

SUMMARY OF DATA

**PURPOSE**

MF and HF transmitter for voice and telegraphic communication.

**TYPES OF MODULATION AND TRANSMISSION**

Single, independent or double sideband modulation in the following modes:-

- |  |                |
|--|----------------|
| CW or MCW telegraphy   | Single channel |
| D.S.B. telephony   | Single channel |
| I.S.B. telephony or keyed tone (suppressed or pilot carrier) | Two channels   |
| External modulation (ie fst)                                 |                |

**FREQUENCY RANGE**

- |    |                   |
|----|-------------------|
| MF | 240 kHz to 3 MHz  |
| HF | 1.5 MHz to 24 MHz |

**BRIEF DESCRIPTION**

The carrier frequency is derived from an external high stability reference signal (usually from Outfit FSA or FSB) via a frequency synthesiser to give the stability and accuracy required for ssb and lsb communication.

A 100 kHz carrier from the synthesiser is modulated in one of two channels from either a local control unit or one of two remote control positions. The output from the two modulation channels is combined and fed back to the synthesiser (with the carrier either suppressed or re-inserted at various preset levels).

The modulated synthesiser output is taken to the Drive Amplifier in the TRANSMIT condition or to an associated receiver in the RECEIVE condition. The Drive Amplifier is tunable and provides the correct signal level for the Amplifier R.F. which uses artificial transmission line techniques to give wide-band power amplification without using tuned circuits. The Amplifier R.F. has separate outputs for MF and HF, but it can be restricted to HF working only. The outputs are fed to the aerials via Aerial Tuning Outfits (eg ETC and ETB) which enable the transmitter output impedance to be matched to the aerial impedance.

Directional Couplers in the outputs provide the feed for peak power and V.S.W.R. monitoring.

The transmitter performance can be checked by means of monitoring facilities on the front panel.

**MAJOR UNITS**

1. 5820-99-580-1583 Cabinet, Electrical Equipment
2. 5820-99-580-1584 Control, Power Supply
3. 5820-99-580-1585 Transformer
4. 5820-99-580-1586 Power Supply (Auxiliary)
5. 5820-99-580-1587 Power Supply (H.T.)
6. 5820-99-580-1588 Control Amplifier
7. 5820-99-580-6739 Generator Modulation
8. Drive Amplifier

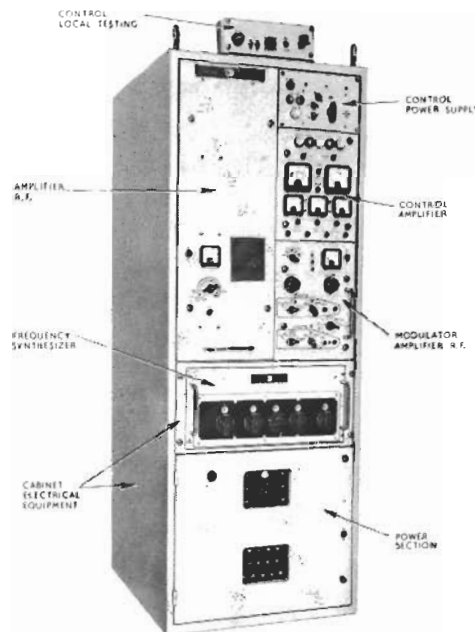
NOTE Units 7 and 8 together form a 5820-99-580-1589 Modulator Amplifier.

9. 5820-99-580-1590 Amplifier R.F.
10. 5820-99-580-1591 Frequency Synthesiser
11. 5820-99-580-1705 Control, Local Testing

**PHYSICAL DATA**

Cabinet including Units 1 to 10 Control, Local Testing

Height	5 ft 3 in.	4½ in.
Width	1 ft 11 11/16 in.	10 13/16 in.
Depth	2 ft 6½ in.	4½ in.
Weight	796 lb	4 in.



TRANSMITTER TYPE 640

## CONTROL CIRCUITS

The transmitter can be used with wireless Control Outfits KH and KM series.

## ELECTRICAL CHARACTERISTICS

Maximum r.f. power output:	Telegraphy, 30 Bauds	500 w
	Telegraphy, 200 Bauds	400 w
	I.S.B.	500 w P.E.P.
	D.S.B.	125 w carrier
Output impedance		50 ohms
Audio input impedance		600 ohms
Audio input level		0 dBm for 85% modulation
Modulation level		Up to 100%
Maximum Keying Speeds		CW 30 bauds
		FST 200 bauds
		I.S.B. tone 75 bauds
		(rise and fall times not less than 1.5 mS)
Tuning		By five decade selectors on the synthesiser
Carrier Suppression		-60 dB below P.E.P.
Pilot Carrier Levels		-26, -21, -16, -11 or -6 dB below P.E.P.

## POWER REQUIREMENTS

400-450 V, 50-60 Hz, 3 phase 3 wire, 4 kW (on full power)  
115 or 230 V a.c. or d.c. 150 w for anti-condensation heaters

## HANDBOOK

BR 2328

## ESTABLISHMENT LIST

E1353

## INSTALLATION SPECIFICATION

3932