



CIRCUIT DESCRIPTION

100 Multi-Line Key System

1. **GENERAL**

1.01 This Practice replaces Section 55 Part 903 in the SEIRP binders.

1.02 Figure 1 illustrates a typical installation of 100 multi-line key system equipment, also shown are the single sided and double sided key boxes.

1.03 All connections from incoming lines, battery-ground and generator supply, strapping to other cabinets (when required), and cabling to key boxes are made on the external connecting blocks mounted on the apparatus cabinet backboard. (See Fig. 1). Connect key boxes to 2A KTU only when an ICL is specified on service order.

2. **CIRCUIT DESCRIPTION**

2.01 Ringing current will operate the R relay on each ringing cycle (it will release during the silent period) from ring side of line through 1090 ohm winding, R condenser to tip side of line.

2.02 Relay R operated will operate the R1 relay. R1 will (initially) operate by battery through the 450 ohm winding, contacts 4-5 top of the B relay, contacts 1 and A of the R relay and contacts 1-2 top of the B relay. When the ground cut-off switch is in the closed position a locking circuit is established through contacts 4-5 of the R1 relay to ground. Should the ground cut-off switch be in the open position, the R1 relay will not lock but will follow the operate-release sequence of the R relay.

2.03 Relay R1 operated:

(1) Controls the line lamp from battery, contacts 1-2 bottom through line lamp to ground.

(2) Controls the audible signal (from contacts 2-3 top to G and B leads of fig. 4).

2.04 When the call is answered, the talk key places the telephone across the line in series with the 18.7 ohm winding of the S relay operating it.

Relay S operated operates relay TA, Relay TA operated operates relay B, Relay B operated:

(1) Releases relay R1 and extinguishes the line lamp.

(2) Lights the busy lamp from battery, contacts 3-4 bottom through the lamp to ground.

2.05 The call may be held by operating the line key to the HOLD position which will

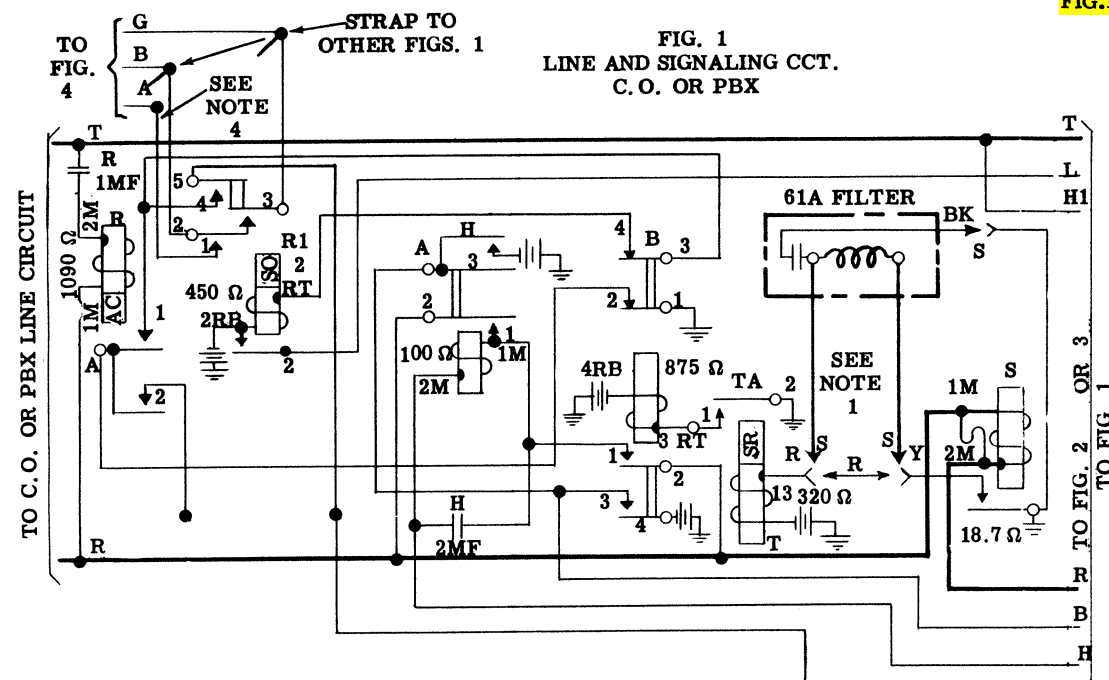
(1) Release the S relay; (2) Relay TA is slow release and will hold relay B operated until the H relay operates. This is (initially) from tip side of the line, the contacts of the hold key through 100 ohm winding of the H relay, and contacts 1-2 bottom of the B relay to ring side of the line. This provides a 100 ohm holding bridge. H relay operated locks operated through its own 1-2 top contacts.

2.06 When the HOLD key is restored, the H relay will release removing the holding bridge.

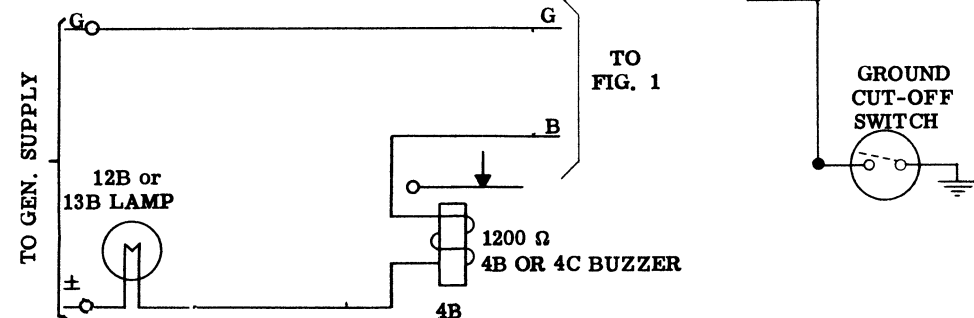
2.07 The intercommunicating circuit is wired so that it will be available with the TALK keys in the normal or unoperated position or in the HOLD position. This circuit should be wired to the key boxes only when an ICL is specified on the service order.

2.08 An outward call is made by selecting a non-busy line and operating its key to the TALK position. Circuit conditions are the same as in paragraphs 2.04 thru 2.07.

FIG.1 THROUGH FIG.4.



COMMON BUZZER CIRCUIT
FIG. 4



- NOTE 1. "S" WIRING AND APPARATUS SHALL BE USED ONLY WHEN IT IS NECESSARY TO SUPPRESS THE RADIO FREQUENCY INDUCTION ARISING FROM THE (S) RELAY CONTACTS. THE YELLOW AND BLACK CORDS OF THE (A) FILTER SHALL BE CONNECTED DIRECTLY TO THE (S) RELAY CONTACT TERMINALS WITHOUT SPLICING. IF NECESSARY ADDITIONAL WIRE MAY BE SPLICED TO THE RED CORD ON THE (A) FILTER TO CONNECT IT TO THE WINDING OF THE (TA) RELAY.
- NOTE 2. THE H1 AND T LEADS SHALL BE CONNECTED TOGETHER AT EACH KEY BOX.
- NOTE 3. NO MORE THAN 12 LAMPS SHALL BE CONNECTED TO ONE "L" OR "B" LEAD. USE TYPE OF LAMP AS REQUIRED.
- NOTE 4. USE "A" WIRING WHEN INDIVIDUAL BUZZER PER LINE IS REQUIRED.
- NOTE 5. PROVIDE ONLY WHEN ICL IS SPECIFIED ON SERVICE ORDER.

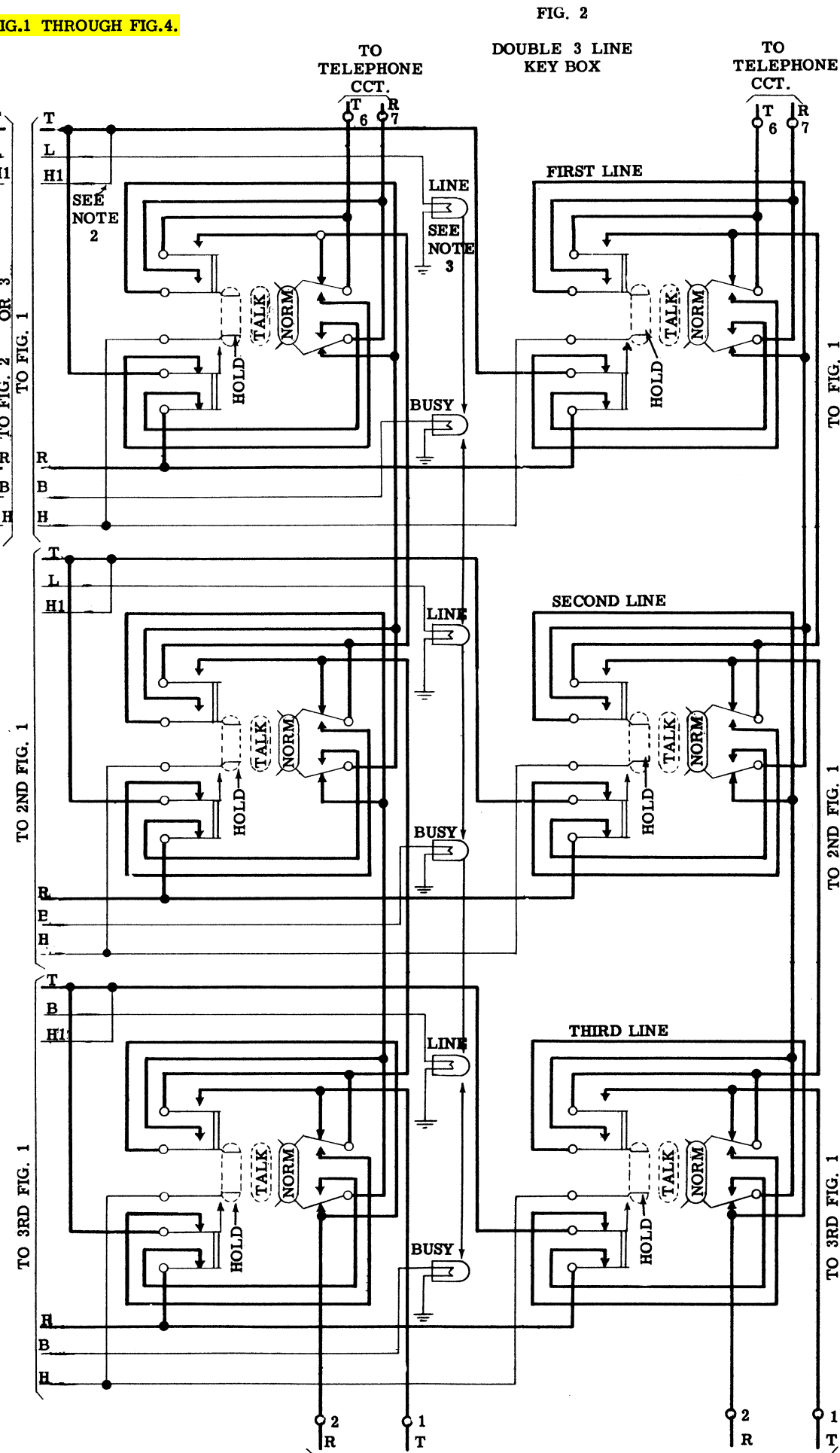
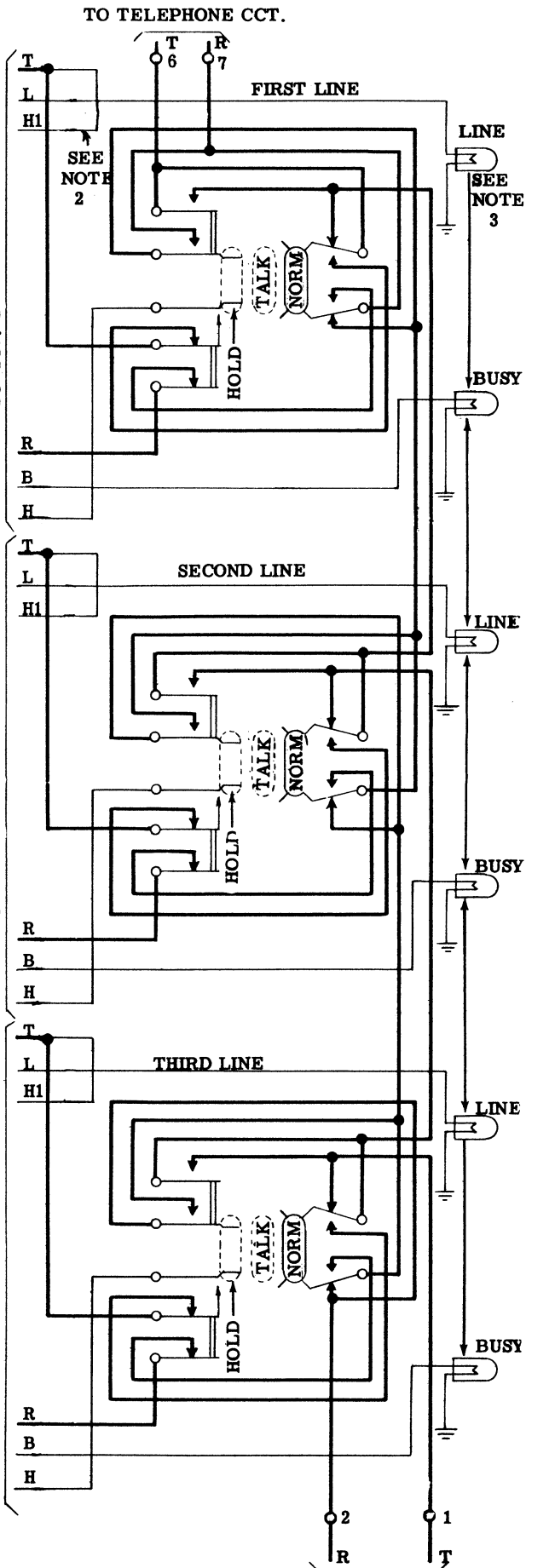


FIG. 3
SINGLE 3 LINE
KEY BOX



THROUGH 2A KTU (ICL) SEE NOTE 5 THROUGH 2A KTU (ICL) SEE NOTE 5 THROUGH 2A KTU (ICL)

FIG. 5

