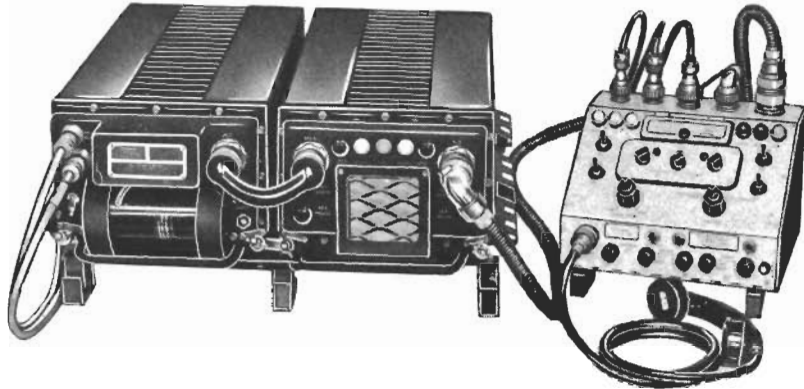


SUMMARY OF DATA



PURPOSE

A general purpose multi-channel UHF transceiver for voice and mcw communication. It replaces Type 86M.

FREQUENCY RANGE

1750 channels at 100 kHz intervals (crystal controlled) in the frequency range 225-399.9 MHz. Frequency error not more than 10 kHz after 15 minutes operation.

CHANNEL SELECTION TIME. The maximum channel selection time is 6 seconds.

BRIEF DESCRIPTION

The Transmitter-Receiver consists of eleven separate modules which plug into a main chassis assembly. This is contained in a pressurised, double-walled case, which by the use of internal and external blowers, acts as a heat exchanger. Some of the frequency generation circuits are common to both transmitter and receiver. The 1750 channels, spaced at 100 kHz intervals, are obtained from a crystal-controlled frequency synthesiser. Channel selection is made by setting-up the required frequency on the Control Unit which is connected to the electro-mechanical tuning unit in the transceiver. This selects the required crystals and tunes the appropriate circuits. The modulator unit can accept signals from either a local or remote microphone, or from an associated HI-FI unit and also contains a 1 kHz tone oscillator which is externally keyed during mcw operation. Amplitude modulated signals at the desired carrier frequency between 225 and 399.9 MHz are fed from the power amplifier to the aerial system. Sidetone, at a reduced audio level, is obtained by rectification of the r.f. carrier and is available for loudspeaker or telephones on both voice and mcw.

The receiver uses a double superhet. circuit. The first i.f. is variable between the limits 20-29.9 MHz and the second i.f. is fixed at 1.85 MHz. From the second mixer, the signal is applied to a band-pass filter and fed to the i.f. amplifier, detector, A.G.C. and noise limiter stages. The A.G.C. controls the gain of the r.f., first i.f. and second i.f. stages. The audio stages include a muting circuit, loudspeaker amplifier and HI-FI amplifier. The HI-FI facility gives extended bandwidth in both transmission and reception and can be utilised for data transmission.

MAJOR UNITS

Item	Part No.	Description	Physical Data			
			Height	Width	Depth	Weight
1	5820-AP 164407	Transmitter-Receiver, Radio	9 in.	10½ in.	22 in.	50 lb
2	5820-AP 164408	Control, Radio Set	8 in.	11 in.	9 in.	25 lb
3	5820-AP 164410	Power Supply	9 in.	10½ in.	22 in.	60 lb
4	5820-AP 164412	Tray, Mounting, Double	6 in.	22 in.	23 in.	15 lb
5	5820-AP 164413*	Tray, Mounting, Single	6 in.	11½ in.	23 in.	7½ lb

*Only required where a spare Item 1 or Item 3 is required.

RECEIVER PERFORMANCE

Sensitivity: Input for 8 dB S+N: N not more than 5 μ V o.c. from 75 ohm source, 30% mod. at 1 kHz.

Audio Output: VOICE - Local and remote loudspeaker in parallel, 1 watt per 600-ohm loudspeaker. Local or remote 600 ohm phones.
MCW - Local phones only.
HI-FI - 0.2 V peak-to-peak into 150 ohm HI-FI output.

Frequency Response: VOICE 300-3000 Hz
MCW 920-1120 Hz
HI-FI 40 Hz-20 kHz

Harmonic Distortion (VOICE): Not more than 12% for 2 W output.

Noise Limiter (VOICE and MCW): Instantaneous peak clipping.

Mute: Signal-to-noise operated with manual switch override.

TRANSMITTER PERFORMANCE

R.F. Output: Not less than 14 W into 75 ohms.

Transmitter Keying: VOICE - Local Local and remote by completion of microphone circuit.
MCW - By carrier switch and tone key.
HI-FI - By external lines.

Modulation: VOICE - Not less than 65% with input of 0.8 V r.m.s. \pm 10 dB from 600 ohm source.
MCW - Not less than 65%, 1 kHz tone, keyed up to 30 w.p.m.
HI-FI - Not less than 65% with a 1 kHz sine wave input at 1 V peak-to-peak, 150 ohm source.

Frequency Response: VOICE - 300-3000 Hz.
MCW - Nominal 1 kHz tone.
HI-FI - 128-30 000 Hz.

Sidetone: By means of rectified carrier.
VOICE - Local and remote phones and loudspeakers.
MCW - Local phones only.

Duty Cycle: Nominally 5 minutes transmission in any 15 minute period.

POWER SUPPLIES AND CONSUMPTION

115 V or 230 V (\pm 5%) 45-65 Hz

Receive 300 W
Transmit 490 W
Channel Change 250 W

ESTABLISHMENT LIST

E1293

ASSOCIATED TEST EQUIPMENT

5905-AP 189014 Attenuator 120 dB
6625-AP 197034 Test kit UHF
6625-99-943-6904 Pump, Pressurising

INSTALLATION SPECIFICATION

B904

HANDBOOK

ASSOCIATED AERIAL OUTFITS

SR 2304

AJE for surface craft
ALG or AMK for submarines