

Fig. 2—Data Set 108B, Series 7

1.06 Data sets and DASs that are to be returned to the distributing house should be carefully packed (in original type cartons, if available) to protect the sets in transit. A tag, describing the nature of the trouble as completely as possible, should be attached to the defective data set or DAS.

2. TROUBLE LOCATION PROCEDURE

2.01 Figure 3 is a block diagram representation of a trouble location procedure that may be used to locate and repair a trouble. This procedure follows the "test before dispatch" philosophy of trouble clearing.

2.02 When trouble is reported, the first action required is an analysis of the information to determine, if possible, the origin of the trouble. In many instances, the cause of the trouble cannot be determined from an analysis of the trouble report or from any indications provided at the central office. When this is the case, the procedures outlined in the following text and Fig. 4 can be used as a guide in locating the trouble condition.

2.03 If the trouble is interfering with service on the rest of the circuit, the leg should be removed from service at this time.

2.04 When the trouble is obviously being caused by the station data set or terminal equipment, a telephone company employee should be dispatched to clear the trouble and restore service.

2.05 If the nature of the trouble is not obvious or cannot be determined from the available information, the line should be checked for F1 and F2 frequency and level using a KS-19935 telegraph carrier test set.

Note: For information on using the KS-19935 telegraph carrier test set, refer to the section entitled, KS-19935 Telegraph Carrier Test Set (103-825-100).



Verify that any replacing data set or DASs have the proper options installed before patching in or substituting these units.

2.06 The line is first monitored for F1. If F1 is not present or the frequency and level is not acceptable, the data set 108B and DAS 811C should be suspected of being the cause of the trouble, and known good data set 108B and DAS 811C should be patched in. After patching in the known good units, a check should be made to determine if (1) the F1 frequency and level are acceptable, and (2) the trouble condition has been cleared by substitution of known good units. When substitution of known good units does not clear the trouble, a check of the power supplied to the data set and the associated wiring should be made. Perform the necessary tests to locate the cause of the trouble and make the necessary repairs. When substitution of known good units clears the trouble, inform the serving test center (STC) of the action taken and the results of this trouble clearing procedure.

2.07 When F1 is found to be present, the line is monitored for F2. If F2 is not present, it may be due to either a faulty line or trouble at the customer station. The line should be tested using the established test procedures for private line services. The results of this test should be compared with the test results obtained at the time the line was approved for service. If the test indicates a faulty line, take the necessary

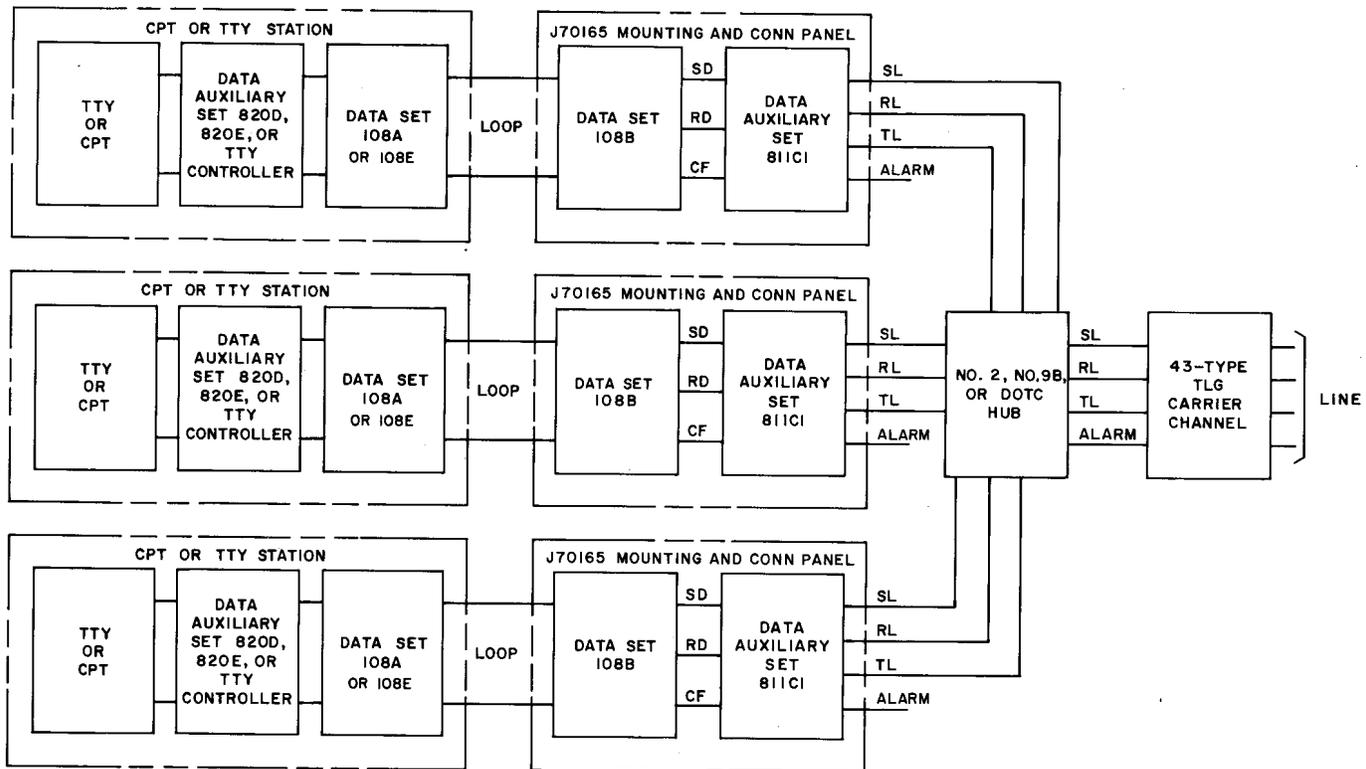


Fig. 3—System Block Diagram

steps to have the line patched or repaired. When the line is acceptable, the station is suspected of causing the trouble. Refer to the applicable sections for information on locating trouble at the station.

Note: Before the test mode can be used as indicated in the following text, the necessary connections must be made to terminate the customer station leg on a full-duplex (FDX) basis to provide for the required FDX operation in the test mode. A position teletypewriter cord circuit (SD-70559-01) which has been modified to provide optional half-duplex (HDX) or FDX terminations can be used for this test. This is the standard position cord circuit for No. 2 and No. 9B serviceboards and DOTCs.

2.08 In order to facilitate testing, remove the leg from service, patch in the spare hub, and attempt to communicate with the customer station. Determine if the customer station can copy a 25-percent switched combination distorted signal sent from the STC and send a signal that is less than 10-percent distorted as received at the STC. If the customer station can meet these

requirements, it is operating properly and the trouble can be considered to have "come clear".

2.09 When the attempt to communicate with the customer results in either high distortion or no copy being received, request that the customer loop back the data signal at the station by operating the test switch at the station. Undistorted "FOX" should be sent and the received distortion measured. If the received distortion is less than 15 percent, the station teletypewriter should be suspected of causing trouble. If the station is not a Bell System station, the customer should be informed that the telephone company equipment has been checked and is operating properly. Request that the customer have the terminal device checked to verify that it is operating properly. If the station having trouble is a Bell System station, a telephone company employee must be dispatched to clear the trouble and restore service.



Verify that any replacing data set or DAS has the proper options installed before patching in or substituting these units.

SECTION 312-800-300

2.10 If the received distortion of the loop-back test is more than 15 percent, a known good data set 108B and DAS 811C should be patched in (substituted) and the distortion test repeated. If this test indicates less than 15-percent distortion, it can be assumed that the trouble is in the data set 108B, DAS 811C, or the J70165A-1 mounting and connecting panel. Substitution of known good units can be made to locate the defective unit. If the second distortion test shows a high distortion, the data set at the customer location should be suspected of causing the trouble.

3. OPTION CONNECTIONS

3.01 Option connections for data set 108B are shown in Table A.

3.02 When making option connections, only the options specified on the service order should be installed. The options are installed as follows.

- (a) Use strapping wire (approximately 26-gauge) to strap between the terminals indicated in Table A. Refer to Fig. 5 (Data Set 108B, Series 2) or Fig. 6 (Data Set 108B, Series 7) for the location of these terminals.



Extreme care must be used when soldering to prevent possible damage to the circuit board.

- (b) After wrapping the wire securely around the terminal, solder the wire to the terminal using a KS-16346 L1 or L2 soldering iron or an equivalent low wattage iron.

4. DATA SET 108B REPLACEMENT PROCEDURES



Before attempting to replace a data set or DAS, make sure the power has been disconnected.

4.01 The data set 108B is mounted in J1A slots of a J70165A-1 mounting and connecting panel. The J70165A-1 mounting and connecting panel is shown in Fig. 7.

4.02 Replacement of the data set 108B or DAS 811C is accomplished as follows.

- (a) Remove the fuses for the +24 and -24V power. These fuses are located on the mounting panel (see Fig. 7).
- (b) Remove the retaining screws that hold the card retaining bar.
- (c) Remove the data set by grasping the pulling ring on the data set card and pulling the card straight out of the mounting panel.
- (d) When replacing a data set, make sure that the card is correctly positioned to engage the connector at the back of the panel. Excessive force should not be required to install the data set; however, the data set should be seated firmly in the mounting panel connector.
- (e) Replace the card retaining bar and fuses to complete the installation of the data set.

5. REFERENCES

5.01 For additional information on the equipment associated with the data set, refer to the following items:

- (a) J70165A-1 Mounting and Connecting Panel for Data Sets 108B and Data Auxiliary Set 811C1 (807-017-150)
- (b) ED-95131-10 Group 41 (Modular Fuse Block Arrangement)
- (c) SD-70942-01 Data Set 108B
- (d) SD-70963-01 Data Auxiliary Set 811C
- (e) SD-70955-01 (Data System Connecting Circuits for Data Sets 108B, 108D, 108E, 109B, 109G, and 110B and Data Auxiliary Sets 811C1 and 811K in Central Office, Schematic Diagram and Circuit Description)
- (f) SD-70878-01 Telegraph Service Board No. 2 Leg-Hub, Relay Terminating, and Hit Indicator Control Circuits
- (g) SD-70613-01 Telegraph Service Board No. 2 Leg Multiple, Loop Leg, and Hub Jack Circuits
- (h) SD-70612-01 Telegraph Service Board No. 9B Jack and Lamp Circuits.

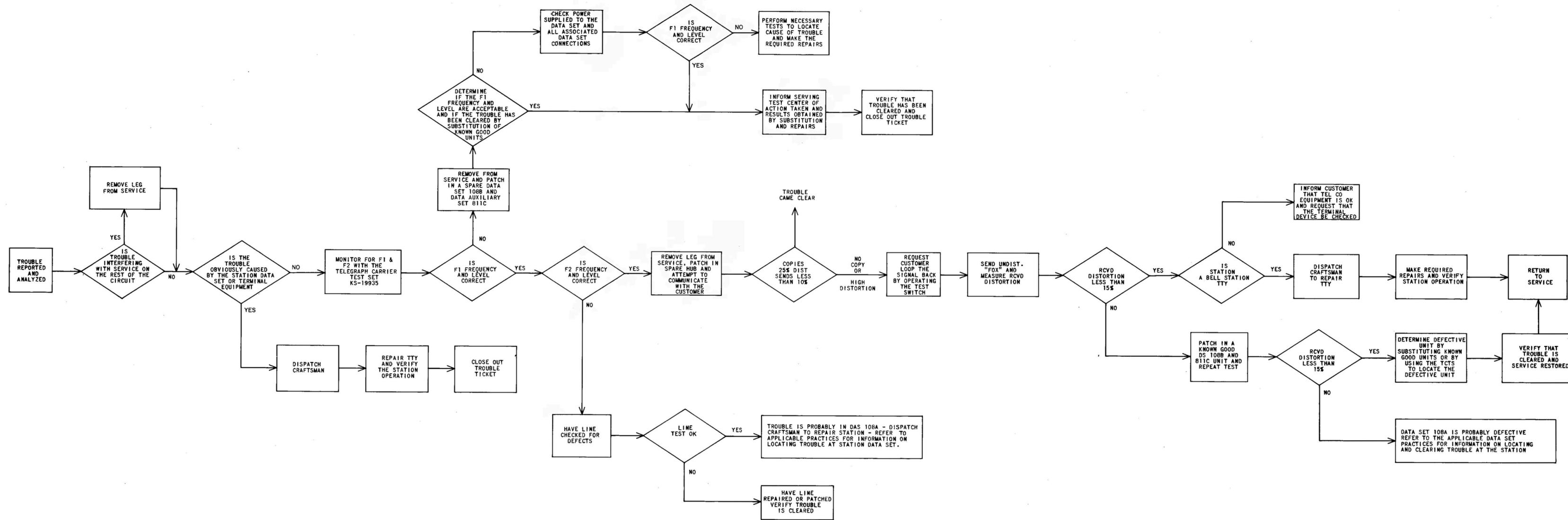


Fig. 4—Trouble Locating Procedures

◆TABLE A◆

2-WIRE/4-WIRE OPTIONS

OPTION	FEATURE	STRAP TERMINAL	CONNECT TERMINALS
Z	4-wire operation	G to H I to J	15 and 16 to send line 10 and 11 to receive line
X	2-wire operation for H88 (HC) cable	G to J F to H	15 and 16 to line
Y	2-wire operation for NL (HC) cable	G to J E to H	15 and 16 to line

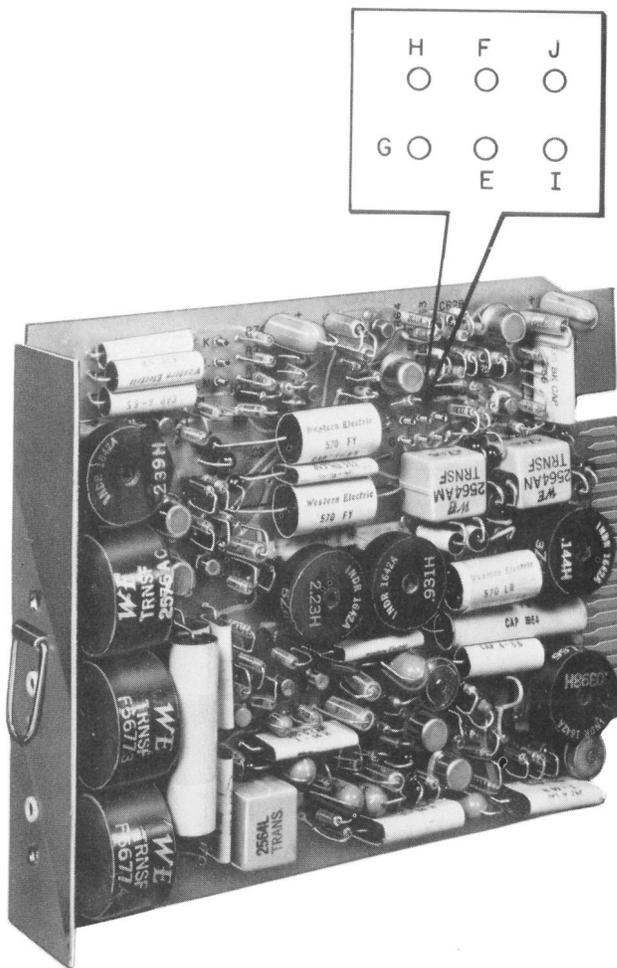


Fig. 5—Data Set 108B, Series 2—Location of Terminals for Option Strapping

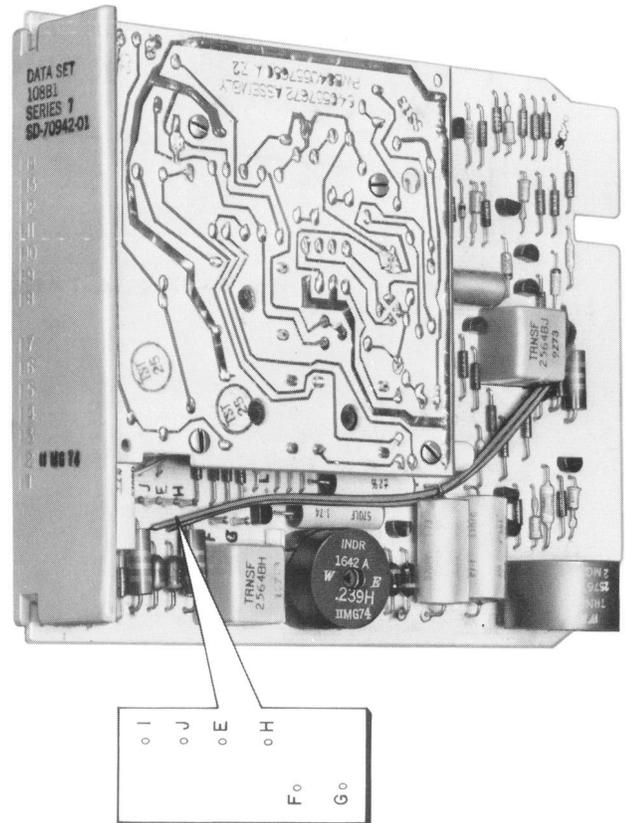


Fig. 6—Data Set 108B, Series 7—Location of Terminals for Option Strapping

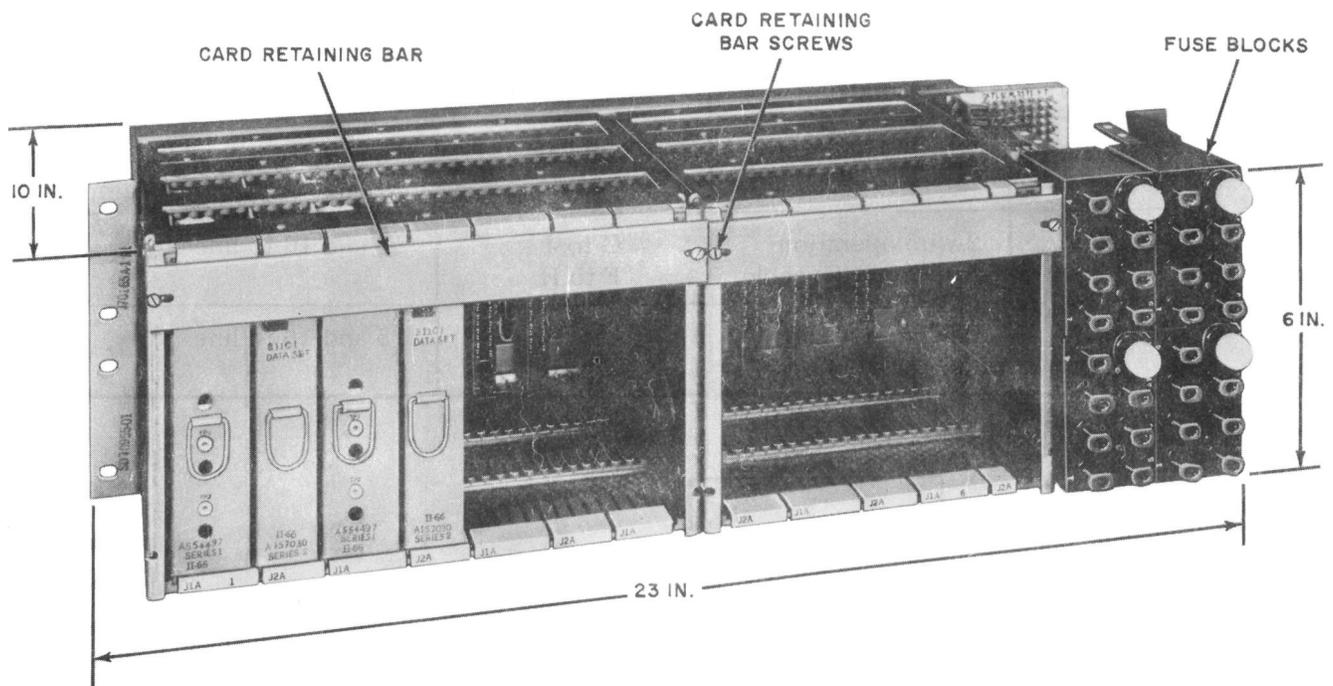


Fig. 7—J70165A-1 Mounting and Connecting Panel (MD)