TYPE 9650/R

Summary of Data

Purpose
Air-warning. Moving-Target-Indicating (MTI) Radar for Frigates. In the MTI Mode Clutter is Suppressed.

Frequency
214 - 224 MHz
(A 1.5 Hz steps approx)

Power Output
450 kW peak.

P.R.F.
To reduce the effect of interference from other radars, one of five available pulse intervals is selected:
2600 µs, 2900 µs, 2600 µs, 2610 µs, 2620 µs (± 3 µs). In the non MTI mode the P.R.F. is set by Pulse Synchronising Outfit M1.

Pulse Duration
6 µs (nominal) for MTI working.
15 µs for non MTI working.

Stagger
The pulse spacing is varied using P.U.M. For each pulse interval there is a corresponding Stagger Time:-

<table>
<thead>
<tr>
<th>Pulse Interval</th>
<th>Stagger</th>
<th>µs</th>
<th>µs</th>
<th>µs</th>
<th>µs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2580</td>
<td>2590</td>
<td>2600</td>
<td>2610</td>
<td>2620</td>
</tr>
<tr>
<td></td>
<td>± 516</td>
<td>± 516</td>
<td>± 520</td>
<td>± 522</td>
<td>± 524</td>
</tr>
<tr>
<td></td>
<td>± 3 µs</td>
<td>± 2 µs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Aerial and Receiver Outfits

<table>
<thead>
<tr>
<th>Aerial Outfit</th>
<th>Re Outfit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 9650[1]</td>
<td>AKE(11)[3] Single Stack</td>
</tr>
<tr>
<td>Type 9650[2]</td>
<td>AKC(11)[3]</td>
</tr>
<tr>
<td>Type 9650[4]</td>
<td>AKD(2)[4] Double Stack</td>
</tr>
<tr>
<td>Type 9650[5]</td>
<td>CCO(1) for auto detection</td>
</tr>
</tbody>
</table>

Aerial Beamwidth
a. Horizontal 12°
b. Vertical 40° (approx.)

Aerial Rotation Speed
10 rev/min.

I.F. Bandwidth
a. Short pulse (MTI): 360 kHz at -3 dB points
b. Long pulse: 120 kHz at -3 dB points.

Power Supplies
a. Transmitter
230 V, 50/60 Hz; 36; 3-wire; 4 kVA
or 220 V, 3Ø; 3-wire.
220 V d.c. or 115 V a.c., 800 W for anti-condensation heater.
b. Receiver/Signal Processor (R/S/P)
230 V or 115 V, 50/60 Hz, 200 W
115 V, 50/60 Hz, 150 W, for anti-condensation heater.

Major Units
1. 5994-BB-520-1213 Receiver/Signal Processor (R/S/P)
2. Types 9560/R and C/R have Identical Transmitter Cabinet Assemblies.

Restricted 6.35
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**PHYSICAL DATA**

<table>
<thead>
<tr>
<th></th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tx</td>
<td>79 in 200.7 cm</td>
<td>108 in 274.3 cm</td>
<td>29 in 73.7 cm</td>
<td>4350 lb 1969.8 kg</td>
</tr>
<tr>
<td>Rx S.P.</td>
<td>66 in 167.6 cm</td>
<td>24 in 61 cm</td>
<td>27 in 68.6 cm</td>
<td>600 lb 272.1 kg</td>
</tr>
</tbody>
</table>

**BRIEF DESCRIPTION**

Type 9650/8 improves upon Type 9650/6 by providing the choice of the MTI mode of operation when its use is advantageous. To achieve the MTI mode, the receiver has a Coherent Oscillator (COO) to provide the coherence in phase between transmission and reception. The COO is phase locked to the transmitter pulse. Additionally, a highly stable local (STALO) r.f. oscillator is used to produce the i.f., a P.R.F. Discriminator (PRD) control gives a choice of 3 pulse intervals to reduce the effect of interferences and reduce the effect of interferences from other radars.

**HANDBOOKS**

- BR 8569 Series for Type 9600/6
- BR 1184 Aerial Outfit ME1
- BR 2742 Aerial Outfit ME2
- BR 2347 Bearing Transmission Outfit XMA Series
- BR 2540 Radar Data Distribution Outfit FD
- BR 2724 Interference Suppression Outfit IXS
- BR 2628 High Accuracy Receiver Outfit G2O
- BR 3544 Radar Type 844 I.F.
- BR 1374

**ESTABLISHMENT LIST**

- 1795 Type 965 (all variants)

**INSTALLATION SPECIFICATION**

6/47

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