

SUMMARY OF DATA

PURPOSE

Type 643 and Outfit CJP have been introduced into the fleet to replace Types 618 and 619 and Outfits, CAS and CAT and Receiver B40. Type 643 and Outfit CJP will be fitted as the main transmitter and receiver outfit in small ships, eg Coastal Minesweepers, Patrol Craft and MCMV's. Some of these fits will include two Outfits CJP.

Frigates and larger ships not fitted with Type 641 will be fitted with Type 643 and Outfit CJP as the emergency transmitter and receiver outfit. Metrological offices and general purpose bays in the MCO and other offices will also be fitted with Outfit CJP to replace Receiver B40.

BRIEF DESCRIPTION

Type 643 and Outfit CJP is made up of 9 main units which are contained in 4 separate cabinets. Cabinets 1 and 4 are normally mounted stacked vertically at the operator's position since they have to be under control of the operator. Cabinet 2 may be mounted in the same or in another compartment and need not be under the control of the operator. Cabinet 3 is normally mounted on the upper deck at the base of the aerial.

There are 3 variants to each of Type 643 and Outfit CJP which are identified by the numbered suffix as indicated below: -

- (1) Type 643(1) Basic transmitter used as the main or emergency transmitter.
- (2) Type 643(2) Uses the same drive unit but has a specially modified Tuning Unit Radio Frequency (Antenna Coupling Unit) produced for fitting in submarines.
- (3) Type 643(3) A structurally modified Type 643(1) for fitting in MCMV's.
- (4) CJP(1) Basic receiver outfit fitted in small ships for simplex working with Type 643 or fitted as a second receiver outfit designed to operate from a single aerial.
- (5) CJP2 Basic receiver outfit fitted with an Adapter Unit, Common Antenna Working and an antenna selection switch so as to allow it to operate from the receiver common aerial working outfit. It has change-over facilities to allow it to work from a single aerial with Type 643 or from receiver CAW. Normally fitted in frigates and larger ships.
- (6) CJP(3) A structurally modified CJP(1) for fitting in MCMV's.

The Type 643 and Outfit CJP equipment is a 100 W all solid-state transmitter-receiver which may be operated separately from each other or combined as a simplex or duplex radiotelephone.

TYPES OF TRANSMISSION

CW (A1)(A2J compatible)
 MCW (A2, A2H, A2J)
 dsb (A3)(A3A, A3H compatible)
 ssb (A3J, A3H, A3A)
 usb only

TYPES OF RECEPTION

CW (A1)(A2J compatible)
 MCW (A2, A2H)
 dsb (A3)(A3A, A3H compatible)
 ssb (A3A, A3H, A3J, A2J)
 usb and lsb

FREQUENCY RANGE

Transmitter : 1.5 to 24 MHz in 100 Hz steps
 Receiver : 60 kHz to 30 MHz in 100 Hz steps

MAJOR UNITS

5820-99-525-6182	Drive Unit Transmitter (GK203N))	Cabinet 1
5820-99-525-6185	Control Unit Antenna (RC126))	
5820-99-525-6183	Amplifier RF (GA481))	Cabinet 2
5820-99-525-6184	Power Supply Unit (PU220))	
5820-99-525-6186	Tuning Unit RF (ACU15))	Cabinet 3
5820-99-525-6189	Receiver Radio (R551N))	
5820-99-525-6190	Synthesizer Electrical Frequency (ARU11))	Cabinet 4
5820-99-525-6191	Panel Receiver Interface)	
5820-99-525-6192	Adaptor CAW (ARU 18))	
	(CJP2 only))	

ELECTRICAL CHARACTERISTICS – TRANSMITTER

Frequency Stability and Accuracy: Within 1 part in 10^7

Power Output: (a) High Power — 100 W PEP \pm 1 dB into 50 ohm resistive load connected directly to GA481N Amplifier Radio Frequency for all modes of operation, with supply voltage of 28.0 V dc to amplifier.

(b) Low Power — Nominally 3 dB below High Power output.

Harmonic Radiation: At least 36 dB below wanted output when ACU15A Tuning Unit, Radio Frequency correctly adjusted.

Intermodulation Distortion: With two-tone signal at 100 W PEP into 50 ohm resistive load all intermodulation product levels are at least 31 dB below 100 W PEP.

ELECTRICAL CHARACTERISTICS – RECEIVER

Frequency Stability and Accuracy: Within 1 part in 10^7

Aerial Input Source Impedance: (a) Above 1 MHz 50 ohm or 75 ohm.

(b) Below 1 MHz 10 ohm (200 to 600 pF)

Noise Figure: Above 1 MHz less than 10 dB.

Intermodulation: Two equal unwanted signals, not closer than 10 kHz to the receiver tune frequency, must be at least 70 dB above 1 μ V emf to produce an equivalent 1 μ V emf signal input.

POWER REQUIREMENTS

Complete 643-CJP equipment operating in Transmit A1CW mode with key down ie 100 W output:

(a) 115 V \pm 8% ac 45 to 65 Hz or

(b) 230 V \pm 8% ac 45 to 65 Hz or

(c) 220 V \pm 6% ac 45 to 65 Hz or

(d) 240 V \pm 6% ac 45 to 65 Hz
400 W or 735 VA maximum

Anti-Condensation Heater Supply: 115 or 230 V 40 W

ASSOCIATED AERIALS

Transmitter

Whip aerials AWH and AWN, AWQ, AWW and AWY and suitable wire aerials.

Receiver

CJP(1) Whip aerials AWH and AWN
CJP(2) Receiver CAW inputs

HANDBOOKS

BR 339)
BR 341) Transmitter

BR 340)
BR 341) Receiver

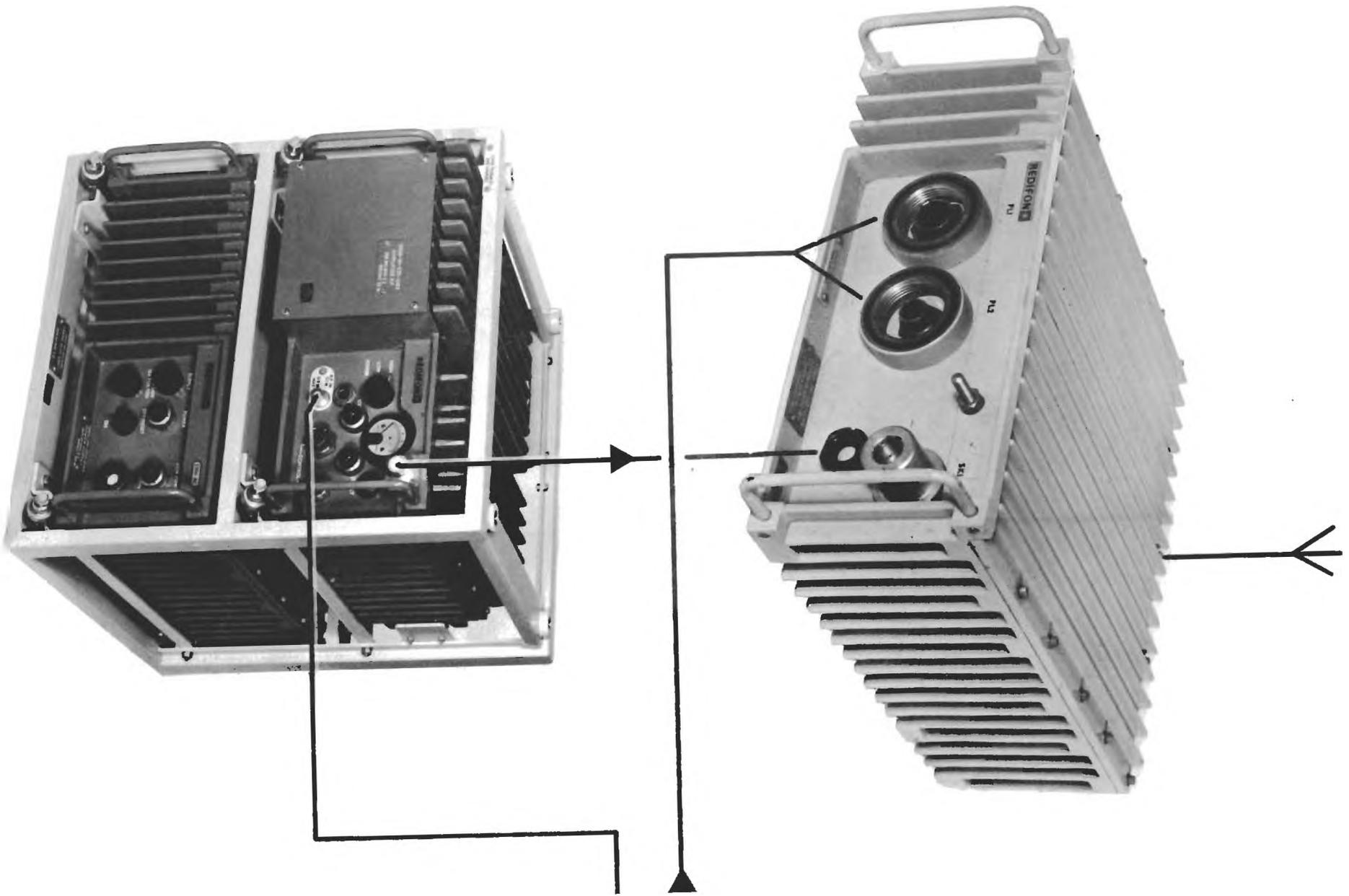
ESTABLISHMENT LIST

S 1698 (Transmitter)

S 1699 (Receiver)

INSTALLATION SPECIFICATION

B 1088



TRANSMITTER TYPE 643. RE



RECEIVER OUTFIT CJP- FIG. 4.8

ORIGINAL