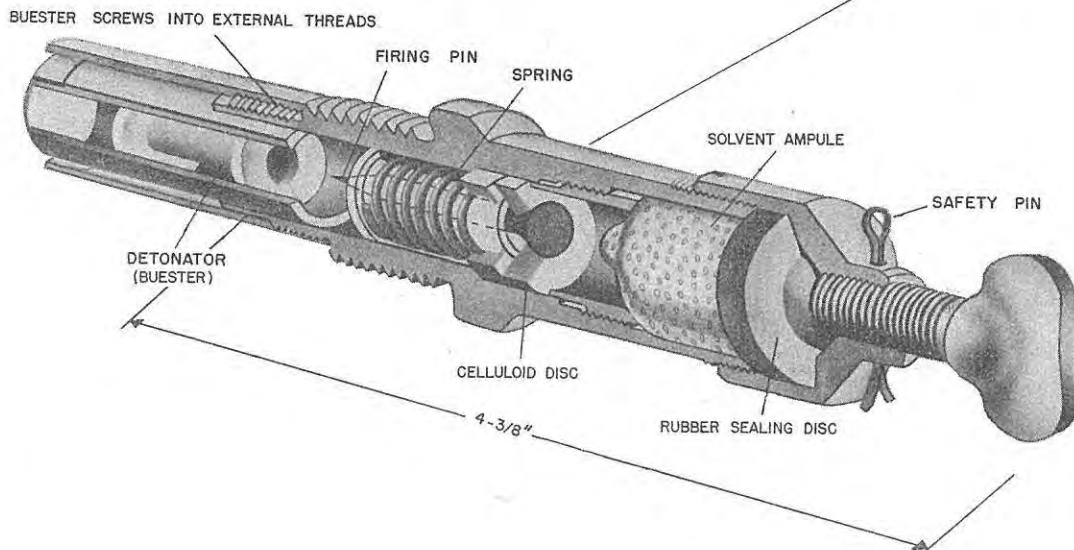
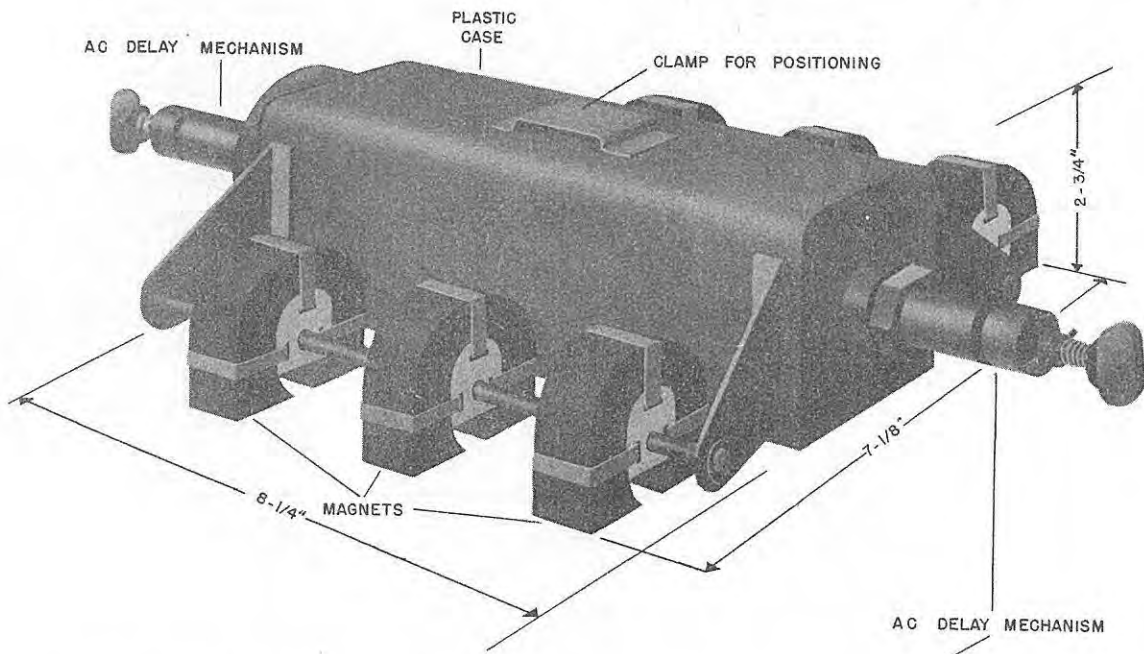


PURPOSE: The Limpet is designed to be affixed to the side of enemy vessels by self-contained magnets. The charge of explosive which it contains is sufficient to blow a hole about 25 square feet in the steel plate of merchant vessels. (Special Limpets should be prepared for use on armored vessels.) The Limpet is designed to withstand water pressures arising when the vessel is in motion. It can also be used effectively against storage tanks.

# LIMPET

The device consists of a plastic case containing a high explosive charge and carrying high power magnets affixed to its sides. In each end is inserted a waterproof time delay mechanism. An ampule within it is broken, solvents are released which eat through a celluloid disc, releasing, in turn, a spring-propelled firing pin which strikes a detonator.

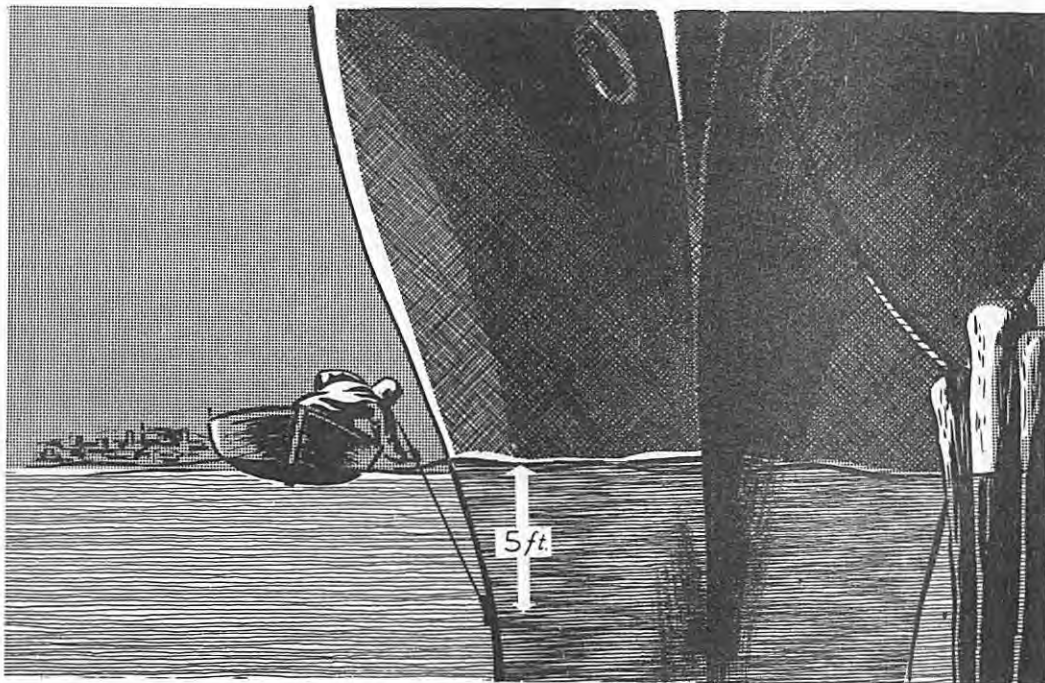
The ampule is broken by twisting a thumb screw. A safety pin prevents accidental turning of the screw.



**METHOD OF USE:** The Limpet is affixed to the underwater plates of an enemy vessel, preferably at least five feet below the waterline. Where possible, the operator may approach the vessel in a small boat and make use of a positioning rod which fits the bracket on top of the Limpet. When installation is made from a boat, just before affixing the device, the operator removes the keeper plate and turns the thumb screws of the time delays, after removing the safety pins.

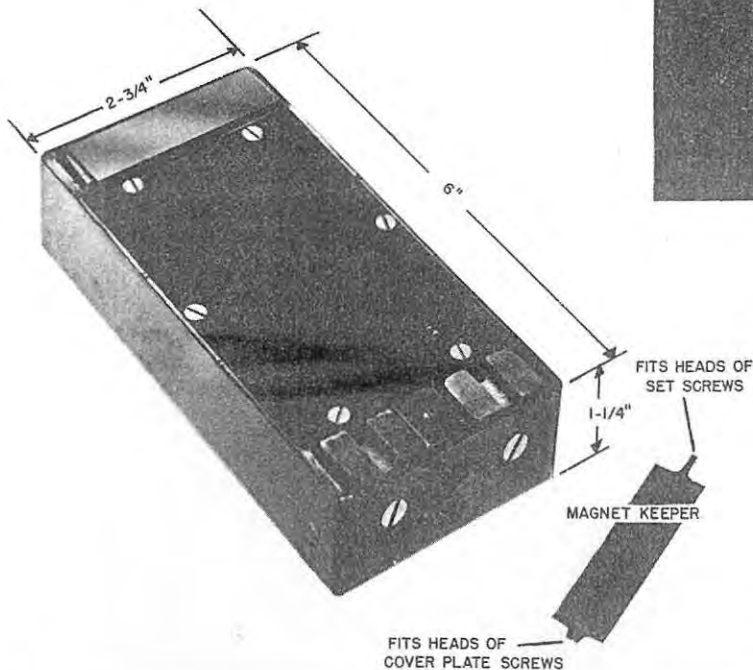
In certain difficult cases, the operator may have to swim to his objective, carrying or towing the Limpet. In such cases, the thumb screws should not be turned until immediately after the device is in place on the ship's plates.

The Limpet should be placed as nearly as possible opposite the boiler room, which is usually amidships.



POSITIONING ROD FITS CLAMP ON TOP OF LIMPET

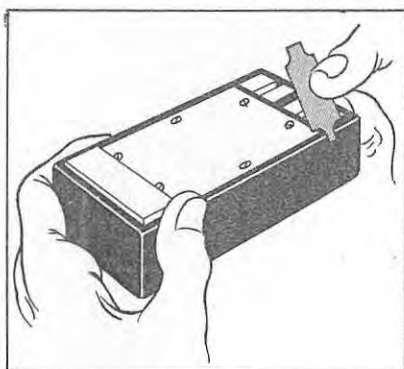
# DEMOLITION DEVICE (CLAM)



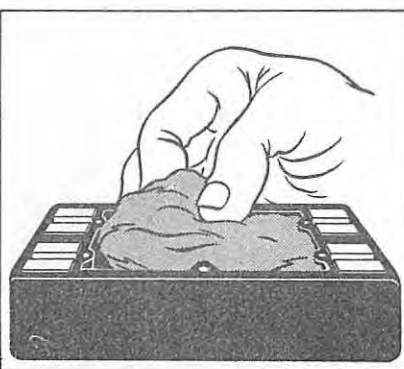
**PURPOSE:** Contains a charge of high explosive which may be set off by the operation of two detonator-equipped time pencils. The device is especially effective for the demolition of automobiles, trucks, small tanks, small boats, etc.

The Clam is a plastic case with four self-contained high power magnets. An explosive charge is placed inside the case and two time pencils are inserted through holes in the end. Each pair of magnets comes with a metal keeper covering them. One of these keepers has one end shaped to fit heads of screws on the case and the other end to fit set screws for securing time pencils in position

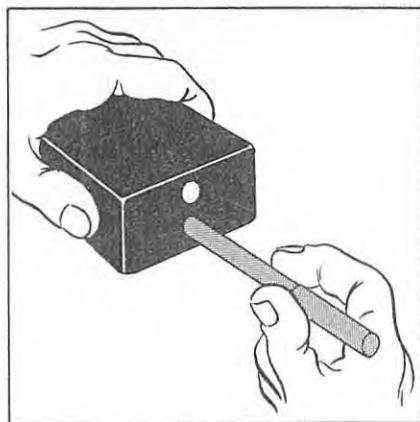
**METHOD OF USE:** After setting (see illustrations), Clam is placed on any exposed steel surface. On vehicles, good positions are engine heads, transmissions, under gas tanks, etc. Clam will adhere to moving vehicles, seriously injure autos, trucks, and tanks, and, when properly waterproofed, is effective against small steel-hulled boats.



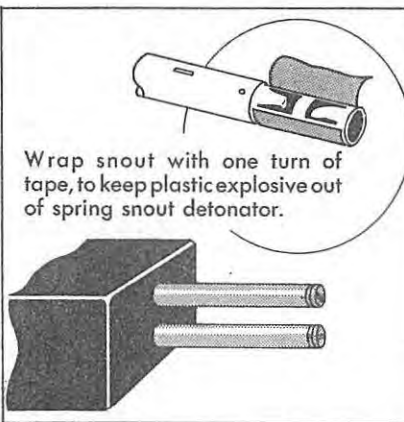
Remove keepers; use the shaped one to unscrew base plate of case.



Pack case with plastic explosive. Replace base plate and screws.

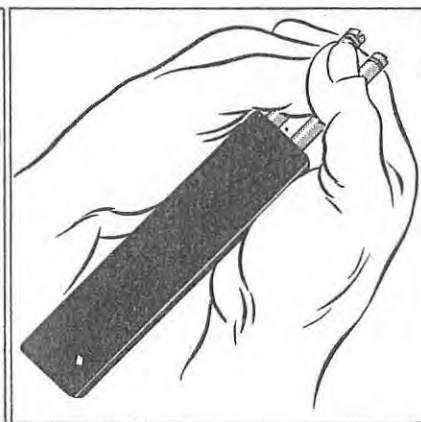


Make space for pencils with forming rod. Do this and preceding steps before arriving at scene of job.



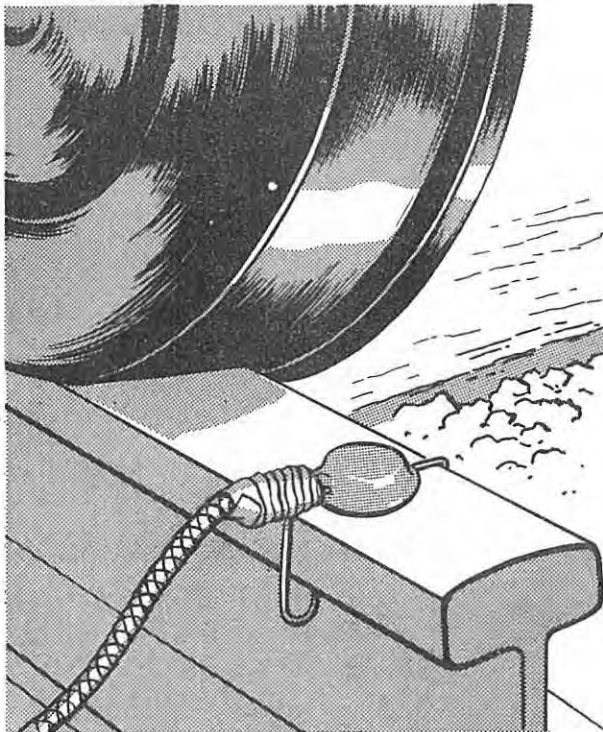
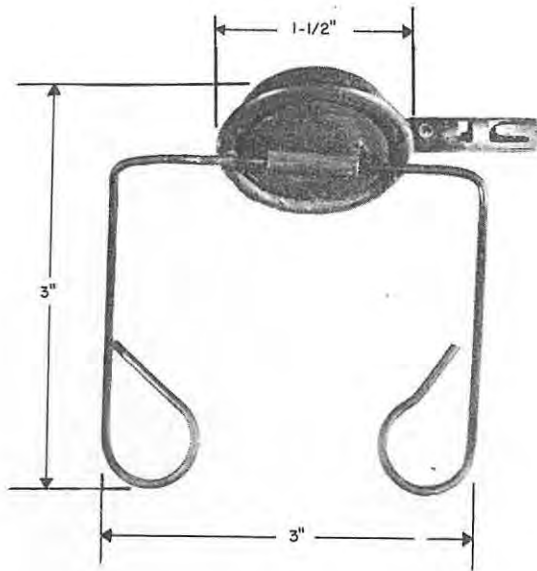
Wrap snout with one turn of tape, to keep plastic explosive out of spring snout detonator.

At job, insert pencils through the openings, snout end first. Tighten set screws.



Squeeze copper tubes. See Sheet 4 for information on handling time pencils.

**PURPOSE:** The device is used to set off a charge of high explosive. It is actuated by the wheels of the first truck of a locomotive passing over it. It is effective for the demolition of locomotives and trains, tracks, and other right-of-way structures. The device is designed to prevent detection by the engineer of the oncoming train, since it is sprayed with neutral paint which resembles the color of steel rails and reflects light to the same degree.

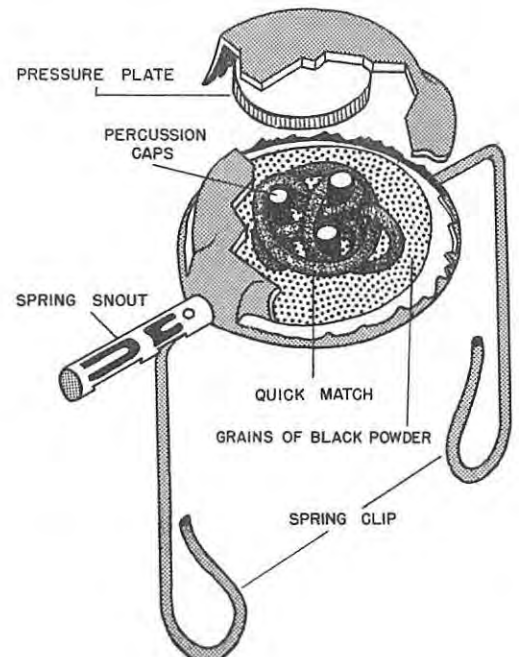


## FOG SIGNAL

The device consists of a pressed metal container, containing a percussion cap ring and a plate soldered to the top of the container above the three caps. The three percussion caps are surrounded by a quick match and loose black powder. A spring snout is fixed to one side of the device. At the bottom of the device is a spring clip which fits securely over a rail.

**METHOD OF USE:** The operator fixes the Fog Signal on the rail with the spring clip. The spring snout must point toward the outside of the track, so that the flange of the locomotive wheel will not sever the fuse. A detonator is inserted into the spring snout and a length of Primacord is led from it to the charge. The charge is placed where it will cause most damage to the rail.

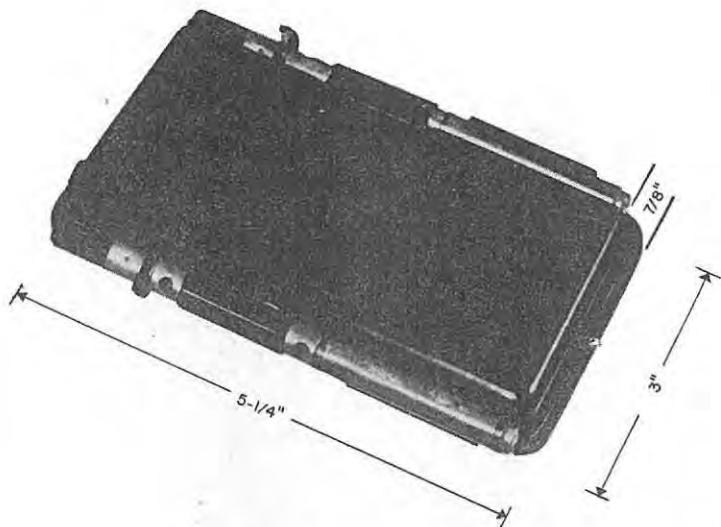
When the locomotive wheel passes over the Fog Signal, it presses the plate onto the percussion caps; the flash from the caps ignites the quick match; the flame spits out through the spring snout, firing the detonator which, in turn, fires the Primacord and thence the explosive charge.





**PURPOSE:** This device is essentially an incendiary for starting fires at a predetermined future time. It is effective in warehouses, factories, vessels, coal mines, etc. It will operate at temperatures from 10 degrees F. to 120 degrees F. The ignited unit will burn up to 8 minutes, producing a flame about a foot high. It will ignite green wood, wet wood, and even larger pieces of hard wood.

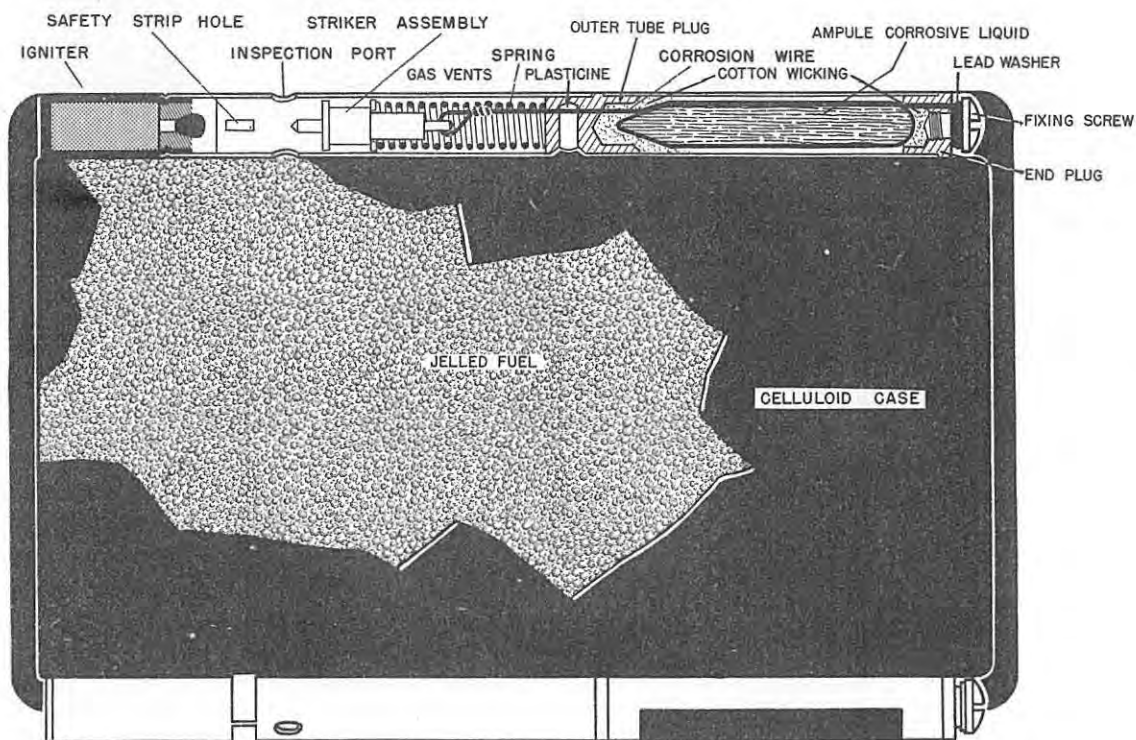
# INCENDIARY, POCKET M-I

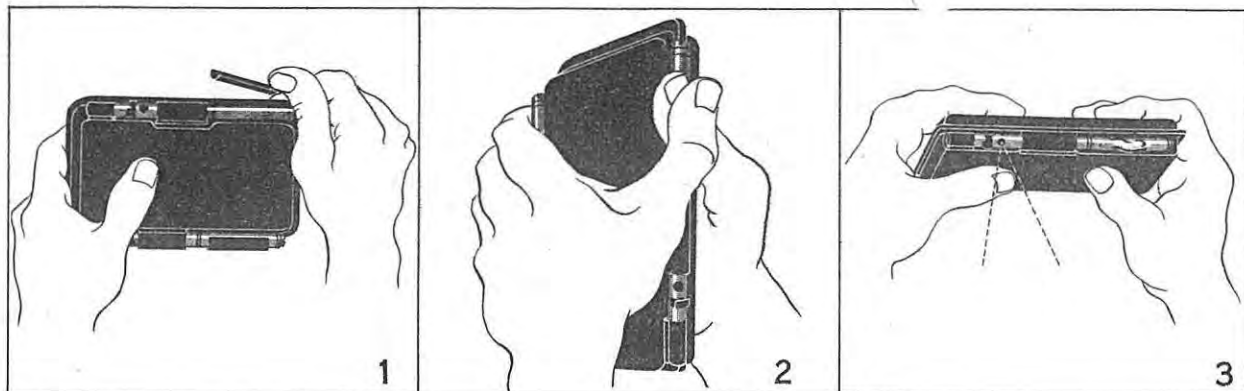


THE POCKET INCENDIARY is a black celluloid case filled with a jelled fuel and carrying two time pencils on its sides. The pencils are of the type described on Sheet 4 (which see) with the exception that a match head igniter is substituted for the detonating chamber.

The time pencils have colored metal safety strips, the colors denoting the same time delay periods as shown in the chart on Sheet 4. The incendiaries are packed in cartons containing two, both of the same color designation.

Temperature plays an important part in the use of this device, since it contains time pencils. Precautions must be taken in cold or hot locales. (See Sheet 4).

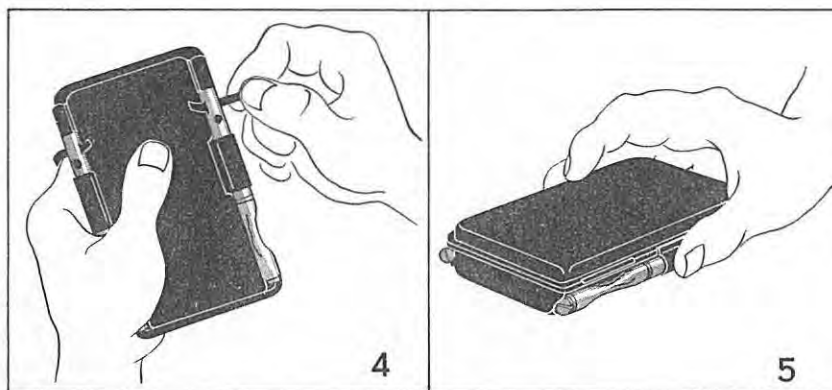




REMOVE GUARD from copper tube.

CRUSH COPPER TUBE enough to break glass vial.

INSPECT pencil through port to make sure that it has not fired.



REMOVE THE SAFETY STRIP, making sure it is correct color for desired delay.

READY FOR USE. Repeat all operations with other time pencil.

AFTER SETTING, the train of events begins when the wire breaks and the spring strikes the match head. This is followed by a few seconds of intense glowing within the ignition chamber, which then bursts into flame, igniting the celluloid case and firing the whole incendiary.

**IMPORTANT:** In order to burn properly, the unit requires access to the oxygen of the air. The user should preferably place the unit between combustible surfaces

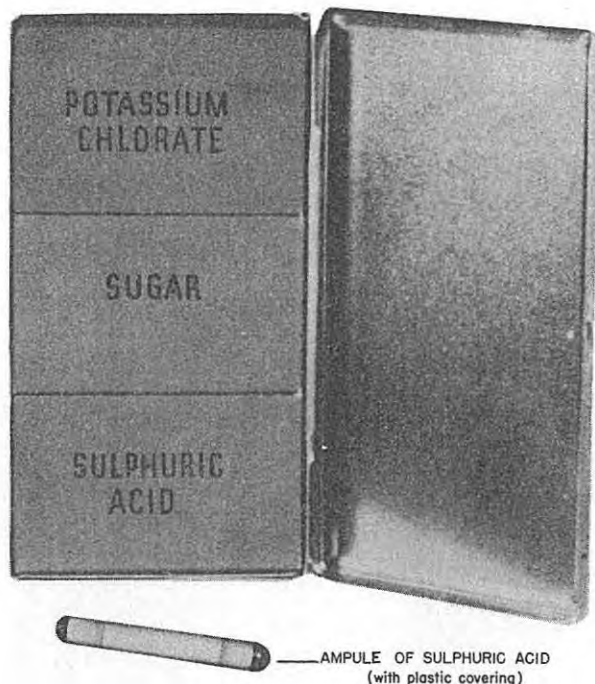
so that, as the combustion proceeds, the ascending hot air and smoke create a draft, thereby fanning and increasing the fire.

An operator functioning in temperate climates should have in his personal stores at least 30 pocket incendiaries, 5 of each delay period.

The time delay chart (sheet 4) should always be consulted before selecting pencils for a specific job.

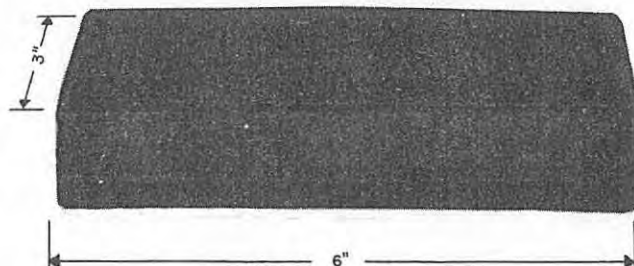
## INCENDIARY PACKET

**PURPOSE:** The Incendiary Packet is designed to equip an operator with chemicals and materials which may be used to start a vigorous fire at some predetermined future time.



The packet consists of a waterproof container which is sealed with waterproof adhesive tape. It holds a box of powdered sugar, a box of potassium chlorate, and a box containing ten glass ampules of sulphuric acid. These ampules are jacketed with ethyl cellulose. The thickness of the ethyl cellulose jacket determines the length of time which will elapse before combustion takes place. The time delay period varies greatly with temperature. The more lightly covered ampules will afford a delay period of one to three hours, the more heavily covered, about two to six hours.

**METHOD OF USE:** The operator mixes equal quantities of sugar and potassium chlorate, placing the mixture in any convenient and suitable inflammable container. Two or more ampules of acid are then crushed – enough to break the glass but not rupture the ethyl cellulose covering – and inserted in the pile of mixed powders. In the specified time, the acid eats through the ethyl cellulose, comes in contact with the mixture, and ignites it.



A variant method is to saturate a piece of clothing or cloth with a water solution of sugar and potassium chlorate, allow it to dry, and then wrap it around several crushed ampules of acid. When the acid eats through the cellulose it will ignite the cloth.

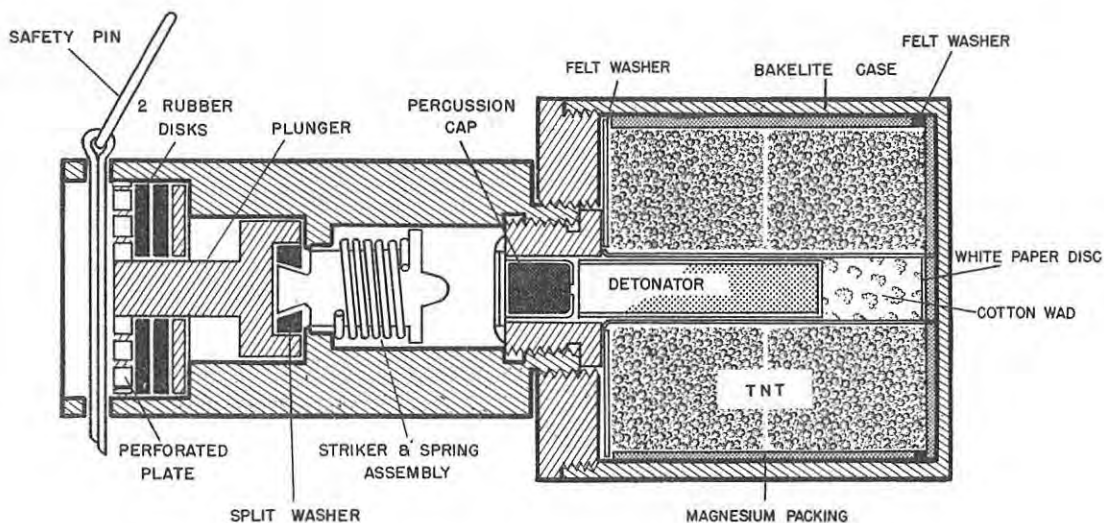
## INCENDIARY, EXPLOSIVE (FIREFLY)

**PURPOSE:** This small-sized explosive incendiary is intended for being palmed into the gasoline tanks of motor vehicles and gasoline storage containers, such as barrels, cans, etc. It causes a violent explosion resulting in instantaneous fires. The incendiary has a self-contained time delay device.



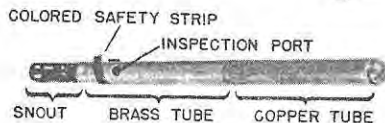
The unit is constructed of three plastic parts which screw together to form a tube closed at the ends. A safety pin at the small end prevents premature firing. The time delay device is actuated by two rubber washers in the small end which swell up when immersed in gasoline. As the washers swell, they withdraw a plunger, which permits a spring-propelled firing pin to slip through a split washer and strike a percussion cap against a detonator in the center of an explosive charge. The resulting explosion is sufficient to burst a gasoline tank, as well as ignite it.

**METHOD OF USE:** The operator merely withdraws the safety pin and slips the Firefly into the chosen gasoline tank. The usual delay period is from 2 to 7 hours, depending on the temperature of the gasoline.





**PURPOSE:** The Time Delay Pencil is used to set off an explosive charge when an interval of time is required between placing the charge and the explosion. It is used for the demolition of structures of all kinds, including buildings, bridges, power lines, water works, machinery, etc.



#### DELAY CHART

The pencils are marked with six different colors. Each color indicates a different delay period. The time periods for each color pencil—at 70 degrees F or 21 degrees C—are:

Black . . . . .	6 to 16 minutes
Red . . . . .	26 minutes
White . . . . .	54 min. to 2 hrs. 18 min.
Green . . . . .	2 1-2 hrs. to 4 1-2 hrs.
Yellow . . . . .	6 3-4 hrs. to 11 1-4 hrs.
Blue . . . . .	10 hrs. to 20 hrs.

Temperature is important. The longer delays are not advisable in extreme cold, and the shorter delays may not allow the operator enough time to escape if used in tropical heat.

## PENCILS - TIME DELAY S R A - 2

THE DEVICES ARE ISSUED packed in waterproof metal boxes, each containing five pencils of similar delay periods (table, below, left). They are issued in complete sets, one box of each time period. To avoid failures, use at least two pencils for each explosive charge. Several charges may be needed for demolishing a large structure. These charges may be connected to the initiating charge with Primacord.

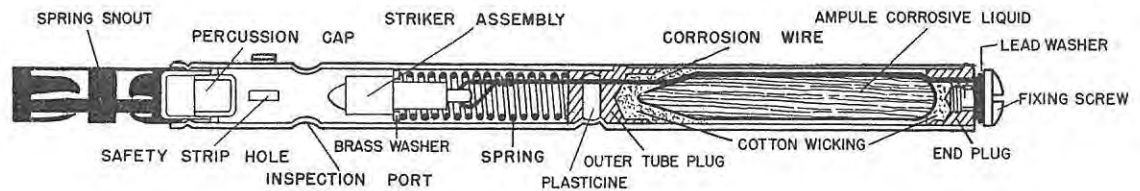
A single operator for a single job should be equipped with at least 30 pencils of the varying delay periods. For, obviously, a difficult demolition will require a large number of charges.

#### DESCRIPTION OF THE DEVICE:

(a) A soft copper tube containing an ampule of corrosive liquid and a steel wire. The wire holds a spring-loaded firing pin in firing position.

(b) A brass tube, continuing the copper one and containing the spring and firing pin. The tube has an inspection port for determining whether premature firing has occurred, and a colored metal safety strip, which must be removed prior to use.

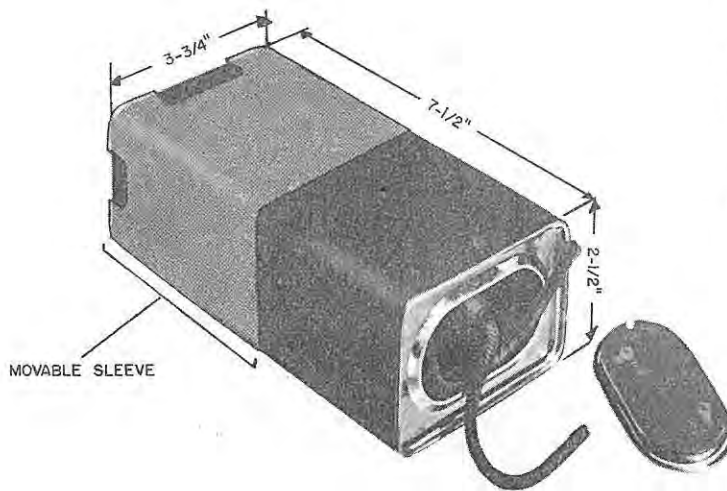
(c) A spring snout, forming a continuation of the brass tube, into which a fuse or percussion cap is inserted by the operator.



**METHOD OF USE:** Insert either a safety fuse or a percussion cap in the tube end of the spring snout. In the latter case it is necessary to insert the cap directly into a charge of explosive or to tape a length of primacord to the blasting cap and carry the cord to the explosive charge. To start the corrosive action which will subsequently initiate the explosion,

squeeze the copper tube enough to break the ampule. Then, look through inspection port to make sure premature firing has not occurred. Finally, if device is safe, remove the metal safety strip. Consult delay chart before starting out on a job and make the proper allowance for temperature.

**PURPOSE:** The Thermit Well is designed for destroying or ruining metal machinery by cutting through the casing steel and fusing the gears, shafts, pistons, etc., with a molten stream of metal and magnesium at 5,000 degrees F. It is particularly valuable for use on strategic machinery in factories, mines, dock installations, ship's engine, power-houses; also mobile machinery, ammunition boxes, etc.



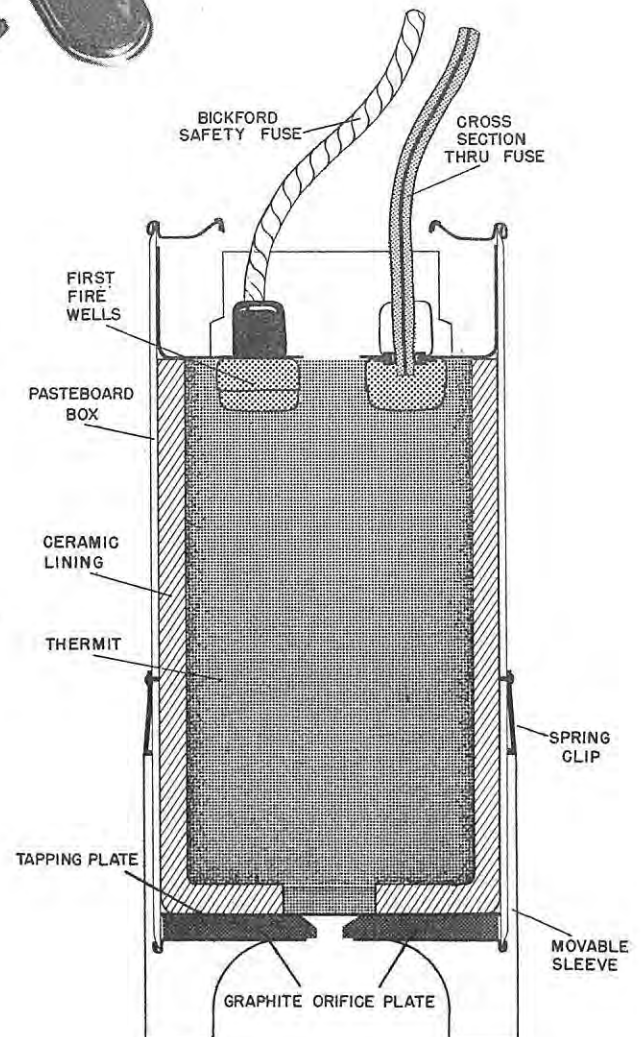
**CONSTRUCTION:** The unit appears to be a harmless pasteboard box, and may be disguised as a commonplace grocery product. Within the box is a ceramic lining with a hole at bottom. The ceramic lining is filled with Thermit. At bottom is a graphite plate with an orifice and between it and the ceramic lining is a thin metal tapping plate which serves as retainer for the Thermit. At top, in a false compartment, are two lengths of Bickford Fuse which are led into two small fire wells filled with igniting powder. Both top and bottom of the device are closed by tin lids, the top one removable for reaching the fuse.

**METHOD OF USE:** The operator should select a particularly vulnerable spot on the equipment he wishes to destroy. He mounts the unit, bottom-side down, one inch above the chosen spot, by pulling out an extensible sleeve on bottom until a metal spring engages the top of the sleeve.

When the unit is in place, the operator ignites the pull-wire Bickford Fuse.

## THERMIT WELL

The unit has been designed to allow enough time during combustion for a separation of the molten iron from the other constituents of the mixture to take place. This metal collects at the bottom and burns its way through the thin tapping plate, thereupon flowing through the opening and onto the surface of the equipment and through it to the vital parts to be attacked.



THE OPERATOR should be provided with an adequate store of these accessories, which are used in conjunction with many demolition devices and may be used by the operator for improvising his own devices.

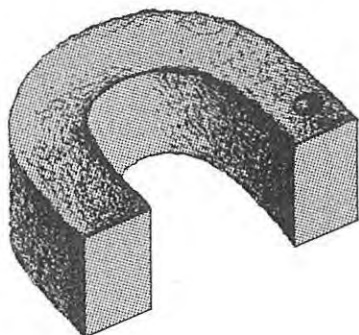
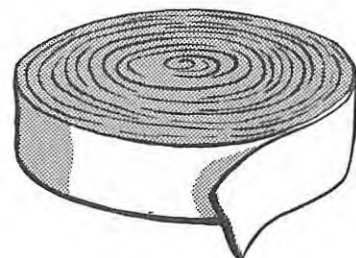
## ACCESSORIES



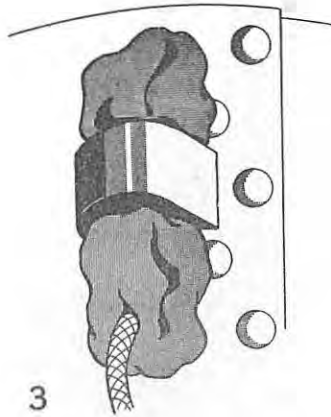
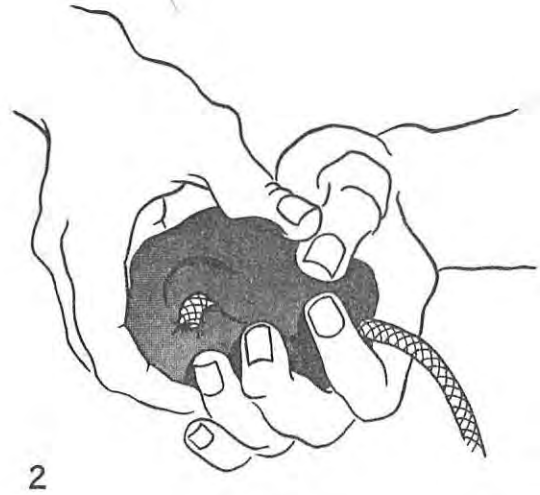
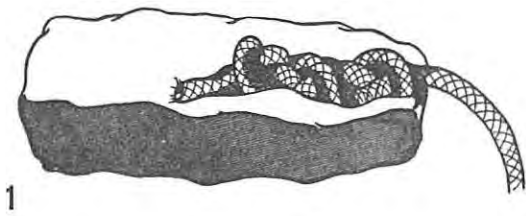
THE DETONATOR MAGAZINE is a safe container for blasting caps. It consists of a tubular plastic barrel compartmented into 16 cylinders, each holding a blasting cap. The magazine is loaded with 11 caps from one end and 5 from the other. Caps are withdrawn by rotating either end until its hole aligns with a cylinder in the body. After the openings are aligned, a cap may be extracted.

ADHESIVE TAPE is used:

- a. To attach Primacord to blasting caps in time delay firing devices;
- b. To make water-tight closures for containers;
- c. To strap explosives to objects to be destroyed.



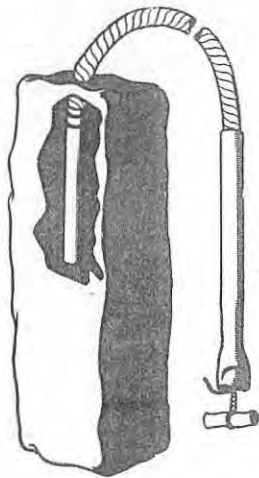
MAGNETS may be used either singly or in numbers for attaching charges of plastic explosive to iron or steel surfaces. They are particularly useful when the charge is too large for taping securely or when speed is an important factor. The magnets normally supplied to operators are made of Alnico No. 2, horse-shoe shape, with an opening of approximately 1 1/4 inch.



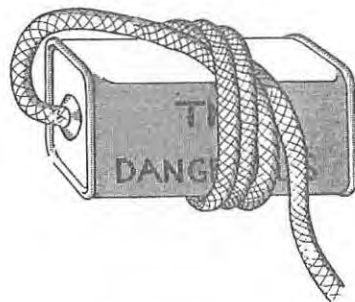
PLASTIC EXPLOSIVE, one of the new weapons of this war, is a versatile and powerful tool in the hands of a trained operator. Figure 1. Shows proper way of imbedding knotted Primacord in a charge. The knots are essential for complete detonation of the Plastic Explosive.

Figure 2. Shows method of molding Plastic Explosive around Primacord or other detonator. Effort should be made to center detonator in the charge.

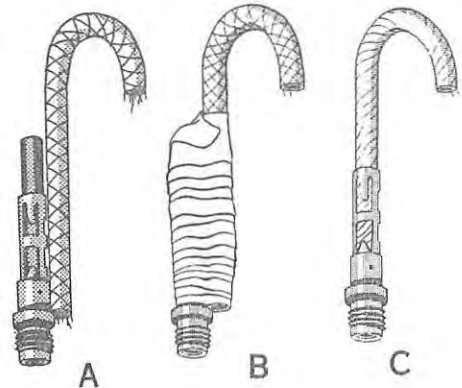
Figure 3. Shows standard application of a charge to a metal object, using a magnet to hold it in place.



ENGINEER'S SPECIAL DETONATOR, showing proper placement. It should be centered and inserted well into charge. Initiation is by safety fuse, using pull-wire igniter.



TRITON BLOCK (TNT), showing proper method of wrapping primacord around it. Primacord is inserted into detonator hole in the block, then given three turns around the block, and secured with a half-hitch.



- A: Proper insertion of detonator into spring snout, with Primacord in position for taping.
- B: Primacord taped into position.
- C: Safety fuse seated properly in spring snout. Snout is provided with rubber covering which is snapped into place after the fuse is properly seated.