RECEIVER OUTFIT DAS2

SUMMARY OF DATA

PURPOSE

A shipborne Long Range Navigational Aid consisting of a receiver and C.R.T. indicator.

BRIEF DESCRIPTION

The principle of operation of the Loran Navigational System is based on the measurement of the time interval between the reception of pulse radio signals from transmitting stations spaced several hundred miles apart.

If two stations (say "master" A and "slave" B) transmit a pulse simultaneously, an observer sited on the perpendicular bisector of the straight line joining the two stations will also receive the pulses simultaneously. However, if the observer is at a point nearer to A than to B, the signals from A will be received before those from B, and in general, the loci for observation points of given time differences are represented by hyperbolas with the two transmitting stations A and B at the Foci. In order to identify the pulses (which are similar in shape) and hence establish on which side of the perpendicular bisector the pertinent hyperbola lies, the signal from the B station is delayed by a known amount so that the first signal received in a sequence is always the A station. The received signals are displayed on a C.R.T. indicator having an upper and a lower trace, the former showing the A station pulse, the latter carrying the B station pulse. The traces are calibrated in time against an internal crystal oscillator so that, by normal practice, the time intervals may be measured to a high degree of accuracy. Similar measurements are made using a second "slave" station and the readings obtained are referred to specially prepared Loran Tables or Charts, from which the normal navigational "fix" is obtained.

Transmission of the signals is in the frequency range 1.7–2.075 MHz and reception on one of four channels in that band. Pairs of stations are identified by their pulse recurrence frequencies, the P.R.F. of the indicator scan being selected by an eight-position switch to give stationary pulses on the screen. The position of this switch is included in the notation of the Loran Tables so that the complete navigational information is provided.

PHYSICAL DATA

	Height	Width	Depth	Weight
Receiver–Indicator Outfit (including Power Supply)	17⅞ in.	28⅛ in.	22⅝ in.	210 lb
Coil, Antenna, Loading	11⅛ in.	7 in.	5½ in.	8 lb

POWER SUPPLY AND CONSUMPTION

115 V or 230 V, 50–60 c/s single phase. 0.96 pF, 300 watts. If this supply is not already available A.C. Supply Outfit DQB is required.

AERIAL

A vertical wire between 40 and 125 ft long. The aerial is matched to the receiver by a loading coil mounted in a weather–proof box conveniently located near the base of the aerial.

REMARKS

This is American equipment.

HANDBOOK

US Handbook

ESTABLISHMENT LIST

AE6

INSTALLATION SPECIFICATION

B491/R1