LINE VERIFICATION CIRCUIT
GENERAL DESCRIPTIVE INFORMATION
NO. 5 CROSSBAR OFFICES

CONTENTS PAGE

1. GENERAL

1.01 This section describes the line verification circuit which contains features for verifying number group cross-connections associated with subscriber line numbers, class-of-service cross connections associated with the line location on the line link frame, and cross connections associated with the line numbers in the AMA translator.

1.02 This circuit is separate from the master test frame but obtains access to the necessary circuits by way of the master test control and master test frame connector circuits. The verification circuit duplicates but does not replace the line verification features of the master test control circuit which are described in Section A770.201.

1.03 The purpose of a separate circuit is to permit cross connections to be verified in connection with the completion of service orders without interfering with other uses of the master test frame.

1.04 Arrangements are provided for the circuit to function with the connector circuits of two master test frames and, therefore, verification tests can be made of cross connections associated with lines located in two marker groups.

1.05 The controls for the verification circuit, as described in Part 2, can be located near the number group or AMA translator frames where the majority of cross connections to be checked are made.

1.06 The circuit is arranged for use in offices having a maximum of 60 classes of service.

2. EQUIPMENT FEATURES

2.01 The apparatus of the line verification circuit is mounted on two separate equipment units. One unit, which will be referred to as the control unit, contains the apparatus used for controlling the operation of the circuit. The other unit, which will be referred to as the relay unit, contains the relays, resistors, and capacitors of the circuit. Both units are arranged for mounting on a 23-inch relay rack.

2.02 The purpose of the two unit arrangement is to permit the controls to be placed in the best location from an operating standpoint even though it may not be possible or desirable to locate the other apparatus at that point.

A. Control Unit

2.03 The control unit is 12 inches high and consists of a panel on which are mounted rotary switches, key units, and lamps. The wiring from this apparatus is terminated on terminal strips at the top of the unit. The connections from the relay unit are also terminated on these strips.

2.04 The control unit can be mounted on a wall, the end of a distributing frame, a desk, or a relay rack.

2.05 Fig. 1 shows the control unit mounted on the same frame as the relay unit. When so located, the connections between the terminal strips of the two units are made by means of straps rather than cable.

2.06 When mounted in locations other than on a relay rack, additional brackets, a top cover, and a baffle for the rear of the unit are provided. The bracket on the left side, when viewed from the rear of the unit, is hinged in order that the unit may swing out and thus permit access to the wiring side of the unit.

2.07 Fig. 2 shows the control unit mounted on the end of a main distributing frame. The telephone handset and the two items of equipment shown directly above the

control unit are not associated with the line verification arrangement.

B. Relay Unit

2.08 The relay unit is 32 inches high and accommodates nine mounting plates and twelve terminal strips. Eight of the terminal strips, located at the top of the frame, are used for terminating the connections between the verification circuit and the master test frame, marker, and transverter circuits. The other four terminal strips are located at the bottom of the unit and are used for terminating the connections between the relay and the control units. As indicated in 2.05, this unit is shown with the control unit in Fig. 1.

2.09 The amount of apparatus, and consequently the number of mounting plates required, depends on whether one or two marker groups are involved and upon whether AMA equipment is employed. The variation in the number of mounting plates is as follows:

Marker Groups	AMA	Non-AMA
1	7	5
2	9	6

Space will always be provided in the unit for the full complement of nine mounting plates.

3. METHOD OF OPERATION

A. General

3.01 As outlined in 1.01, the line verification circuit is arranged to verify cross connections in the number group, the line link frame, and the AMA translator. The number group and line link frame cross connections are checked by way of a marker and will be referred to as marker line verification tests. The translator cross connections are checked by way of a transverter and will be referred to as transverter line verification tests.

3.02 Marker and transverter line verification tests can be made separately or the circuit can automatically proceed to make a transverter line verification test following the completion of a satisfactory marker line verification test.

3.03 Results of the cross-connection tests are indicated by means of lamps. Under certain conditions, however, it may be found desirable to have a permanent record of a verification. For such cases, a feature is provided for causing a trouble recorder card to be produced.

3.04 The rotary switches on the control unit provide means for registering the office designation, the subscriber number, the location of the line on the line link frame, the class of service, and the ringing combination assigned to the line. The keys are provided for setting the circuit for selecting the marker group and the marker and transverter to be used for the tests, for registering the talking charge condition to be checked, for obtaining a trouble recorder card, and for starting and restoring the verification circuit.

B. Marker Line Verification Tests

3.05 When making marker line verification tests, that is, checks of number group and line link frame cross connections, the circuit transmits the subscriber number, the office designation, and talking charge information to the selected marker. The marker then functions in the same manner as when seized by an incoming register.

3.06 The marker connects to the proper number group and transmits the subscriber number to it. The number group translates this number into the line location, ringing combination, and talking charge information which is transmitted back to the marker.

3.07 The marker uses the new information to select the required line link frame and to attempt to establish a connection to the line. However, the line hold magnet is not operated.

3.08 The line verification circuit has access to information stored in the marker which has been received from the line link frame and from the number group translation. This access is used to check the stored information against the settings of the switches and keys.

3.09 If the information matches the setting of the verification circuit, an OK verification is indicated by the lighting of a particular lamp.

3.10 If the information does not match the setting of the circuit, a lamp is lighted to indicate the cross connection involved in the mismatch.

3.11 If an intercept condition is encountered, an RI (regular intercept), BN (blank number), or TBI (trouble intercept) lamp will light and remain lighted under control of the RL key.

3.12 Verification of PBX lines includes a check that the number group sleeve cross connection is associated with the line hold magnet assigned to the line.

C. Transverter Line Verification Tests

3.13 When making transverter line verification tests, that is, checks of AMA translator cross connections, the test circuit transmits the proper line location information to the selected transverter

which transmits it without change to the AMA translator.

3.14 The translator converts the line location information into subscriber number and office information which is transmitted back to the transverter and to the verification circuit.

3.15 As described for the marker line verification test, an OK lamp indication is given if the information received by the test circuit matches the verification circuit settings.

3.16 If the information does not match in all respects, a lamp is lighted indicating the cross connection involved in the mismatch.

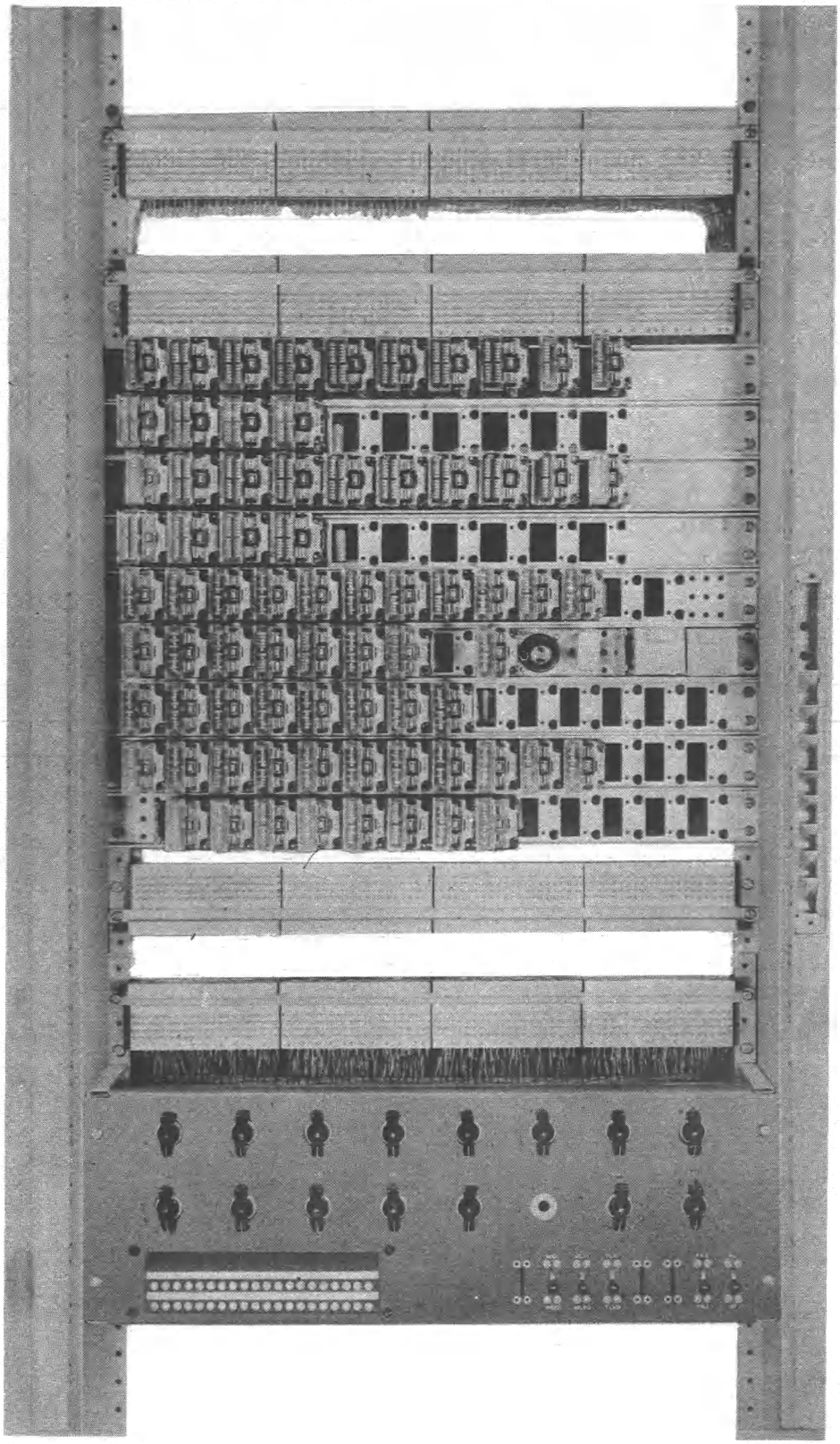

Fig. 1 - Control Unit and Relay Unit
Mounted on Same Frame

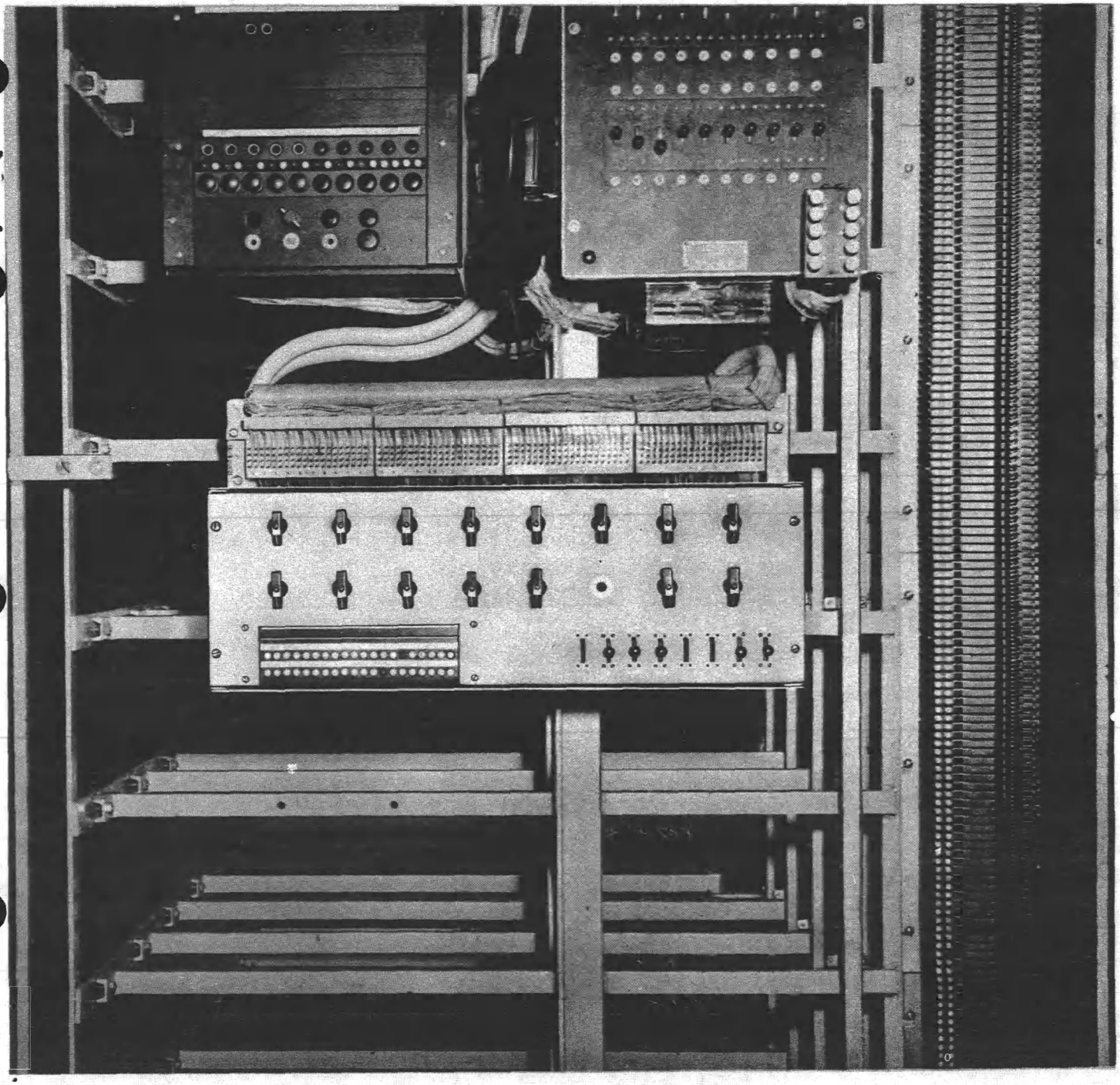

Fig. 2 - Control Unit Mounted on End of Main Distributing Frame