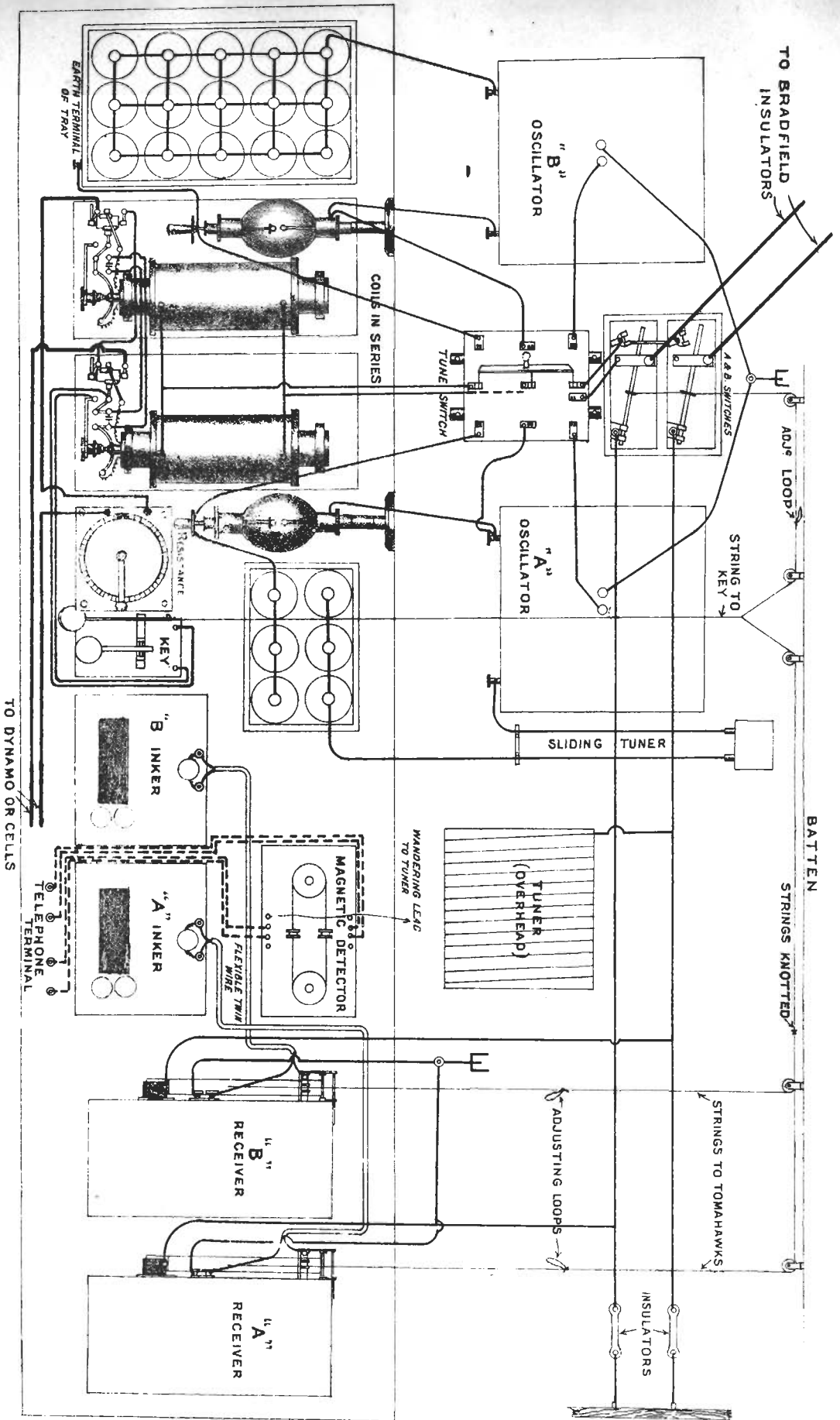


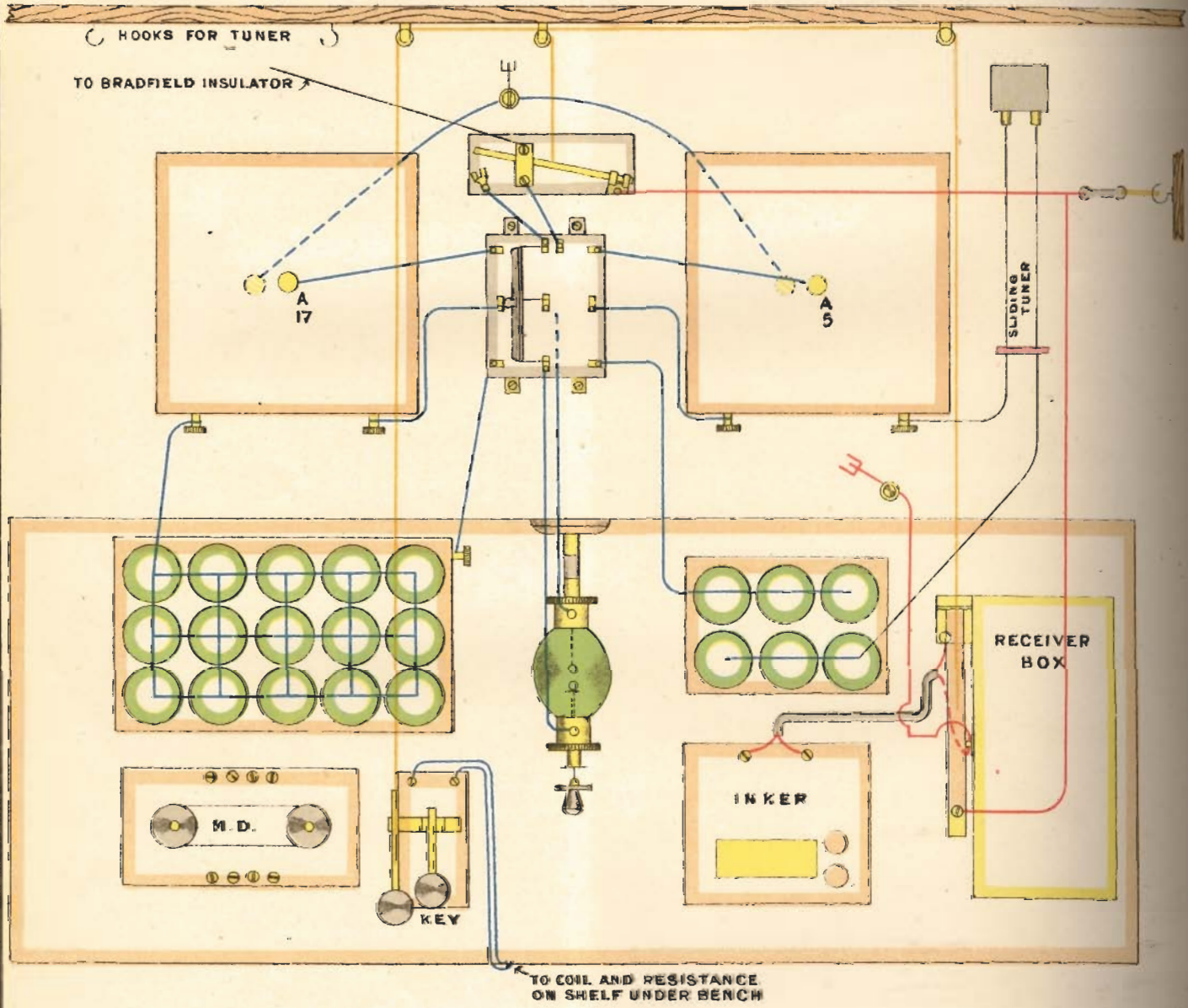
EQUIPMENT OF THE FLEET.

- All ships to be fitted with wireless telegraphy. Proposal to fit destroyers. Wireless telegraphy apparatus will in future form part of the equipment of every ship above the size of a destroyer. The question of fitting the new coastal destroyers is under consideration. It is proposed to supply one set of a special apparatus to each four destroyers, every destroyer having certain fittings, such as Bradfield insulators, so that the apparatus can be quickly transferred from one to another.
- New plans for wireless telegraphy fittings. The plans and specification, for the wireless telegraphy fittings in ships have been revised. New plans and an altered specification have been approved by the Admiralty.
- Offices in battleships and cruisers. Offices in battleships, first-class cruisers, and all large craft are to be situated on the "after shelter deck abaft the mast if possible, and not nearer to it than 20 feet, if this " can be arranged for." The internal dimensions are to be 12 ft. x 9 ft. x 7 ft. 6 ins.
- Offices in "Scout" and "Gem" class. "For future, ships similar to "Scouts" or "Gem" class, the office is not to be less than 7 ft. x 6 ft.," and every effort will "be made to obtain larger dimensions."
- Internal fittings of offices. The internal fittings in the larger offices allow of a bench 12 ft. x 3 ft., under which are drawers, cupboards, and a shelf strong enough to support the coils. Should extra bench space ever be required, the coils will be placed on this shelf, and small insulators provided for leading the current to the tune switch. There is also a silent cabinet, cupboard for papers, a large cupboard, hinged cabin-table, electric radiator, and navyphone to the fore-bridge. The smaller offices are similar, except that the coil is expected to be placed on the shelf, and insulators are provided and placed. These insulators consist of a metal rod, surrounded by ebonite, and are fitted so as to form a support for the spark gap. No silent cabinet or large cupboard is provided for the smaller offices. A sending earth and receiving earth are placed. They are connected direct to the hull of the ship. The back of all offices above the bench is wood-lined, and a batten for the pulleys is fixed to the ceiling. Two battens for the "A" and "B" switches are also in position.
- Charging board. No charging board will be supplied to larger offices.
- Bradfield insulator. The old form of deck tube is replaced by the introduction of the Bradfield insulator. This consists of a steel rod, insulated by ebonite. A zinc hood keeps the insulator dry in wet weather. The rod passes through a simple gland in the deck. It is fitted with two nuts and a piece of iron to take the strain at the top, and a butterfly nut at the bottom for the office side of the connection. A cowtail is not required unless the lead from the office to the insulator is complicated.
- Fittings aloft. The wireless telegraphy gaff is retained, but the halliards are doubled. No signal halliards are to be fitted to the wireless telegraphy gaff.
- Main gaff abolished. The main gaff is abolished wherever it interferes with wireless telegraphy, i.e., whenever the office is abaft the mainmast.
- Triatic stay insulated. When a triatic stay is fitted it will be insulated at the ends.
- Fittings for T. aerial. Halliards will be rove through double blocks fitted on each mast, as high as possible, consistent with non-interference with the masthead semaphore. This will enable a T. aerial to be easily rigged.
- Ships to be altered. These arrangements only apply in their entirety to new ships. Ships already fitted will only be brought up to date in cases where the necessity is urgent enough. The only ships that will be altered at all are 1st class battleships of the "Majestic" and subsequent classes and 1st class cruisers of the "Cressy" and subsequent classes.
- Standard Service Installation. The Standard Service Installation, 1904, has been revised and replaced by the Standard Service Installation, 1905 (see Plate I.). Plate I. differs from the sketch issued with the instructions, in that it shows a Newton's resistance in the place of the old series resistance.

STANDARD W. T. INSTALLATION. 05.



REDUCED SET.



— SENDING CIRCUIT
 — RECEIVING

The accompanying diagram shows the method of placing the W.T. instruments recommended to ships using a full set. It differs in certain points from the Standard Service Installation, 1904, as laid down in the Annual Report of Torpedo School, 1904.

Some of these points are essential and some are only matters of convenience. The following details are to be altered at once, or as soon as the necessary instruments can be obtained :—

1. The tune switch is to be installed and joined up in the position shown. It should be mounted on two wood battens similar to those usually provided for the "A" and "B" switches.

As one of the leads from the secondaries of the coil passes behind the switch and up through the centre, it must be at least 5 inches clear of the bulkhead and well clear of the wood battens. Leads should be joined up as shown.

Should the length of the leads from the aerial terminal to the tune switch, added to the length of lead from the tune switch to the "A" and "B" switches, plus 3 inches, be much greater or less than 2 feet, the difference must be subtracted or added to the aerial at some other point.

Position of the rocker of the switch :—

- (a) When waiting, central as shown.
- (b) Sending and receiving on "B," over to left.
- (c) Sending and receiving on "A," over to right.
- (d) Receiving by double reception, central.

2. The coils are to be joined in series as shown.

In diagram the right-hand coil is the working coil. It should occasionally exchange duties with the idle coil. The secondaries of similar coils should be joined in parallel; dissimilar in series.

3. Telephone terminals should be placed as shown.

4. The leads from the horizontal aeriels to the receiver boxes are exchanged, making the lower aerial receive for "A" and the upper for "B."

5. Two resistances in series, instead of one, should be fitted.

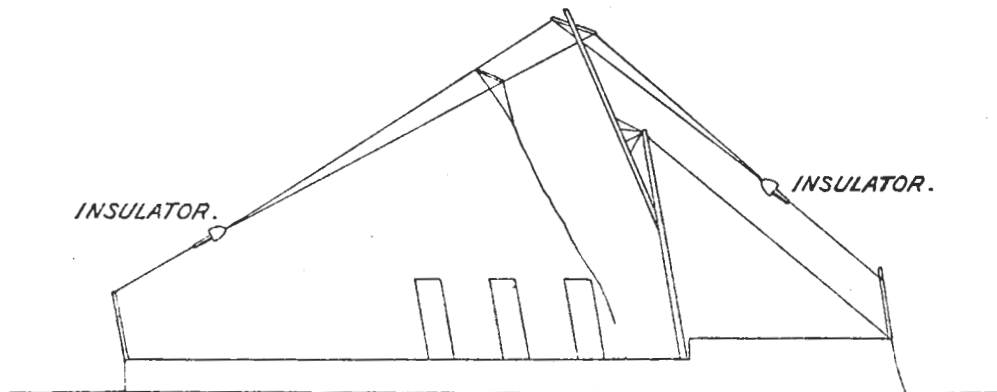
The following differences are not sufficiently important to justify any alteration in an office already fitted :—

- (1) The spark gaps are horizontal, and the "A" spark gap is shifted nearer the coil, where it is better protected.
- (2) An alteration in the "A" tune leads consequent on the alteration in position of the "A" spark gap.
- (3) The key is placed on the left of the inkers, so that when the operator is sending he can adjust his coil breaks with ease.

Plate II. shows the method of arranging a reduced set of apparatus recommended for the smaller offices. The actual method adopted cannot always conform to this standard owing to the shape and size of the offices. Reduced set installation.

The aerial for scouts, destroyers, and other small craft, should be of the T shape, Aerial for scouts and destroyers.

FIG. 2.



The feeder should be joined to the roof, as nearly as possible in the centre.

At the point where the feeder joins the aerial there should be a spreader, otherwise the wires of the roof will be drawn together there.

When there is no great height above the funnels it may be found advantageous to use Pattern 600 instead of ordinary bare aerial, as it has been noticed that the smoke from the funnels has a very decided effect. This is due to the ionising properties of the gases forming the smoke. Effect of smoke.

In destroyers the difficulty of insulating the aerial is very great. The harm due to faulty insulation can be eliminated to a great extent by placing condensers in series with the aerial down below. This will be done in the destroyer set. This condenser reduces the amount of energy which the aerial is capable of holding when perfectly dry, but minimises the losses in the aerial when damp. Insulation difficulty in destroyers.