

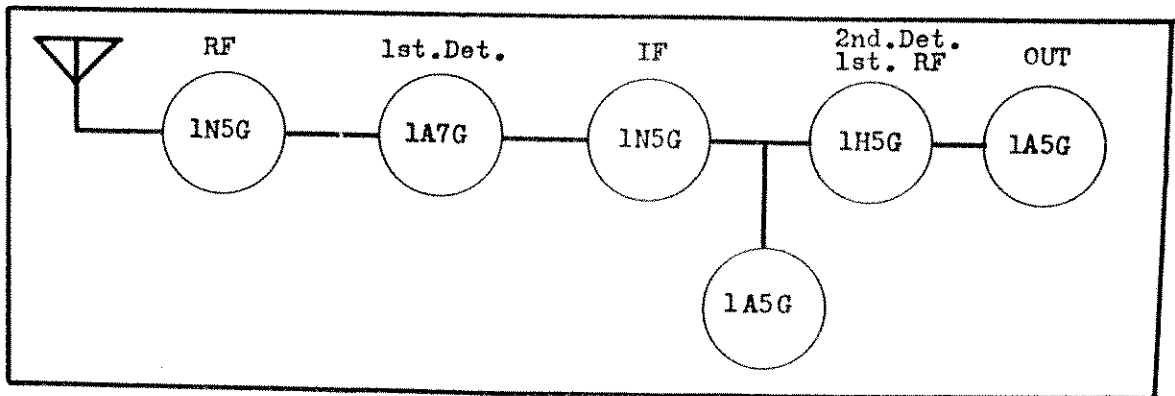
Section 8

R E C E I V E R S

Topic V.

TYPE: AR4 (10D/1279)

- PURPOSE OF EQUIPMENT - Portable receiver for point-to-point or army co-operation use (Marconi)
- FREQUENCY RANGE - 500 kc. - 10 mc.
- FUNCTIONS -
- POWER OUTPUT (NOM) - Max. 170 milliwatts
- CIRCUIT DESCRIPTION - Superheterodyne with one stage of R.F. and one stage of I.F. at 465 kc.
- NO. & TYPE OF TUBES - (6) 2-1N5G. 1-1A5G. 2-1H5G. 1-1A7G.
- POWER SUPPLY - Combination A - B 1.4 v. & 90 v. battery (5A/578)
- POWER SUPPLY (INPUT) - L.T. 250 - 300 ma. - H.T. 10 ma.
- POWER SUPPLY (OUTPUT) -
- TYPE OF MODULATION -
- APPROX. DIMENSIONS - 18 x 15 x 10
- WEIGHT - 42 lbs.
- ACCESSORY EQUIPMENT - Portable aerial mast (10B/1280), 1750 ohm headphones (10A/2345)
- TYPE OF CRYSTAL USED -
- TYPE OF MIC. USED -



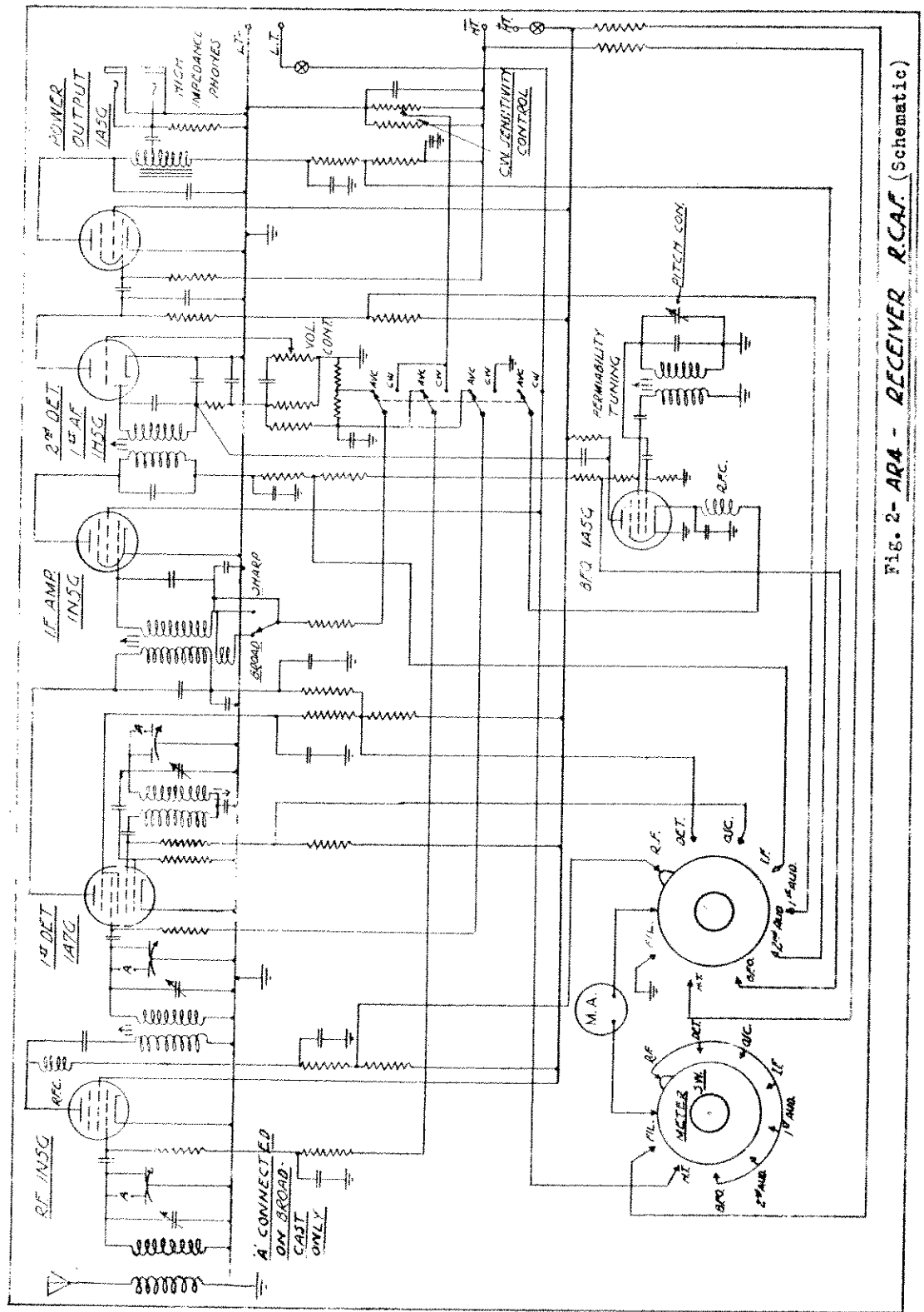


Fig. 2-ARA - RECEIVER R.C.A. (Schematic)

GENERAL

1. The type AR4 is a portable receiver designed for army co-operation, but may be employed for point-to-point reception. It has been designed to operate in snow, sleet or rain, and in temperatures ranging from plus 55 degrees centigrade to minus 40 degrees centigrade. All components are rigidly constructed and securely fastened to withstand rough usage. All bright metallic components on the exterior of the receiver have been oxidized to a dull finish so as to present a poor reflecting surface.

FREQUENCY RANGE

2. Range 1 - 496 - 1,498 kc.
 Range 2 - 1,335 - 2,890 kc.
 Range 3 - 2,700 - 5,800 kc.
 Range 4 - 5,510 - 10,840 kc.

POWER SUPPLY

3. The receiver is completely self-contained, the power supply being obtained from dry batteries located in the base of the unit.

FEATURES

4. Automatic volume control, beat frequency oscillator with front panel control, CW sensitivity control, two I.F. selectivity settings.

CIRCUIT

5. The receiver functions as an 8-tube superheterodyne. The aerial works into high impedance primaries on each aerial transformer. A 1N5G tube, working as an R.F. amplifier, couples the signal from the aerial transformers to the first detector coils which in turn are coupled to a 1N7G tube working as a converter. The converter output at 465 kc. is coupled to the first I.F. transformer and thence to an I.F. amplifier tube 1N5G. The I.F. amplifier 1N5G feeds the second I.F. transformer which is coupled to the diode of the first audio tube 1H5G. Here the signal is rectified, the resulting audio and D.C. voltage components appearing across the diode load resistor. The audio component is fed to the volume control and thence to the grid of a 1H5G tube working as an audio amplifier. Here it is amplified and passed on to the grid of a 1A5G pentode output tube. The D.C. voltage component across the diode