

OPEN TRANSMITTING LEAD BETWEEN ORIGINATING MARKER AND SENDER NO. 1 CROSSBAR OFFICES

1. GENERAL

1.01 This section describes a trouble condition involving an open transmitting lead between an originating marker and a sender which is difficult to analyze from the trouble indicator display because the marker advances while it is connected to the trouble indicator.

2. INDICATIONS OF TROUBLE CONDITION

2.01 Originating trouble indicator displays.

3. REACTIONS DUE TO TROUBLE

3.01 The reactions from this trouble are usually confined to individual calls and do not affect service generally. If the trouble is in the marker, or on the marker side of the originating marker connector, the call will usually be completed on second trial, using another marker. If the trouble is in the sender, or on the sender side of the marker connector, the call will be completed on second trial if the transmitting lead in trouble is not used on that trial; otherwise a third trial will be made. On third trial the call will be completed to an overflow trunk if the lead in trouble is not used; otherwise the district junctor will be set in the "no-connection" position or the sender will become stuck, depending on the optional wiring used in the sender.

4. IMMEDIATE PROCEDURE TO FOLLOW

4.01 Analyze the trouble indicator displays. If the same sender is always involved, make it busy. If the same marker and marker connector are always involved, make the marker busy to the particular marker connector. If the same marker is always involved, but with different marker connectors, make the marker busy.

5. ANALYSIS OF TROUBLE

5.01 An open transmitting lead between a marker and a sender will result in the marker timing out and summoning the trouble indicator since the TK relay cannot operate unless all used transmitting leads are continuous to battery in the sender.

5.02 Under this condition the marker cannot advance from the decoding stage since the SR relay cannot operate to ground the RL

lead to the sender. Consequently, when the trouble indicator is first seized, the TK, SR, and MS lamps will not be lighted. Since no channel has been selected, no CH- lamp will be lighted and the CHE lamp will be lighted and locked in. This would be the normal display for trouble of this nature.

5.03 However, after the trouble indicator is seized, the marker check for continuity of the defective transmitting lead is satisfied falsely, thereby permitting the marker to advance and change the display. This occurs when the indicator connects battery through a relay winding to the defective transmitting lead. This battery substitutes for the battery which should normally be supplied by the sender and permits the checking relay in series with the defective lead to operate and complete the operating path of the TK relay. This in turn operates the SR relay, which permits the marker to advance and make channel test, so that a CH- relay is operated. As a result, trouble indicator lamps TK, SR, and CH- are now lighted. At this point the marker is prevented from continuing with its functions to close the channel due to the fact that, although a CH- relay has been operated, the CHE relay cannot release, since it is held in parallel with the indicator CHE relay to its locking ground. The marker cannot advance from the marker stage and cause the MS lamp to be lighted since, although the SR relay has been operated, the RL lead cannot be grounded to release the sender and marker connector, as this path is opened at the marker TR relay when the trouble indicator is summoned.

5.04 If the transmitting lead should be open in the marker at such a point that the path from the trouble indicator to the transmitting lead checking relay cannot be established, the trouble display will not be altered when the indicator is seized, and no difficulty will be experienced in analyzing the trouble.

6. SUGGESTED PROCEDURE FOR LOCATING AND CLEARING TROUBLE

6.01 The equipment involved in repeated failures will indicate the approximate location of the trouble. The same sender with different markers would indicate that the trouble is in the sender, or on the sender side of the marker connector. The same marker and connector would indicate, that the

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trouble is on the marker side of the particular connector. The same marker with different marker connectors would indicate that the trouble is between the marker connectors and the marker or possibly in the marker.

6.02 Analysis of the trouble indicator displays will often make it possible to determine the particular lead in trouble, since it will be used on every call failing. Any lead which is not used on every display may be eliminated from consideration.

6.03 When a particular sender is in trouble, tests made by means of the originating sender test frame using codes which appear on the trouble indicator record will aid in determining the trouble. When the trouble is on the marker side of the marker connector, or between the marker connector and the marker, it will not be possible to reproduce the failure by means of test calls using the trouble indicator. In either case, tests and inspection for continuity of the transmitting lead should reveal the trouble.

7. TROUBLE CONDITIONS CAUSING REACTION MAY BE LISTED BELOW

7.01 Open contact No. 15, originating marker connector SB- relay.
