GENERAL SUFFIX AMENDT

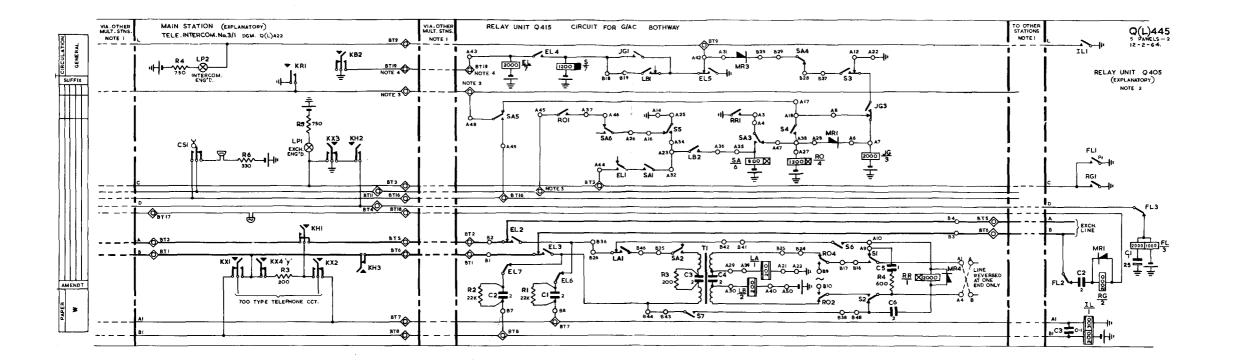
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H.E.S. No.3 (KEYMASTER)
TERMINATION OF PRIVATE AND INTERSWITCHBOARD
CIRCUITS USING RELAY UNIT Q415
SIGNALLING GROUP G/AC BOTHWAY.

Q(L)445 5 PANELS-I 12-2-64.

NOTES :-

- I. RELAY UNIT Q415 RÉPLACES THE LAST MULTIPLE STATION, BUT MUST DE CONNECTED BEFORE THE NON-MULTIPLE EXTENSION IF FITTED. MORE THAN ONE RELAY UNIT Q415 MAY DE FITTED.
- RELAY UNIT Q405, OR Q410 WHEN FITTED, MUST BE CONNECTED AFTER THE LAST STATION. SEE DGMS. Q(L)403 & 404. IN THIS DGM. TYPICAL CONNEXIONS FOR RELAY UNIT Q405 ARE SHOWN.
- 3. THESE CONNEXIONS WILL DEPEND ON THE NUMBER OF THE STATION REPLACED BY THE RELAY UNIT Q415, AND ALSO THE NUMBER OF THE MAIN STATION, SEE DGM.Q(L)441 NOTES 3 % 4.
- 4. THIS CONNEXION IS PROVIDED AT THE MAIN STATION ONLY IF THE EXTENSION OF EXCHANGE CALLS OVER THE PRIVATE CIRCUIT IS AUTHORISED ON THE ADVICE NOTE.
- 5. FOR ARRANGEMENT OF STRAPS IN RELAY UNIT Q415 SEE DGM. Q(L)441.



RELAY UNIT Q415 CONNECTED FOR G/AC B/W

Q(L)445 5 Panels-3 12-2-64.

I. OUTGOING CALL

Lifting handset at calling station operates relay IL. IL1 extends earth to intercom engaged wire. Pressing calling button (KR) extends earth via SA5 and JG3 to operate relay JG. JG1 operates relay S, and relay JG holds via JG3, S3 and SA4 to earth on intercom engaged wire. S4 extends calling earth to relay RO which operates while KR button is pressed. RO2 and 4 connect local 25 c/s ringing to line via S1 and 2.

2. ANSWERING CONDITIONS

when distant end answers relays LA and LB operate. LA1 disconnects relay RR. LB2 operates relay SA. LB1 holds relay S. SA4 disconnects hold path of relay JG which releases. SA2 completes speech path. SA5 provides station engaged condition.

3. INCOMING CALL

Incoming ringing operates relay RR. Earth at RR1 operates relays RO and JG. Relay JG locks via JG3 and S3. RO1 extends earth from S5 and SA6 to operate main station buzzer. When main station answers relay IL operates and earth is connected by IL1 to intercom engaged wire operating relay S via JG1. S3 operates and relay JG now holds to earth on intercom engaged wire. S1 and S2 connect relays LA and LB to line. Relays LA and LB operate. LA1 disconnects relay RR. Relay SA operates via LB2 and S5. SA4 releases relay JG. SA2 completes speech path.

4. CALL ABANDONED

If call is abandoned before answer is received relay JG remains held. Next call on intercom causes relay S to operate via JG1 to earth on intercom wire. When intercom circuit is cleared at end of call relay

5 Panels-4

JG releases first then relay S and circuit is restored to normal.

5- CLEARING

When the multiple station clears first, IL1 earth is removed from the intercom engaged wire and relay S releases. S1 and 2 disconnect line and release relays LA and LB. S5 and LB2 release relay SA. LA1 and SA2 remove loop from intercom circuit.

When distant end clears first relays LA and LB release. LB1 releases relay S. S5 and LB2 release relay SA.

6. EXCHANGE CALLS (see note μ)

Calls answered by a multiple station may be extended over the tie line. The tie line is first called as described in paras. 1 and 2. The control button (KB) is then pressed, connecting earth to operate relay EL, which via EL4

holds with relay S via LB1 to earth at EL5. EL2, 3, 6 and 7, switch the tie line to the exchange line. Earth via S5, SA1 and EL1 lights exchange line engaged lamps at multiple stations. When distant end clears relays LA and LB release. LB1 releases relays S and EL. LB2 and S5 release relay SA.

7. NIGHT SERVICE

At the main station the control button (KB) is depressed and locked down. KB2 earth operates relay EL. EL2, 3, 6 and 7 switch tie line to exchange line. EL4 operates relay S. S6 and 7 connect relay RR to exchange line. S1 and 2 connect relays LA and LB to tie line. Incoming exchange ringing operates relay RR. RR1 via SA3 operates relay RO. RO2 and 4 connect local ringing to tie line. When distant end answers relays LA and LB operate. LB2 operates relay SA to earth via S5. LA1 disconnects relay RR. LA1

and SA2 complete loop to exchange. EL1 and SA1 provide exch. line engaged

When distant end clears relays LA

condition.

and LB release. LB2 releases relay SA. LA1 reconnects relay RR to exchange line. Relays EL and S remain operated.

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