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NAVAL TORPEDO SCHOOL.

THIRTIETH ANNUAL REPORT

ON THE

**INSTRUCTION AND PRACTICE OF TORPEDO
WARFARE**

IN

H. M. NAVY.

1909.



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Letter from Captain of "Vernon" submitting Report.

H.M. Ship "VERNON," at Portsmouth,

27th January, 1910.

SIR,

I HAVE the honour to forward, for your information, and for transmission to the Lords Commissioners of the Admiralty, the Thirtieth Annual Report of the Naval Torpedo School.

I have the honour to be,

Sir,

Your obedient Servant,

R. PHIPPS HORNBY,

Captain.

Admiral Sir Arthur D. Fanshawe, G.C.V.O., K.C.B.,

Commander-in-Chief.

INTRODUCTORY REMARKS.

The personnel of the Torpedo Service is dealt with on page 1, and on pages 2 and 4 are tabulated statements of officers and men who have been instructed in the Torpedo Schools in 1909.

Whitehead.

Some information on Heater torpedoes which has been collected since the issue of the Heater handbook is given in Section IV.

The present state of affairs in connection with gyroscope safety gear is explained, together with the steps now being taken.

The new telescopic director is described, and several questions in connection with director problems are gone into.

Trials have been carried out with the "Indomitable's" submerged tube with the ship steaming 25 knots.

Trials have been carried out in "Furious," firing a submerged torpedo without the shield bar being run out.

A 21-inch submerged tube has been constructed for trial in Portsmouth dockyard, and fitted in H.M.S. "Spartiate."

A trial torpedo battle practice has been carried out by certain ships of the Home Fleet.

The question of fitting fore bridge firing gear to later destroyers is under consideration.

A 21-inch above-water tube has been fitted for trial in H.M.S. "Waveney," and has now been transferred to "Rocket." Details are given.

A day and a night competition for torpedo boats and destroyers has been carried out this year.

Electric lighting.

In *Section VI*, will be found a description of Plates showing—

Present types of 24-inch searchlight projectors.

Lift motor circuits as fitted in H.M.S. "Vincent."

Circuit of Lawrence Scott motor generator for searchlights.

Bonnets for searchlight projectors.

The following various subjects are dealt with, viz. — Portable magazine lamps. Leather braided cables. Electric governor for dynamo. Curves for searchlight motor generators. Telescope carriers. 60-volt arc. Metallic mirrors. Miniature searchlights. Rolling platform. Universal transmission gear.

Mining.

Defects in packing of Mark I. spherical mines. *See Annual Report, 1908, page 47.* Steps have been taken to overcome these defects, and a report on the subject is included at page 44.

The safety rings of Marks I. and II. spherical mines having shown signs of deformation under the stress of the springs supporting them; a strengthened form has been under trial with satisfactory results.

The operation of loading a "mine carrier" (from which vessels it is intended to replenish the mine layers) has been carried out at Portsmouth with the object of ascertaining the most suitable method of stowing mines, sinkers, and pistols. Extracts from the reports of Capt. Chatterton, H.M.S. "Thetis," and the N.O.O., Portsmouth, are included.

Operations have been carried out by the East Indies Squadron on the S.S. "Sir John Jackson"; H.M.S. "Hyacinth's" report on the subject is included.

Extracts from a report on a visit to the new Explosive Co.'s works at Stowmarket are included.

Trials have been carried out to ascertain the best method of laying floating mines connected by a grass line.

Trials have also been made to ascertain the best charge of explosive, and the depth it should be below water to imitate most closely the splash of a 12-inch projectile.

An extract from the report on the attack on a boom by H.M.S. "Ferret" is included.

An inventor has submitted a design for a mine intended to keep its correct depth at any state of the tide. A general description of this invention has been given.

Considerable progress has been made in improving and standardising the methods of sweeping for mines. A report from "Actæon" and some notes on the subject by Capt. Greatorex are given.

The question of a suitable form of dynamometer for detecting the presence of mines in a sweep has not yet been decided. Reports from H.M.S. "Speedy," and from "Cochrane" and "Shannon," are included.

The most suitable type of buoy for buoyage of channels to be swept has been under consideration. Comparative trials have been carried out and "Vernon's" report on the subject is given.

Sketches of the Dan and Munro buoys are included.

Referring to Annual Report for 1908, page 59, a sketch of the rocking plate dropping gear fitted in H.M.S. "Latona" is given.

A sketch is also included of the temporary shears used in the stern of the gunboats employed in sweeping.

Sketches are included of the two methods of rigging a 50-foot picket boat for laying spherical mines.

A 12-foot kite with a chain span, and with stronger fittings, has been designed; a sketch is shown.

Various proposals which have been put forward for the improvement of turret gun circuits will be found on page 65.

Gun circuits
and commu-
nications.

The trials of different types of dry cells have been continued, and a description of the various types, with the results of the trials, are given on page 7.

Several loud-speaking telephones have been tested, but none has yet been found to be entirely satisfactory. Details are given on page 70.

All the latest additions to fire-control installations are not dealt with in this issue, on account of a new edition of the Fire-control Handbook being now in the press. The Chatham resonance system is described, however, on page 71.

A number of proposals for the improvement of light Q.F. and searchlight control gear are described on page 71, and on page 73 will be found a reference to the night defence practices of the Mediterranean Fleet, the details of which are given in an Addendum.

A Committee has been formed with the Captain of "Vernon" as President, the Captain of Navigation School, the Inspecting Captain of Submarines, and the Superintendent of Signal Schools as members of the Committee, to consider the use of submarine sound signalling apparatus in ships. Details of this subject are given on page 75.

The following ORDERS relative to TORPEDO WORK have been issued in the G. and T. ORDERS during 1909 :—

Subject of Order.	Date of Order.
Air compressing machinery - - - - -	January.
Annual torpedo firing competition for T.B.'s and T.B.D.'s - - - - -	July.
Amendments to ditto - - - - -	September.
Countermining, observation mining, and explosive sweeping, abolition of - - - - -	March.
Drilling of screw for holding impact stopping gear for torpedoes - - - - -	February.
Heater torpedoes, additional instructions for running - - - - -	February.
Ditto, directions for use with - - - - -	February.
Ditto, distribution of - - - - -	August, September.
Ditto, testing for air leaks in - - - - -	November.
Forms S. 285 and S. 303, rendering of - - - - -	December.
Impact stopping gear - - - - -	November.
Naval Ordnance Stores, alterations in proportion of - - - - -	February, September, and December 1908.
Nightsight circuits, one cable only from 3 or 5 way box to switch - - - - -	December.
Rusting of inside of fuel pots of Fiume III ² heaters - - - - -	October.
Silencing of blowers, Service Mark II, W.T. installation - - - - -	October.
Spherical mines for instructional purposes - - - - -	January.
Supply of air to the air blast gear of 9·2-inch V.S. mountings - - - - -	October.
Survey on gun and torpedo machinery, &c. - - - - -	April.
System of accounting for Whitehead torpedo tools and spare gear - - - - -	August.
Tubes, V.S., electric wireless, defects in, to be reported in half-yearly report of missfires. - - - - -	November.
Warhead doors, alteration of - - - - -	June.
Warheads, to be fitted with coiled G.C. yarn in lieu of felt discs - - - - -	June.
Wet gumcotton, examination of tins for pinholes - - - - -	November.
W.T. installation, Mark II., method of reducing range by means of an auxiliary impedance coil. - - - - -	June.

CIRCULAR LETTERS issued during the year and still in force.

Subject of Letter.	Date.
Maintaining secrecy of fire control arrangements of H.M. ships. G. 5439 - - - - -	20th April.
Recovery of torpedoes - - - - -	22nd October.
Standard of examination for telegraphists, and leading telegraphist - - - - -	30th October.

EXTRACTS from the last two HALF-YEARLY ISSUES of PROGRESS in GUNNERY.

Miniature Automatic Arc Lamp.—Bad reports on Nernst lamps for this purpose from sea, suggestion from Channel fleet for utilizing cruiser arc lamp in its place. Trials in progress with miniature automatic arc lamp to take 3 amps. Page 87, No. 12.

Searchlight Trials.—Carried out at Aldershot on nights of August 19th, and 21st 1908. To determine value of searchlight in aiding troops attacking or defending a position. Page 87, No. 12.

H.M.S. "Foresight" System of Fire Control.—Page 8, No. 13.

Plate showing Night Deflection Teacher, designed to use the cruiser arc lamp. Plate to face page 13, No. 13.

Electric Control for training and firing guns. Page 22, No. 13.

PLATES AND LITHOGRAPHS.

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