

CHAPTER 2 **INSTALLATION**

GENERAL

- 1 The Antenna/Transceiver is to be mounted on a rigid platform which provides clearance from other structures for the rotating antenna. The height and position of the platform is to be such that the radiated beam is unobstructed forward (i.e. beam-to-beam through the ship's head) and the vertical radiated beam clearing the ship's bow.
- 2 There are two versions of the MkV Transceiver covered in this publication:
 - (1) Low Speed Turning Mechanism CAE-A30/7.
 - (2) High Speed Turning Mechanism CAE-A30/8.
- 3 The High Speed Turning Mechanism uses an external downmast Power Supply CZZ-A22 to provide +40V to drive the turning motor. The Low Speed Turning Mechanism uses +27V power supplies from the display to drive the turning motor.

SAFETY NOTES

- 4 Electrical power supplies are to be isolated to any part of the platform when mounting an antenna/transceiver. A suitable safety platform or harness should be used to avoid personal injury when working aloft.
 - (1) A working platform is to be provided for installing or servicing the assembly. This should be positioned approximately a metre below the base of the Transceiver housing with a guard rail surrounding it.
 - (2) A flat steel plate (12mm thick approx.), pre-drilled (in accordance with Figure 1) to accommodate the Transceiver unit and the cable from the Display. The steel plate must be mounted horizontally and braced with struts for rigidity.
 - (3) The plate has to be sited in a clear area where the turning Antenna cannot be obstructed by any cables, mast halyards etc.
 - (4) The Antenna and Transceiver Unit must be hoisted to the fixing position using a secured block and tackle or rope strops.
 - (5) Safety personnel must ensure that persons do not encroach on the area of work.
 - (6) The Antenna and Transceiver Unit must **NOT** be lifted by the array, but the complete unit secured and hoisted evenly.

EQUIPMENT LOCATION

Transceiver and Turning Mechanism

- 5 The Transceiver/Turning Mechanism should be installed in such a position where Blind Arcs, caused by obstructions, e.g. masts, funnels, are eliminated or minimised. Funnels, crosstrees and other large obstructions can also reflect energy and give rise to spurious echo returns especially in close proximity to land.
- 6 The Transceiver/Turning Mechanism **must not** be mounted where the temperature exceeds 70° C.
- 7 The Transceiver/Turning Mechanism must be kept clear of ship's flexible communication aerials to avoid damage to both.
- 8 The Transceiver/Turning Mechanism must be mounted more than 914mm above any flat surface, when the flat surface is greater than the diameter swept by the antenna.
- 9 The Transceiver/Turning Mechanism must not be positioned in the close proximity of any magnetic compass or D/F aerial, etc.

40V Power Supply CZZ-A22

- 10 The following points must be considered when selecting a suitable site for the Power Supply:
 - (1) The Power Supply is designed for bulkhead mounting, away from the turning mechanism.
 - (2) Consideration must be given to accessibility for servicing and protection from adverse conditions. For ease of maintenance, the top of the power supply should not be mounted more than 1.6m above the deck.
 - (3) Ensure that there is sufficient space below the unit for cable entries.
 - (4) The power supply should be mounted in a position which allows for ventilation and cooling.

NOTE The power supply air circulation must not be obstructed.

- (5) Do not fit the power supply in an acoustic, noise sensitive area, e.g. The bridge or operations room.

FITTING NOTES

Transceiver and Turning Mechanism

11 The Antenna and Transceiver are specified and supplied separately (options are shown on Chapter 1, Figure 1). Refer to Figure 1 for outline dimensions and fixing centres. The following criteria are to be observed when installing:

NOTE: Assemble the two units together prior to hoisting into the installation position.

CAUTION

Do not remove the transparent film covering the waveguide outlet as this prevents the ingress of water or moisture.

- (1) Remove the protective caps, tapes etc. Ensure the waveguide faces are clean and free from grease. Fit the appropriate 'O' ring. Fit the Antenna array to the transceiver with the eight bolts, holding it loosely in position. **DO NOT TIGHTEN THE BOLTS.** Refer to Figure 2.
- (2) Align the waveguide from the Antenna to the Rotating Joint and fit the four waveguide bolts. Do not force the waveguide to the coupling face. Tighten the waveguide bolts evenly until the mating faces are flush. Torque load the Antenna retaining bolts to 19 to 24 Nm (14-16 lb./ft).
- (3) Hoist the Transceiver and Antenna assembly, (ensuring the slings do not foul with the Array), to the mounting plate.
- (4) Mount the Transceiver facing forward (removable cover facing aft). Fit the retaining bolts and torque load to 50lb/ft (75kg/m) then gain access to the interior by removing the rear cover.

NOTE: The outer casing of the Transceiver must be bonded to the ship's superstructure using a copper earthing strap connected to the earthing point shown in Figure 1.

- (5) The connecting cable from the Transceiver to the Display should be kept to a maximum of 60 metres. Do not exceed 60m without consulting the Kelvin Hughes Technical Department.
- (6) Fit the Monitor Arm (if supplied) onto the side of the casing and secure the clamp with the four retaining screws. The monitor arm cable is passed through the smaller cable gland and clamped. The cable screen is to be earthed by the ferrules in the cable gland assembly.

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12 The +40V Power Supply is fitted to the bulkhead using the four installation bolts provided.