RESTRICTED

TYPE 9444(2)

SUMMARY OF DATA

PURPOSE

J.F.F. Mark 10 interrogator with selective identification feature (S.I.F.), co-ordinated with primary radar, or unco-ordinated.

BRIEF DESCRIPTION

The Mark 10 system of J.F.F. with S.I.F. is a pulsed secondary radar in which a signal transmitted from an interrogator in the ship is received by a transponder in the craft under observation. The transponder then sends back a reply in the form of a coded pulse train for each interrogation. This is detected by the receiving part of the interrogator and then converted to a single pulse by S.I.F. decoders and distributed for display. The equipment may be switched to basic operation if required, with the S.I.F. decoding circuits to be bypassed. Three modes of operation are available.

Type 9444(2) comprises (a) J.F.F. Mark 10 co-ordinated with a primary radar or (b) unco-ordinated. In (a) the J.F.F. aerial installation is co-ordinated with the radar aerial installation, and the J.F.F. interrogator is superimposed in the radar video to provide a single display. In (b) the J.F.F. interrogator is completely independent, having its own exclusive display arrangements.

FREQUENCY

2930 MHz transmission.
3000 MHz reception.

POWER OUTPUT

1 kW approximately.

PULSE REPETITION FREQUENCY

Co-ordinated - the nearest sub-multiple of the radar p.r.f. below 400 (e.g. 250 pulses per second for a 800 Hz radar).
Unco-ordinated - 400 pulses per second.

PULSE DURATION

1 μs from transmitter, reply [decoded] 0.75 μs pulse lengths to 4.0 μs approximately for display.

INTERMEDIATE FREQUENCY

25.5 MHz.

RECEIVER BANDWIDTH

8 MHz to 11 MHz at 6 dB down.

AERIAL BEAM WIDTH

1° in azimuth at half-power points.

MAJOR UNITS

Items of American Design:

1. Receiver-Transmitter RT-1H4A/UW-1 (MDA)
2. Code-Decoder KY-11/A/UPA-1 (MDA)
3. Radar Test Set AN/APS-8 (MDA)

Part of Radar Recognition Set AN/PPQ-1 (MDA)
Acoustic Outfit FFA

Pattern No. | Description | Remarks
--- | --- | ---
1. 64222 | Cabinet Design: 120 Mod. 1 | Numbers vary with installation.
2. 64274 | Master Control Unit Design 2 | Unnomentioned installations only.
3. 64275 | Mixer Control Unit Design 2 | Only when more than five decoders are required on same I.F. signals.
4. 64281 | Video Distribution Unit |
5. 64287

S.I.F. Outfit: USA

1. 2696-AP 141232 | Decoder, Passive | Numbers vary with installation.
2. 2696-AP 141240 | Stand, Cabinet Mounting |
3. 2696-AP 141241 | Cabinet, Distribution Section |
4. 2696-AP 141242 | Cabinet, 2 Decoder Section |
5. 2696-AP 141243 | Cabinet, 5 Decoder Section |
6. 2696-AP 141238 | Mixer Control Unit [ATS Model] |
7. 2696-AP 141256 | Decoder, Distress |
8. 2696-AP 141235 | Control, Coder, Mod. 3 |
9. 2696-AP 141237 | Coder, Transmitter [Supplied for use as a Test Set] |

**PHYSICAL DATA**

<table>
<thead>
<tr>
<th>Description</th>
<th>Weight</th>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interrogator Cabinet with equipment</td>
<td>550 lb</td>
<td>12 in</td>
<td>23 in</td>
<td>6 ft</td>
</tr>
<tr>
<td>Master Generator</td>
<td>50 lb</td>
<td>10 in</td>
<td>12 in</td>
<td>6 in</td>
</tr>
<tr>
<td>Aircraft, with pedestal</td>
<td>210 lb</td>
<td>-</td>
<td>23 in</td>
<td>-</td>
</tr>
<tr>
<td>Cabinets with S.I.F. Decoders</td>
<td>285 lb</td>
<td>24 in</td>
<td>28 in</td>
<td>3 ft 6 in</td>
</tr>
<tr>
<td>3 Decoders</td>
<td>285 lb</td>
<td>24 in</td>
<td>28 in</td>
<td>4 ft 3 in</td>
</tr>
<tr>
<td>4 Decoders</td>
<td>300 lb</td>
<td>24 in</td>
<td>28 in</td>
<td>5 ft 3 in</td>
</tr>
<tr>
<td>5 Decoders</td>
<td>400 lb</td>
<td>24 in</td>
<td>28 in</td>
<td>6 ft 3 in</td>
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</table>

**POWER REQUIREMENTS**

<table>
<thead>
<tr>
<th>Type</th>
<th>115 V., 50/60 Hz</th>
<th>115 or 220 V.</th>
<th>24 V. G.C.</th>
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</thead>
<tbody>
<tr>
<td>Single Phase</td>
<td>for heaters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interrogator Cabinet complete</td>
<td>250 watts</td>
<td>250 watts</td>
<td>0.34 A at 250 V</td>
</tr>
<tr>
<td>Decoder, Passive Mode I</td>
<td>30 watts</td>
<td>200 V (the supply can also be 230 V)</td>
<td>0.05 A</td>
</tr>
<tr>
<td>Decoder, Distress</td>
<td>10 watts</td>
<td>170 V (the supply can also be 230 V)</td>
<td>0.01 A</td>
</tr>
<tr>
<td>Decoder Cabinet, for each Decoder, Passive</td>
<td>200 watts</td>
<td>220 V (the supply can also be 230 V)</td>
<td>0.34 A</td>
</tr>
<tr>
<td>Video Distribution Unit [when fitted]</td>
<td>50 watts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coder, Transmitter Test Set</td>
<td>75 watts</td>
<td></td>
<td></td>
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</table>

Heat dissipation in office is not approximately

**REMARKS**

The main items of interrogator equipment are of electronl design, although manufactured in the United Kingdom under the terms of the Montreal Agreement. Cabinets, S.I.F. decoders and items necessary to form the I.F. Mark 10 system with British radar are of British design and manufacture.

**HANDBOOK**

BR 2355

**ESTABLISHMENT LISTS**

<table>
<thead>
<tr>
<th>Type/Model</th>
<th>Installation Specification</th>
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<tbody>
<tr>
<td>FFA</td>
<td>Aerial Outfit and or MH</td>
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**ASSOCIATED AERIAL OUTFIT**

<table>
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<tr>
<th>Type</th>
<th>Installation Specification</th>
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<tr>
<td>FFA</td>
<td>AERIAL</td>
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