# RECEIVER TYPE AR88/LF/D

## SUMMARY OF DATA

### PURPOSE

MF and HF receiver outfit fitted in some Royal Naval Shore Wireless Stations.

RECEIVER TYPE AR88

### TYPE OF RECEPTION

C.W., M.C.W., VOICE

### FREQUENCY RANGE

AR88 535 kc/s to 32 Mc/s in 6 ranges.
AR88LF 73 kc/s to 550 kc/s in 2 ranges, also 1.48 Mc/s to 30.5 Mc/s in four ranges.
AR88D 535 kc/s to 32 Mc/s in 6 ranges.

Intermediate Frequency:- AR88 - 455 kc/s
AR88LF - 735 kc/s
AR88D - 455 kc/s

### PHYSICAL DATA

| Height | Width | Depth | Weight |
|---|---|---|---|
| 11" | 19½" | 19½" | 100 lb approx. unpacked |

Table or rack mounting.

### BRIEF TECHNICAL DESCRIPTION

The RF section comprises two stages of amplification followed by a mixer valve. A separate heterodyne oscillator with stabilized HT is employed. Intermediate frequencies at the mixer anode are transformer coupled to the first IF amplifier stage through a crystal filter which is in circuit on three of the five selectivity positions. The second and third IF transformers are composed of four tuned circuits each. These circuits provide varied degrees of coupling depending on the position of the selectivity switch. A fourth IF transformer has two tuned circuits for coupling to the detectors. Stage three of the IF amplifier and the audio gain control are not connected to the AGC line. There are two double diode rectifiers coupled to the secondary of the fourth IF transformer, one valve provides rectification for signal and AGC voltages, the other valve is incorporated in a noise limiting circuit. The degree of noise limiting is manually controlled. When AGC is in operation a variable delay voltage is obtainable depending on the setting of the RF gain control. Desired output levels, when AGC is in use, are obtained by the AF gain control. The first audio amplifier feeds into a final output stage. A front panel tone control and transmit-receive switch are provided. Rear terminals allow for relay control of the transmit receive switch.

### CHARACTERISTICS

M.C.W. Sensitivity:- Range 0.6 to 1.5 Mc/s 8 ± 4 microvolts ) 10 db signal to
Ranges 1.7 to 28 Mc/s 6.5 ± 1.5 microvolts ) noise ratio

C.W. Sensitivity:- Range 0.6 to 1.5 Mc/s 2.4 ± 0.4 microvolts ) 20 db signal to
Ranges 1.7 to 28 Mc/s 1.65 ± 0.45 microvolts ) noise ratio

Selectivity:- Bandpass at 6 db down for the five positions of the selectivity switch.

| | IF BANDWIDTH | | | |
|---|---|---|---|---|
| Switch Positions | Crystal Filter | AR-88 | AR-88D | AR-88LF |
| 5 | IN | 0.4 kc/s | 0.4 kc/s | 0.55 kc/s |
| 4 | IN | 1.5 " | 1.5 " | 2 " |
| 3 | IN | 3 " | 3 " | 4 " |
| 2 | OUT | 8 " | 8 " | 8 " |
| 1 | OUT | 14 " | 14 " | 16 " |

Max. Power Output:- approx. 2.5 watts with a 2.5 or 600 ohm load.
approx. 10 milliwatts using 20,000 ohm phones.

POWER REQUIREMENTS AND CONSUMPTION

Power supply A.C. 100V A.C. to 260V A .C. provided by 5 tapping positions. 50-60 c/s with a consumption of 90 watts.

HEAT DISSIPATION

90 watts.

AERIAL SYSTEM

Provision for connection to balanced or unbalanced aerial or feeders. Input impedance approximately 200 ohms except on HF bands where it is higher.

REMARKS

Receivers AR88/LF/D are American receivers manufactured by R.C.A.

HANDBOOK ~~U.S. Navy~~ BR 1344 AR88
" 1345 - AR88 LF

ESTABLISHMENT LIST AE7 (AR88LF)

INSTALLATION SPECIFICATION NIL (Installation information contained in U.S. Navy Handbook)