

U. S. NAVAL TECHNICAL MISSION TO JAPAN
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From: Chief, Naval Technical Mission to Japan.
To : Chief of Naval Operations.
Subject: Target Report - Japanese Depth Charges.
Reference: (a) "Intelligence Targets Japan" (DNI) of 4 Sept. 1945.

1. Subject report, covering Target O-08 of Fascicle O-1 of reference (a), is submitted herewith.

2. The investigation of the target and the target report were accomplished by Lt. Comdr. L.V. Goldsworthy, RANVR, and Lt. Comdr. R.C.R. Brooke, RNVR.



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Captain, USN

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O-08

JAPANESE DEPTH CHARGES

"INTELLIGENCE TARGETS JAPAN" (DNI) OF 4 SEPT. 1945

FASCICLE O-1, TARGET O-08

DECEMBER 1945

U.S. NAVAL TECHNICAL MISSION TO JAPAN

SUMMARY

ORDNANCE TARGETS JAPANESE DEPTH CHARGES

The purpose of this report is to provide information about Japanese depth charges, namely influence depth charges and standard depth charge pistols.

Interrogation has revealed that only two influence depth charges were under consideration, and of these, only one was approaching finality of design.

Drawings supplied by the Japanese of depth charge pistols are included.

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REFERENCES

Location of Target:

Mine Research Laboratory at KURIHAMA.

Japanese Personnel Who Assisted in Collecting Information:

Tech. Lt. Comdr. M. HIGUCHI.

Lieut. M. TSUKAMOTO.

Japanese Personnel Interviewed:

Tech. Lt. Comdr. M. HIGUCHI seems to be familiar with nearly all aspects of the induction system of mine and depth charge firing and would be considered a fairly capable technical officer.

Lieut. MIZUTA is familiar with the details of the experimental work carried out on the Type 4 depth charge and seemed to be in a position to give all information that was available.

Lieut. IKEDA is familiar with the functioning of the D.C. Type 4 and confirmed information supplied by the first two named officers.

LIST OF ENCLOSURES

- (A) Photograph of Depth Charge Type 4.
- (B) Diagram of Depth Charge Pistol Type 3.
- (C) List of Equipment Shipped to OIL, Indianhead. Md. (For study in connection with this report.)

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INTRODUCTION

The need for an influence depth charge seems to have been appreciated by the Japanese and a fair amount of effort and research seems to have been directed towards obtaining such a weapon. The magnetic depth charge had reached the state where trials were being carried out although the production position did not appear very satisfactory, but the acoustic depth charge was still in the research stage.

THE REPORT

1. Influence Depth Charge, Type 4.

The Japanese had only one depth charge operated on the influence principle and trials were not complete on it when the war ended. None were ever used operationally.

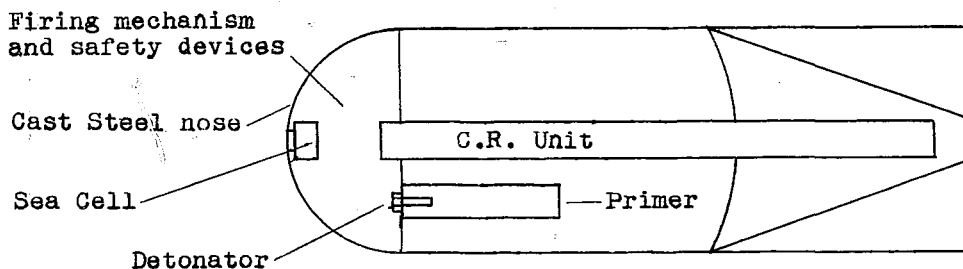


Figure 1
Diagram of Influence Depth Charge

Length	4.48 ft.
Diameter	1 ft. 5.7 in.
Weight (Total)	582 lbs.
Weight of explosive (Type 88 or Type 1)...	220 lbs.

a. The cast steel nose presented one of the major problems in the production of this depth charge; out of ten produced experimentally only two were satisfactory, the remainder being porous.

b. The relay and associated gear was housed in the nose, but no provision appears to have been made against shock. Trial work had just started on the production of an aircraft laid model when the war ended.

c. Circuit.

1000 micro. farads relay 20 micro. amps.

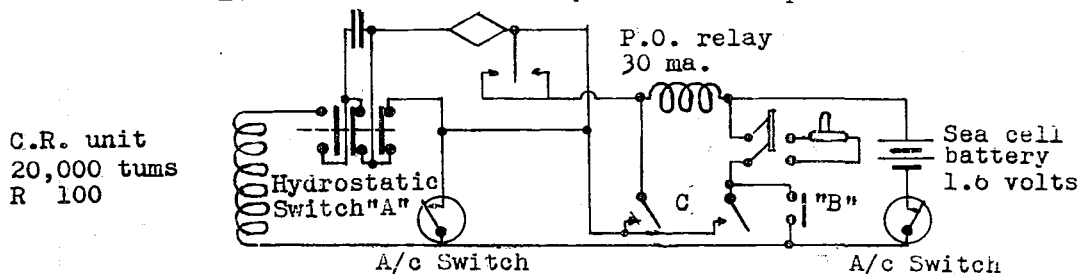


Figure 2
Circuit Diagram of Depth Charge, Type 4

Hydrostatic switch "A" closes at 65.6 feet and a hydrostatic detonator placer closes the detonator contacts at 82 feet as the detonator is placed in the primer. Should the depth charge fail to make contact with any target, a further movement of the hydrostatic switch takes place at 656 feet, controlled by a shear wire which connects the detonator of the battery and fires the charge.

The actuation range against an E-class submarine is given as 26.24 feet, and the rate of sinking of the depth charge is 22.96 feet per second.

If the D.C. passes near a target, the 20 microamp. relay makes contact and this closes the P.O. type relay which fires the charge. The reason for the P.O. relay was that the detonator current passing through the 20 microamp. relay direct was liable to burn out the hair spring, and thus break the circuit, before the detonator had time to fire.

2. Acoustic Depth Charge.

An acoustic depth charge was in the early stages of research, but as far as can be determined none was ever made. It was intended for laying from ships but the need for aircraft laying was appreciated.

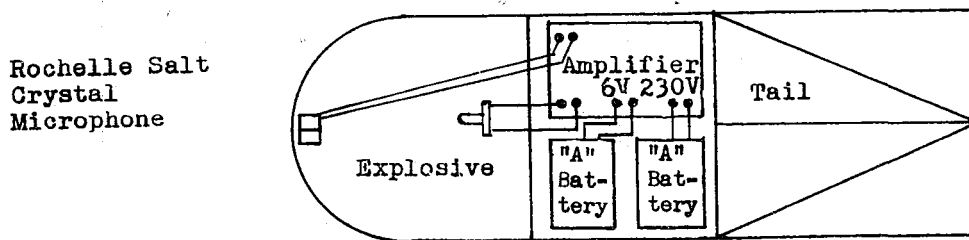


Figure 3
Diagram of Acoustic Depth Charge

Weight	550 lbs.
Total length (over tail)	4.92 ft.
Length of D.C. only	3.28 ft.
Diameter	1.31 ft.

The depth charge was arranged to fire when the rate of change of sound was greatest, that is to say, just as it passed the target. The firing rate of charge was one to two db/sec.

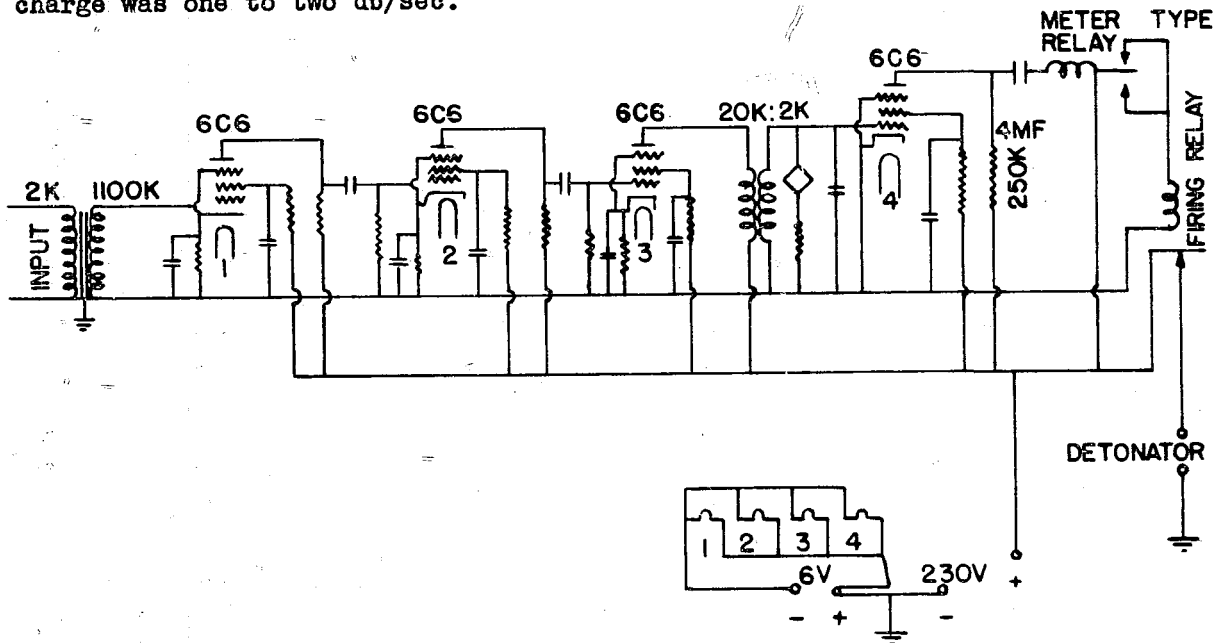


Figure 4
Circuit Diagram, Acoustic Depth Charge

3. Depth Charge Pistols.

Maximum depth setting and description of the only deep setting depth charge pistol is the Type 3 Model 1.

The pistol arrangement in this pistol is similar to that in the Type 2 depth charge, but the extra time required for reaching the greater depth is provided by a delay train which is initiated by the firing pin.

Depth settings for the Type 3 Model 2 depth charge are at 131.2 feet, 262.4 feet, 393.6 feet, 524.8 feet, and 656.0 feet.

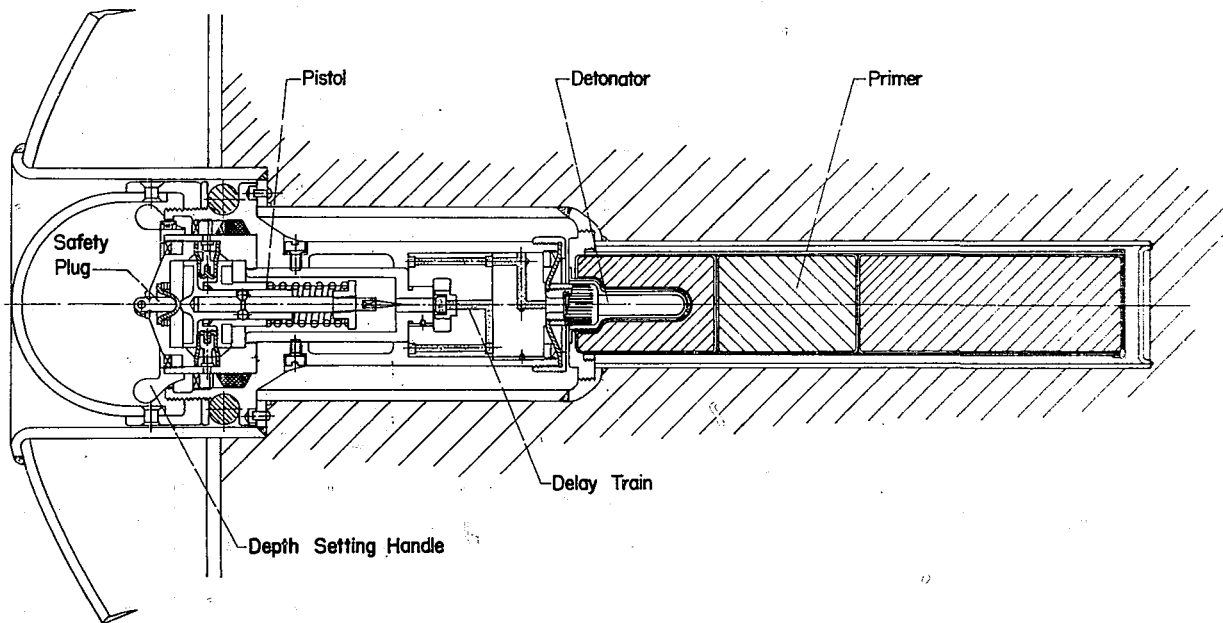
ENCLOSURE (A)



Depth Charge Type 4

ENCLOSURE (B)

FIRING ARRANGEMENT OF DEPTH CHARGE TYPE 3



ENCLOSURE (C)

List of Material Shipped to OIL, Indianhead, Md.
(For study in connection with depth charges.)

TYPE 4 DEPTH CHARGES	JE 21-4969-1
	JE 21-4969-2
	JE 21-4969-3
EXPERIMENTAL DEPTH CHARGES	JE 21-4967-1
	JE 21-4967-2
DEPTH CHARGE PISTOLS	JE 21-4552
	JE 21-4553
	JE 21-4564
AERIAL DEPTH CHARGE	JE 21-4550