TYPE 59D

SUMMARY OF DATA

PURPOSE

A high power M.F. transmitter fitted in capital ships, air craft carriers and cruisers with the Centralised Wireless System (C.W.S.)

TYPE OF TRANSMISSION

C.W. and M.C.W.

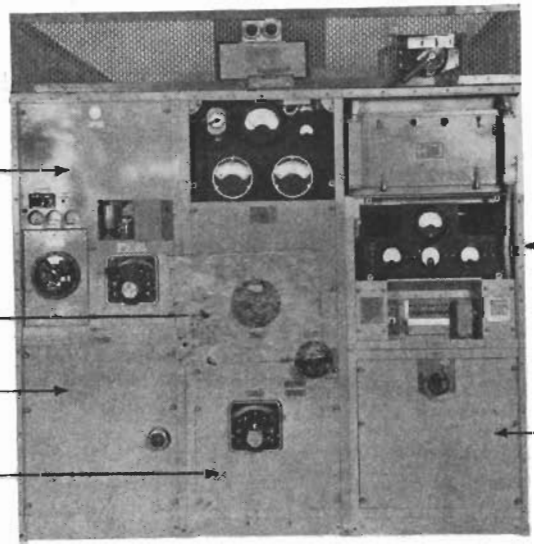
FREQUENCY RANGE

100 - 500 kc/s

MAJOR UNITS

Type 59D comprises the following units:-

Patt. No.	Description	Physical Data		
		Height	Width	Depth
W286	Panel 3PFX Master Oscillator	3' 3"	2' 3"	1' 11"
W287	Panel 3PFX Rectifying, for Master Oscillator	9"	2' 3"	1' 11"
W288	Panel 3PFX Main Transmitting, Upper	4' 0"	2' 5"	1' 11"
W289	Panel 3PFX Main Transmitting, Lower	2' 0"	2' 5"	1' 11"
W290/A	Panel 3PFX Controlling	3' 6"	2' 4"	1' 11"
or 59210	Panel 3PFX Controlling Design 2			
or 67460	Panel 3PFX Controlling Design 3			
W291/A	Panel 3PFX Supply	2' 6"	2' 4"	1' 11"
W292/A	Panel 3PFX Main Rectifying	2' 9"	2' 5"	1' 11"
W293/A	Panel 3PFX Stand for Panel 3PFX Main Rectifying	3' 3"	2' 4"	1' 11"
W604	Stand for Patt. W605 Coil Aerial	9"	2' 4"	1' 9"
W294	Mount, Stowage for Spare Valves	5' 1"	1' 9"	10½"
W605	Coil Aerial			
W785	Switch Aerial Change-over, 1 pole, 4 way			



TYPE 59D - FRONT VIEW

PHYSICAL DATA

The total weight is approximately 2¼ tons. The weight of spare stores particular to Type 59D weight 2¼ cwt. The space occupied by the transmitter panels and safety enclosure is arranged for a minimum size of 7' 2" by 7' 2".

BRIEF DESCRIPTION

The various components of the transmitter are built into eight panels. Six of the panels, containing the tuning controls, meters and switches form the front of the transmitter and also one side of a safety enclosure. The two remaining panels are enclosed in the safety enclosure. Access to the safety enclosure and to the rear of the transmitter is by means of a gate fitted with safety contacts.

The transmitter consists of a two stage, master controlled circuit with a capacity coupled tuned aerial circuit.

The frequency range, 100 - 500 kc/s is sub-divided into three overlapping bands. The selection of the frequency bands is made by a three position switch, which selects the appropriate capacities in the Master and Power Amplifier stages and also the aerial coupling condenser for the band of frequencies required. Continuous frequency variation in each band is obtained by variometers, fitted with slow motion controls, in the Master and Power Amplifier circuits. The variometer controls have four scales, three marked with the appropriate frequency in Kc/s, and coloured to correspond with the colours on the range switch. The fourth scale is engraved with arbitrary divisions to enable an accurate record of adjustments to be made.

The use of different aerials, depending upon the type of ship, necessitates an independent adjustment of the aerial tuning circuit. This is obtained by means of a tapped aerial inductance with continuous fine tuning by means of a rotor, fitted at the low potential end of the main aerial coil, operating as a variometer. An aerial series capacitor, fitted with a short-circuiting link, is fitted at the low potential end of the aerial tuning coil.

The transmitter may be keyed up to 150 words per minute. Provision is made for either Full, Medium or Low Power. Power Output into the aerial is 2 kW on C.W. and 500 watts on M.C.W. on full power.

M.C.W., at a modulation frequency of approximately 1000 cycles per second, is obtained by suppressor grid modulation of the output stage pentode valves, the modulation voltage being obtained by a separate oscillator.

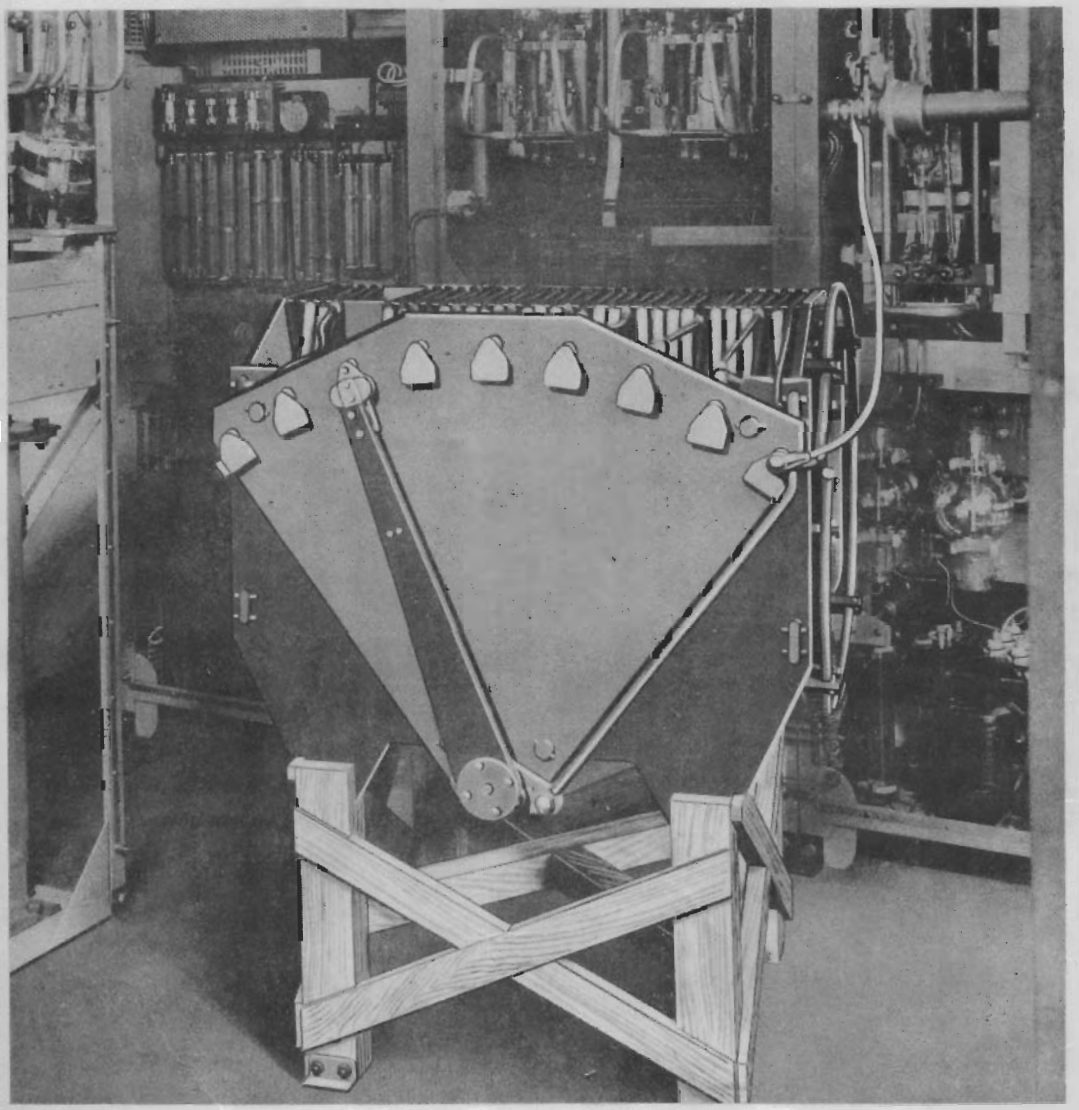
CONTROL CIRCUITS

Type 59D is operated with the C.W.S. (Centralised Wireless System) and may also be adapted for use with Control Outfits of the KHA Series.

POWER REQUIREMENTS	400 volts, 50 c/s 3 phase 15 kVA from the C.W.S. supply system.
AERIAL SYSTEM	Ships main roof aerial.
REMARKS	Wavemeter G62 is used for calibration.
HANDBOOK	B.R.1359
ESTABLISHMENT LIST	T.52
INSTALLATION SPECIFICATIONS	9591 B714 (Type 590 with KHA - KHZ)

TYPE 59D

REAR VIEW OF PANELS WITH AERIAL COIL



TYPE 59 D

REAR VIEW OF PANELS WITHOUT AERIAL COIL