

NAVAL TORPEDO STATION,

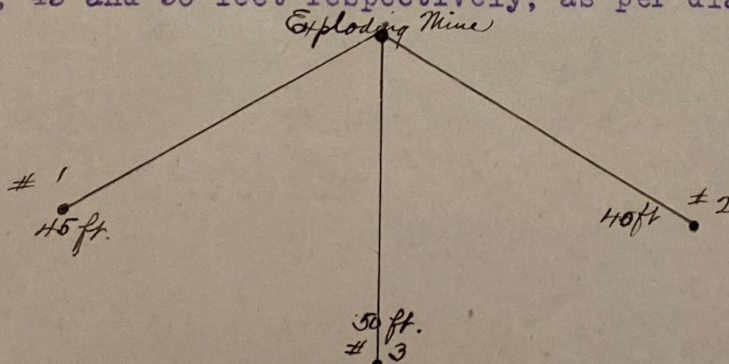
Newport, R.I.

July 13, 1904.

Sir:

1. I have the honor to submit the following report relative to experiments conducted in Coddington Cove on the 8th instant with Naval Defense Mines, to determine the distance that they may be planted apart without danger of exploding adjacent mines.

2. Four Naval Defense Mines fully equipped as used in actual service, with the exception that the gun cotton charges in the cases of mines Nos. 1, 2 and 3 were substituted by the use of sand in the torpedoes and wooden blocks in the dry primer cases, bringing them up to the required weight, while the loaded mine contained 160 lbs. of wet gun cotton and 10 lbs. of dry, as primers; but in each case the experimental mines, Nos. 1, 2 and 3 were connected up with live detonators in accordance with the prescribed regulations. All mines had 10 feet submergence and were planted in 30 feet of water, placed apart 40, 45 and 50 feet respectively, as per diagram,



and for recovering the anchor of the exploding mine, a 4" manila line was bent on to one of the handles and the end



7/13/04.

buoyed. The latter mine was exploded at high tide, the Bay being calm and no tidal currents perceptible at time of explosion. Time in planting the four mines was 39 minutes, which included the laying out of the mine leading wires and the planting of the three battery boxes. Elapsed time from the pressing of the firing key to the settlement of the water was 9-4/5 seconds. The firing of the exploding mine was conducted from the mine launch used at this Station, at a distance of 800 feet, by means of a dry battery consisting of 20 cells in series, each having a voltage of 1.5 volts.

3. When preparations were made for recovering the mines and the anchor of the exploded mine, it was found that the latter was firmly imbedded in the mud, and by actual measurement of the mooring line which was bent on for recovery of same it was found to be in the mud about 27-1/2 feet deep.

4. Condition of Mines. No.1. (Distance 45 feet)

Top half blown apart from lower, carrying with it the four torpedoes and circuit closer. This part we have been unable to recover. Lower half, badly buckled on flanges and one mooring eye for tripod leg pulled out; anchor; battery box; mine leading wire; stuffing boxes, and distance line found intact.

No.2. (Distance 40 feet.) Top part blown apart from lower. Buckled on the flanges, much the same as No.1.



7/13/04.

No. 3. (Distance 50 feet.) Buckled on flanges, filled with water and sank. Gasket cut in half circumferentially. Three of the four detonators exploded.

5. Remarks. While the upper part of the two nearest mines with torpedoes and detonators were lost, it is safe to assume that the detonators were fired, inasmuch as three out of four detonators exploded in the mine which was most distant (No. 3). The damage to the mines was greatest to the mine at 40 feet and least to that at 50 feet, but all of them would have been exploded had they been loaded. The distances were carefully measured and buoyed before the mines were laid and were subsequently verified.

W. R. Gherardi  
Lieut. U.S.N.



