

TRUBLE INDICATOR FRAME DESCRIPTION PANEL OFFICES

1. GENERAL

- 1.01 This section describes the trouble indicator frame of the decoder equipment in 3 digit and 3-2 digit panel offices.
- 1.02 The trouble indicator serves as a means for giving the following information regarding connections on which a trouble release has occurred:
- The decoder number.
 - The decoder-connector number.
 - The sender number.
 - The code dialed into the sender.
 - The receiving leads which were grounded or open, and, in the event of trouble in the transmitting circuit, the point at which the transmitting relay chain failed.

2. EQUIPMENT FEATURES

- 2.01 The trouble indicator frame is arranged to serve two decoder groups of a maximum of 6 decoders and 51 decoder-connectors each. It is a single bay structure, 1 foot, 6-11/16 inches long located adjacent to the decoder-test frame. It contains the apparatus of the trouble indicator circuit and also the make-busy jacks, frame talking line, battery supply jack and alarm bells.
- 2.02 The make-busy jacks for making the decoders busy to individual or all connectors are mounted on this frame below the trouble indicator lamps and jacks. These make-busy jacks are arranged to grow from the top downward and are arranged in two groups. The top group is assigned to the first group of decoders, the bottom group being assigned to the second group of decoders when two groups are in use.
- 2.03 The d-c. alarm bells for giving audible alarms in case of time, fuse and motor-stop alarms affecting the decoder equipment are mounted above the trouble indicator apparatus. Two bells are provided, a small bell for the trouble indicator alarm and a large bell for all other decoder, decoder-connector and test frame alarms.
- 2.04 Terminal strips for terminating the cabling from the decoders and decoder-connectors and from the alarm circuits are located at the top of the frame.

3. TROUBLE INDICATOR CIRCUIT

- 3.01 The decoders obtain access to the trouble indicator by means of multi-contact relays mounted on the decoder frame.
- 3.02 The trouble indicator is arranged to take only one record at a time and, therefore, only one of these multi-contact relays will be operated at a time. Thus, only one set of wiring is required from the trouble indicator to the decoder frames, this wiring being multiplied between the multi-contact relays just mentioned. Certain leads individual to the decoder-connector circuits are required, however, for the purpose of identifying the connector and sender involved.
- 3.03 Whenever a decoder finds opens, grounds or crosses on the receiving leads during the preliminary test of these leads or is unable to translate received information due to trouble in the decoder circuit or is unable to transmit the translated information to the senders due to opens, grounds, or crosses affecting the transmitting leads to be used, the decoder is arranged to connect to the trouble indicator before allowing the sender to make a second trial. However, if the trouble indicator is busy, either on account of being used by another decoder, or being made busy by a make-busy plug, the sender is immediately allowed to make a second trial.
- 3.04 Assuming that the trouble indicator is idle, the multi-contact relay on the decoder frame operates, connecting the decoder to the trouble indicator. When the trouble indicator is connected, it records on relays the decoder group number, the decoder number, the connector frame, the connector (A, B, or C) on the frame, and the location of the sender multi-contact relay on the connector. It also makes a record of the receiving leads which are grounded and if the receiving leads are not in trouble it records the point at which the transmitting relay chain failed to close the circuit to send a release signal to the sender. By operating the LP lamp key, a lamp indication of the record just described will be given. As soon as the record is obtained by the trouble indicator, a release signal is sent to the sender and an alarm is given

by a tapping bell. This alarm continues until the REL key is operated to release the relays in the trouble indicator. If the trouble indicator is busy, an immediate release signal is sent to the sender. However, in this case, a vibrating d-c. bell alarm is given and the decoder number is recorded on a separate set of lamps designated DL unless the decoder is the one

which was responsible for a record which is being held by the trouble indicator.

4. **CIRCUITS AND CIRCUIT DESCRIPTIONS**

- 4.01 Drawing SD-21197-011 is the circuit drawing for the trouble indicator. A detailed circuit description will be found in the associated CD sheet.

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