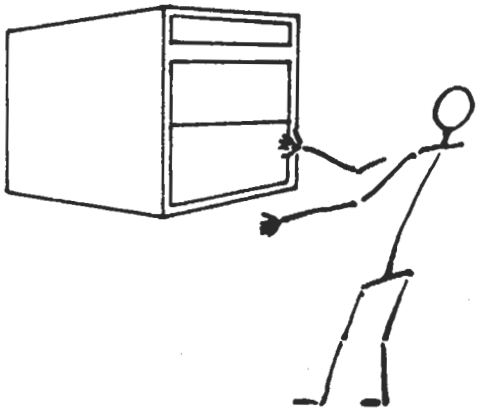
TYPE 274 & 275 SERVICING THE DISPLAY PANELS

THE MORAL IS :- TAKE CARE OF IT !.

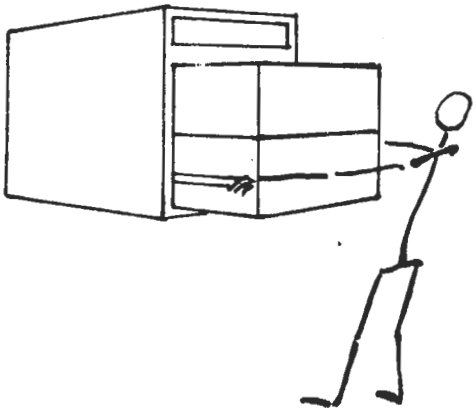
1

SOMETHING'S WRONG! THE RADIO MECHANIC
COMES AT ONCE. NO NEED TO PANIC



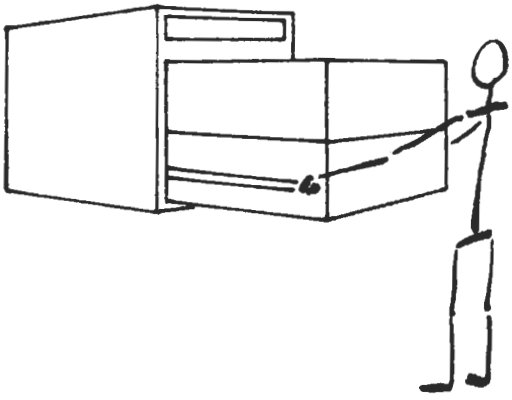
2

SO GENTLE JACK TO LOOK AT THE JOB
GETS THE KEY AND TURNS THE KNOB



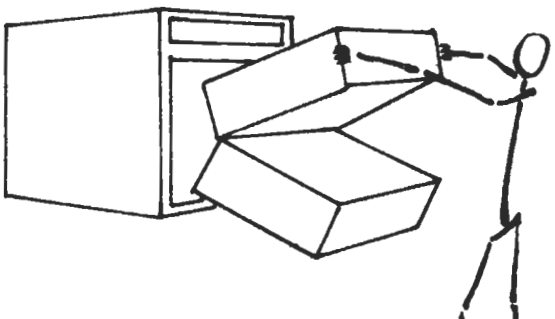
3

PULLS IT AJAR AND GRASPS THE SLIDES
TAKES THE WEIGHT AND OUT IT GLIDES



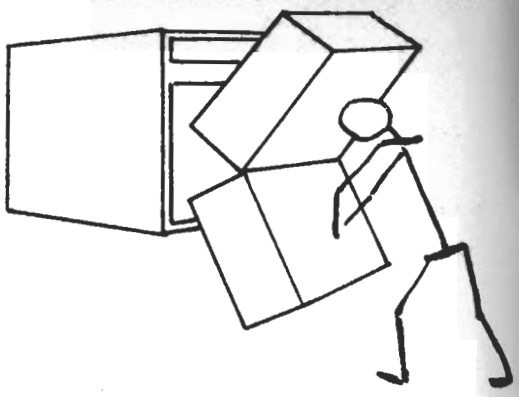
4

HE OPENS IT UP USING THE LATCHES
CARRYING ON HE FINDS IT CATCHES



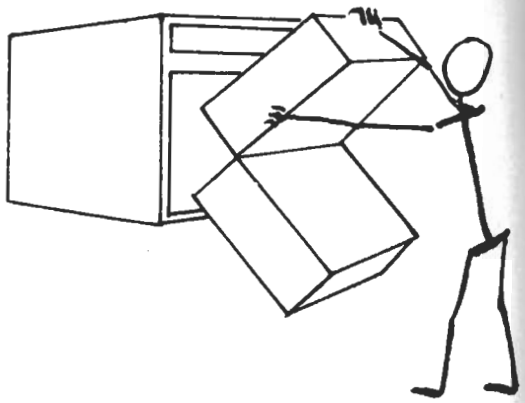
5

THERE'S THE FAULT – A DREADFUL SIGHT
BUT VERY SOON HE'LL PUT IT RIGHT



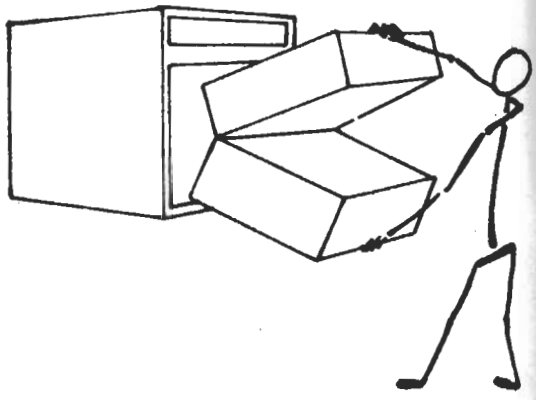
6

HE RELEASES THE PAWL-AT SIDE SITUATED
HOLDING THE CRADLES AS HEREIN RELATED



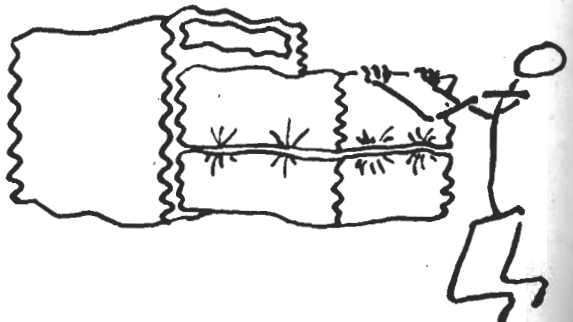
7

EXACTLY BALANCED HE SHUTS IT WITH EASE
ESPECIALLY CAREFUL IN HEAVY SEAS



8

GENTLY DOES IT -THERE'S NO NEED TO SLAM IT
LETTING IT CRASH HE WOULD ONLY JAM IT.



TYPE 275 THE NEW HA/LA GUNNERY FIRE CONTROL FIRE

Radar 275, the successor to Type 285, is expected to go to sea as part of the Mk.VI Directors (British) and Mk. XXXVII Directors (U.S.) in British and Dominion new construction destroyers and above starting June 1944. Radar 275 is an integral part of the ships' Fire Control System. It can provide accurate Radar Range, Radar Bearing and Radar Elevation (Angle of Sight) of a target.

This important new Gunnery Radar development, incorporating modern Radar technique, comprises the following items of equipment:-

(i) Duplicate Power Supplies, fitted in the Low Power Room where space permits.

(ii) Transmitter, Receiver and 242 Interrogator Aerials, fitted on the H.A. Director Tower.

(iii) Modulator and Receiver Panels } fitted in the H.A.C.P. or T.S. in Destroyers where space permits.

(iv) Display Panels }

(v) Interrogator 242, fitted with the Modulator and Receiver Panels.

The outstanding features of the set are the Aerial System and the Display Panels.

AERIAL SYSTEM.

The 275 Aerial System will be fitted on:-

(i) Mk VI Director

(ii) Mk XXXVII Director (U.S. Director).

The Transmitter and Receiver arrays with certain items of the transmitter and the receiver equipment are fitted in Nacelles (egg like containers). On the Mk VI Director Tower, a nacelle is fitted on each side of the director, while on the Mk XXXVII Director Towers, they are fitted on top of the director.

An air conditioning system is fitted to reduce the temperature range to which the nacelles will be subjected. This is a closed-air system entirely carried on the director. The nacelles are mechanically coupled to the optical sights in the director and power elevated and trained with the optical sights on to a target.

Beam-switching in the form of Conical Scanning is provided in the Receiver Nacelle giving side-by-side presentation of echoes in the Display Equipment.

DISPLAY PANELS AND "TALLBOY".

The Display equipment provides, on four Cathode Ray Tubes, Radar range of the target, Radar bearing of the target and Radar elevation of the target, relative to the ship.

The equipment consists of four panels:-

(i) Elevation Display Panel.
Coarse elevation by "side-by-side" echoes on a C.R.Tube and a fine elevation on meter.

(ii) Coarse Range Display Panel.
Cathode Ray Tube.

(iii) Fine Range Display Panel.
Cathode Ray Tube.

(iv) Bearing Display Panel.
Coarse and Fine as for Elevation.

These display panels are built on top of the Remote Power Control units for Elevation and Training to the Director and Range to the H.A.C.S. or F.K.C. The whole has come to be known as the "Tallboy" from its pretentious resemblance to a solid piece of Victorian furniture.

Three units comprise the lower half of the "Tallboy".

(v) Elevation Control Unit (E.C.U.).

(vi) Continuous Prediction Unit C.P.U. Mk.II (which includes the R.T.U. and can also work as an A.B.U.).

(vii) Training Control Unit (T.C.U.).

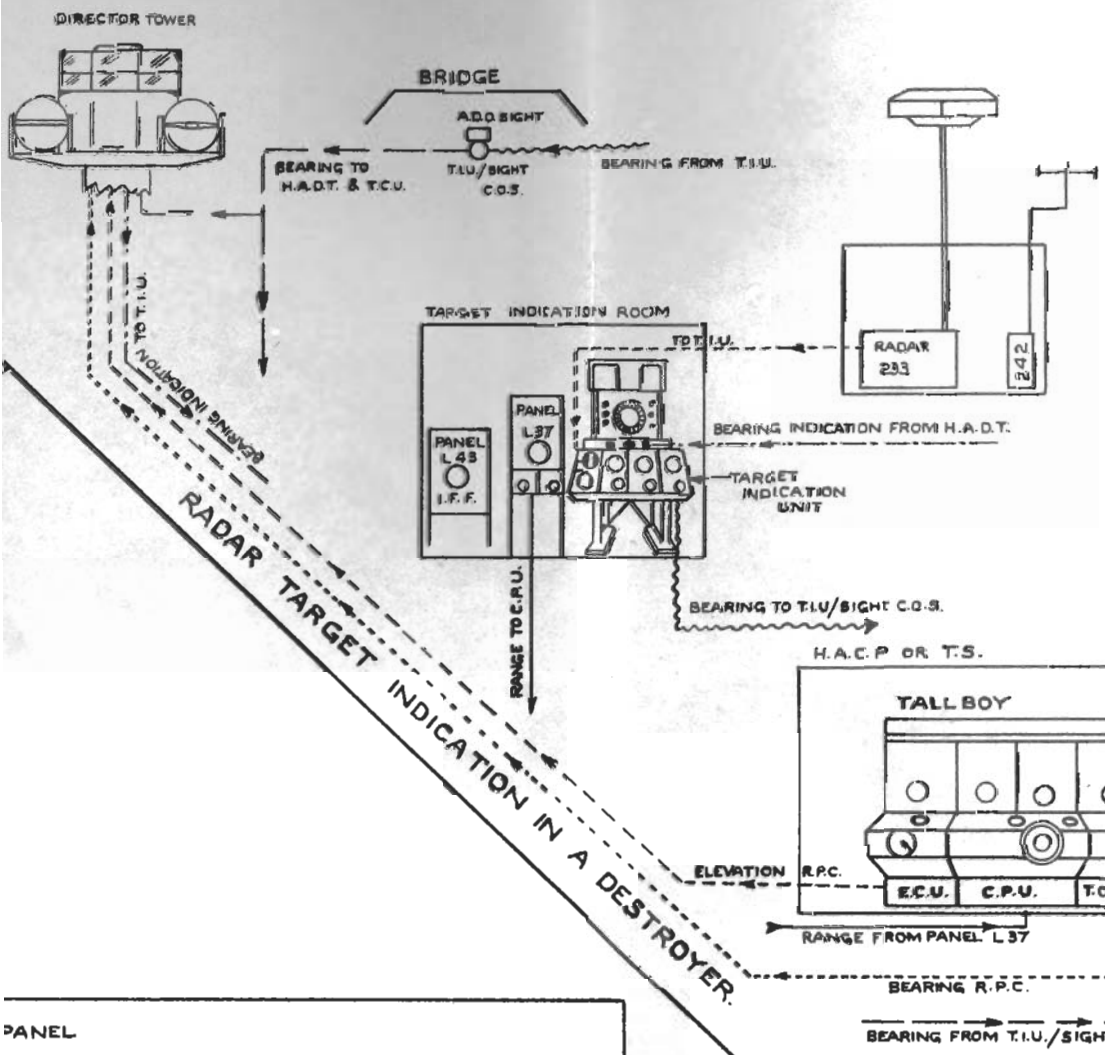
Four operators are required for the "Tallboy".

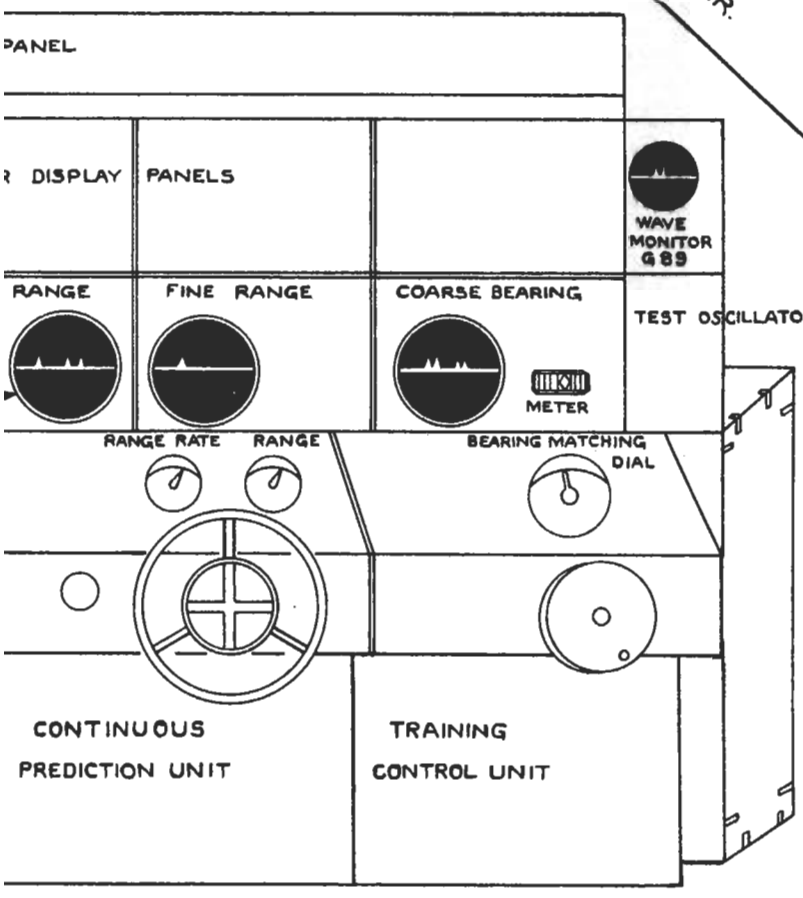
Elevation operator (Radar Layer) at the E.C.U.
Bearing operator (Radar Trainer) at the T.C.U.
Radar Range operator at the C.P.U. Mk.II (Captain of the Team).
A.B.U. operator on the Range operator's left at the C.P.U.

Display: Each of the "Coarse" cathode ray tubes covers the maximum effective range of the set. In the Fine Range Display Panel, any selected 4,000 yards of the maximum range can be presented in an expanded form. This enables range of a target echo to be read with greater accuracy. The Coarse elevation, range and bearing tubes each have a bright spot (a Target Strobe) on the trace. This target strobe is adjustable in range, i.e. it is controlled by the Range operator and moves simultaneously on all three tubes. The Fine Range Panel has a similar bright spot (a Ranging Strobe) that remains in a fixed position near the middle of the fine range tube.

The signals received, as the result of conical scanning, relating to bearing and elevation of the target echo are displayed as two echoes (side-by-side presentation) on the bearing and elevation tubes.

When the Radar line of sight coincides with the true line of sight to the target, i.e. Radar 275 aerials on target, the two target echoes appearing on the bearing tube and the two target echoes appearing on the elevation tube will be equal in height. Should the echoes not be of equal height then the radar line of sight will be either off bearing or off elevation or both.





A. B. U. OPERATOR

RANGE OPERATOR

BEARING OPERATOR (RADAR TRAINER).

DATE. 1-5-44.