

## 113-TYPE DATA STATION MAINTENANCE

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not exceed 10 percent of the total number of Data Sets 113B-L1 in a 113-type data station.

**1.06** Prior to installing a replacement data set or data mounting, ensure that the proper options, as shown on the service order or circuit layout record card, are installed in the replacement unit. After installation of a replacement Data Set 113B-L1, the data set transmitter output level **must** be adjusted as described in 4.10.

**1.07** Take necessary steps to ensure customer is not billed for test calls. Refer to the section entitled Crediting Charges on Test Calls (010-250-001).

**2. MAINTENANCE AIDS**

**2.01** This part lists the Bell System Practices (BSPs), circuit descriptions (CDs), schematic diagrams (SDs), tools, and test equipment that will be of aid in maintaining the 113-type data station.

**2.02 BSPs, SDs, and CDs—**

SECTION	TITLE
591-814-Series	113-Type Data Station—
CD- & SD-1D208-01	Data Systems Station—Data Set 113B-L1 and 32A1 Data Mounting—Part of 113-Type Data Station
CD- & SD-1D210-01	Data Systems Station—Data Auxiliary Set 804T-Type—Part of 113-Type Data Station.



**The section entitled 113-Type Data Station—Installation (591-814-200) contains the installation procedures required for the installation of replacement units. Therefore, this section MUST accompany all maintenance visits.**

**2.03 Tools—**553A lamp extraction and replacement tool.



**The section entitled 113-Type Data Station—Test Procedures (591-814-500) contains the tests referred to in the following text and troubleshooting flowcharts. Therefore, this section**

**MUST accompany all maintenance visits.**

**2.04 Maintenance Tests—**The test equipment required for the performance of each test is shown in brackets following the listing of the test.

- (a) Test A—Power Source Output Test [KS-14510-L1, or equivalent, volt-ohm-milliammeter (VOM)]

**Note:** If Test C or D is to be performed, the meter on the 914B Data Test Set (DTS) required for this test may be used in place of the KS-14510-L1 VOM.

- (b) Test B—Loop-Back Test from the 904-Type Data Test Center [Test Mode (TM) connector (provided with 32A1 Data Mounting)].

- (c) Test C—Power Receptacle Ground Test Using 914B Data Test Set [914B DTS, 6A Impulse Counter]

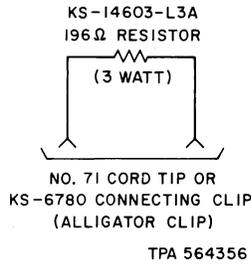
- (d) Test D—Data Set 113B-L1 Interface Test Using 914B DTS [914B DTS]

- (e) Test E—Power Receptacle Ground Test Using 901B DTS Interface Test Adapter [901B DTS, 6A Impulse Counter]

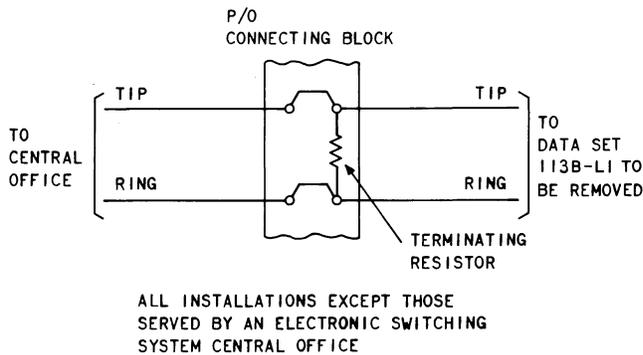
- (f) Test F—Data Set 113B-L1 Interface Test Using 901B DTS [901B DTS].

**2.05** The removal of a Data Set 113B-L1 will cause the line hunting arrangement in central office (CO) to stall on the unterminated line. Therefore, it is recommended that the terminating resistor shown in Fig. 1 be fabricated locally. This terminating resistor should be connected across the tip and ring [or between sleeve (a third wire used for supervisory signaling) and ground] of the line associated with the data set to be removed, as shown in Fig. 2, prior to removing the data set.

**2.06** Some testing and trouble isolating procedures require plugging the service line twin plug of the 32A1 Data Mounting into the service line twin jack on the faceplate of the Data Set 113B-L1. If the data set is in the data mode at the time the service line is plugged in, the call being served will be disconnected and the data set made busy to any further incoming calls. Therefore, it is



**Fig. 1—Line Terminating Resistor for Removal of Data Set 113B-L1**

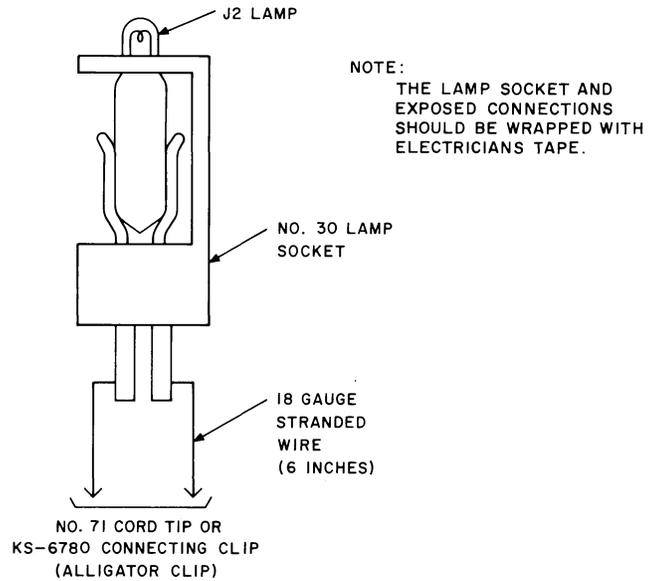


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**Fig. 2—Connection of Line Terminating Resistor for Removal of Data Set 113B-L1**

important to ensure that the data set is idle before plugging in the service line twin plug. At installations equipped with a DAS 804T-type, this is accomplished by observing the status field lamps on the DAS. At installations *not* equipped with a DAS 804T-type it is suggested that the test lamp shown in Fig. 3 be fabricated locally and used in accordance with Table A to determine whether a data set is idle before plugging in the service line. If the lamp is extinguished, it indicates that the data set is

idle. A lighted lamp indicates that the data set is either in the data mode or manually made busy.



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**Fig. 3—Test Lamp for Checking if Data Set 113B-L1 is Idle at Installations not Equipped With a DAS 804T-Type**

**2.07** The procedure for checking the Data Set 113B-L1 transmitter output level described in 4.09 requires a TTS-28 Transmission Measuring Set (TMS), or equivalent, and a 6P8B patching cord.

**2.08** The procedure for checking the data terminal ready (CD) and data terminal busy (CN) leads described in 4.20 (b) requires the use of a 914B DTS.

### 3. MAINTENANCE PROCEDURES

#### A. Data Set 113B-L1 Replacement



*The removal of a Data Set 113B-L1 will cause the line hunting arrangement in the CO to stall on the unterminated line. Therefore, it is recommended that the terminating resistor shown in Fig. 1 be fabricated locally. This terminating resistor should be connected across the tip and ring (or between sleeve and ground) of the line associated with the data set to be removed, as*

TABLE A

TEST LAMP CONNECTIONS FOR CHECKING IF  
DATA SET 113B-L1 IS IDLE

DATA SET IN SLOT	CONNECT TEST LAMP BETWEEN J22 - 26 AND
1	J22-1
2	J22-2
3	J22-3
4	J22-4
5	J22-5
6	J22-6
7	J22-7
8	J22-8
9	J22-9
10	J22-10
11	J22-11
12	J22-12
13	J22-13
14	J22-14
15	J22-15
16	J22-16
17	J22-17
18	J22-18
19	J22-19
20	J22-20

*shown in Fig. 2, prior to removing the data set.*

**B. 32A1 Data Mounting****Replacement**

*Before replacing a 32A1 Data Mounting, ensure that each access line serving that data mounting has been terminated with a 200-ohm, 3-watt resistor. After replacing the data mounting and the associated data sets, remove the terminating resistors.*

**3.03** A faulty 32A1 Data Mounting may be removed by reversing the installation procedures described in the section entitled 113-Type Data Station—Installation (591-814-200). Installation of the replacement data mounting should also be in accordance with this section.

**41D Power Unit Replacement (Fig. 4)**

**3.04** To remove a faulty 41D power unit:

- (1) Disconnect the ac power cord from J25 on the 32A1 Data Mounting.

**3.01** To remove a faulty Data Set 113B-L1:

- (1) Grasp the handle on the faceplate of the data set and pull outward until the data set disconnects from the 927A connector on the 32A1 Data Mounting.

- (2) Remove data set from the 32A1 Data Mounting.

**3.02** To install a replacement Data Set 113B-L1:

- (1) Align the top and bottom edges in the slots of the removed data set.
- (2) Carefully push in until the catch on the handle snaps into place.

- (2) Disconnect the power cord assembly (J26) from P1 on the 41D power unit.
- (3) Remove the two connector bracket nuts (Fig. 4) and pull the connector away from the 41D power unit.

**Note:** This will disconnect J27.

**Caution:** *The 41D power unit should be supported from the rear of the 32A1 Data Mounting when removing the mounting nuts from the front of the data mounting. This will prevent the power unit from falling and damaging itself and other component parts of the data mounting.*

- (4) Remove the four mounting nuts (Fig. 4) holding the 41D power unit and remove the 41D power unit from the rear of the 32A1 Data Mounting.

- 3.05** To install a new 41D power unit, reverse the procedure of 3.04.

### C. DAS 804T-Type

#### Replacement

**3.06** The entire DAS 804T-type may be removed by reversing the installation procedures described in the section referenced in 3.03. Installation of the replacement DAS 804T-type should also be in accordance with this section.

#### DAS 804T-Type Housing Removal and Installation (Fig. 5)

**3.07** To remove the DAS 804T-type housing:

- (1) Depress front housing release button and raise the front of the housing approximately 1/2 inch.
- (2) Depress left and right side housing release buttons and lift cover up and off.



**Before performing Step (3), insert a 258C plug into the lower receptacle of the service line twin jack on all data sets that are made busy by means of the status field make-busy buttons.**

- (3) Disconnect the A25D connector cables at the rear of the DAS 804T-type.

**3.08** To install the DAS 804T-type housing, reverse the procedure of 3.07.

#### 652D4 Key Removal (Fig. 6 and 7)

**3.09** To remove a 652D4 Key:

- (1) Perform Steps (1) through (3) of 3.07.
- (2) Remove the opaque plastic faceplate located under the housing.

**Caution:** *The plastic faceplate is easily broken. Handle with care.*

- (3) Loosen, but do not remove, the two frame assembly mounting screws (Fig. 6).
- (4) Remove the frame assembly by lifting upward at the back, pulling slightly toward the back, then lifting the entire assembly upwards. Place the frame assembly face down in front of the base assembly as shown in Fig. 7.
- (5) Remove the ten tab terminal connectors (Fig. 7) from the key of interest by pulling each one outward with a slight rocking motion.

- (6) Remove the four 652D4 mounting screws (Fig. 6) on the front of the frame assembly.

**3.10** To install a replacement 652D4 key, reverse the procedure of 3.09.

**3.11** To replace a cover assembly with a 652D4 key:

- (1) Perform Steps (1) through (3) of 3.07.
- (2) Remove the opaque plastic faceplate located under the housing.

**Caution:** *The plastic faceplate is easily broken. Handle with care.*

- (3) Remove the four cover assembly screws (Fig. 7) from the cover assembly to be replaced.

- (4) Install the 652D4 key by reversing the procedure of 3.09.

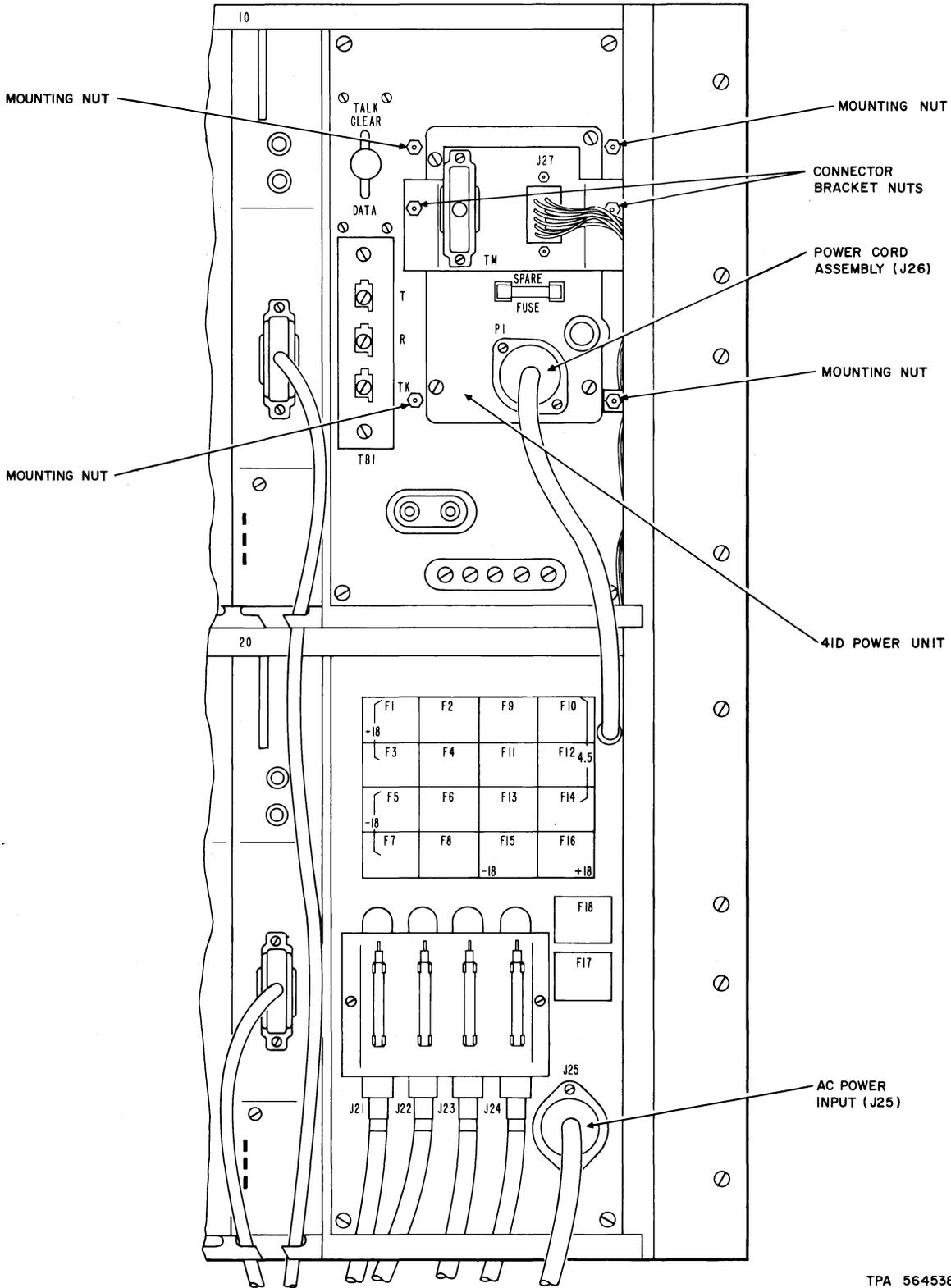
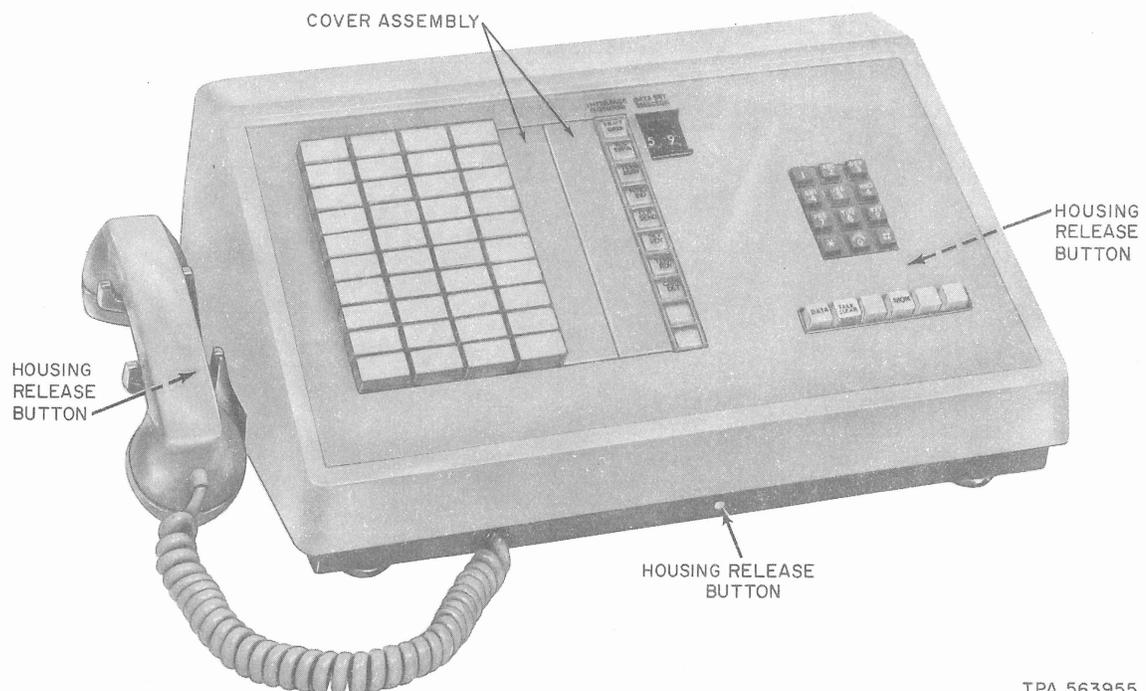


Fig. 4—41D Power Unit—Mounting Arrangement

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Fig. 5—Data Auxiliary Set 804T-Type

- (5) Install the DAS 804T-type housing by reversing the procedure of 3.07.

### 51A Lamp Replacement

**Note:** A 553A lamp extraction and replacement tool is required for the following procedure.

- 3.12 To replace a 51A lamp under the buttons of the 652D4 key or 635A5 key:



**Replacement of a lamp under a button of the 652D4 (make-busy) key requires the operation of the buttons directly above and below the button associated with the lamp to be replaced. If the data set associated with either of these buttons is in service (lamp lighted steadily), operation of that button will cause the data set to be immediately made busy, thereby disconnecting the call being served. Therefore, it is important to ensure that the data sets associated with the buttons to be operated are either idle (lamp**

**extinguished) or made busy (lamp winking) BEFORE operating the button.**

- (1) Depress the buttons directly above and below the button associated with the lamp to be replaced (652D4 key only), grasp the button, and remove the button by pulling outward while applying a slight rocking motion.
- (2) Using the 553A tool, extract the defective lamp.
- (3) Insert new 51A lamp into socket and push into place.
- (4) Replace the button by aligning in place and pushing in until it snaps into place.
- (5) Restore any affected buttons to their original state.

**Note:** A 553A lamp extraction and replacement tool is required for the following procedure.

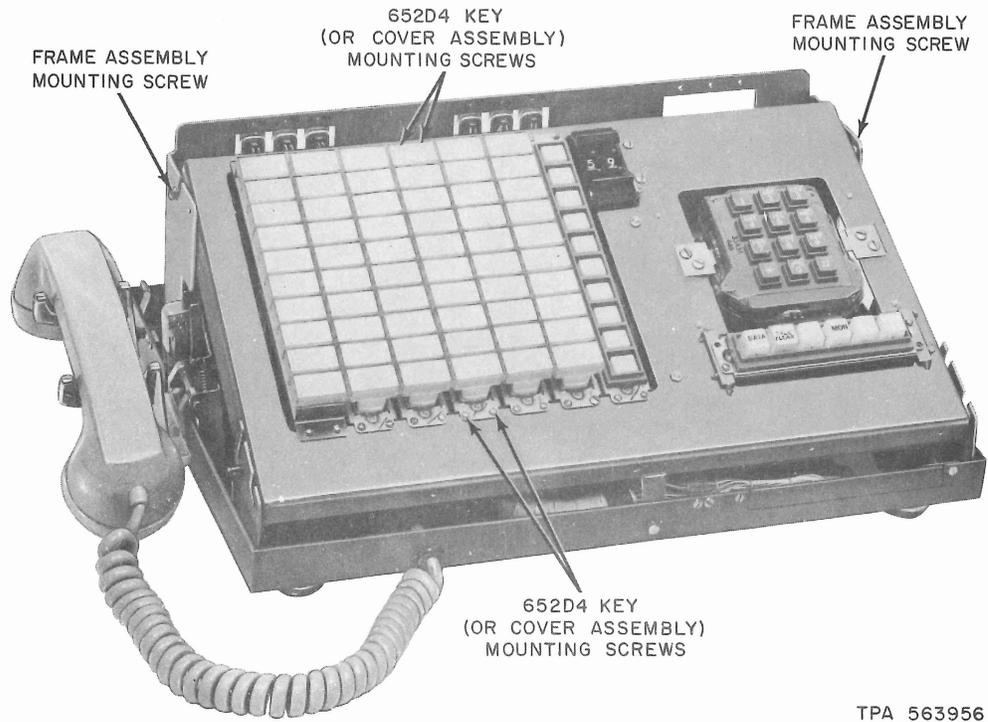


Fig. 6—Data Auxiliary Set 804T-Type—Housing Removed

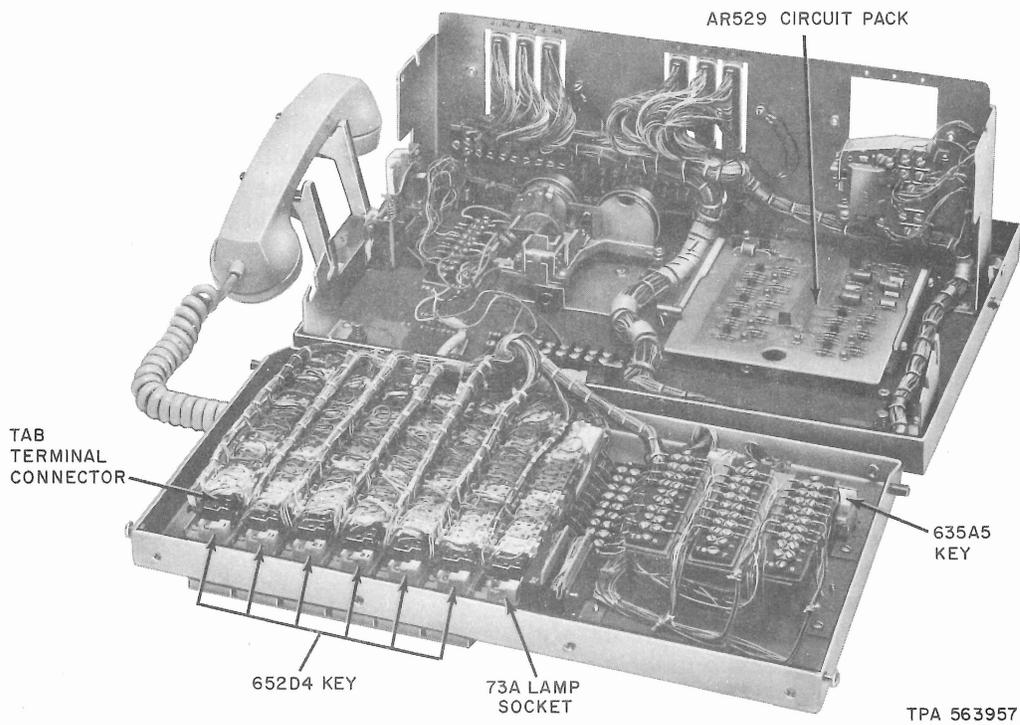


Fig. 7—Data Auxiliary Set 804T-Type—Housing and Frame Assembly Removed

**3.13** To replace the INTERFACE MONITOR lamps (51A) within the 73A lamp socket:

- (1) Perform Steps (1) and (2) of 3.07.
- (2) Remove the opaque plastic faceplate located under the housing.

**Caution:** *The plastic faceplate is easily broken. Handle with care.*

- (3) Remove the light shield.
- (4) Grasp the button associated with the lamp to be replaced and remove by pulling outward while applying a slight rocking motion.
- (5) Using the 553A tool, extract the defective lamp.
- (6) Insert new 51A lamp into socket and push into place.
- (7) Replace the button by aligning in place and pushing in until it snaps into place.
- (8) Replace light shield.
- (9) Replace the opaque plastic faceplate.
- (10) Replace DAS 804T-type housing by reversing Steps (1) and (2) of 3.07.

#### **AR529 Circuit Pack Replacement (Fig. 6 and 7)**

**3.14** To replace the AR529 circuit pack:

- (1) Perform Steps (1) through (3) of 3.07.
- (2) Remove the opaque plastic faceplate located under the housing.

**Caution:** *The plastic faceplate is easily broken. Handle with care.*

- (3) Loosen, but do not remove, the two frame assembly mounting screws (Fig. 6).
- (4) Remove the frame assembly by lifting upward at the back, pulling slightly toward the back, then lifting the entire assembly upwards. Place the frame assembly face down in front of the base assembly as shown in Fig. 7.

- (5) Remove the AR529 circuit pack (Fig. 7) from the base assembly.

**3.15** To install a new AR529 circuit pack, reverse the procedure of 3.14.

#### **4. MAINTENANCE ACTIVITIES**

**4.01** This part covers the procedures to be followed when trying to isolate a trouble condition in the 113-type data station. The troubleshooting information given herein is to be used in conjunction with the flowcharts shown in Fig. 8 through 13.

**4.02** The flowchart of Fig. 8 shows the steps to be followed when analyzing the trouble report prior to dispatching a telephone company (TELCo) employee to the 113-type data station or originating station. The reason for dispatch and the figure to refer to are also shown.

**4.03** The tests referenced in Fig. 9 through 13 and the following text should be performed in accordance with the section entitled 113-Type Data Station—Test Procedures (591-814-500).

#### **Multiple Stations Report 113-Type Data Station Responds and Immediately Disconnects (Fig. 9)**

**4.04** When more than one station report that the 113-type data station responds to a call and then immediately disconnects, use the service line to locate the faulty data set as follows.



*Before performing Step (1), ensure that the data set to be checked is idle (see 2.06).*

- (1) Connect the service line twin plug to the twin jack on the first idle data set.
- (2) Replace the customer-provided interface connector with the test mode(TM)connector.
- (3) Operate the TALK-CLEAR/DATA key to the TALK-CLEAR position.

**Note:** Step (4) requires that the data test center (DTC) check the spacing sensitivity of the Data Set 113B-L1 by transmitting an F1 MARK tone that will reach the data set at -45 dBm. In order to do this the DTC must know the transmitter output level of the data

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set. The transmitter output level may be found on the circuit layout record card.

**Note:** DTC must be informed of the type of operation (whether option Z is installed).

(4) Call the DTC and request a test of the spacing sensitivity of the data set.

(5a) If option Z *is not* installed in the data sets to be tested, the DTC will call back after checking each data set and request that the TM connector and service line be connected to the next data set to be tested.

(6b) If option Z *is* installed in the data sets to be tested, the DTC will request that the TALK-CLEAR/DATA key be operated to the TALK-CLEAR position after a prearranged period of time and then to connect the TM connector and service line to the next data set to be tested.

**4.05** If the faulty data set cannot be located as described in 4.04, it indicates a faulty access line between the CO and the 113-type data station. If the access line is in proper working order it indicates a faulty interoffice trunk and the trouble should be referred to the CO.

**4.06** If the faulty data set is located as described in 4.04, perform the loop-back test (Test B) on the faulty data set. When the results of the loop-back test are known, proceed as follows:

(a) If the data set meets the requirements of Test B, it indicates a trouble in the customer equipment and the trouble should be referred to the customer.

(b) If the data set does not meet the requirements of Test B, replace the data set, repeat Test B, and verify that the customer service has been restored. If the service is restored, inform the customer that he may now transmit and receive data. If not, refer the trouble to the plant service center (PSC).

### Multiple Stations Report Garbled Data Reception (Fig. 10)

**4.07** When two or more stations report they are receiving garbled data, use the service line to locate the faulty data set as described in 4.04.

**4.08** If the faulty data set cannot be located, refer to Fig. 9 and 4.05.

**4.09** If the faulty data set is located, check the data set transmitter output level as follows.

(1) Insert one of the 425A plugs on the 6P8B patching cord into the service line twin jack of the data set to be checked.

(2) Connect the - lead of the TTS-28 TMS to the tip of one prong on the unconnected 425A plug.

(3) Connect the + lead of the TTS-28 TMS to the tip of the other prong on the unconnected 425A plug.

(4) Operate the TTS-28 TMS FUNCTION switch to DBM 900Ω TERM 0 position.

(5) Operate the TALK-CLEAR/DATA key on the 32A1 Data Mounting and (if provided) DAS 804T-type or key telephone set to DATA.

**Requirement:** TTS-28 TMS meter indicates data set transmitter output level given on circuit layout record card.

(6) If the data set *does not* meet the requirement given in Step (5), adjust the transmitter output level as described in 4.10. However, if the data set *does* meet the requirement given in Step (5), proceed to 4.15.

**4.10** To adjust the Data Set 113B-L1 transmitter output level:

(1) Perform Steps (1) through (4) of 4.09.

(2) Operate the TALK-CLEAR/DATA key on the 32A1 Data Mounting and (if provided) DAS 804T-type or key telephone set to DATA.

(3) Adjust R-29 on the Data Set 113B-L1 until the TTS-28 TMS meter indicates the data set transmitter output level specified on the circuit layout record card.

**Note:** Potentiometer R-29 is accessible through the faceplate of the data set.

**4.11** If the data set transmitter output level *can* be adjusted to the correct value, call the

DTC and have them verify that proper service is restored. If so, return the data set to service and notify the customer. If the proper service is not restored, perform Test B.

**4.12** If the data set meets all of the requirements of Test B, a CPT problem is indicated and the trouble should be referred to the customer. If the data set fails to meet all of the requirements of Test B, replace the data set and repeat Test B.

**4.13** If the replacement data set *fails* to meet all of the test requirements, refer the trouble to the PSC. However, if the replacement data set *does* meet all of the test requirements, verify that proper service is restored and, if so, return the data set to service and inform the customer. If proper service is not restored, it indicates a CPT problem and the trouble should be referred to the customer.

**4.14** If the data set transmitter output level *cannot* be adjusted to the correct value, replace the data set with one that is known to be operating properly and then verify that proper service is restored. If proper service has been restored, return the data set to service and inform the customer. If not, a CPT problem is indicated and the trouble should be referred to the customer.

**4.15** If the data set transmitter output level is found to be correct, perform Test B on the faulty data set. If the data set *fails* to meet all of the requirements of Test B, replace it with a data set that is known to be operating properly and repeat the test. If the data set *does* meet all of the requirements of Test B, it indicates a CPT problem and the trouble should be referred to the customer.

**4.16** If the replacement data set *fails* to meet all of the requirements of Test B, refer the trouble to the PSC. However, if the replacement data set *does* meet all of the requirements of Test B, verify that proper service is restored and, if so, return the data set to service and inform the customer. If proper service is not restored, it indicates a CPT problem and the trouble should be referred to the customer.

#### Access Troubles (Fig. 11)

**4.17** When one or more stations report trouble in accessing the 113-type data station and the CO line hunting arrangement is in proper working order, verify that there are no blown fuses in the 32A1 Data Mounting and 41D power unit.

**4.18** If no fuses are blown, perform the power test (Test A) on the 41D power unit in the affected 32A1 Data Mounting.

**4.19** If the 41D power unit *fails* to meet all of the requirements of Test A, replace the power unit and repeat Test A. If the replacement power unit *does* meet all of the test requirements, verify that the proper service has been restored and, if so, return the station to service and notify the customer. If the replacement power unit *fails* to meet all of the requirements of Test A, or does but proper service is not restored, refer the troubles to the PSC for further action.

**4.20** If the power unit *does* meet all of the requirements for Test A, ascertain whether or not the affected data sets are provided with a DAS 804T-type and use one of the two following procedures to check the data terminal ready (CD) lead.

(a) If DAS 804T-type *is* provided:

(1) Ensure the plug on the interface cable is properly connected to the data set and set the DATA SET SELECTOR switch on the DAS 804T-type to the number for one of the affected data sets and depress the MON (monitor) button.

**Requirement:** TERM RDY lamp lighted (CD lead—ON).

**Note:** If option X (ignore data terminal make-busy control) *is* installed in the data set, control by the CN lead is ineffective.

**Requirement:** If the X option *is not* installed in the data set being checked, TERM BUSY lamp extinguished (CN lead—OFF).

(2) Repeat Step (1) for all of the affected data sets.

(b) If DAS 804T-type *is not* provided:

- (1) Insert red shorting pins in the 914B DTS programming matrix at row DS1, column 20; row DS2, column 25.
- (2) Operate INTERFACE MODE switch to VOLTAGE.
- (3) Connect the customer interface cable to the B connector on the 914B DTS.
- (4) Operate (depress) POWER switch.
- (5) Operate (depress) B switches 20 and 25.

**Requirement:** DS1 lamp lighted (CD lead—ON).

**Note:** If option X (ignore data terminal make-busy control) *is* installed in the data set, control by the CN lead is ineffective.

**Requirement:** If the X option *is not* installed in the data set being checked, DS2 lamp extinguished (CN lead—OFF).

- (6) Pull up B switches 20 and 25.
- (7) Operate POWER switch to off.
- (8) Disconnect the customer interface cable from the B connector on the 914B DTS and connect it to the data set interface connector.
- (9) Repeat Steps (3) through (8) for all of the affected data sets.

**4.21** If the CD lead to all of the affected data sets are in the off condition, it indicates a CPT problem. If the CD lead of a single data set is in the off condition, it indicates a problem in the interface cable. In either case the trouble should be referred to the customer. If the CD lead of all of the affected data sets is in the on condition, refer the trouble to the PSC for further instructions.

**4.22** If any or all of fuses 13, 15, 16, or 18 are blown, it indicates that a problem may exist in the associated 32A1 Data Mounting or DAS 804T-type. To determine if one of the units is bad, first disconnect J21 and J22 from the 32A1 Data Mounting and then replace the blown fuse(s).

If the fuse(s) blows, replace the 41D power unit and verify that proper service is restored. If the fuse(s) *does not* blow, reconnect J21 and J22 to the 32A1 Data Mounting. If this causes the fuse(s) to blow, first replace the AR529 circuit pack, then replace the blown fuse(s). If the fuse(s) does not blow, verify that proper service has been restored. If the fuse(s) does blow when the circuit pack is replaced, first replace the DAS 804T-type, then replace the blown fuse(s), and then verify that proper service has been restored. If the fuse(s) does not blow when J21 and J22 are reconnected, verify that proper service has been restored. If proper service is restored, return the data sets to service and notify the customer. If proper service is not restored, refer the trouble to the PSC for further instructions.

**4.23** If either fuse 17 or the fuse contained on the 41D power unit is blown, replace either or both of the fuses. If the replacement fuse(s) did not blow, verify that proper service is restored. If the replacement fuse(s) did blow, however, replace the 41D power unit and verify that proper service is restored. If proper service is restored, return the data sets to service and notify the customer. If the proper service is not restored, refer the trouble to the PSC for further instructions.

**4.24** If any of fuses one through twelve are blown, connect the terminating resistor (Fig. 1) across the lines of all the data sets associated with the blown fuses, as shown in Fig. 2, and remove all of these data sets. Replace any of the fuses (one through twelve) that are blown. If the replacement fuse(s) blows, replace the 41D power unit, replace the removed data sets, remove the terminating resistors, and verify that proper service is restored. If the replacement fuse(s) *did not* blow, replace the data sets one at a time. If, after replacing a data set, the fuse(s) blows, replace that data set with one known to be operating properly; replace the blown fuse(s), and continue installing the remainder of the data sets. After the last data set is installed, remove the terminating resistors and verify that proper service is restored. If proper service is restored, return the data sets to service and notify the customer. If the proper service is not restored, refer the trouble to the PSC for further instructions.

#### **Stalled Hunting Arrangement (Fig. 12)**

**4.25** When the CO line hunting arrangement is stalled and it is found that the CO switching

equipment is operating properly, it indicates that either one or more data sets are not properly seated in the 32A1 Data Mounting or one or more of the CO access lines are open. To isolate the trouble, visually inspect the data sets to ensure that they are all properly seated in the data mounting (catch handles of data sets are snapped in place on the data mounting).

**4.26** If any of the data sets are not properly seated, push in on the faceplate of each of these data sets until the catch on the handle snaps into place and verify that proper service has been restored. If proper service is restored, return the data sets to service and notify the customer.

**4.27** If all of the data sets are properly seated or after all of them have been properly seated and proper service is not restored, have the CO check the CO access lines. If all of the CO access lines check out, refer the trouble to the PSC.

**4.28** If any CO access lines are bad, repair or replace the access line(s), verify that proper service is restored, and, if so, return the data sets to service and inform the customer. If after repairing or replacing the CO access line(s) proper service is not restored, refer the trouble to the PSC.

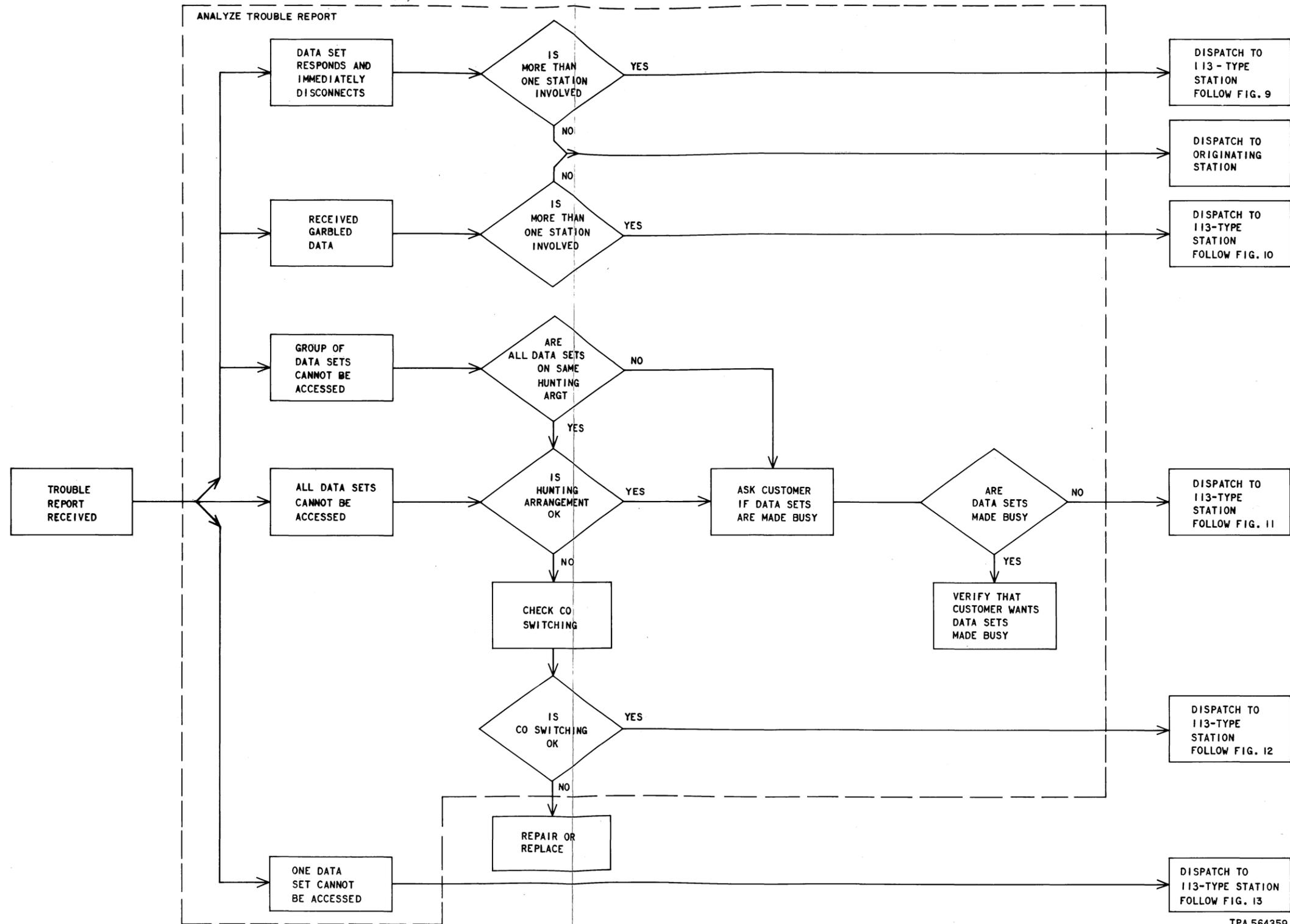
### Single Data Set Access Troubles (Fig. 13)

**4.29** If one particular data set is not being accessed, visually inspect the data set to determine whether or not the interface cable plug is properly connected. If the plug is not properly connected, push it in, verify that proper service has been restored, and, if so, return the data set to service and notify the customer.

**4.30** If the interface cable plug is properly connected, check the CD lead of the interface plug as described in 4.20. If the CD lead is in the off condition (negative voltage), refer the trouble to the customer. However, if the CD lead is in the on condition (positive voltage), perform a loop-back test (Test B) on the data set.

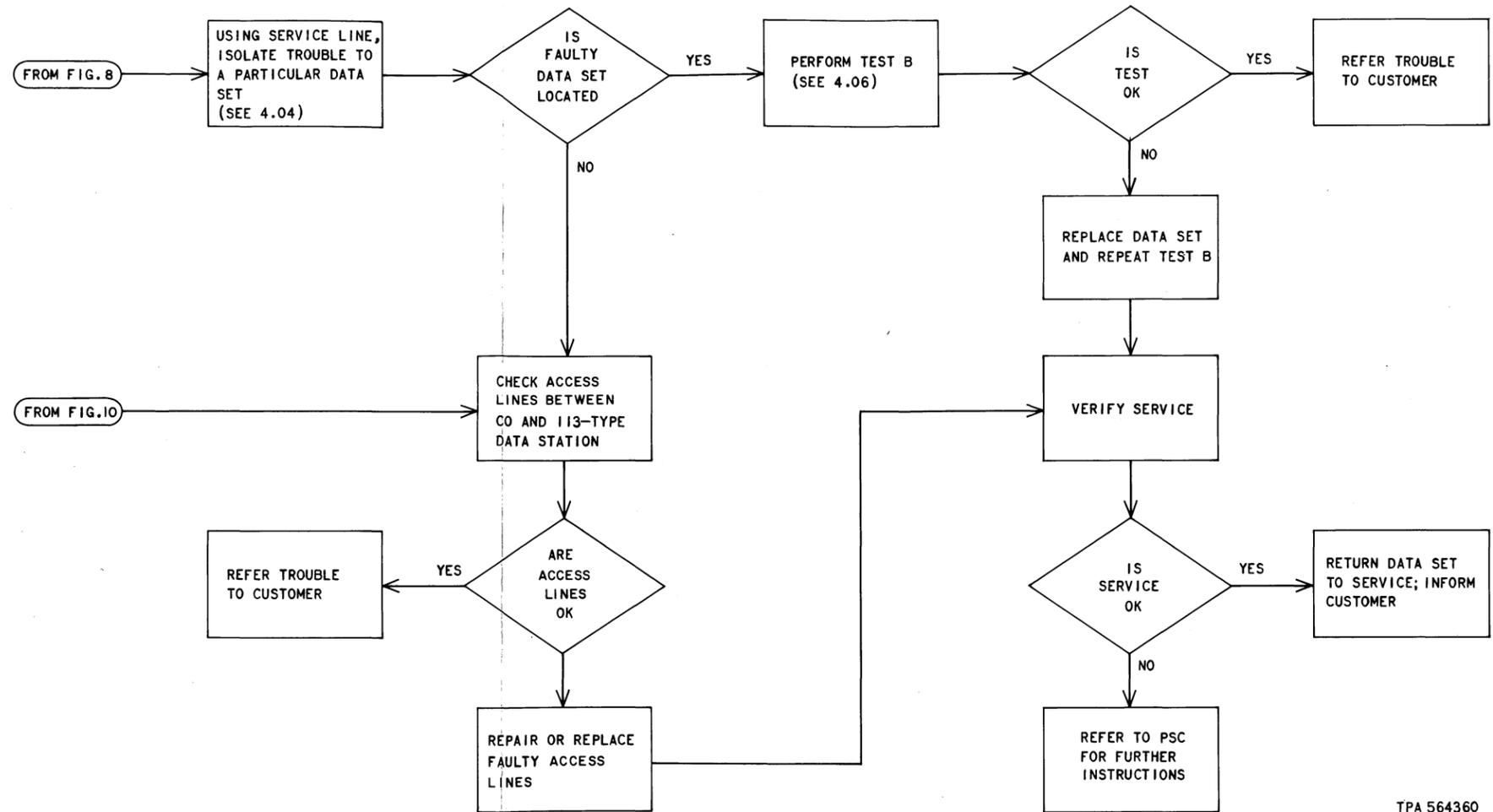
**4.31** If the data set *does not* meet all of the requirements of Test B replace it with one that is known to be operating properly, repeat Test B, and verify that proper service has been restored. If the service is restored, return the data set to service and notify the customer. If not, refer the trouble to the PSC.

**4.32** If the data set *does* meet all of the requirements of Test B, have the CO check the CO access line. If the CO access line is found to be faulty, repair or replace it, verify that proper service has been restored, and, if so, return the data set to service and inform the customer. If the CO access line is found to be good refer the trouble to the PSC.



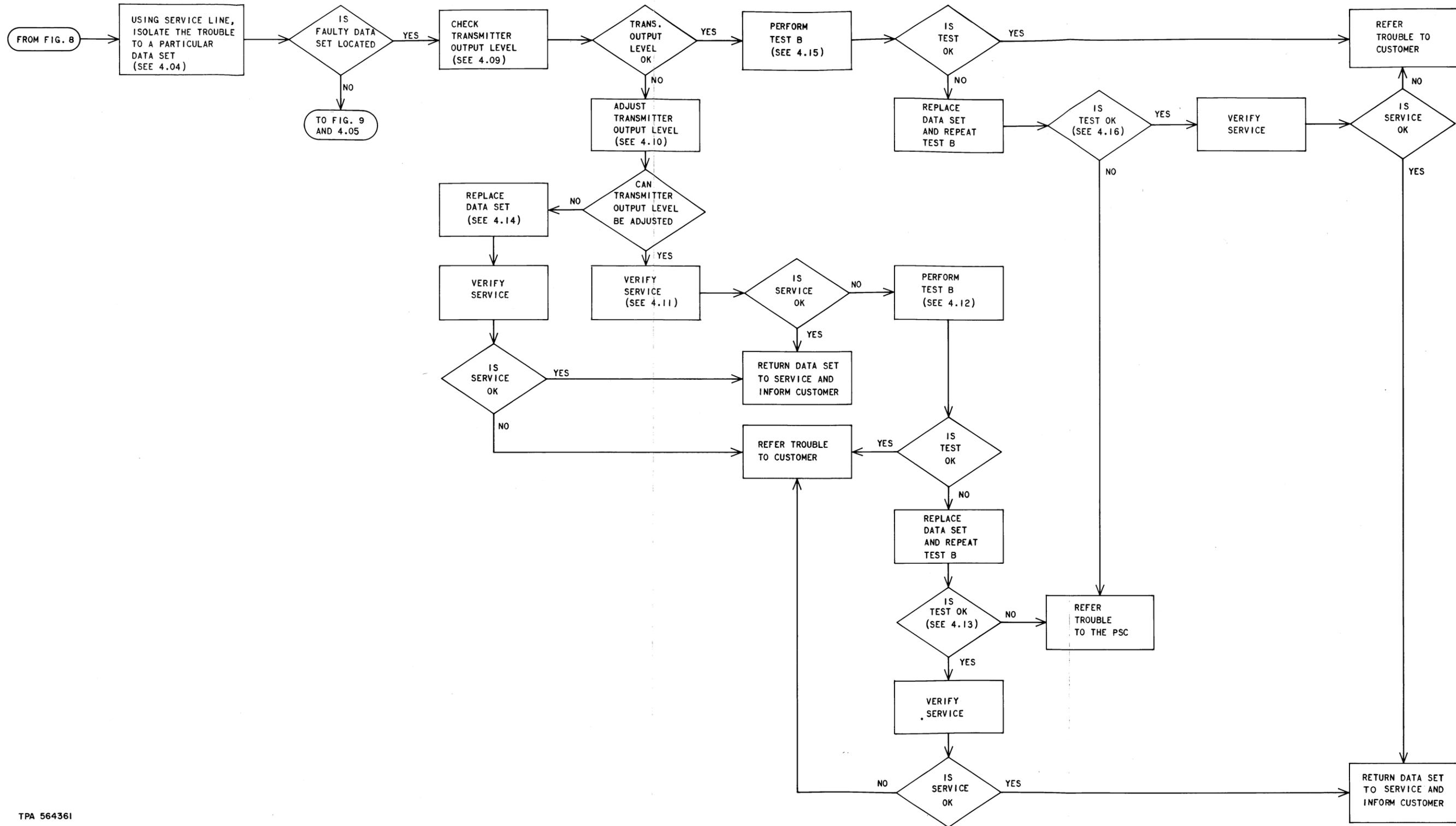
TPA 564359

Fig. 8—Isolating a Trouble Condition to the 113-Type Data Station



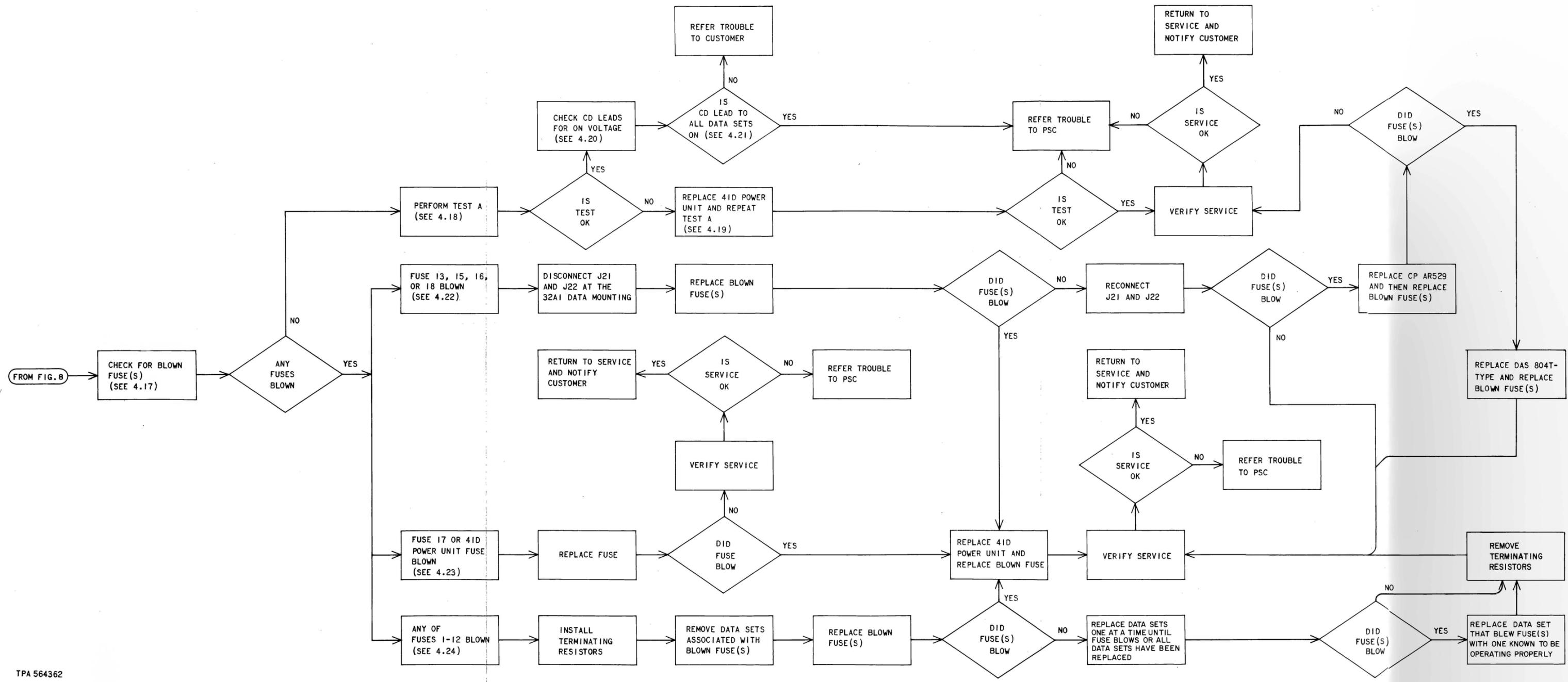
TPA 564360

**Fig. 9—Troubleshooting Flowchart for Use When Multiple Stations Report 113-Type Data Station Responds and Immediately Disconnects**



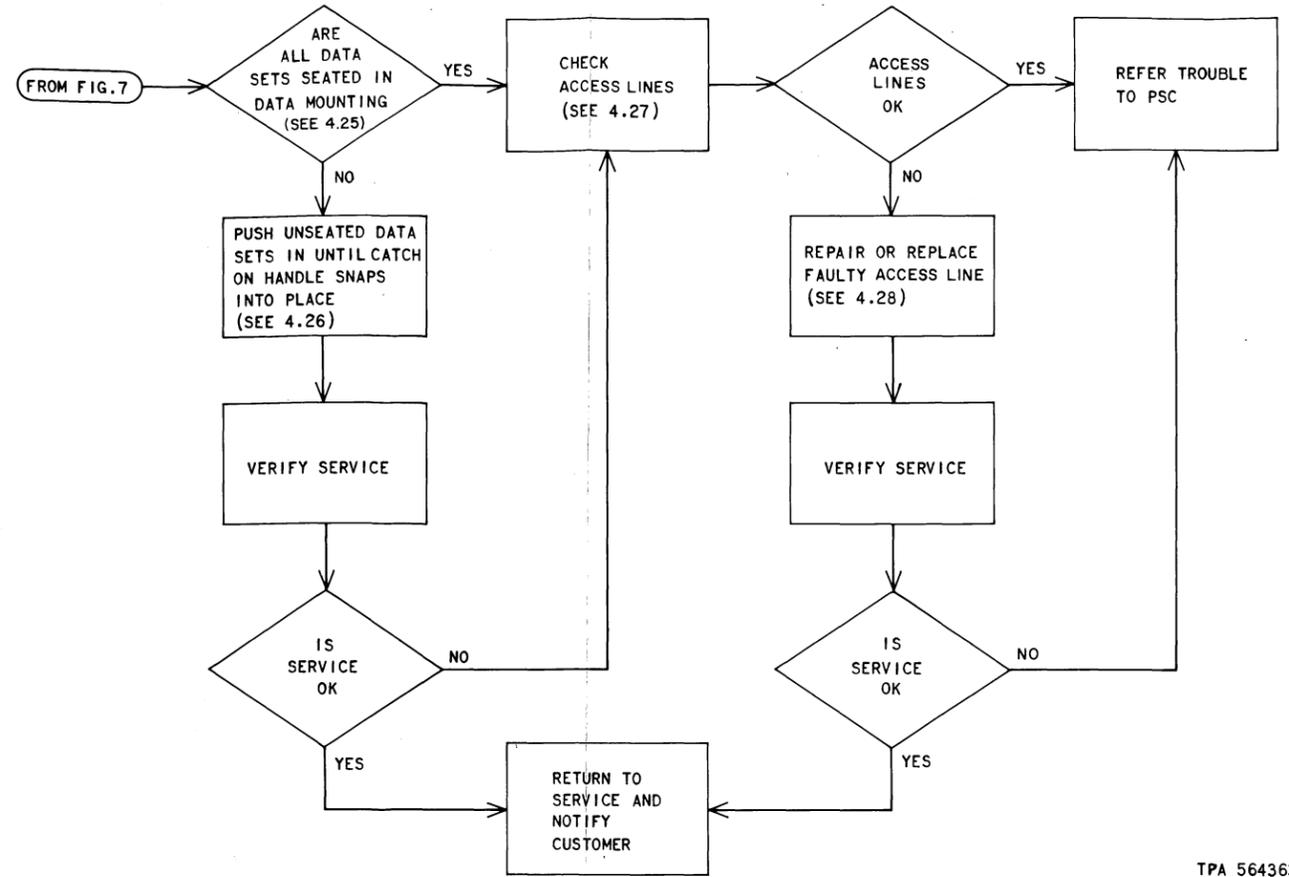
TPA 564361

Fig. 10—Troubleshooting Flowchart for Use When Multiple Stations Report Garbled Data Reception



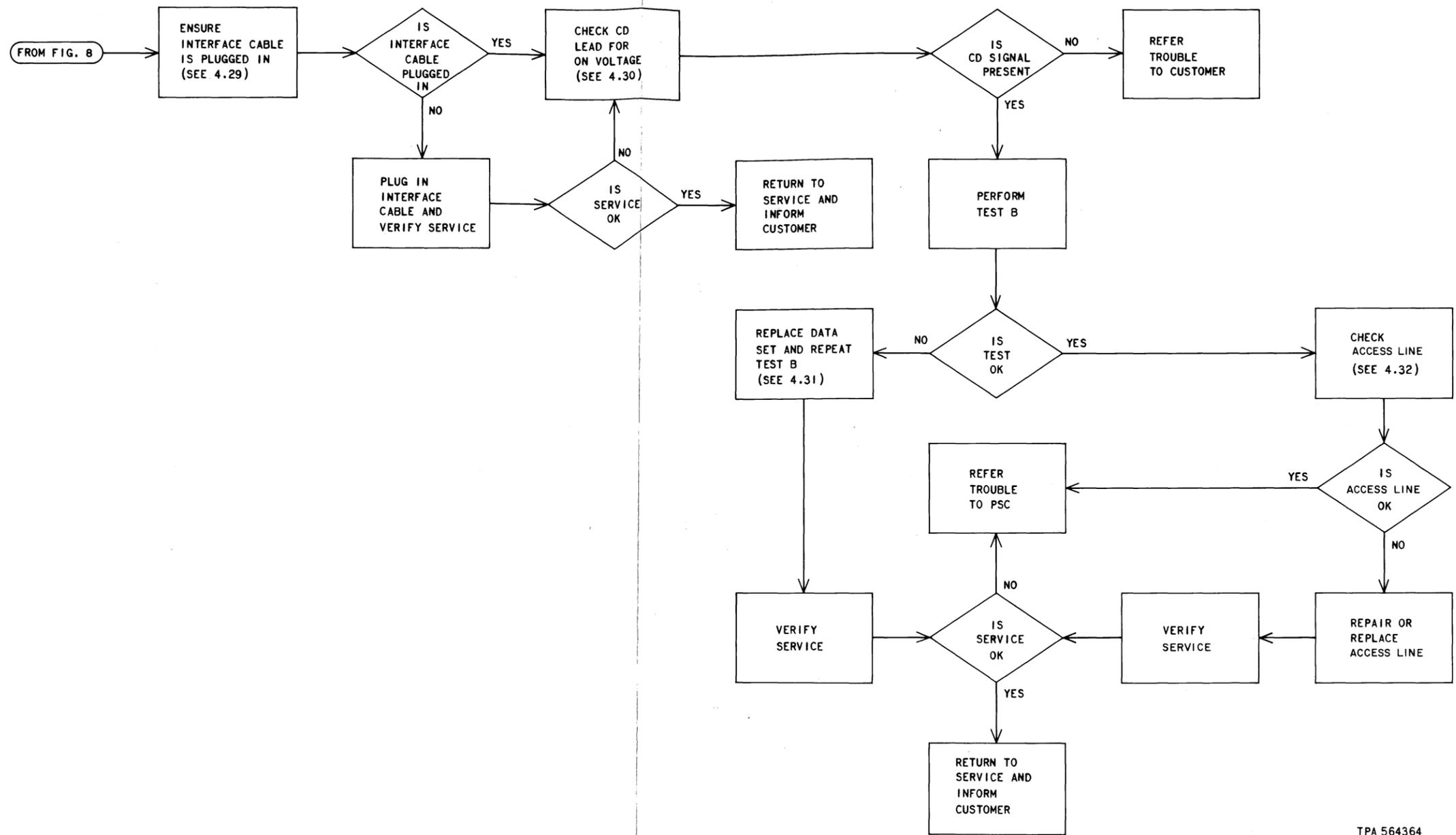
TPA 564362

Fig. 11—Troubleshooting Flowchart for Access Troubles



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Fig. 12—Troubleshooting Flowchart for Stalled Hunting Arrangement



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Fig. 13—Troubleshooting Flowchart for Single Data Set Access Troubles