QUESTIONS AND ANSWERS FOR USE IN THE INSTRUCTION OF TORPEDO COMPANIES AND DETACHMENTS (NEW SYSTEM)

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649227273

Questions and Answers for Use in the Instruction of Torpedo Companies and detachments (new system) by Various

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

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VARIOUS

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Trieste

WAR DEPARTMENT

OFFICE OF THE CHIEF OF STAFF :: WASHINGTON

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WASHINGTON
GOVERNMENT PRINTING OFFICE
1908

WAR DEPARTMENT.

Document No. 310.

Office of the Chief of Staff.

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QUESTIONS AND ANSWERS

FOR USE IN THE

Instruction of Torpedo Companies and Detachments.

(NEW SYSTEM.)

Upon the recommendation of the Chief of Artillery, approved by the Secretary of War, the following is issued as a guide in the instruction of enlisted men in companies and detachments assigned to mine defense where the new system is installed.

MATERIAL OF, AND DUTIES IN, THE LOADING ROOM.

1. What apparatus is used in making a turk's head?

A navy knife, 1 pair cutting pliers, 1 hammer, 1 turk's head collar (large or small), 14 feet marline, are required.

2. What is used in making a telegraph joint?

Cutting pliers, navy knife, and a small file. If the joint is to be insulated add rubber tape.

3. What is used in making a joint to be put under water?

A navy knife, cutting pliers, file, rubber cement, rubber tape, tinfoil, and protective tape. A torch, or

waste saturated with alcohol or oil, is needed for vulcanizing the joint. Brass jointers are used when authorized.

Before placing the joint in water, the turk's heads must be clamped in a distribution box or junction box.

4. Name all the parts of an assembled mine.

Mine case, mine cap, compound plug, complete—including plug proper, lower tube, fuze can cap, fuze can, mine transformer, ball seat, circuit-closer case, distance ring, springs, steel ball, 2 brass washers, 2 rubber packings, 1 brass follower, 1 steel follower, 3 lead washers, and set screws; loading wire, "C" wire, priming charge, 2 fuzes, 100 pounds of explosive, and ruberine.

5. Explain how to prepare a compound plug.

The transformer to be used is first tested for a good circuit between the red wires, a poor circuit between the black wires, no circuit between the red and black wires, and no circuit between either wire and case. The upper black resistance terminal is cut to 1½ inches in length, the end bared, and then clamped in the terminal stud in the neck of the transformer. The ball seat is then screwed home and the ball put in place. The circuit-closer case containing springs, distance ring and steel ball is then screwed home. (In preparing mines for service, before screwing up the threads of the circuit closer, transformer, fuze can, and plug proper are coated with ruberine or some similar waterproofing material. This is omitted when compound plugs are prepared for drill or for instruction purposes.) A piece

of "A" or loading wire, 20 feet in length, is fastened by a telegraph joint to the primary terminal and the joint is taped. This length is for convenience in testing and is cut off 15 inches from the compound plug when the mine is assembled for planting. This wire and the two secondary wires are drawn through the fuze can, which is then screwed on the transformer.

Two fuzes which have been tested for continuity of circuit are put on by telegraph or jointers joint in multiple across the secondary (red) terminals and the joints taped. The primer charge, about 1 pound of dynamite, is put in a cloth bag provided for the purpose, the fuzes embedded in the charge and the bag tightly tied around the neck. The charge is then pushed up in the fuze can. The loading wire is drawn through the fuze-can cap, a rubber packing pushed over it into its stuffing box, and a brass washer is threaded down so that it is close against the rubber packing. The follower is then screwed home with moderate pressure, and the lower tube is screwed into place, compressing a lead washer between it and the fuze-can cap. The loading wire is drawn through the hole in the plug proper and the latter screwed hard against the lower tube, a lead washer being used between them.

A rubber packing and brass washer are now placed upon the loading wire and forced into their seats in the plug proper by means of the follower, as in the case of the fuze-can cap. Special care must be exercised in forcing the followers home, as the insulation of the loading wire is liable to be pinched if the rubber pack-

ings are squeezed down too much. The plug is then tested with a circuit detector for poor circuit when in vertical position and for good circuit when turned beyond 45°. When a transformer is used, as in this system, this test may be made without any danger.

If it is desired to record the actual resistance with the plug in vertical and horizontal positions, this may be done by testing with a voltmeter; it is not really necessary and would be omitted if there were not an abundance of time.

In service if the loaded plug tests out satisfactorily all set screws are then set up.

Continuity of circuit of fuzes should be tested only under specific instructions of a commissioned officer.

6. What apparatus is used in preparing a compound plug?

Compound plug complete, as described in (4), bench vise, S-wrench, large monkey wrench, screw-driver, small pliers, navy knife, loading wire, cotton braided wire, priming charge, fuzes, rubber packings, brass washers, followers, lead washers, set screws, red lead or ruberine, circuit detector, brass jointers, rubber tape.

7. How are mines numbered?

Facing the direction from which the enemy is expected the mines in each group are numbered from left to right—No. 1 on the left.

Groups are numbered in a similar way; the outer left-hand group is No. 1, the next one to the right is No. 2, and so on through outer line; the left-hand group of next line has the number following that of the right-hand group of first line.

8. How are the mooring ropes prepared, and what are the rules for length of mine cables and of mooring ropes?

The mooring cables are cut off with square ends and the ends passed through the holes in the mooring sockets. The strands and wires are untwisted and spread out for a length equal to the length of the socket hole. The rope is then pulled back until the loose ends are about flush with the top edge of the hole; a piece of marline is tied about the rope below the socket. If necessary to hold the socket a piece of burlap may be wrapped around below the socket and a fold allowed to fall over the hand. Generally means can be found to set the socket upright while pouring full of alloy. Great care must be taken to see that there is no water or surplus oil on the socket or mooring rope before pouring the alloy.

Mines are planted with a submergence of 5 feet below mean low water.

Where ordinary anchors are used the mooring ropes must be prepared for depths obtained by sounding. If sockets are used, the ropes for No. 32 cases are but 10 feet less than the ascertained depths at mean low water. This allows 5 feet for submergence and 5 feet for the mine, mine bail, sockets, shackles, and anchor. For the larger mine cases an additional allowance must be made for the length of the cylindrical part of the case. Finally each mooring rope is tagged at each end with the number of the corresponding mine.

Mine cables are cut to the following lengths plus twice the approximate depth of water: