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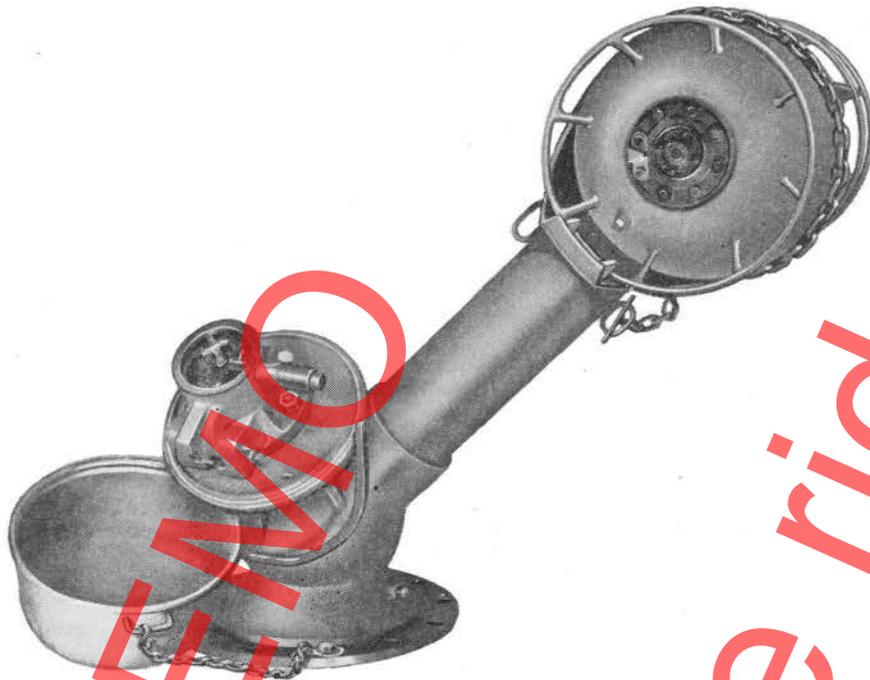


Figure 1.—Depth Charge Projector Mark 6 Mod 1 or Mod 2, Loaded.

WHAT THEY ARE

Depth Charge Projectors Mk 6 Mod 1 and Mod 2 are weapons for projecting depth charges. The projectors consist of a base with an expansion chamber and two tubular extensions, one serving as a mount for the steel barrel of the projector, and the other serving as a cartridge chamber with a breech mechanism mounted thereon.

THEIR PURPOSE

The primary purpose of these weapons is to project depth charges to port and starboard of vessels in order to enlarge and supplement the pattern obtained by charges dropped from the stern.

HOW THEY WORK

When the propellant charge in the cartridge case chamber is fired, either electrically or percussively, the arbor with a depth charge secured to it is forced from the projector barrel. The arbors are mechanically released from the depth charges, and the two fall into the sea independently.

WHERE THEY ARE USED

The Depth Charge Projectors Mk 6 Mods 1 and 2 are used aboard destroyers, destroyer escorts, submarine chasers, minesweepers, patrol vessels, and other types of craft which may be engaged in action against enemy submarines. The projectors are generally mounted on the port and starboard sides of the after portion of the vessel.

INTRODUCTION AND GENERAL DESCRIPTION

GENERAL DESCRIPTION

Size and Weight of the Depth Charge Projector Mk 6 Mod 1 and Mod 2

Weight (Unloaded) 328 lb.
Base Frame (Diameter) 20 in.
Barrel (Inside Diameter) 6 in.
Barrel (Length) (approx.) 24 in.
Expansion Chamber (Inside Diameter)

10.5 in.

Cartridge Case (Diameter) 3.0 in.

Cartridge Case (Length) 9.0 in.

MAIN PARTS

The main parts of the Depth Charge Projectors Mk 6 Mods 1 and 2 are:

The projector body, including barrel and chamber

The breech mechanism

Accessories include:

Impulse cartridge

Arbor

Depth charge

Breech cover Mk 2

OPERATION—GENERAL

Since the Projectors Mk 6 Mods 1 and 2 operate similarly, information hereafter will be applicable to both Mods unless otherwise indicated.

An impulse cartridge is fired in the expansion chamber either electrically from a remote control station or by percussion through manipulation of a lanyard at the mount. Expanding gases from the propellant charge force the arbor with the depth charge attached out of the barrel of the projector. As the depth charge and arbor are shot out, a mechanical release is tripped, freeing the chain or cable which holds the charge to the arbor.

Because of initial velocity, the arbor and the depth charge remain along the same trajectory for approximately three-fourths of the entire flight. The arbor falls into the sea about fifteen or twenty yards short of the range at which the depth charge sinks to explode at its predetermined setting.

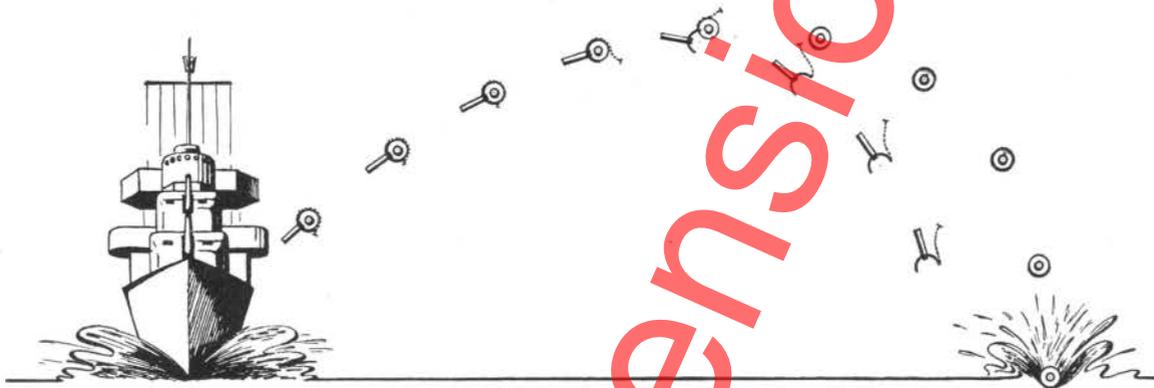


Figure 2.—Depth Charge and Arbor in Flight.

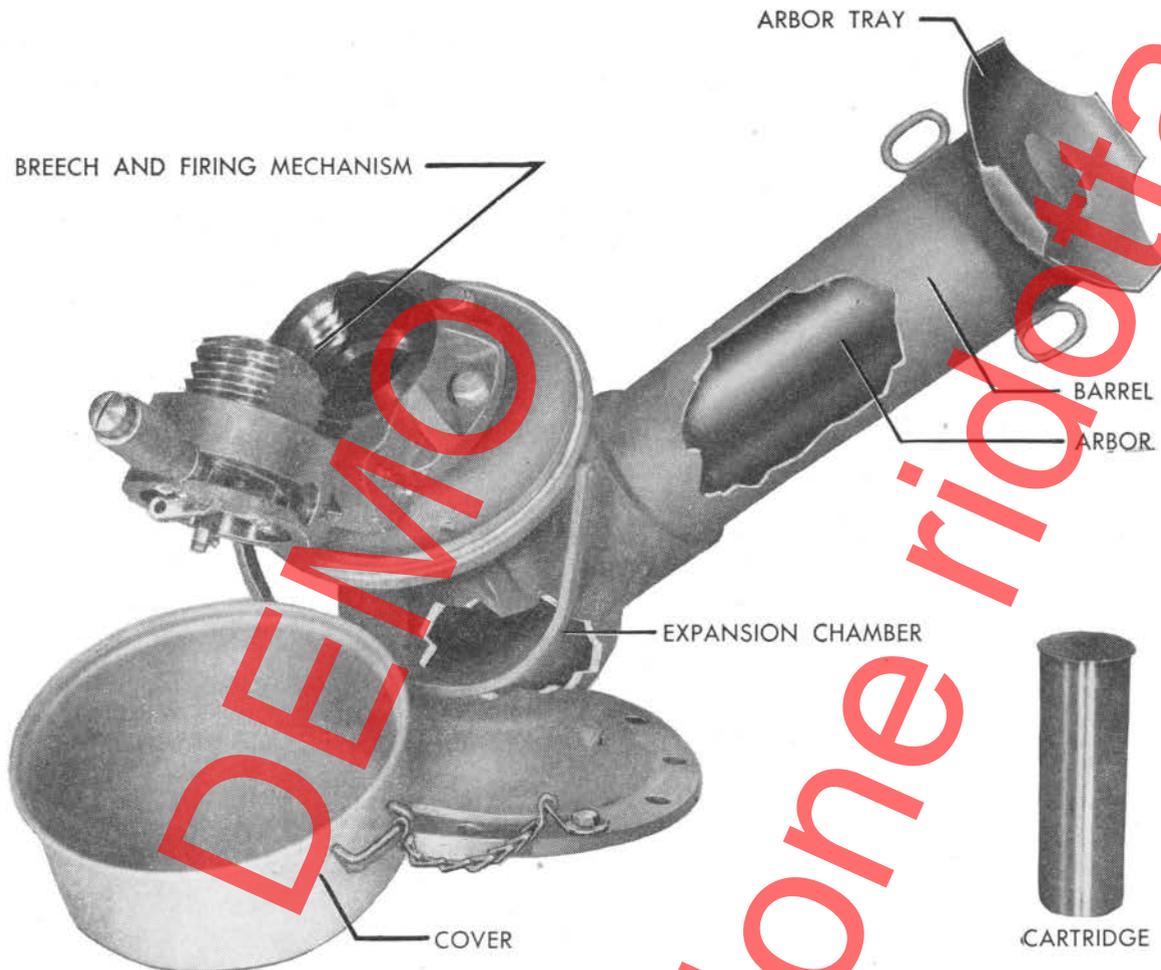


Figure 3.—Depth Charge Projector Mark 6 Mod 1 or Mod 2.

PROJECTOR BASE, BARREL, AND BREECH

BASE

The projector base consists of a steel casting formed with a 20-inch base flange, drilled for bolting to the deck; a spherical expansion chamber, 10.5 inches in diameter, with two tubular extensions pointing 45° upward and at an angle of 90° to each other. One of these tubular extensions has a steel barrel welded into it, and the other serves as the cartridge chamber topped by a flange for mounting the breech mechanism.

BARREL

The barrel is a smooth-bore steel tube approximately 24 inches long and has an inside diameter of 6 inches. Two sea lashing hooks are welded to the barrel near its muzzle and directly in line with two notches that are cut in the muzzle. These sea lashing hooks are used to tie the depth charge and arbor to the projector so that heavy seas cannot wash them overboard. The two muzzle notches keep the arbor and attached charge from rotating in the projector barrel.

GENERAL DESCRIPTION

BREECH

The main parts of the breech mechanism are breech ring, breech carrier, breech plug, operating lever, firing pin mechanism, sear bracket, and cartridge extractor.

The breech mechanism is an interrupted screw type requiring a 90° rotation of the operating handle to lock the breech plug in either the opened or the closed position. The firing mechanism is constructed for firing either by percussion or by electricity. The firing pin mechanism is purposely designed so that the firing pin is grounded to the breech plug when the breech is closed, not only for simplicity of design, but in order to prevent any accidental discharges of live cartridges inadvertently left in the chamber. When the breech is opened, the firing pin travels one quarter of an inch from the center of the cartridge primer, and the safety rocker retracts the point of the firing pin beyond the surface of the plug, rendering the breech safe from accidental firing either electrically or percussively when the breech is unlocked. The extractor, operated by a cam integral with the carrier, raises the cartridge from its seat when the breech is opened.

BREECH COVER MARK 2

Breech Cover Mk 2 is a metal breech cover provided to protect the breech mechanism from damage due to water or the formation of ice or accidental discharge from shock. The breech cover should be kept in place at all times except when firing or servicing the projector.

The Depth Charge Projector Mk 6 Mod 2 was originally designed for installation of the Breech Cover Mk 2 according to directions in Ordnance Specification No. 3057. Ordalt No. 1963 gives instructions for removal of the breech buffer stops from those models of the Mod 1 which still have the stops, so that the Breech Cover Mk 2 can also be installed on it.

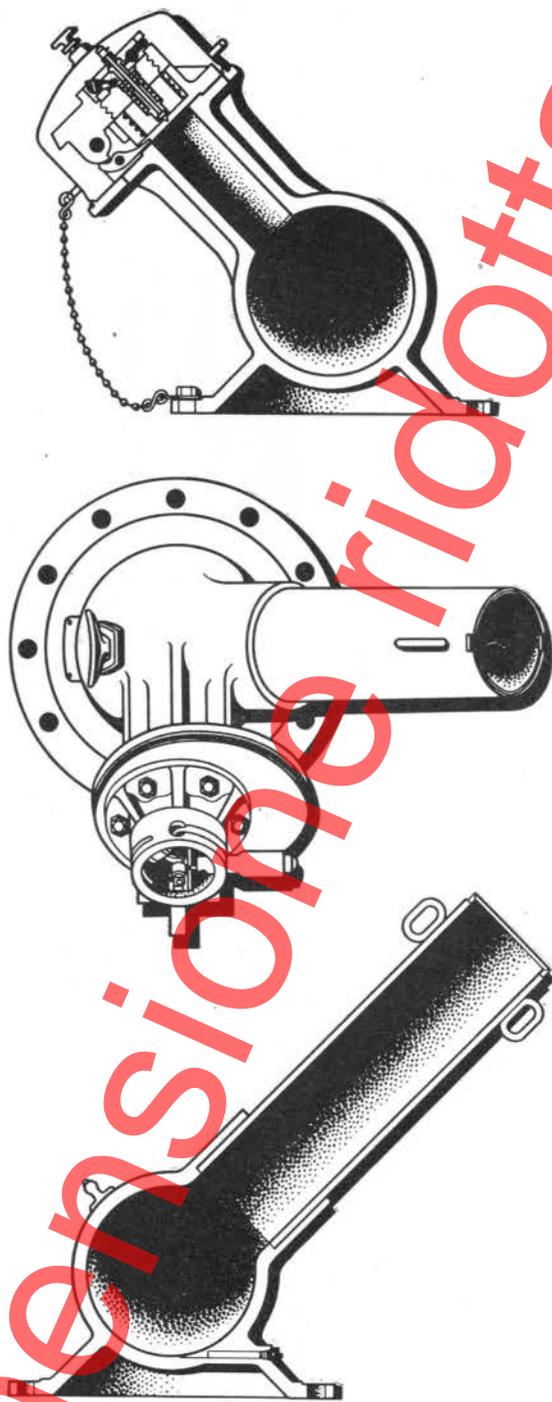


Figure 4.—Sections through Breech, Expansion Chamber, and Barrel.

IMPULSE CARTRIDGES, ARBORS, AND DEPTH CHARGES

IMPULSE CARTRIDGES

Impulse cartridges are available with three impulse charges designated No. 1, No. 2, and No. 3. Their use is covered in Ordnance Data 5318 and in FTP 223, to which reference should be made. Note: Discharged cartridge cases are to be saved for reloading with new primers and impulse charges.

ARBORS

Several types of arbors (Arbors Mk 6, Mk 7, and Mk 7 Mod 1) fit these projectors and are used to hold depth charges centered and balanced on the projector to insure uniform trajectories and to protect projector barrels from undue strain.

All of these arbors are primarily the same. Each consists of a tubular stem (24 inches long by 6 inches in diameter), closed on one end and with a tray (12 by 31 inches) welded to the open end. The stem fits into the projector barrel and acts as a projectile when fired. The arbor weights are: Mk 6, 70 pounds; Mk 7 and Mk 7 Mod 1, each 65 pounds.

A depth charge is secured to the arbor tray by means of a chain or wire cable, operating through a tightening device. Incorporated in the arbors is an automatic unlocking device which releases the arbor from the depth charge during flight, thus giving a better underwater trajectory to a sinking depth charge.



Figure 5.—Arbor, Depth Charge, and Cartridge.