

**RESTRICTED**

**OP 1579**

(Preliminary)

# **DEMOLITION OUTFIT**

## **MARK 136 MODS 0 AND 1**



**A BUREAU OF ORDNANCE PUBLICATION**

**28 JULY 1945**

# **DEMOLITION OUTFIT**

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NAVY DEPARTMENT  
BUREAU OF ORDNANCE

WASHINGTON 25, D. C.

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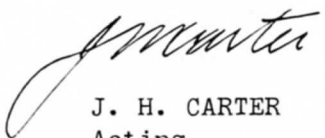
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ORDNANCE PAMPHLET 1579 (PRELIMINARY)

DEMOLITION OUTFIT MARK 136 MODS 0 AND 1

1. Ordnance Pamphlet 1579 (Preliminary) contains a description of, and instructions for the use of Demolition Outfit Mark 136 Mods 0 and 1.
2. Because of the urgent need for this information, it has been issued in preliminary form. This pamphlet will be revised and issued in final, complete form as soon as practicable.
3. This pamphlet does not supersede any existing publication.
4. This publication is RESTRICTED and shall be safeguarded in accordance with the security provisions of U. S. Navy Regulations, 1920, Article 76.

G. F. HUSSEY, JR.  
Rear Admiral, U. S. Navy  
Chief of the Bureau of Ordnance

  
J. H. CARTER  
Acting

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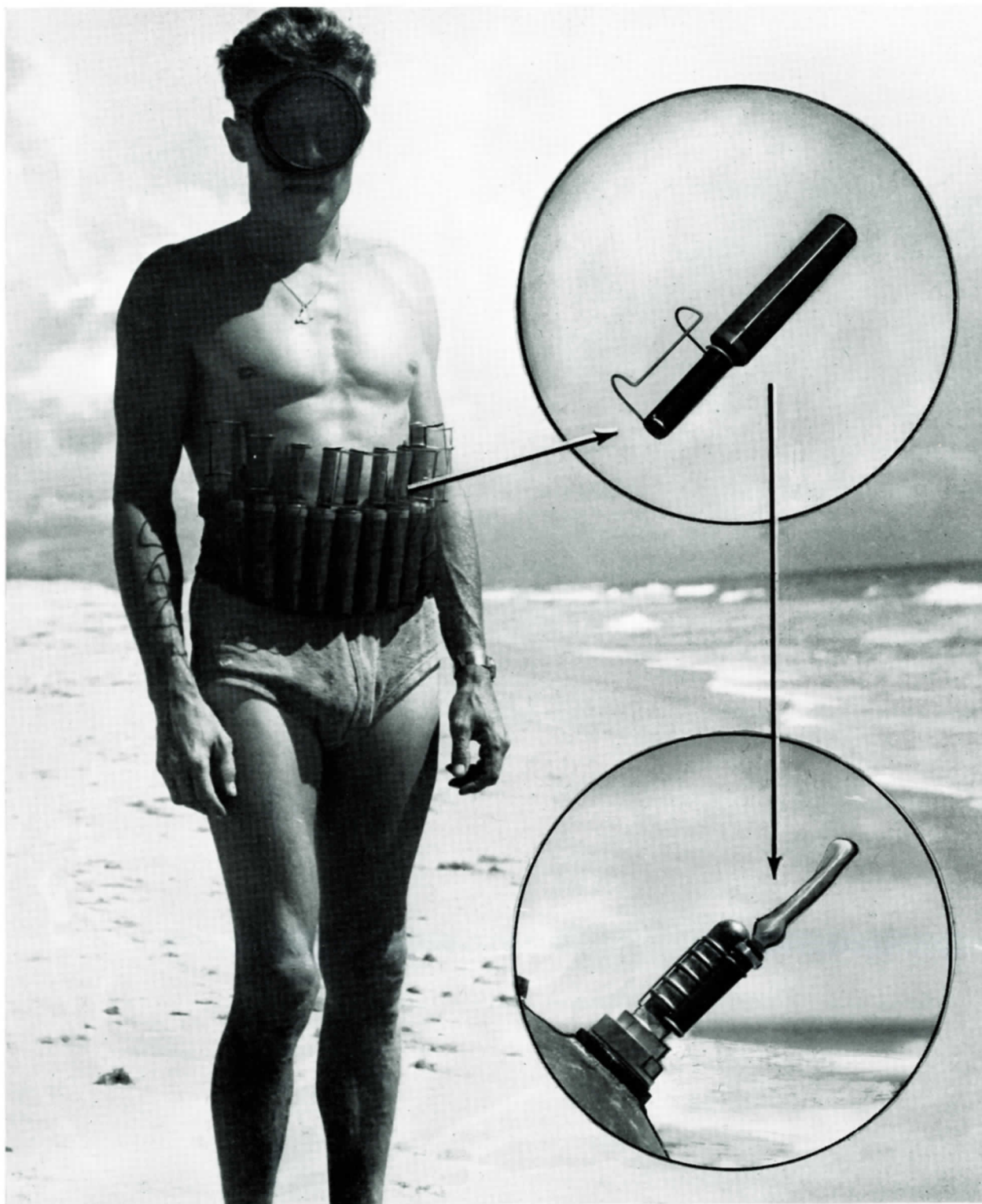


Figure 1. — Demolition outfit worn by swimmer . . . Destructor (Demolition) Mk 1 Mod 0 or Mod 1 . . . destructor placed on horn of anti-boat mine.



## Chapter 1

### INTRODUCTION

Demolition Outfits Mk 136 Mod 0 and Mod 1 are small, light weight belts, each loaded with Destructors (Demolition) Mk 1 Mod 0 or Mod 1. The Mod designation of the outfit is determined by the Mod of the destructor carried therein. A belt and ten Destructors (Demolition) Mk 1 Mod 0, having a two to seven hour firing delay in water at 70° Fahrenheit, make up Demolition Outfit Mk 136 Mod 0. A belt and ten Destructors (Demolition) Mk 1 Mod 1, having a 1½ to 2½ hour delay in water at 70° Fahrenheit, make up one Demolition Outfit Mk 136 Mod 1. For convenience of description, this publication will refer only to Destructor (Demolition) Mk 1 Mod 0, excepting in cases where description of particulars differs.

Primarily, the outfit serves as a carrier for the destructors. The purpose of the destructor is to provide a means for activating Japanese chemical horn type mines (JE and JG) after a time delay. Placement of the weapon is by hand, Fig. 1.

The outfit (loaded) is quickly strapped to the user by elastic straps and adjustable buckles. The adjustable feature of the buckles permits adjustment for any waist measurement.

The destructor provides a waterproof means of detonating a blasting cap and effecting consequently the activation of the chemical horn type Japanese anti-boat mine. The destructor can be easily and quickly attached to the horn of the mine, and the time delay incorporated therein results in detonation after a period of time depending upon the modification of the outfit or destructor selected.

The destructor is designed to hold and fire an engineer's special blasting cap encased in a muffling device. The muffling device in turn is fitted with a means of clipping the entire destructor to the horn of the JG or JE type mine. Resultant activation of the blasting cap crushes the horn of the mine . . . explodes the mine through chemical action of its (the mine's) horn.

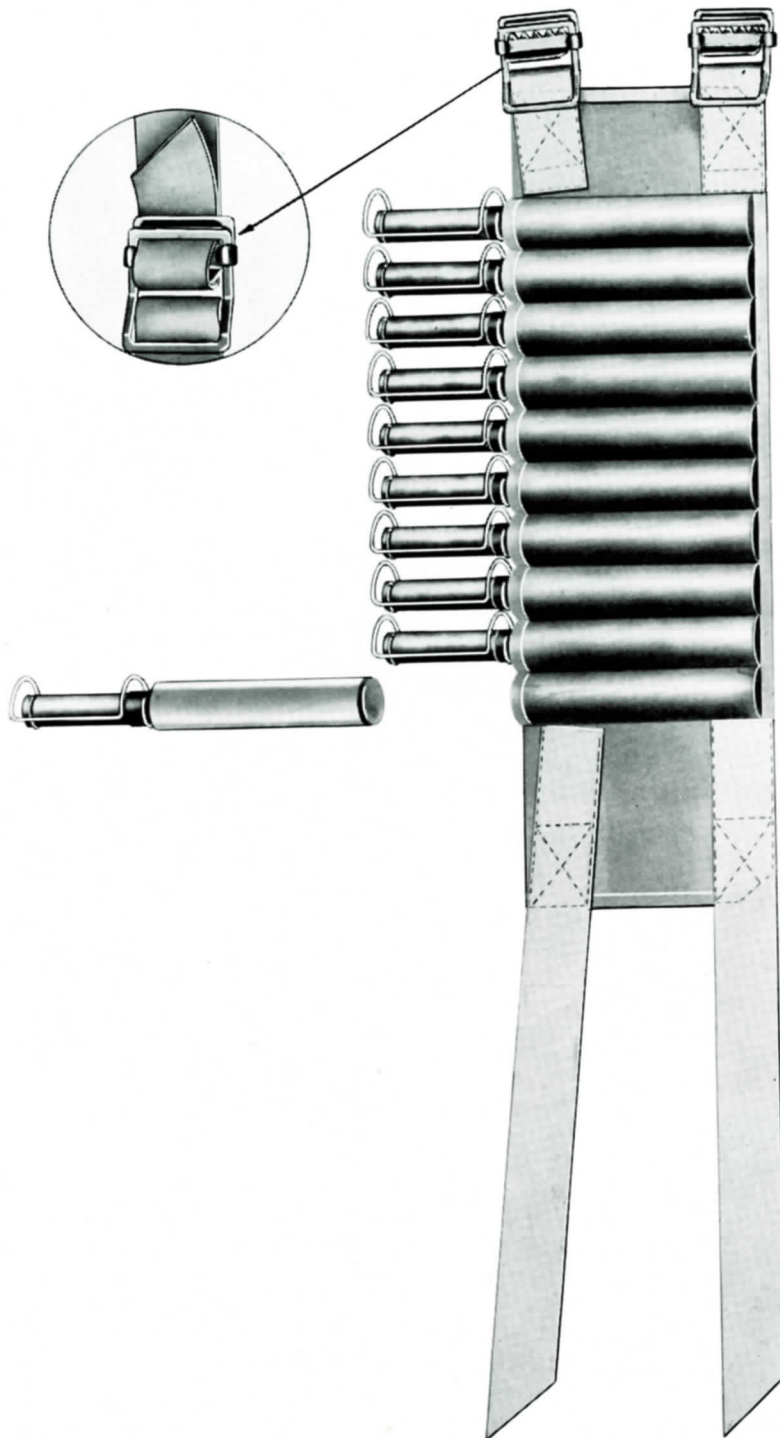


Figure 2. — Demolition outfit showing placement of destructors (ten) in the belt.

## Chapter 2

### DESCRIPTION

#### General

The outfit is built around the destructor as its chief component, Fig. 2. The main objective of the outfit is to provide a portable, light weight, source of destructors for the activation of Japanese type JE and JG anti-boat mines.

Accordingly, the intent of this chapter on Description will be to describe briefly the components of the outfit from a functional standpoint. More important, however, will be the description of the destructor . . . in rather minute detail. The importance of such description is evident from the fact that the destructor is the heart of the outfit . . . the reason for its existence.

Primarily, the outfit (and destructor) have been designed to serve the needs of beach reconnaissance parties (UDT) for the clearance of anti-boat mines. Operating as the parties do, the outfit, weighing approximately three pounds, provides a source of ten destructors in a belt easily strapped to the swimmer's body. The belt is of such design that the destructors are readily accessible . . . and after having served its purpose, the belt is easily jettisoned, freeing the swimmer of his burden.

The sequence of events initiated by the arming and firing of the destructor results in the crushing (but not rupturing) of the chemical horn of the mine by the explosive force of the blasting cap. The horn is not completely destroyed . . . the blast of the cap being only sufficient to dent the horn, break the glass ampoule, energize a battery, and explode the mine.

Description will include the following: Belt, including pockets and straps; firing device assembly, including firing pin, corrosive acid, positive safety pin, and modified coupling base; rubber sheath and seals; plastic transportation tube; cap protector and clip; Mod identification; and shipping information.

#### Belt

In general, the belt is a nylon band approximately two feet long and six inches wide, Fig. 2. Stitched to two-thirds of its length are ten folds of sufficient breadth and material to provide snug pockets for the destructors.

Each of the folds is provided with an elastic "tuck" at its top "open-end" so as to secure the destructor positively in place. The latter is a safeguard against loss of the destructor during the swimming operation.

Sewn into the upper edge of the belt is a cotton duck "stiffener". This serves as a means of preventing sag in the belt when worn by the operator in water.

The belt is equipped with two elastic straps and two buckles of the commercial type, Fig. 2. These buckles provide positive attachment of the belt to the body and similarly provide "quick release" of the unit when the outfit has served its purpose.

One buckle is attached to each of two short lengths of elastic strap sewn to the belt. The buckle is adjustable along the entire length of the



elastic strap to allow for a wide range of waist measurements. Since usage prescribes that the belt fit snugly around the middle of the operator (like a girdle), adjustment for size is made by varying the position of the buckle on the elastic strap.

### Firing Device Assembly

Essentially, the firing device assembly, Fig. 3, consists of a spring loaded plunger (firing pin) poised above a cup primer loaded in a modified coupling base. Upon release of the firing pin, the cup primer is fired and the flame spit detonates a standard type non-electric blasting cap.

Spring loading of the firing pin is counteracted by means of a restraining wire . . . and release of the pin (firing of the unit and the delay incorporated therein) is accomplished by destroying the restraining wire through the corrosive action of an acid. The delay thus attained is a minimum of 2 hours for the Mod 0 and  $\frac{1}{2}$  hour for the Mod 1 (See Table, Page 15).

The components of the device, the water sealing methods and devices, the safety pin, etc., are described below in the order of their function.

**Body:** The firing components of the assembly are housed in a two-section tube known as the body, approximately  $4\frac{1}{4}$  inches long. The upper half of the body is of soft seamless copper tubing, wall thickness, 0.005 inches. The lower half of the body is of seamless brass tubing, wall thickness 0.016 inches.

The two units comprising the body are swaged together around an outer tube plug. The latter is a copper plated brass plug machined to receive the two parts of the body, drilled and countersunk to allow passage of the restraining wire and seating of the acid ampoule, and bearing surface for the compression spring. Reinforcing of the joint is accomplished by a brass sleeve, Fig. 3. Sealing of the joint is accomplished by filling a transverse hole in the plug with a plastic sealing compound.

The upper half of the body provides a housing for the glass ampoule of corrosive acid. Fabricated as it is of copper tubing (soft), actuation of the device can be accomplished by crushing this half of the body and consequently crushing the ampoule of acid . . . for the copper tubing is soft and can be collapsed with a minimum pressure of approximately 15 pounds.

The lower half of the body provides a rigid housing for the firing plunger and spring assembly, Fig. 3. Also, the lower body provides means of inserting the safety pin between the plunger and the cup primer in the coupling base.

**AMPOULE, SPRING, AND PLUNGER:** The glass ampoule of corrosive acid is contained in the upper half of the body. Small wads of absorbent cotton protect the ends of the ampoule and the design of the brass connecting plug is such that the ampoule seats itself snugly thereon, Fig. 3.

The compression spring is fabricated from No. 18 (0.040) wire and has a free length of approximately  $1\frac{3}{8}$  inches. It compresses to approximately

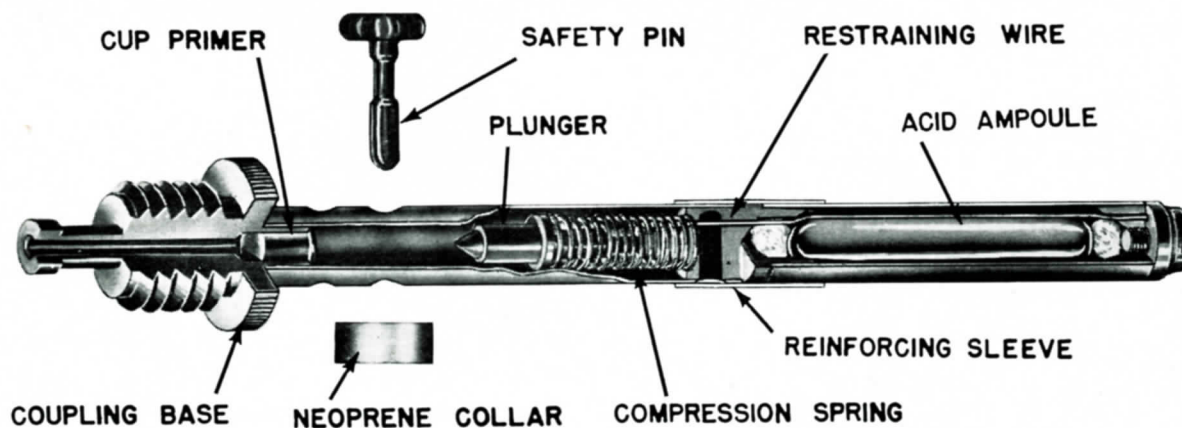
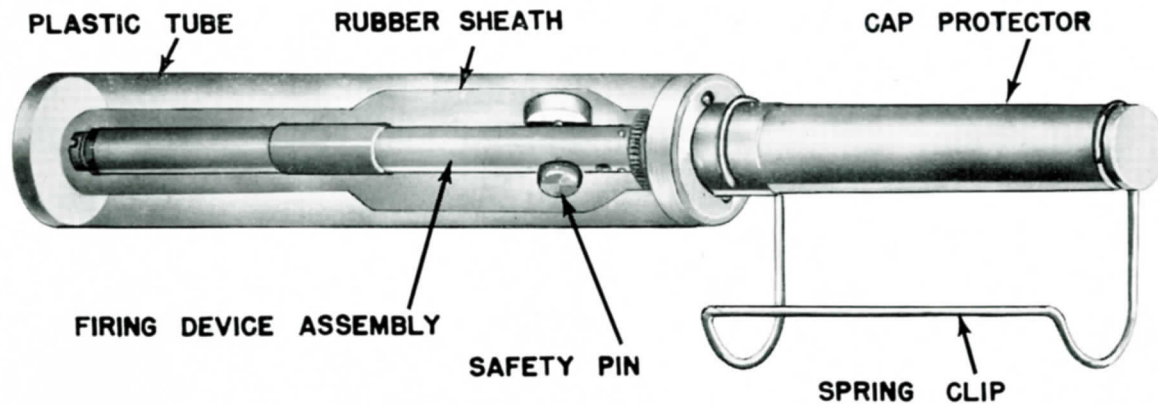


Figure 3. — Quarter section view of firing device.



**Figure 4. — Phantom view showing firing device assembly in transportation tube.**

$\frac{7}{8}$  inch under a pressure of from 14 to 16 pounds. Compression of the spring is accomplished by means of a plunger and a restraining wire, Fig. 3.

The plunger (firing pin) is of brass, approximately  $\frac{3}{4}$  inch long, machined at one end to form a striker ball having a radius of 0.040 inch. The other end of the plunger is beveled, shaped and drilled to receive the restraining wire required to hold the plunger cocked (the compression spring compressed), Fig. 3.

**RESTRAINING WIRE:** Assembly of the unit in itself provides the working arrangement of the firing device. To this end, the restraining wire provides the connecting link between the body of the unit, the ampoule of corrosive acid, and the cup primer in the coupling base.

The restraining wire is a seven inch length of music wire (0.014 inch diameter) fastened to one end of the plunger. The wire is passed between the coils of the compression spring and enters the upper body of the unit (through an access hole in the outer tube plug) where it passes along the side of the glass ampoule before it leaves the body of the unit through the end plug. It is secured in place by a lead washer and the head of a screw.

Positioned as the ampoule and restraining wire are in the upper body of the device, corrosive action is self-evident. In operation, the ampoule of acid is crushed and chemical action begins the firing process.

**SAFETY PIN:** The safety pin is of the positive type, fabricated of brass, and fits transversely through the lower body of the unit between the cocked plunger and the cup primer of the coupling

base, Fig. 3. The pin is secured positively in place by means of a small, circular, neoprene collar ( $\frac{5}{8}$  inch diameter).

Positiveness of action is provided in the machining of the safety pin. Eleven sixteenths of an inch long, the pin is cylindrical in shape with a button head at one end for a finger grip . . . a grooved or recessed center . . . and a smooth, rounded nose at the other end for assembly with the neoprene locking collar.

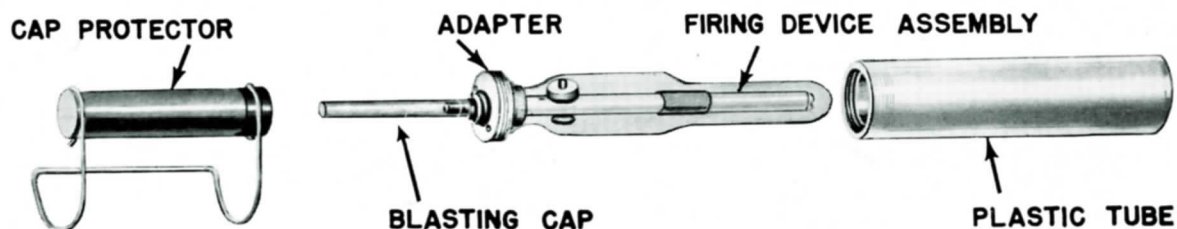
Should accidental firing occur, the plunger would lodge in the recess of the pin. This design is intended to prevent removal of the safety pin by hand in the event that the restraining wire had parted.

**COUPLING BASE:** The coupling base used in the destructor is much the same as that issued for standard service, modified for attachment of a rubber gasket and adapter for securing the plastic transportation tube. A standard type cup primer is pressed and sealed into one end . . . and the other end is machined to allow for attachment of a standard non-electric blasting cap, Fig. 3.

The tube containing the ampoule, plunger and compression spring, and safety pin is pressed onto the cup primer end of the coupling base and secured in place by staking. The unit as assembled, is waterproofed by means of a continuous rubber sheath. The latter is described below in more detail, Fig. 4.

**ADAPTER, SHEATH, AND PLASTIC TUBE:** Waterproofing and protection during transportation are the main features provided by the adapter, sheath and plastic tube, Fig. 4. Each in turn is dependent upon the other for proper operation of the unit.





**Figure 5. — Exploded view of firing device assembly staked to the coupling base, cap protector, and plastic transportation tube.**

The adapter is a brass collar machined to thread onto the coupling base over the snout or blasting cap extension. The external threads of the adapter receive the plastic transportation tube.

Assembly of the adapter to the coupling base is accomplished with a rubber gasket. This seals the assembly at one end, for the gasket is forced snugly against the underside of the coupling base shoulder by means of the adapter.

A rubber sheath, Fig. 5, moulded to fit (with a minimum clearance) over the body of the unit, extends down and over the shoulder of the coupling base. The sheath is designed with a bulge at its lower end to provide easy removal or positioning of the safety pin.

The sheath seats around the rubber gasket assembled with the adapter. Further waterproofing is obtained by cementing the sheath to the gasket with a plastic type sealing compound. Thus, the combination of the gasket and the rubber sheath provides for complete waterproofing of the unit.

The plastic tube, Fig. 5, provided to protect the unit during transportation has already been mentioned. Other than that the tube is of light weight, fabricated to enclose the unit by threading (left hand threads) onto the adapter and thus protect the unit, no further description is necessary.

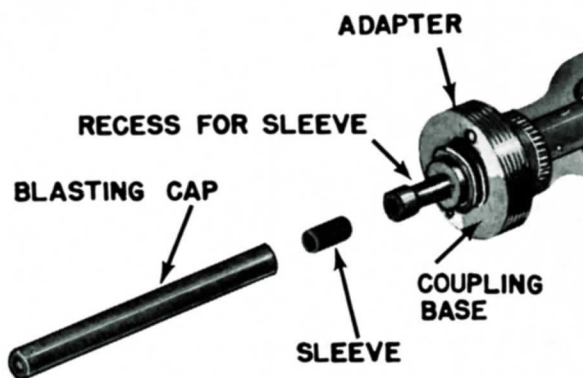
**BLASTING CAP:** The blasting cap, Fig. 6, used with the device is the engineer's special non-electric blasting cap, and is crimped in place over the snout of the coupling base. A water tight joint is assured through the use of a small sleeve fitted over the snout of the coupling base extension. Crimping of the cap should be by means of a cut-throat type crimper.

**CAP PROTECTOR:** The cap protector, (three inches long) is a plastic case that houses the blasting cap. It serves as a means of muffling the blast of the cap as well as a physical protector.

A 5/16 inch diameter flat bottomed hole is drilled from one end of the cap to form a recess for the blasting cap. The open end of the cap is threaded to fit the 9/16-12 threads of the coupling base. Thus the cap protector fits over the blasting cap and threads onto the coupling base to complete the assembly, Figs. 6 and 8.

A reinforcing ferrule of sheet metal is pressed over the open end of the cap protector. This provides added strength to the threaded end of the protector to prevent cracking and splitting during successive operations of assembly of the unit.

In order that the end-point of the destructor be successfully attained, the blast produced by the cap must be of only sufficient force to dent or crush the horn. The protector sufficiently controls the blast of the cap to give the proper crushing action required, Fig. 7.



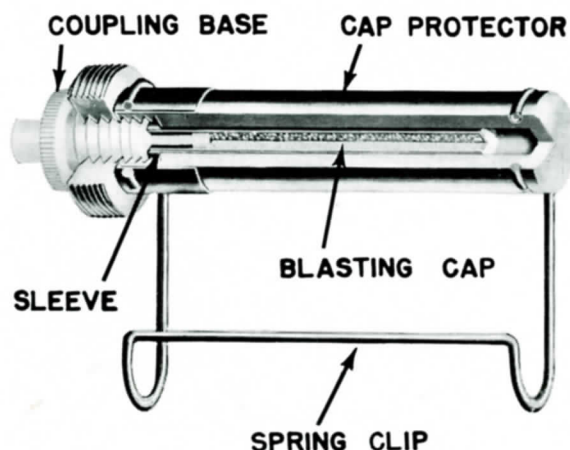
**Figure 6. — Exploded view showing coupling base, sleeve, and blasting cap.**



**Figure 7. — Proper crushing of the mine horn . . . the horn has not been destroyed or ruptured.**

**SPRING CLIP:** The primary function of the spring clip, Fig. 8, is to secure the destructor to the horn of the mine. Its design is such that the clip (and destructor) can easily be clipped to, and positioned on the horn of the mine.

The clip consists of a length of 18 gage, spring steel wire formed into a yoke  $2\frac{3}{4}$  inches long, Fig. 8. Each end of the clip is formed into a loop and fitted over the ends of the cap protector. In order to positively locate the spring clip onto the cap protector, one end of the protector is grooved to receive the smaller of the two loops of the clip.

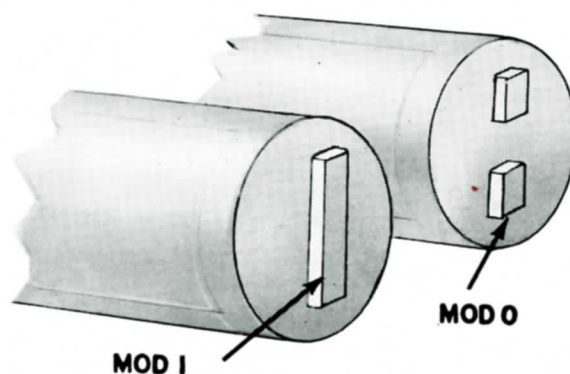


**Figure 8. — Cap protector and spring clip for attaching destructor to the mine horn.**

## Mod Identification

Means of identification have been incorporated in the design of the destructor to assist personnel in choosing the time delay desired. In the case of the Demolition Outfit Mk 136 Mod 1, Destructor (Demolition) Mk 1 Mod 1 is supplied. Identification is as follows:

1. The rubber sheath enclosing the delay firing device assembly is white.
2. The closed end of the plastic transportation tube is dipped in white paint.
3. The closed end of the plastic transportation tube has a raised flat  $1/16$  inch high,  $1/4$  inch wide and  $7/8$  inch long, Fig. 9.



**Figure 9. — Raised flats to distinguish Mods of destructor.**

Identification of the Destructor (Demolition) Mk 1 Mod 0 is by means of similar aids. These are:

1. The rubber sheath encasing the delay firing device assembly is green.
2. The end of the plastic transportation tube is dipped in green paint.
3. The closed end of the plastic transportation tube has two  $1/4$  inch square raised flats, each  $1/16$  inch high, Fig. 9.
4. In addition, the cap protector has a groove turned around the circumference of the cap near its lower end.

## Shipping Information

The parts comprising Demolition Outfit Mk 136 Mod 0 will be shipped in one box, packaged

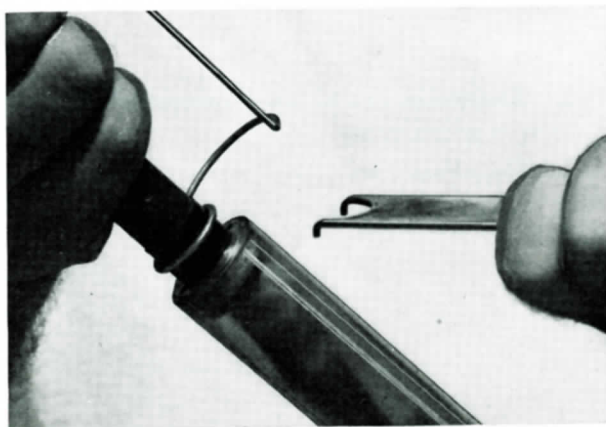


in accordance with the latest specifications applicable to overseas packaging. However, the destructors and the belts will be separately packaged therein. One spanner wrench required for the assembly of the unit will be packaged with each belt. The blasting caps necessary to the final assembly will not be shipped as part of the unit.

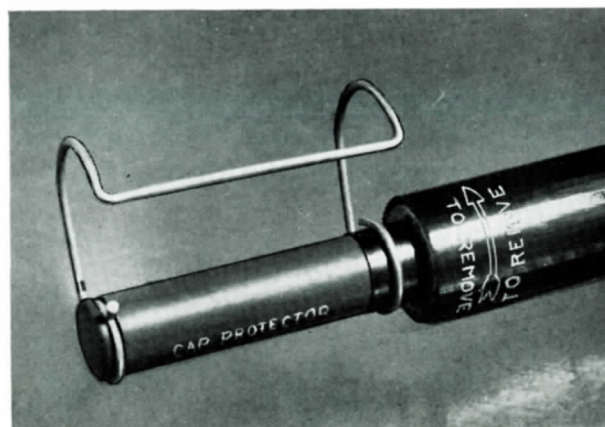
One hundred destructors will be packed in an "all flaps meeting" style fiberboard box, sealed for overseas shipment. The destructors, as mentioned above will be fully assembled, excepting the blasting cap. One of the following legends, as appropriate, will be stencilled on the outside of the container: "Contains 100 Destructors (Demolition) Mk 1 Mod 0", or "Contains 100 Destructors (Demolition) Mk 1 Mod 1".

Ten belt assemblies, and ten spanner wrenches for assembly of the destructors will be packed in a separate container. These will similarly be packaged in an "all flaps meeting" fiberboard box, sealed for overseas shipment. The outside of the box will carry one of the legends: "Contains 10 Belts for Demolition Outfit Mk 136 Mod 0", or "Contains 10 Belts for Demolition Outfit Mk 1 Mod 1".

As stated above, the two containers comprising the components of the outfit will be packed in one wood box nailed and sealed with an interliner (waterproof) for overseas shipment. One of the following legends, as appropriate, will appear on the outside of each box: "Contains 10 Demolition Outfits Mk 136 Mod 0", or "Contains 10 Demolition Outfits Mk 136 Mod 1".



**Figure 10.** — ...using spanner wrench to remove cap protector.



**Figure 11.** — Remove the plastic tube ... this is a left hand thread (see arrow).

## Chapter 3

### OPERATION

#### General

Operation of the weapon, as described in this chapter, will deal primarily with the usage of the destructor. However, in order to introduce the steps necessary to operation, repetition of the theory involved is desirable.

Basically, the delay firing device incorporated in the destructor is an adaptation of the U. S. Army Delay Firing Device M-1. The intent of the device is to fire a blasting cap after a time delay of from two to seven hours. Thus, the result is attained by the release of a plunger (firing pin) to actuate or fire a cup primer . . . which in turn detonates a blasting cap. Release of the plunger is accomplished by crushing an ampoule of corrosive acid . . . destroying or weakening the restraining wire holding the plunger cocked.

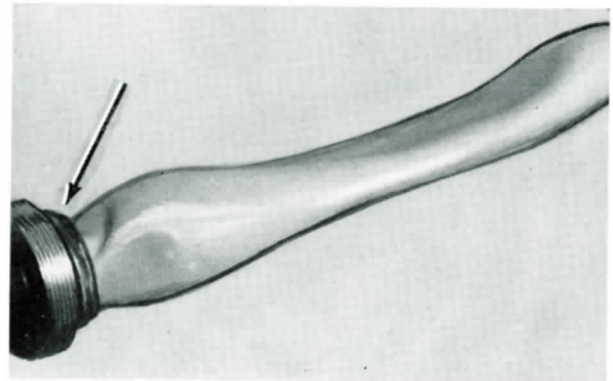
In order that the end-point of the destructor be successfully reached . . . detonation of the mine through the chemical action of its horn . . . the blast produced by the cap must be of only sufficient force to dent or crush the horn. A horn that is completely destroyed or one that is severely ruptured would not result in detonation of the mine.

#### Preparation For Usage

The outfit (and destructors) are shipped to the field in one box, separately packed therein (see Description—Shipping Information). Preliminary preparations necessary to ready the equipment for operational usage is necessary. The latter will take the form of crimping a blasting cap to the coupling base, inspecting the equipment for defects or accidental activation, reassembly of the destructor,

and loading into the belt of the outfit. In order that the steps involved result in ultimate operational efficiency, it is suggested the procedure outlined below be followed:

1. Unpack the destructors and belts from the shipping containers.
2. Remove the cap protector using the spanner wrench provided, Fig. 10.
3. Remove the plastic transportation tube. Be careful not to allow the rubber sheath to become twisted during this operation, Fig. 11.
4. Inspect the rubber sheath . . . if the rubber sheath has been ruptured or if it appears defective, discard the device as having been activated or partially activated, Fig. 12.
5. Remove the neoprene collar from the safety pin . . . do not attempt to remove the safety pin in this step . . . do so without rupturing the rubber sheath.



**Figure 12. — . . . inspect the rubber sheath (see arrow) . . . discard the destructor if the sheath is ruptured.**



6. Remove the safety pin . . . should a great deal of effort be required in attempting to remove the pin, assume that the device has accidentally fired and discard the device.

7. Replace the safety pin and neoprene collar. Make sure that the safety pin is fully inserted and that the collar is positively attached . . . be careful not to rupture the rubber sheath.

8. Grasp the coupling base in one hand and the tube body with the other hand. Gently strain the assembly to make sure that it is firmly staked. A loose device will be of no value and should be discarded.

9. Replace the plastic transportation tube. **This is a left hand thread (finger tight fit).**

10. By inspection, insure that the sleeve is in place in the recess on the snout of the coupling base, Fig. 13.

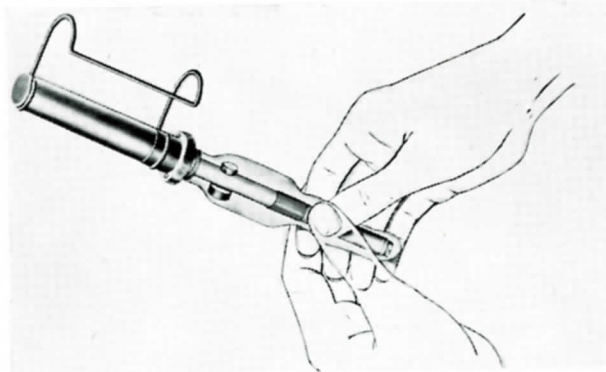
11. Crimp a non-electric blasting cap over the sleeve and snout making a water tight joint. Be sure to use a crimping tool of the style that results in a cut-throat type crimp around the circumference of the cap, Fig. 13.

12. Replace the cap protector . . . use the spanner wrench provided . . . make this a tight joint.

13. Load ten destructors into each belt. Insert the transportation tube first . . . and make sure that the destructors are fully seated in the pockets and that the elastic edging (or tuck) snaps over the top of the transportation tube.



**Figure 13. — . . . crimp the non-electric blasting cap in place . . . use a sleeve (arrow) . . . use a "cut-throat" type crimping tool.**



**Figure 14. — . . . squeeze the tube with the thumb and fingers of both hands to crush the ampoule.**

The outfit is now fully prepared and ready for use. No further attention before placement is necessary.

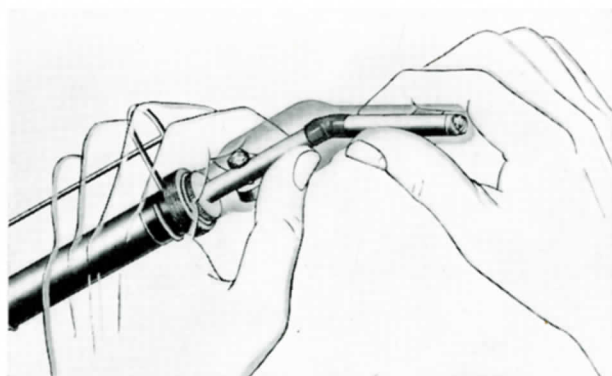
The belt is fastened about the middle of the operator simulating a girdle. Adjustment for size of operator can be made by varying the position of the buckles and elastic straps. The belt should fit snugly around the waist, destructors to the front for accessibility by the operator.

## Placement

Placement of the destructor on the horn of the mine is accomplished by hand. Since the spring clip is of positive design, no adjustment after placement is necessary. As long as the clip is attached around the horn, the cap protector and therefore the cap, will be in proper position for actuation of the mine when the device explodes.

In order that the device functions satisfactorily, it is desirable to mention at this point that sequence of steps as outlined below is important. Thus it is suggested that the device be actuated and the safety pin removed before the destructor is positioned. If such procedure is followed, defective devices can be discovered and discarded and danger to operating personnel avoided. The steps in placement and actuation of the destructor are as follows:

1. Remove one destructor from the belt.
2. Remove the plastic transportation tube . . . this is a left hand thread . . . discard the tube.
3. Crush the upper body of the tube between the thumb and fingers of both hands, Fig. 14.

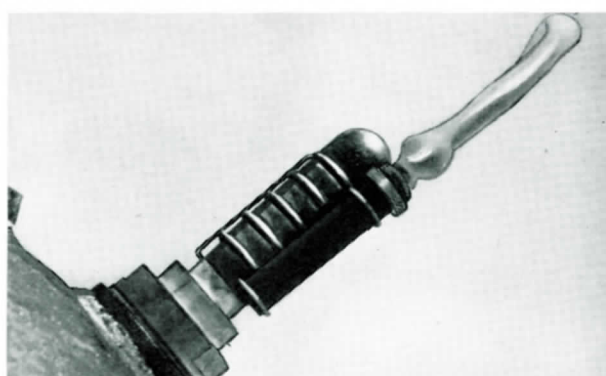


**Figure 15 — ... do not bend the device by grasping in both hands.**

**Note:** Do not grasp the device in both hands and attempt to crush the copper tube by leverage, Fig. 15. Bending of the device will result in the rupturing of the two tubes comprising the body of the device and failure to fire will result. Crush the ampoule using the thumbs and fingers of both hands ... use a squeezing action ... squeeze until the sides of the copper tube meet, Fig. 14.

4. Remove the neoprene collar and safety pin ... make sure that the pin is completely removed from the lower tube.

**Note:** A good practice to assure removal of the pin is to permit the pin to drop, within the sheath, to the shoulder of the coupling base. If this prac-



**Figure 16. — ... snap the spring clip around the horn of the mine.**

tice is followed, the operator can be sure that the pin has been removed completely. If an attempt at removal of the safety pin requires considerable effort, assume that the device has been activated ... discard it. Again, be careful not to rupture the rubber sheath when removing the safety pin.

5. Snap the spring clip of the cap protector around the horn of the mine so that the device proper is up, Fig. 16.

No further attention to the device is required. Within the limits of the time delay ( $1\frac{1}{2}$  to  $2\frac{1}{2}$  hours for the Mod 1 device and two to seven hours for the Mod 0 device) the device will fire.

## TEMPERATURE CORRECTION CHART

### Destructor (Demolition) Mark I Mods 0 and 1

\*Delay Time in Hours

TEMP. °F	MOD 0 GREEN			MOD 1 WHITE		
	PROBABLE MINIMUM	NOMINAL	PROBABLE MAXIMUM	PROBABLE MINIMUM	NOMINAL	PROBABLE MAXIMUM
80°	$1\frac{1}{2}$	3	$4\frac{1}{2}$	$\frac{1}{4}$	1	$1\frac{3}{4}$
70°	2	$4\frac{1}{4}$	$6\frac{3}{4}$	$\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}$
60°	$2\frac{3}{4}$	$5\frac{3}{4}$	9	$\frac{3}{4}$	$1\frac{3}{4}$	$3\frac{1}{4}$
50°	4	8	$12\frac{1}{4}$	1	$2\frac{3}{4}$	$4\frac{1}{2}$

\* On the basis of currently known data, not more than 1 out of 100 destructors will fall outside of the above limits for the temperatures shown.



## Chapter 4

### PRECAUTIONS

#### Handling And Stowage

Demolition Outfit Mark 136 Mod 0 and Mod 1, and its main component, Destructor (Demolition) Mk 1 Mod 0, or Mod 1 (whichever applies), must be handled in accordance with existing regulations for the handling and stowage of ammunition as promulgated in Ordnance Pamphlets 4 and 5. Particular attention is invited to the section therein where specific mention is made of the handling and stowage of cup primers. Destructors incorporating cup primers should be handled in accordance with regulations governing live explosives and should be stowed in ready boxes or magazines both afloat and ashore.

#### Safety Precautions

1. Never store the outfit or the destructor with high explosives or in magazines containing explosives of any kind.
2. Exposed lights or flames are not to be allowed in the vicinity of the outfit or destructor, or where the outfit or destructor are stored.
3. Never throw or drop the outfit or the destructor. Thoroughly inspect each destructor of an outfit that has been dropped.
4. Never use any tool other than a crimping tool when crimping the blasting cap to the destructor.
5. Never force a blasting cap onto the snout of the coupling base.
6. Never store the outfit or the destructor near radio equipment or antennas.

7. Always keep blasting caps in HE magazines or ready boxes according to the regulations promulgated in Ordnance Pamphlets 4 and 5.

8. Never attempt to remove or investigate the contents of a blasting cap.

9. In the event of a misfire, wait until the maximum delay time has expired (See Table on Page 15), before approaching and disposing of the destructor. Never disassemble a misfired destructor.

10. Never attempt to crush the acid ampoule of the destructor with safety pin removed.

11. Never try to remove the safety pin of a destructor by excessive force . . . assume that the destructor has been activated and dispose of the destructor in deep water.

12. Never attempt to disassemble a blasting cap from a destructor.

#### Operating Precautions

1. Never leave the destructor lying around in wet or damp places.
2. Always use a cut-throat type cap crimper when attaching the blasting cap to the coupling base. Always use a sleeve in crimping the cap in place to assure a waterproof joint.
3. Never remove the rubber sheath from the destructor.
4. Never bend the firing device at the middle as this will permit the acid to leak out of its container . . . cause the device to malfunction.
5. Never attempt to disassemble the firing device assembly of the destructor.

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