

SUMMARY OF DATA

PURPOSE

Type 242 is fitted in conjunction with Type 291 and Type 275 to provide A-band interrogation working in the standard Mark 3 I.F.F. system.

FREQUENCY

Fixed frequency in the band 165-185 Mc/s (normally 179 or 182 Mc/s).

WAVELENGTH

1.8 to 1.6 metres (approximately).

PEAK POWER OUTPUT

1 kW.

PULSE REPETITION FREQUENCY

125 or 50 p.p.s.

PULSE LENGTH

6 microseconds.

BEAM WIDTH

Aerial Outfit ASD (with Type 291M, 268) all round radiation and reception.
Aerial Outfit ASW (with Type 275) - 60° (approximately) to half field strength.

INTERMEDIATE FREQUENCY

11Mc/s.

RECEIVER BAND-WIDTH

4 Mc/s to 6 dB down.

POWER REQUIREMENTS

180V 500 c.p.s. 200 watts (for office equipment).

The power supplies for Type 242 are normally obtained from the associated radar equipment.

MAJOR UNITS

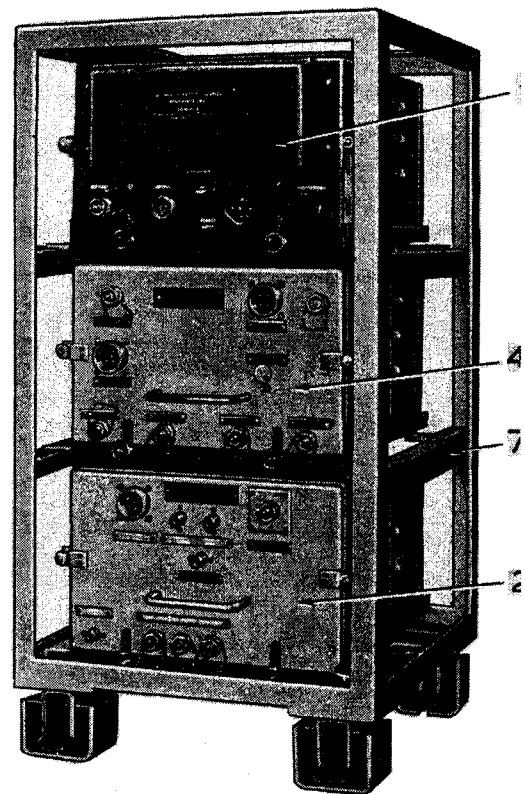
1. Patt. W4790/A/B/C Responder Unit Des. A.
2. Patt. W4832/A Transmitter 7AD.
3. Patt. W6283A Oscillator Unit for Transmitter 7AD only.
4. Patt. W6332/A/B/C Modulator and Mixer Unit Des. D (with Type 277/P, 293/M/P/Q, 291).
or Patt. W7383/A/B Modulator and Mixer Unit Des. E (293/M/P/Q (remotely controlled), 277/P/Q (with H.F.P. & and 9)
5. Patt. W9050 Switch Unit 2 pole 1 way (not with Types 276/7, 293).
6. Patt. 53874 Performance Meter Des. 2.
7. Patt. 54920 Framework, sprung, for three instruments (Type 275 only).

PHYSICAL DATA

Total weight of office equipment - 130 lb.
Total weight of Aerial Outfit AQP (with Pedestal 19S) - 50 lb.
Total weight of Aerial Outfit AQP (with Pedestal 19W) - 100 lb.
Total weight of Aerial Outfit ASD - 30 lb.

ASSOCIATED AERIALS

Aerial Outfit ASD (Type 242 fitted with variations of Type 286 and 291).
Aerial Outfit ASL (Type 242 fitted with Type 277T)
Aerial Outfit ASM (Type 242 fitted with Type 291 in ships where no Type 271/2/3 series or Type 276/7/293 series fitted
Aerial Outfit ASW (Type 242 Fitted with Type 275 except when fitted in R.M.R.).



TYPE 242

ASSOCIATED TEST EQUIPMENT

Pat. W8053 Output Tester S.E.6.
A.M. Ref. No. 10T/87 Wavemeter W1310.
A.M. Ref. No. 10T/90 Monitor, Type 25 (not when Pat. No. 68622, Oscilloscope, Miniature is supplied).
A.M. Ref. No. 10T/6045 Wavemeter, Type W1649 (only to Depot and Repair Ships).

BRIEF DESCRIPTION

The P.R.F. of the main radar equipment is counted down (4:1 or 10:1) in the modulator which fires the interrogator transmitter and also a trace displaced from the radar trace on the "A" scan presentation. The interrogator signals are received by the responder unit and displayed on this trace as inverted signals along with the normal radar echoes. Coincidence of the interrogator pulse and the radar echo identifies the target. The associated shipborne transponder is Type 253 series or Mark 3 I.F.F. when fitted in aircraft.

REMARKS

Installation layout depends on the parent radar equipment but the three main units should be mounted together and the lengths of the interconnecting coaxial leads should not exceed 3 ft.

HANDBOOKS

B.R.1439 (Type 242)
B.R.1608 (Servicing Manual for Type 242)
B.R.1583 (Performance Meter Des. 2)

ESTABLISHMENT LIST

E.534.

INSTALLATION SPECIFICATIONS

B.181/R1 (Type 242)
B.200 (Aerial Outfit ASD)
B.374 (Aerial Outfit ASW)
B.478 (Aerial Outfit AQP)