RECEIVER OUTFIT QR1 AND QR2

QR1
QR2

SUMMARY OF DATA

PURPOSE

Reception of VHF a.m. and f.m. signals.

TYPE OF RECEPTION

C.W. and A.M. Voice
F.M. and N.F.M. Voice

FREQUENCY RANGE

19 Mc/s to 165 Mc/s in six bands.
Intermediate Frequency 5.2 Mc/s.

MAJOR UNIT

A.P.103930 Receiver 770R VHF and
5820-99-971-8329 Receiver Radio VHF

Height	Width	Depth	Weight
9¼ in	17¼ in	13⅜ in	58 lb

BRIEF TECHNICAL DESCRIPTION

The receiver is a conventional superheterodyne having an r.f. stage, mixer, local oscillator, 4 i.f. amplifiers, limiter, discriminator, noise limiter, noise muting stage, b.f.o. push-pull drivers and push-pull output. In addition, there is a control valve associated with the tuning meter, to make a total valve complement of nineteen, excluding three germanium diodes for a.m. detection and noise limiting. Range-changing is effected by switching a coil turret assembly. The ganged tuning capacitor is driven through a 140:1 reduction gear, the effective scale length of each range being 34 ft. A mode switch selects the appropriate circuits for c.w., a.m., narrow band f.m. or wide band f.m. reception. No internal loudspeaker is fitted; there is a phone jack on the front panel for high resistance phones and 600 ohm output terminals at the rear. Pick-up terminals are fitted. A stabilised h.t. supply is provided for the r.f. stages and other critical circuits. Receiver Outfit QR2 is fitted with a Crystal Calibrator Unit to facilitate dial alignment together with an associated mechanical cursor shift.

ELECTRICAL CHARACTERISTICS

Sensitivity : 7μV above 114 Mc/s) for 15 dB signal to noise ratio and 50 mW
5μV below 114 Mc/s) output

Selectivity : A.M. and C.W. 40 dB down, 50 kc/s off resonance
Narrow F.M. 40 dB down, 80 kc/s off resonance
Wide F.M. 40 dB down, 175 kc/s off resonance

Noise Factor :

Range 1	(114 – 165 Mc/s)	≤15 dB
Range 2	(78 – 114 Mc/s)	≤10 dB
Range 3	(54 – 78 Mc/s)	< 8 dB
Range 4	(39 – 54 Mc/s)	< 6 dB
Range 5	(27 – 39 Mc/s)	< 5 dB
Range 6	(19 – 27 Mc/s)	< 5 dB

Image Ratio : Better than 15 dB at 160 Mc/s and correspondingly greater at lower frequencies.

A.G.C. : The audio level does not change by more than 12 dB when the input is varied 60 dB above 5μV.

Frequency Stability: Drift is less than 0.003 of one per cent per degree centigrade and less than 0.003 of one per cent for a five per cent change in mains voltage.

F.M. Deviation:: The discriminator is designed for a deviation of 15 kc/s in the narrow position and 75 kc/s in the wide position.

Muting :: The sensitivity of the muting circuit can be varied to operate on signals above 5μV.

Input Impedance: 72 ohms unbalanced.

Output : 2 W into 600 ohms. High impedance output for phones.

A.F. Response : ±4 dB over range 50 c/s to 12 kc/s.

POWER REQUIREMENTS AND CONSUMPTION

110 V, 200 V or 230 V, 40–60 c/s, 90 VA.

HEAT DISSIPATION

90 watts approx.

REMARKS

Aerial Outfit APH will be fitted initially and another aerial (Outfit ACH, 27–100 Mc/s) at a later date. Filter Unit Des. 18 (issued as part of Outfit QR) is part of the installation and suppresses signals below 100 Mc/s when in circuit.

COMMERCIAL EQUIVALENT

A.P.103930 and 5820-99-971-8329 Receivers are respectively the Naval versions of Stratton Models 770R 770R/1 and 770RII/1 VHF Communications Receiver.

HANDBOOKS

B.R.1147 Receiver Outfits QR1 and QR2
B.R.1610(1) Aerial Outfit APH

ESTABLISHMENT LIST

E.1205

INSTALLATION SPECIFICATION

B.849