CONTROL OUTFITS

K D A

1. GENERAL

This is fundamentally a W/T control system, with some R.T. facilities. It enables operator control of type of modulation and power by dialling. It is fitted in K.G.V class battleships, old Fleet Carriers and unmodernised cruisers.

2. FACILITIES

Enables an operator at a standard W/T control Unit to:-

(i) Switch On and Off. (D/C)

(ii) Indicate to TR watchkeeper a required frequency. (D)

(iii) Select modulation. (D)

(iv) Select Power. (D) (D/C)

(v) Key. (P) (D/C)

(vi) Receive from a parallel position. (P)

(vii) Intercom with a parallel position. (P)

(viii) Knowledge of transmitter state.

D...Dialling. P...Also from portable. D/C...Also by Direct Control.

3. TYPES OF CONTROL AVAILABLE IN C.W.S. SYSTEMS

(a) Normal — (As shown in Block Diagram).

(b) Emergency — Used when the dialling circuits or the selector units are out of order, when the following facilities are still available:-

(i) Switching on at normal power (by the Emergency/Normal switch in selector unit).

(ii) Keying.

(iii) Local Control of modulation Contactors.

(c) Local Emergency — This is used when the CCX itself is damaged. It provides:-

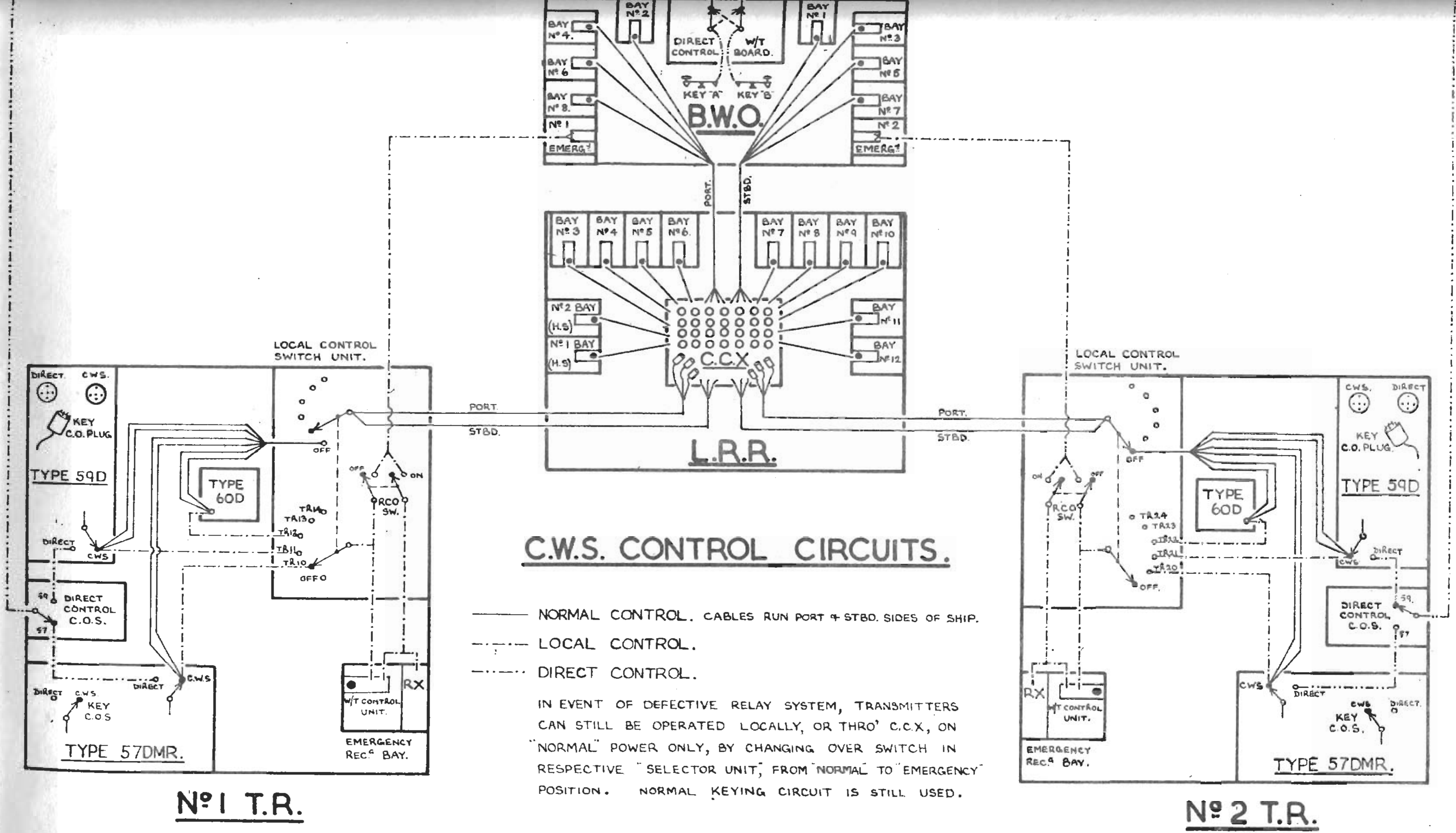
Full facilities from the TR local bay or BWO Emergency bay for one transmitter only in each T.R.

(d) Direct

(i) This can be used from the BWO or Bridge when the local lines are damaged or when controlling "Queen Bees" or as an additional means of control to 2 (v).

(ii) A special control unit enables control of power and use of one high power transmitter in each of 1 and 2 T.R's (for W/T only).

(iii) Special switches must be made in the T.R. and at the transmitter to enable this system to be used.



C.W.S. CONTROL CIRCUITS.

——— NORMAL CONTROL. CABLES RUN PORT + STBD. SIDES OF SHIP.

–·–·– LOCAL CONTROL.

–··–··– DIRECT CONTROL.

IN EVENT OF DEFECTIVE RELAY SYSTEM, TRANSMITTERS CAN STILL BE OPERATED LOCALLY, OR THRO' C.C.X, ON "NORMAL" POWER ONLY, BY CHANGING OVER SWITCH IN RESPECTIVE "SELECTOR UNIT," FROM "NORMAL" TO "EMERGENCY" POSITION. NORMAL KEYING CIRCUIT IS STILL USED.

CONTROL CIRCUITS

5. C C X

Plug and socket exchange fitted in the L.R.R. By means of parallel sockets any transmitter can be plugged to any remote position.

Note: Transmitters cannot be paralled by the CCX, but remote positions can.

6. SELECTOR UNIT

(a) This unit is fitted in the transmitter framework, or rack with the rectifiers for the C W S circuits (Supplies fitted behind it). By means of remotely operated Post Office relays it controls the following functions at the transmitter:-

(i) Switching Off and On.

(ii) Changing Power.

(iii) Changing Modulation.

(iv) Signalling Wave Change Orders, etc.

(v) Providing lamp indications.

(b) The Normal/Emergency switch, when in the emergency position, cuts out all dialling and brings on the transmitter in normal power, together with the last dialled modulation. Normal is indicated by a green light, emergency by a red light.

(c) The Port, Starboard and Local Control lines are always connected to the Selector Unit to avoid change-over switches. Accordingly, to isolate immediately any damaged line, special quick-acting line-clearing fuses are fitted in each line.

7. LOCAL CONTROL SWITCH UNIT

One is fitted in each transmitter room. When it is switched to any position other than OFF, it disconnects the transmitter room transmitters from the CWS, and enables control of one transmitter from either:-

(i) Local Bay in the transmitter room and / or

(ii) The emergency bay in the B.W.O.

W/T CONTROL UNIT

Each standard bay has a permanent base plate with a terminal block into which slides the W/T Control Unit.

Each W/T Control Unit comprises:-

(i) A morse key.

(ii) A control switch (switches on the transmitter).

(iii) A G.P.O. dial.

(iv) Indicating lamps (1 neon, 1 green).

(v) A pair of phone jacks.

(vi) A microphone and switch, for inter-com with M.C.U. and remote positions in parallel.

Behaviour of W/T Control Unit Indicating lamps is as follows:-

LAMPS		SWITCH	INDICATION
Green	Neon		
Off	Off	Broken or made	Power not applied to the transmitter.
Off	On	Broken	Power applied to the transmitter, transmitter not switched on.
Off	Flashing	Broken	Power applied to transmitter, transmitter not switched on due to:-
			(i) Cage door open, and/or
			(ii) Aerial C.O.S. in wrong position (59), and/or
			(iii) Trunk sealed.
On	Flashing	Made	Transmitter switched on, not ready for keying due to:-
			(i) Cage door open, and/or
			(ii) Aerial C.O.S. in wrong position (59), and/or
			(iii) Trunk sealed, and/or
			(iv) Wave change order not acknowledged or wave dialled not same as that set and indicated in W.C.O.1, and/or
			(v) Filaments not warmed up (57 speech amplifier).
On	On	Made	Transmitter switched on, not ready for keying-dialling not completed.

8. W/T CONTROL UNIT (Cont'd)

LAMPS		SWITCH	
Green	Neon		
Flashing	Flashing	Made	Transmitter switched On - not ready for keying because Wave Change Order acknowledged but not yet set.
On	Off	Made	Transmitter ready for keying.

PORTABLE W/T CONTROL UNIT

It is used for gunnery purposes such as rake party or saluting gun deck.

It provides the operator with the following facilities:-

(i) Keying.

(ii) Phone reception.

(iii) Inter-com with the Master Control Unit and Control Units in parallel.

W/T CONTROL UNIT (F/C)

This is a permanent control unit providing the same facilities as 9 above, and is usually fitted in directors etc.

MASTER CONTROL UNIT

One is fitted in the LRR and one in the BWO for the rating in charge.

It provides the following facilities:-

(i) Monitoring of reception in bays.

(ii) Inter-com with individual bays (one at a time)

(iii) Keying of one, or parallel keying of several transmitters.

(iv) Switching of this parallel keying to certain high speed bays.

R.T. EXCHANGE

This is fitted alongside the CCX. It enables three transmitters to be used for R.T. from three positions in the BWO and three in the LRR, but the CCX must be plugged up as well. It only controls microphone circuits.

R.T. CONTROL UNIT

This is fitted in conjunction with a W/T Control Unit and embodies a moving coil microphone. The carrier control switch brings on the carrier and is in parallel with the Morse Key. This unit is now obsolescent and a carbon microphone with a pressel switch is being fitted in lieu.

B.W.O. C C X

A recent modification; this CCX provides additional flexibility within the B.W.O.