

1A1 KEY TELEPHONE SYSTEM
DIAL SELECTIVE INTERCOMMUNICATING CIRCUIT
WITH FLASHING LINE LAMPS
USING 207A, 207B, OR 207C; 208A; AND
209A OR 212A KEY TELEPHONE UNITS
CONNECTION DATA

1.00 GENERAL

1.01 This section covers connections required at the apparatus cabinet for dial selective intercommunicating lines equipped with flashing line lamps. This includes strapping between key telephone units, terminating of wires from power sources, and terminating of key and running cables from key telephone stations.

1.02 The data shown in this section at the time of its issuance reflects the latest wiring connection arrangements. In some cases these connections are not consistent with those shown on existing drawings.

1.03 If a single-spurt audible signal seems to be less than one second in duration, check the wiring connections of KS-13491, List 2, 47-ohm *A* and *B* resistors. The *A* resistor from the *T* relay

should terminate on punching 3 of KS-16171, *A* capacitor; the resistor from the *B* relay should terminate on punching 2 of the *A* capacitor.

2.00 CONNECTIONS

2.01 The connection drawing shows the necessary terminations to be made for power, cross connection straps within and between key telephone units, and termination of key or running cable from key telephone stations (see Fig. 2).

2.02 The connection drawing is supplemented by a feature circuit drawing (see Fig. 1). This drawing has been included as an aid for clearing possible cases of trouble which might be encountered.

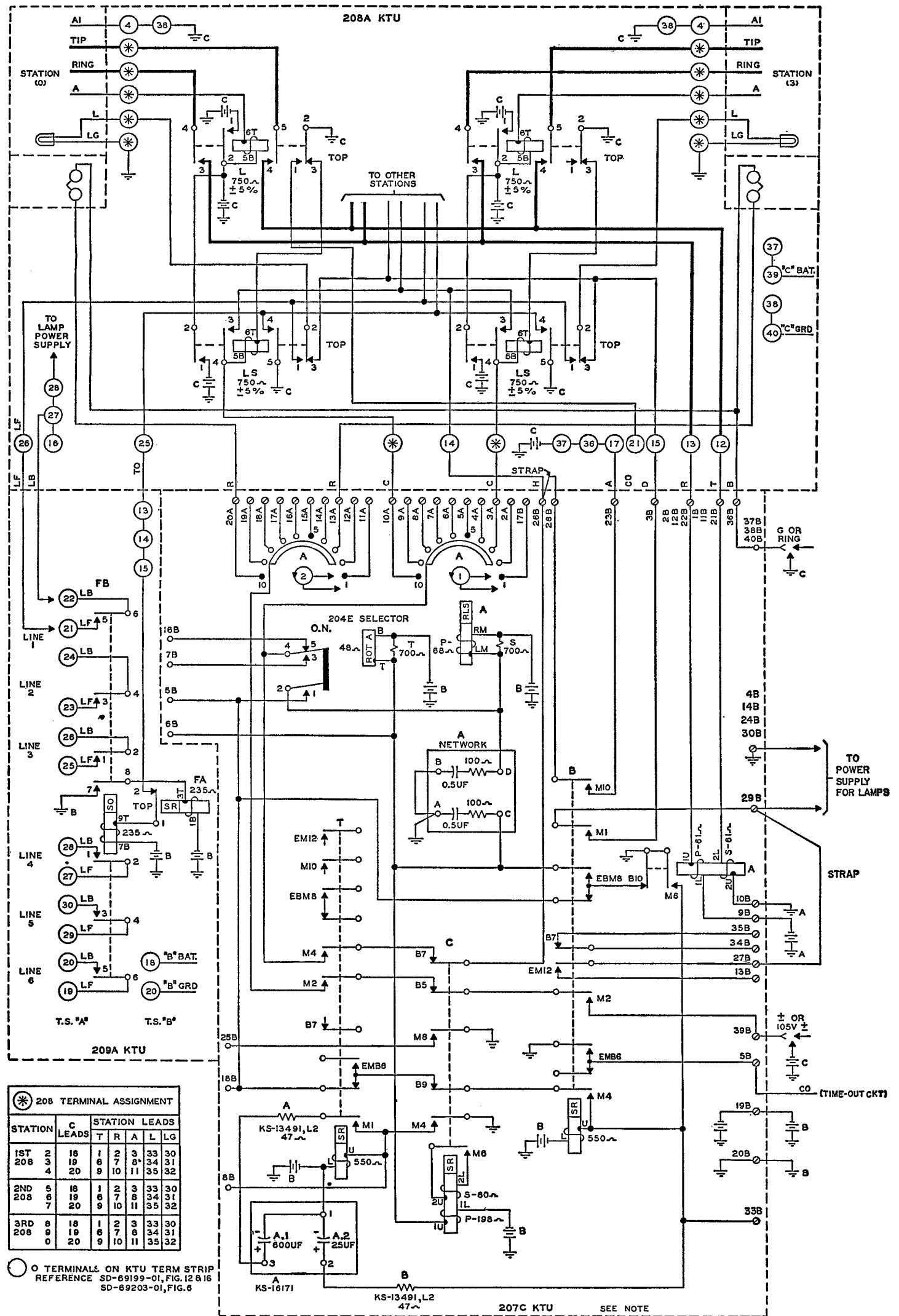


Fig. 1 — Dial Selective Intercom Line Circuit with Flashing Line Lamps — 207B, 207C, 208A, and 209A KTU Circuit

Note 1: The 207B KTU is not equipped with ground or a strap from M8 of the C relay to terminal 25B.

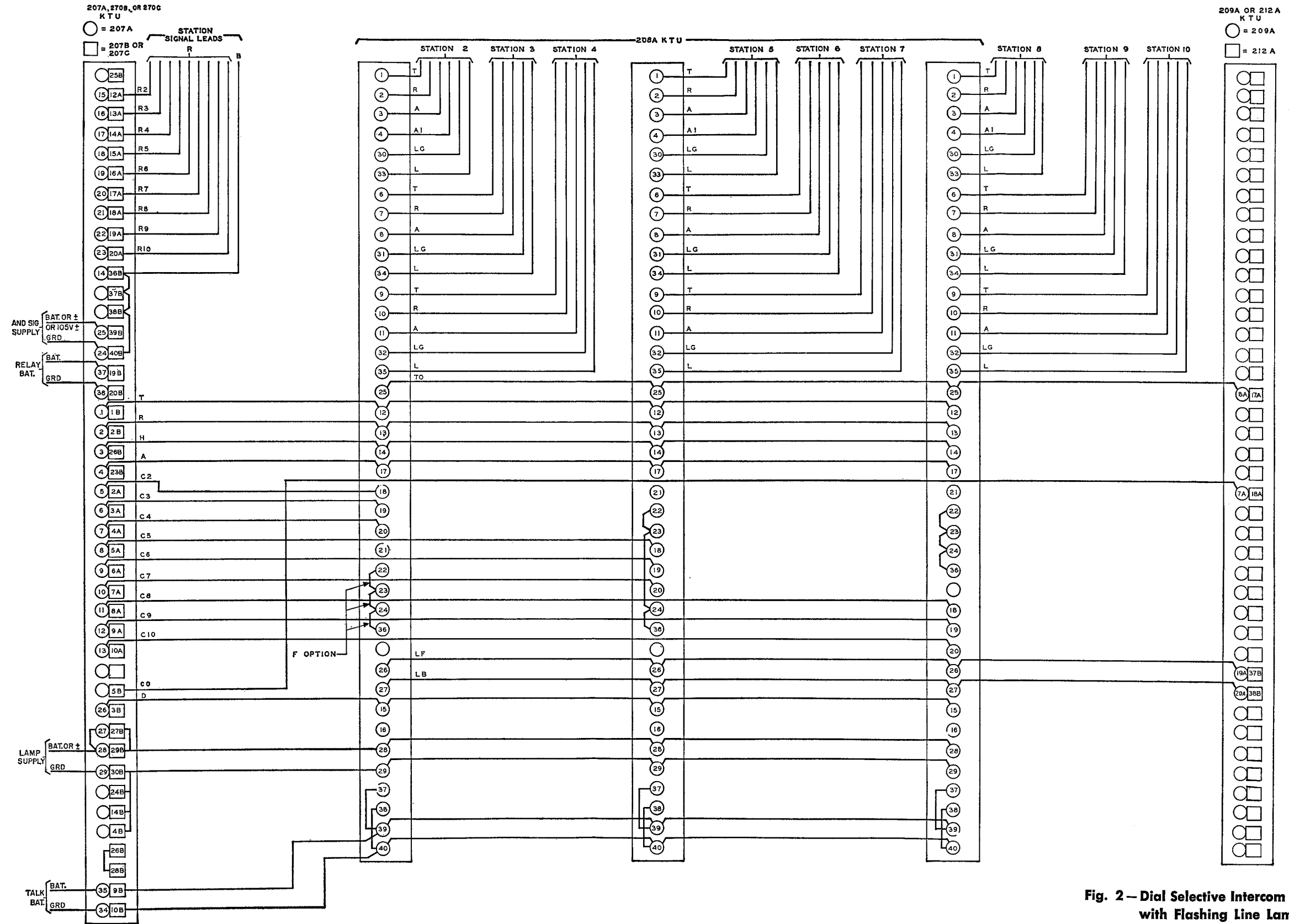


Fig. 2 — Dial Selective Intercom Line Circuit with Flashing Line Lamps — 207A, 207B, or 207C; 208A; and 209A or 212A Key Telephone Units

3.00 DESCRIPTION OF OPERATION

3.01 Line Seizure — When the station originating the call picks up the line, relay *L* associated with this station operates over lead *A*. The operation of relay *L* connects the tip and ring leads of the station to the *A* relay causing it to operate. Relay *A* operated operates relay *B*. Relay *B* operated prepares a circuit for stepping the *A* selector and causes the line and busy lamps, if provided, to light steadily at all stations as a line busy indication.

3.02 Dialing — Stations are selected by dialing the single digit (from 2 to 0, inclusive; the digit 1 is not used) associated with a desired station. When a number is dialed at the calling station, relay *A* releases and reoperates in unison with the makes and breaks of the dial pulses, while the slow releasing relay *B* holds operated during pulsing. Relay *A* releasing and reoperating operates and releases the rotary magnet which causes the *A* selector mechanism to step in a rotary direction. The slow releasing relay *C* operates on the first release of relay *A* and remains operated during the set of pulses. The operation of relay *C* closes the circuit to operate relay *T* in parallel with the *A* resistor and the 600-uf capacitor *A.1*. This charges capacitor *A.1* through the *A* resistor. The *A.2* capacitor slows the release of the *B* relay and permits greater pulsing range, particularly with maximum break intervals.

3.03 Signaling the Called Station — At the completion of the dial pulses, relay *A* reoperates and relay *C* releases. The release of relay *C* closes the circuit to the buzzer, bell, or ringer at the station whose number had been dialed, and opens the circuit to relay *T*. The 600-uf capacitor *A.1* which had been charged to 24 volts is now discharged through the resistor *A* and the winding of relay *T*. This holds relay *T* operated until the discharging current reaches a value which permits the release of relay *T*. The circuit elements have been chosen so that relay *T* will hold operated from 1 to 3 seconds after relay *C* is released. The release of relay *T* opens the circuit to the buzzer, bell, or ringer, and operates the selector release magnet which restores the selector to normal. Thus the buzzer, bell, or ringer at the called sta-

tion is operated for one single interval of 1 to 3 seconds.

3.04 Talking — When the called station picks up the line in answer to the signal, a talking connection is established between the calling and called stations. Talking battery for both stations is supplied through the windings of relay *A*.

3.05 Disconnection — When both stations disconnect, relay *A* releases, which releases relay *B*. The release of relay *B* extinguishes the line and busy lamps, if provided, and restores the circuit to normal.

3.06 Flashing Line Lamp for Key Telephone System No. 1A1 — The 208A key telephone unit provides the flashing line lamp feature in the key telephone system No. 1A1. When the station originating the call picks up the line, relay *L* associated with this station operates over lead *A*. The operation of relay *L* connects the tip and ring leads of the station. When relay *C* releases at the completion of the dial pulses, relay *LS* associated with the station whose number has been dialed operates over leads *C* and *A*. Relay *LS* operated (a) locks operated over lead *H* under control of the operated *B* relay, (b) extinguishes the associated station line and busy lamp by disconnecting the lamp lead from the common lead to the battery supply, (c) connects the lamp lead to lead *LF* of the lamp flashing and incoming signal time-out circuit, and (d) connects ground to the start lead *TO* of the flashing circuit. Ground connected to lead *TO* of the flashing circuit starts the flashing circuit which intermittently connects a battery supply to lead *LF*. This flashes the line and busy lamp at the station whose number has been dialed. The lamps at all other stations remain lighted steadily. When the line is picked up by the station which has been signaled, relay *L* associated with this station operates. Relay *L* operated releases relay *LS*. Relay *LS* released (a) disconnects the lamp lead from lead *LF* of the flashing circuit, (b) connects the lamp lead to the common lead to the battery supply, which relights the associated station line and busy lamp steadily, and (c) disconnects ground from the start lead *TO* of the flashing circuit to stop the flashing circuit. Disconnection by a station at the termination of the call releases relay *L* associated with the station.