

SUB-SECTION **LB** RADIOGONIOMETERS  
RADIOGONIOMETER S25 PAGE LB 2

Date of design - 28.5.  
 Where fitted - D/F Outfit 37 and Receiver Outfit 34.  
 Reference - Admiralty Handbook of W/T (1931) paragraph 792.

Radiogoniometer S 25 is made in two patterns, Pattern 7480A (20 mics) being used with D/F Outfit 37 (see page 145) and Pattern 7482 (250 mics) in Receiver Outfit 34 (see page 147).

This instrument consists of two field coils (22), (23) and (24), (25) placed very accurately at right angles to one another, and a search coil (21), which can be rotated, in the space enclosed by them. Each field coil is split into two halves, the inner ends of each half being connected at the terminals. Coils are split and separated in this manner so as to give a more uniform magnetic field when current is passing through them. The outer ends of each field coil are brought to terminals which are connected to leads to the D.F. earthing switches (123), (124) in the legs of each loop aerial (see page 146). In connecting these leads great care must be taken to connect the legs to the appropriate terminal of the goniometer. The four inner ends of the half coils are made common and connected to sensefinder 341 (see page 102). Great care must be taken not to strain or distort the goniometer box as any error in the angle of the field coils will render the instrument inaccurate.

The search coil (21) is rotated at right angles to its axis in the magnetic field due to the field coils, by a handle on top of the goniometer box. Attached to this handle is a pointer (5) which moves over a fixed scale (7) graduated 0 - 180° Red and Green. Outside the fixed scale is a rotatable scale (4) graduated from 0 - 360° which is driven by the ship's master gyro compass, scaling true bearings to be read direct off the goniometer. Care must be taken to obtain a check from the master gyro compass at least once a watch when D/F watch is being kept, as any error in the gyro repeater will introduce an error in the true bearings read. The pointer itself consists of three arms (9), (14), (11), the centre (9) of which carries an arrow opposite which the bearing is read off. The left-hand arm (14) can be locked and the remaining arms moved. The three are connected by an angle bisecting device consisting of a pivot sliding in a slot in the centre arm for two equal links symmetrically attached to the outer arms so that the centre arm exactly bisects the angle between the two outer arms. This is of use when the strength of signals is poor and the zero covers a considerable space. The same strength of signals can then be measured on either side of signal and the centre arm will indicate the true position of the zero.

The goniometer box is lined internally with copper to act as a screen and prevent any mutual inductance between field coils and the receiving instrument, this copper screen being earthed.

The terminals are marked as follows:-

26	} Search Coil	29	} Fore	35	Aft
27		30		36	To Earth.
22	Port	31	Starboard.	34	

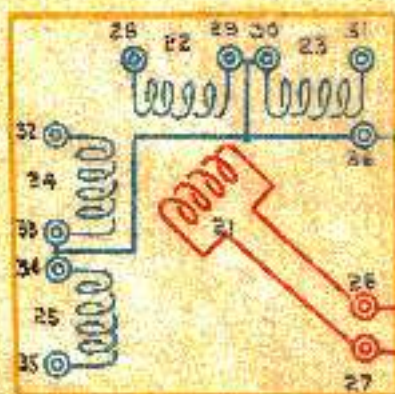


FIG. 2

To Set the Pointer. If when doing test number 72 (see page 1412 figure h.) it is found that one zero does not exactly come at 0°, it is necessary to adjust the pointer. To do this: fix the pointer (9) on 0° (by clamping the angle divider), unscrew the screw (37), rotate the search coil handle till the zero is obtained and set up the screw (37) again. Care should be taken not to damage this screw.

To Set the Sense Arrow. Unscrew the screw (38) on top of the search coil control handle. This allows the top portion, on which is engraved the sense arrow, to be moved in any direction without altering the position of the search coil. Set the error in the correction direction (at right angles to the pointer (9)) and then tighten the screw (38).

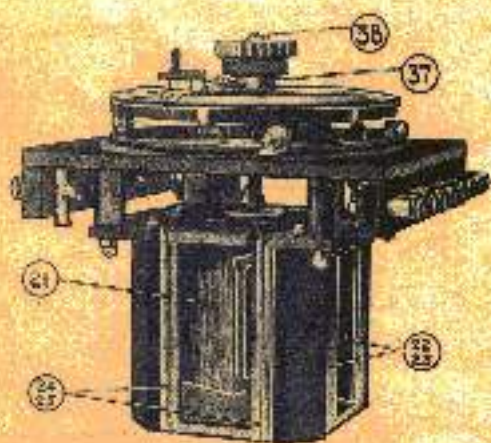


FIG. 6

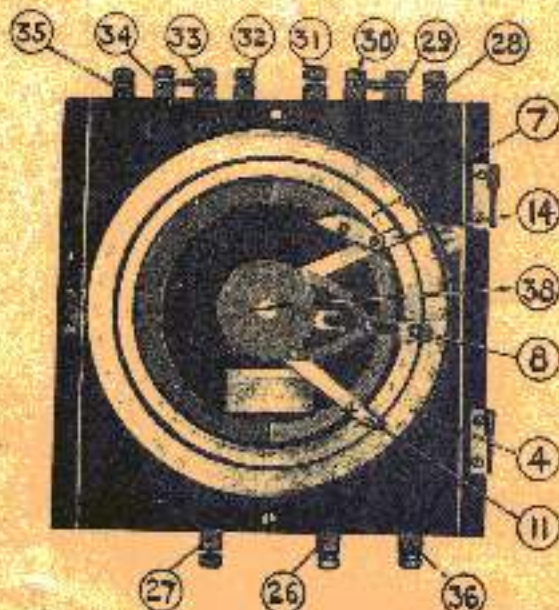


FIG. 5