

# 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

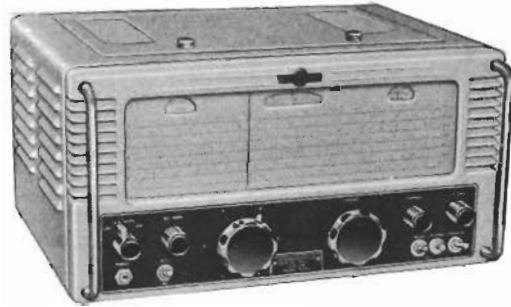
### FREQUENCY RANGE

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
9½ in	17½ in	13½ 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	:	7 $\mu$ V above 114 Mc/s ) for 15 dB signal to noise ratio and 50 mW 5 $\mu$ V 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 5 $\mu$ V.
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 5 $\mu$ V.

Input Impedance: 72 ohms unbalanced.

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

A.F. Response :  $\pm 4$  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 770R/11/1 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