

NO. 1 TRUNK CONCENTRATOR

GENERAL BALANCE INFORMATION

ADMINISTRATION AND RECORDS

1. GENERAL

1.01 This section provides general balancing information for the No. 1 Trunk Concentrator. Terminal balancing is the adjustment, measurement, and evaluation process employed to control echo and singing.

1.02 When this section is reissued, the reason for reissue will be given in this paragraph.

1.03 The general considerations in this section provide a basic understanding of the system description, transmission considerations, administration, and records for balancing the No. 1 Trunk Concentrator. Detailed information concerning specific areas of balance can be found in Section 660-461-100.

1.04 Balance measurements results are to be recorded on standard Form E-6006 (Fig. 4) and must meet the requirements specified in Section 660-461-301.

2. SYSTEM DESCRIPTION

2.01 The No. 1 Trunk Concentrator is used to concentrate trunks from a remote central office to an Automatic Intercept System (AIS) for connection to a recorded announcement or to an operator by means of an Automatic Intercept Center (AIC). A trunk concentrator is also used to route Directory Assistance (DA) traffic to a No. 5 Crossbar Automatic Call Distributor (No. 5 ACD). The basic system arrangement is shown in Fig. 1.

3. TRANSMISSION CONSIDERATIONS

3.01 The No. 1 Trunk Concentrator accepts 2-wire and 4-wire incoming trunks (Fig. 2 and 3). A 1M terminating set or equivalent is used for interfacing between the 2-wire lines and the 4-wire

concentrator. Using the 1M terminating set or equivalent, however, introduces loss in the transmission path which when coupled with the losses in the 2-wire line, requires gain in order to assure the proper transmission level. To avoid the need to provide gain in the trunk concentrator as well as in local offices, the trunk concentrator is operated in a high-loss configuration. For the high-loss operation, the outgoing concentrator switch appearance is a -10 dB TLP in the transmit direction and a +5 dB TLP in the receive direction. In order to compensate for this loss, gain transferred from the carrier facility is always required.

3.02 In 4-wire trunks (Fig. 3) a 4182-type network is used to extend 4-wire voice frequency or carrier facilities to the 4-wire trunk concentrator. The transmission requirement is to match incoming and outgoing carrier levels for the high-loss operation through the trunk concentrator for proper performance. Transmission levels can be controlled and adjusted for optimum performance by applying appropriate 89-type pad resistors in the 4182-type network.

3.03 Impedance compensators (837 type) or precision networks (4066 type) are not required and no options are provided for the No. 1 Trunk Concentrator 4-wire incoming trunks, which use 4-wire voice frequency or carrier facilities.

3.04 For 2-wire incoming trunks, the compromise network may be used in the No. 1 Trunk Concentrator (1M terminating set or equivalent), with provision for adding an adjustable external precision network (4066 type). When an external precision network is used, the compromise network must be removed from the circuit. Options provide either 837-type impedance compensators or a 4066-type precision network when required, but not both.

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

4. ADMINISTRATION AND RECORDS

4.01 Terminal balance records of the balance measurements of the No. 1 Trunk Concentrator should be initiated, maintained, and administered as an aid to analyzing balance conditions or survey results and initiating corrective actions concerning the balance within the No. 1 Trunk Concentrator. This section specifies the form for recording balance measurements. These office records should be kept up to date at the concentrator location as new balancing tests are made for any activities which affect balance. It is the responsibility of the transmission engineer to insure that all of the tests are performed and the office meets or exceeds the transmission criteria.

4.02 The records must provide entries for all trunks in a trunk group. Check in appropriate block to indicate trunk path tested for all trunks listed in Column A.

Note: Trunks having more than one path should be entered on a separate Form E-6006 for each path.

They should be in a form that is readily updated whenever existing trunks are rearranged or when new trunks are added. Enter requirements as required in Column H for ERL, Column J for SRL-LO, and Column K for SRL-HI.

4.03 Maintenance of the balancing records concurrently with balancing work as it is performed should be a primary consideration. Circuit order work test results for new trunks, or retest obtained when facilities are rearranged, should be promptly entered on the standard form E-6006 (Fig. 4).

4.04 The testing arrangements as related to the No. 1 Trunk Concentrator are specified in detail in the balance and verification Section 660-461-301.

5. REFERENCES

5.01 The following references are given to provide additional detailed information for use in the No. 1 Trunk Concentrator.

SECTION	TITLE
103-106-115	WEC Co Model KS-20501 Return Loss Measuring Set Description and Operation
201-850-101	No. 1 Trunk Concentrator Description
332-205-100	Impedance Compensators—837 Type—Description and General Information
332-800-103	1M Terminating Set Description
332-852-100	4066-Type Network Description
660-461-100	General Balancing Information
660-461-301	No. 1 Trunk Concentrator Balance Requirements and Verification
660-47Y-520	Selection of Office NBO in Large Class 5 Office
801-026-165	Incoming Trunk Frame No. 1 Trunk Concentrator Equipment Design
801-206-153	No. 1 Trunk Concentrator Portable Test Set (J94747A-SD97576-01)
853-500-110	Through and Terminal Balance Certification Requirements
Manual	Wiltron Model 9041 RLMS or Equivalent

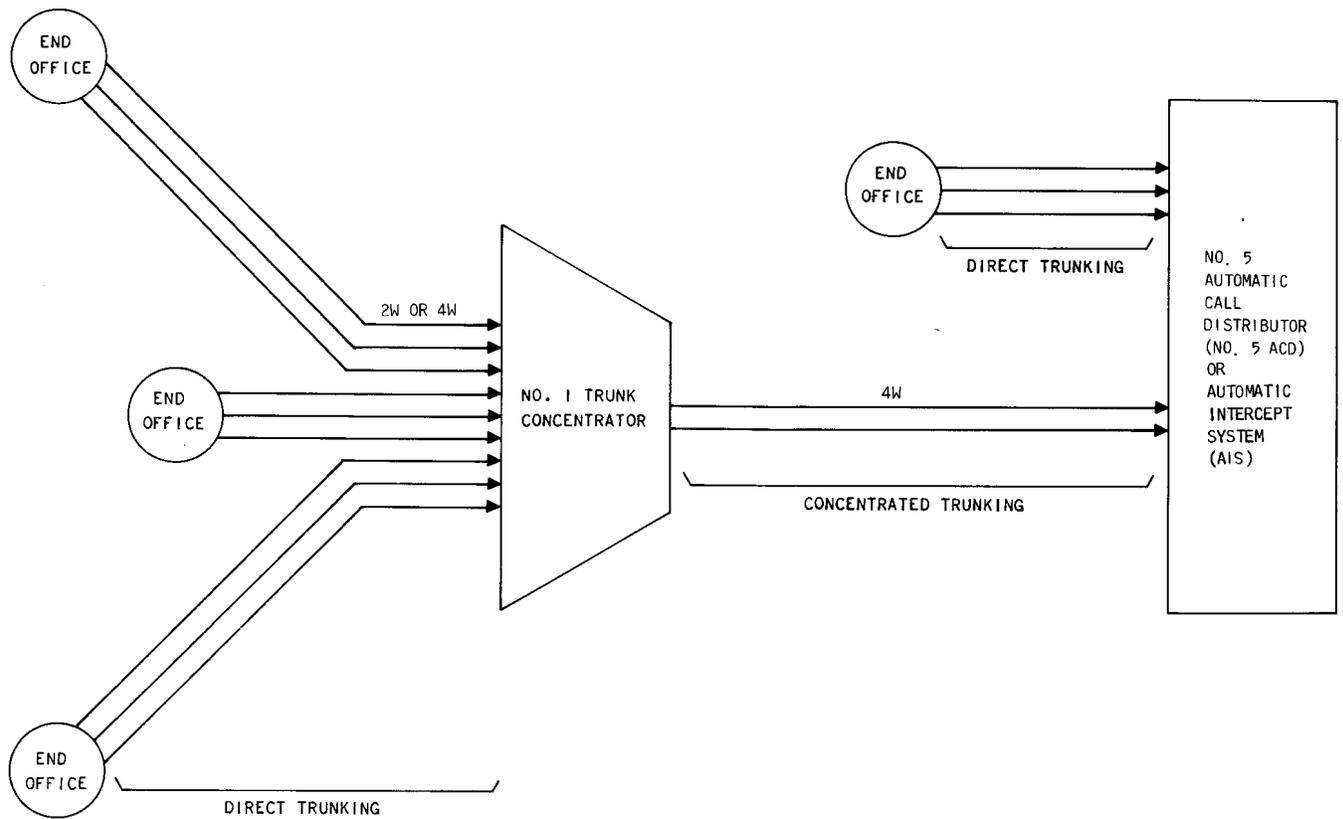
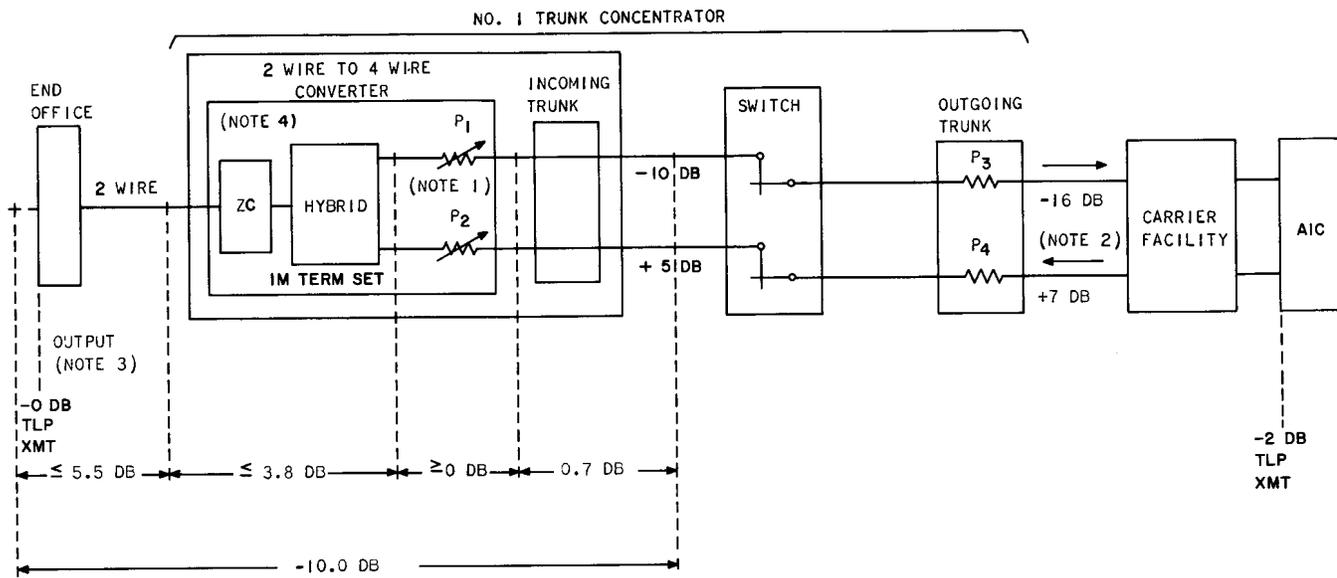


Fig. 1—No. 1 Trunk Concentrator Basic System Arrangement



NOTES:

1. PADS P_1 AND P_2 PROVIDE 0 TO 15DB LOSS IN .25DB INCREMENTS TO ADJUST 10DB TRANSMISSION LOSS FROM AN END OFFICE TO THE NO. 1 TRUNK CONCENTRATOR OUTGOING TRUNK.
2. PADS P_3 AND P_4 PROVIDE 6DB AND 2DB LOSS RESPECTIVELY WITH ALLOWANCE FOR OFFICE CABLE LOSS TO CARRIER BAYS.
3. AT THE OUTPUT OF THE LOCAL OFFICE SWITCH, 0DB LEVEL; AT THE AIC, OUTPUT -2DB LEVEL.
4. ZC DENOTES AN IMPEDANCE COMPENSATOR (OPTIONAL).

Fig. 2—No. 1 Trunk Concentrator Transmission Plan—2-Wire Incoming Trunk

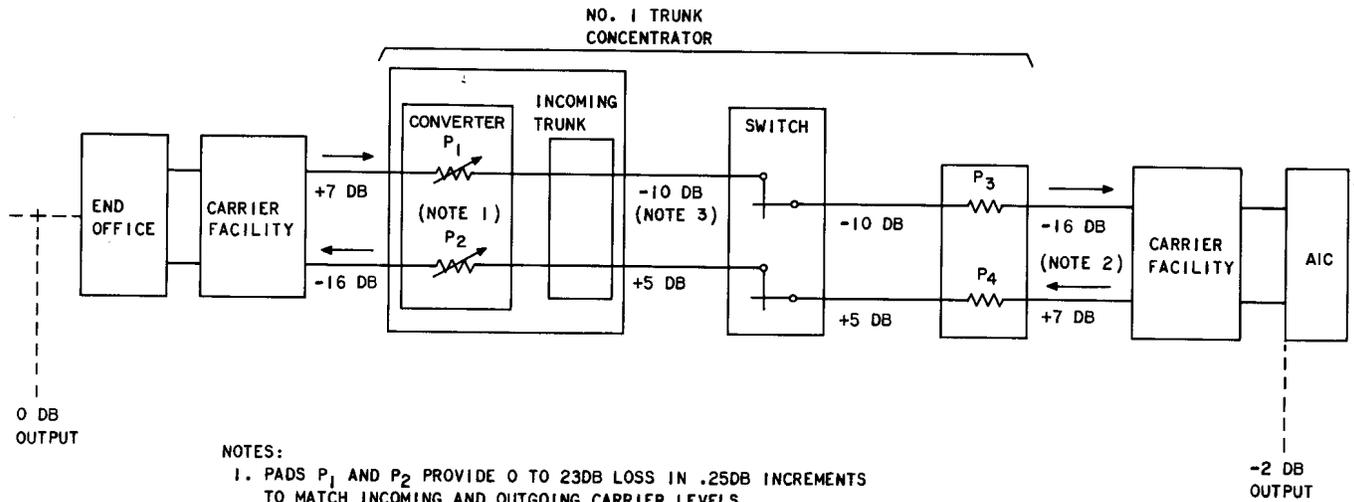


Fig. 3—No. 1 Concentrator Transmission Plan—4-Wire Incoming Trunk

