PURPOSE
A close range, high definition surface warning radar used principally for coastal and navigation, large land masses etc. Can be detected up to 30 miles.

FREQUENCY
400 ± 50 MHz.

POWER OUTPUT
25 kW (peak) minimum.

PULSE REPEITION FREQUENCY
2000 and 2000 s (switchable).

PULSE LENGTH
1 μs at 100 μs
0.2 μs at 2000 μs.

AERIAL ROTATION SPEED
20 rev/min for 50 Hz supply
24 rev/min for 60 Hz supply.

BEAM WIDTH
Horizontal 21° (to 3 dB one way)
Vertical 2° (to 3 dB one way)

RECEIVER BANDWIDTH
6 MHz minimum at -3 dB.

INTERMEDIATE FREQUENCY
60 MHz.

POWER REQUIREMENTS AND CONSUMPTION
115 V 60 Hz
2 kVA
115 V 60 Hz 345 W for magnetics
300-450 V 440 W
Any frequency 500 W
4.8. C or O.C.

ASSOCIATED ANTENNA
ANTENNA ATZ. This consists of a 5 ft double chevron, the upper for summation, the lower for reception. Connection to the office equipment is made by coaxial cable. Size in. NO. 3.

ANTENNA SW. Similar to ATZ except that the Azimuth has alignment sighting device and pedestal is modified for course/true bearing synchro transmission in lieu of two course bearing magnetics.

RESTRICTED
6.47
## MAJOR UNITS

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Description</th>
<th>Qty.</th>
<th>Weight</th>
<th>Width</th>
<th>Depth</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR221</td>
<td>AIR Conditioning Unit</td>
<td>1</td>
<td>3 ft</td>
<td>1 ft 5 in</td>
<td>1 ft 10 in</td>
<td>250 lb</td>
</tr>
<tr>
<td>850-99-972-3972</td>
<td>Transmitter, Radar</td>
<td>1</td>
<td>3 ft</td>
<td>1 ft 5 in</td>
<td>1 ft 10 in</td>
<td>250 lb</td>
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<tr>
<td>850-99-972-3979</td>
<td>on C.R.S.T. is fitted</td>
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<tr>
<td>850-99-972-3974</td>
<td>Receiver, Radar</td>
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<td>3 ft</td>
<td>1 ft 5 in</td>
<td>1 ft 10 in</td>
<td>140 lb</td>
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<td>850-99-972-39722</td>
<td>Control, Radar Set</td>
<td>2</td>
<td>5 ft</td>
<td>4 ft</td>
<td>9 in</td>
<td>52 lb</td>
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<tr>
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<td>Antenna</td>
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<tr>
<td>850-99-972-39777</td>
<td>Scanner, Sensor (A77)</td>
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<td>3 ft 6 in</td>
<td>6 ft 3 in</td>
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<td>220 lb</td>
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<tr>
<td>850-99-972-39763</td>
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<tr>
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<td>Pedestal, Antenna (A73)</td>
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</table>

*The unit is only required for ships in which a supply of dry air is not always available from the N.P.I. air system.

## ASSOCIATED DISPLAY OUTFIT

Display OUTFIT is included. Normally 2 or 3 Display OUTFITS J04 [1, 3, 8] or [4] are fitted but Type 978 can be used with any N.P.I. and can feed up to 16 displays.

## BRIEF DESCRIPTION

The Type 978 radar transmitter and its power supplies are self-contained, the necessary switch functions being made by relay control from the Control Unit. Selection of internal or external triggering is possible by means of a switch on the front panel. A thermistor bridge in the r.f. section enables continuous monitoring of power output without loss of true signal conditions.

The receiver and its power supplies are also self-contained and operated from the Control Unit.

Linear time multiplication is used to improve the performance in conditions of rain or sea clutter. Reference signals for the a.f.c. circuits are provided by a magnetron located ahead directly from the transmitter. An r.f. and a.c. noise source is built into the receiver for accurate measurement of overall noise factor.

Maximum range is 40 miles; minimum range less than 50 yards with 0.2 m pulse. Range discrimination less than 50 yards on 1 mile range scale. Range accuracy 40 yards on 1 mile scale; beyond this, within limits used at centres, 5% of indicated range, and outside half range, 3% of maximum range. Bearing accuracy ± 1°. Bearing transmission in by means of an auto-rotating 360° p.t.g. system.

Type 978. Transmitter and Frame Assy. Modified for use with Control Unit Sector Sector Transmitter.

## HANDBOOKS

- BR 1152 [Type 978/m]
- BR 1156 J04 Series
- BR 1382 Section 9 C.R.S.T.

## ESTABLISHMENT LISTS

- E 1113 [Type 978 and C.R.S.T.]  
- E 1252 [Nominal Outfit, J04 Ag., No. 3]
- E 1321 [Display OUTFITS J04 and A17]

## INSTALLATION SPECIFICATION

- 8925/3