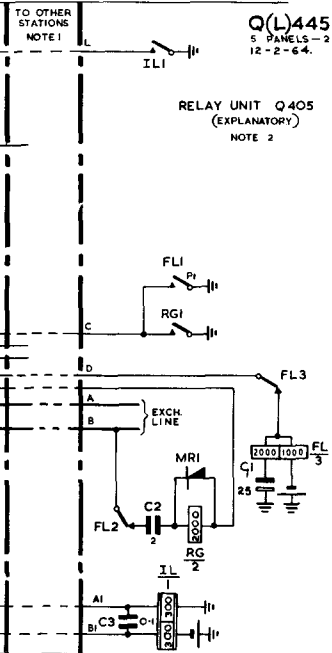
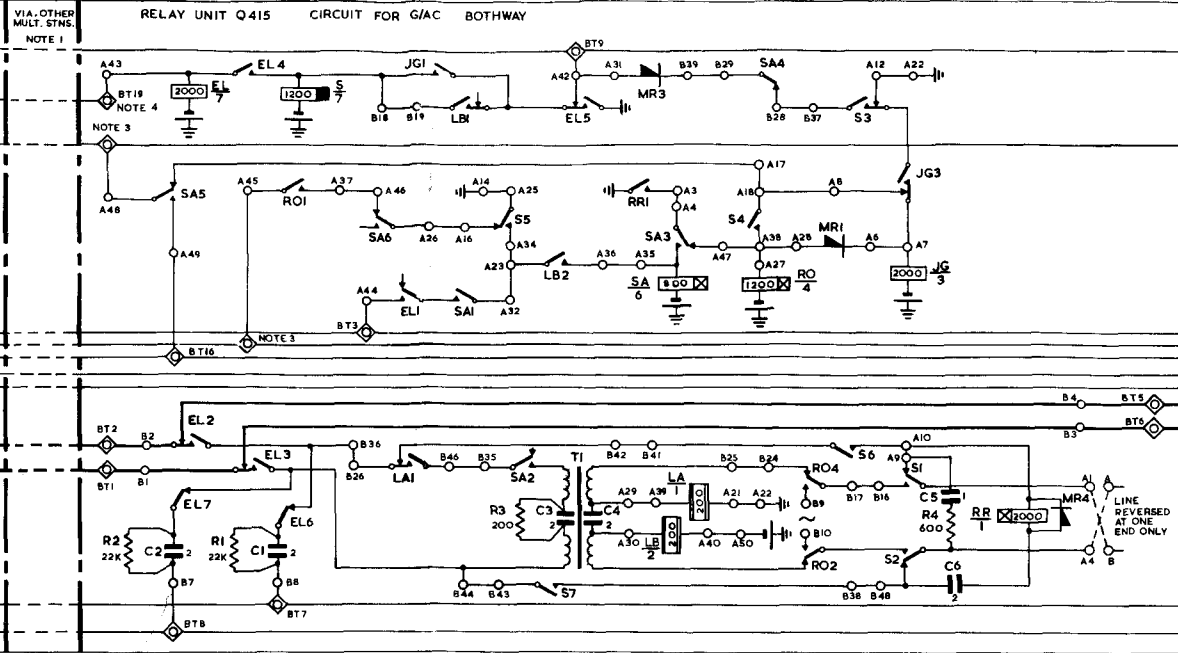
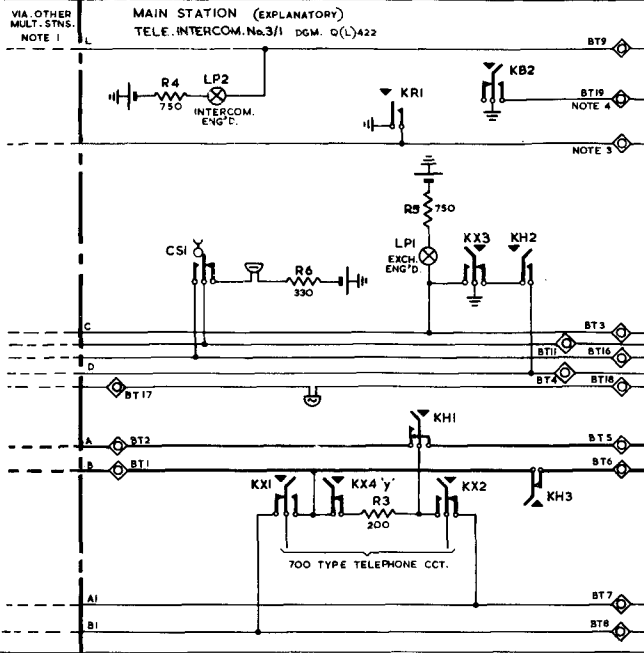


CIRCULATION
GENERAL
SUFFIX
AMENDT
PAPER W



RELAY UNIT Q415 CONNECTED FOR G/AC B/W
CIRCUIT OPERATIONS

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

1. 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 R0 which operates while KR button is pressed. R02 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 R0 and JG. Relay JG locks via JG3 and S3. R01 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

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 4)

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

CIRCUIT OPERATIONS (CONTD.)

Q(L)445

5 Panels-5

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

When distant end clears relays LA
and LB release. LB2 releases relay SA.
LA1 reconnects relay RR to exchange line.
Relays EL and S remain operated.