



## Technical Specification of Telephone-Transmitter

### Type A 198 BCV.

#### Aerial power:

70 watts carrier-wave, measured in an out-door aerial of resistance 15 ohms; switch for reducing power to 7 watts.

#### Frequency range:

11 crystal-controlled frequencies in the 1600-3800 kc/s-band. Quartz crystals being supplied according to customers' needs and specification.

Aerial coupling and tuning variable within very wide limits, for matching transmitter to any ship's aerial.

#### Frequency stability:

The transmitter's total frequency-stability is better than 0,02%, as required by the A.C.-Conference 1947.

#### Facilities:

A3 - (telephony) and audio frequency amplification for loud hailer.

#### Modulation:

Anode modulation in the output stage. Negative feedback for reducing distortion and making modulation percentage relatively independent of load. Automatic gain control and modulation limiter for maximum efficiency, giving a very high average modulation percentage, yet avoiding overmodulation. Modulation up to 95% with distortion no more than 6% (measured at 1000 c/s).

In addition to being used for modulating the transmitter's carrier wave, the microphone and modulation amplifier may also be used in connection with an extra supplied loudspeaker (for outdoor use) and the transmitter thus be used as a very powerful loudhailer unit. Nominal power to loudspeakers: 25 watts.

The modulation amplifier is supplied with an efficient low pass filter cutting off at about 3000 c/s.

#### Harmonics:

All harmonics radiated from the aerial will be attenuated at least 40 dbs in proportion to the fundamental (as required by the 1947 Atlantic City Conference).



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Valves:

6 type QE 06/50 or equivalent: 807  
2 - EL 84 or equivalent: 6 BQ 5  
2 - EF 89 or equivalent: 6 DA 6  
1 - EZ 81 or equivalent: 6 CA 4  
2 - OA 2 neon stabilizers  
1 - 220 volts neon pilot lamp  
1 - 5 volts 0,2 amps. flashlight bulb

Power supply:

The transmitter requires 24, 32 or 36 volts for filament-supply and 550 volts for anode-supply.

Change-over from one filament voltage to another is carried out by linking three pairs of easily accessible soldering tags by shorting wires (24 volts) or fixed resistors (32 and 36 volts).

The transmitter may be fed from a 24, 32 or 36 volt accumulator. Filament-current is taken direct from battery; and an alternator EO 17 supplies the 550 volt anode-voltage.

The transmitter may also be run from the ship's mains 110 or 220 volt D.C., in which case an alternator EOK 20 is used, this alternator supplying both 25 volts filament- and 550 volts anode-voltage.

At length the transmitter may be run off ship's mains 110, 220, 380 or 440 volts A.C., in which case a power pack supplying 25 volts A.C. for filament heating, 25 volts D.C. for grid bias, microphone and relays and 550 volts D.C. for plate and screen grid voltages, the latter voltages being derived off rectifiers with generously rated filters.

The current drain from the battery or the mains amounts to:

At 24 volts - transmitter in position "Duplex"		
	(transmitting) unmodulated:	20 amps.
At 220 volts D.C.	- same -	: 2,8 -
At 220 volts A.C.	- same -	: 2,0 -

Measuring instrument:

The transmitter has but one measuring instrument, a milliammeter, which by means of a multiple change-over switch may be used for checking the anode-current of each individual valve, excepting the A.G.C. valves, and grid current of the R.F.-power valves.

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Keying device:

A built in keying relay operated by a push button in the microphone handset via an auxiliary relay controls change-over from "receive" to "transmit" when working simplex ("press to talk").

Besides keying the transmitter this relay also mutes the receiver loudspeaker and inserts a resistance load instead of the latter.

When working "duplex" the transmitter is keyed constantly by the control switch, but the push button in the microphone handset has to be pressed for modulating the transmitter.

Control switch:

The transmitter has a built-in multiple control switch with the following positions:

1. Off
2. Stand-by (filament current switched on), hailer
3. Telephony, simplex
4. Telephony, duplex.

Mechanical construction:

The transmitter is of rugged construction, built on a heavy aluminium chassis with reinforcements, placed in a rust-proofed iron cabinet in grey finish. The chassis rests in a sliding mechanism and may be drawn out for inspection without breaking connections as the multiple plug (which fits into a multiple socket in the chassis) is provided with ample length of multicore cable.

Extensive use has been made of ceramic material for all parts such as switches, capacitors, coils, etc. carrying R.F.

Dimensions of transmitter:

Height: 340 mm (shock-absorbers included)  
Width: 520 mm  
Depth: 335 mm + knobs, about 35 mm  
Weight: about 30 kgs.

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The transmitter may also be supplied in a steel cabinet common to transmitter and receiver belonging to the set. In this case the multicore cables of transmitter and receiver are terminated in a terminal strip mounted inside the cabinet. Suitable interconnections between terminals for either battery or mains operation have been laid. Cables from outside are led through a hole in the back of the cabinet and terminated in the terminal strip.

The dimensions of the cabinet in this case amounts to:

Height: 600 mm + 40 mm shock absorbers  
          + 50 mm aerial lead in  
Width: 540 mm + earthing bolts.  
Depth: 340 mm + knobs + 40 mm shock absorbers  
Weight: 50 kgs.

The transmitter/receiver may also be combined with charging panel or a panel for switch-over between mains and battery operation, and also incorporating charging facilities, in which case the dimensions of the cabinet amounts to:

Height: 830 mm + 40 mm shock absorbers  
          + 50 mm aerial lead in  
Width: 540 mm + earthing bolts.  
Depth: 340 mm + knobs + 40 mm shock absorbers.  
Weight: 65 kgs.

And at length: When the transmitter is A.C. operated the power pack may be combined with any of the above mentioned cabinets, in which case the height of the cabinet will increase by 245 mms and the weight by 40 kgs.

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