86B1 DATA SELECTIVE CALLING SERVICE
FULL-DUPLEX—100-WORD PER MINUTE DATA STATION
TEST PROCEDURE

CONTENTS PAGE

1. GENERAL

1.01 This section describes the installation and maintenance test procedures for a full-duplex (FDX), 100-word per minute (wpm) data station which incorporates model 33- or 35-type teletypewriters (TTY) and is used in the 86B1 data selective calling service (DSCS).

1.02 This section is reissued for the following reasons:

(a) To add information on data sets 108E and 109E

(b) To replace the remote test of the data auxiliary set (DAS) with an attended test that utilizes the capabilities of the serving test center (STC). This test is performed by the STC with the assistance of the craft employee at the station. The STC test procedures are contained in the section entitled 86B-Type Data Selective Calling Service, Serving Test Center (STC), Test Procedures (666-702-502).

Since this reissue constitutes a general revision, arrows ordinarily used to denote changes have been omitted.

1.03 The tests covered are as follows:

A. Local Test: This test verifies that the data station TTY is operative and functioning properly.

B. Attended STC Test: This test is performed to isolate and clear a trouble condition at the station. It provides the necessary testing assistance and coordination to allow the STC to test the station operation and determine the cause of the trouble.

C. Remote Test of Data Set: This test requires gaining access to the controller and is made by the STC. The test is the same as Action B which is performed by the STC when a trouble condition indicates the data set or line facility is in trouble.

D. Continuity Test of DAS 804N2 or 804R3 (Receive Attendant Set): This test checks the continuity of the keys, lamps, and cabling associated with the receive attendant set.

E. Continuity Test of DAS 804N1 (Transmit Attendant Set): This test checks the continuity of the keys, lamps, and cabling of the transmit attendant set.

1.04 The testing of the data station depends on a specific format. Any deviation from this format may condition the data station for false

indications or operations. If such a condition occurs, momentarily disconnecting the power cord to the data station will return the station to the idle condition. The station can also be returned to the idle condition by having the STC perform Action A (a major initialization sequence) given in the STC Bell System Practice (BSP) (666-702-502).

1.05 The tests given in this BSP are used for both installation and maintenance testing. Since the same tests are used for both purposes, each test is presented only once.

1.06 The TTY range adjustments and/or adjustments to any auxiliary receiver should be made with a test signal that is transmitted from the STC. The station controller regenerates signals between the line and the TTY. Signals sent from the station reader in the OFF-LINE mode are not regenerated by the station controller. These features make it necessary to modify normal distortion testing. Range finder settings for ASR units (typing unit and punch, M35 only) can be made with the station in the OFF-LINE mode and then verified with signals from the STC. Range finder settings for the primary and auxiliary RO and ROTR must be made with STC signals. In this case, the regenerated line signals are almost perfect when delivered to the machine units from the station controller.

Installation Testing

1.07 The installation tests are designed to verify that the data station has been properly assembled and is operative with the 86B1 DSCS. The Local Test (Test A) and Attended STC Test (Test B) should be performed for this purpose. After completion of the test sequence, the customer verification procedure described in Part 6 should be performed.

Maintenance Testing

1.08 The maintenance test procedure should be in accordance with the maintenance philosophy given in the section entitled 86B1 Data Selective Calling Service, Full-Duplex, 100-Word Per Minute Data Station, Maintenance (581-136-302).

1.09 The maintenance test sequence will be determined by the nature of the trouble being investigated. In general, the station will have been remotely tested by the STC to determine the nature of the trouble. Any or all of the tests in this section may be used in investigating trouble reports. For information on the test required for troubleshooting and trouble clearing procedures, refer to the section referenced in 1.08.

TTY Maintenance

1.10 Maintenance procedures for the TTYs should be performed in accordance with the appropriate 574 and 579 division Bell System Practices.

1.11 No attempts should be made to test the data station with the STC until it is verified that the TTY(s) and associated components which are part of the station are operative.

1.12 Data sets 108E and 109E are the current production models being used in new installations. Data sets that are already in the field (example—108A) are suitable substitutes and, if operative, need not be replaced.

2. APPARATUS

Tests A, B, and C

2.01 STC assistance will be required for Tests B and C. No apparatus is required at the station for these tests.

Test D

2.02 KS-14510-L1 volt-ohm-milliammeter and KS-16786-L3 connector.

Test E

2.03 KS-14510-L1 volt-ohm-milliammeter and KS-16786-L2 connector.

3. PREPARATION FOR TESTING

3.01 Perform the following step procedure to prepare the test tape (Fig. 1) required in Test B.

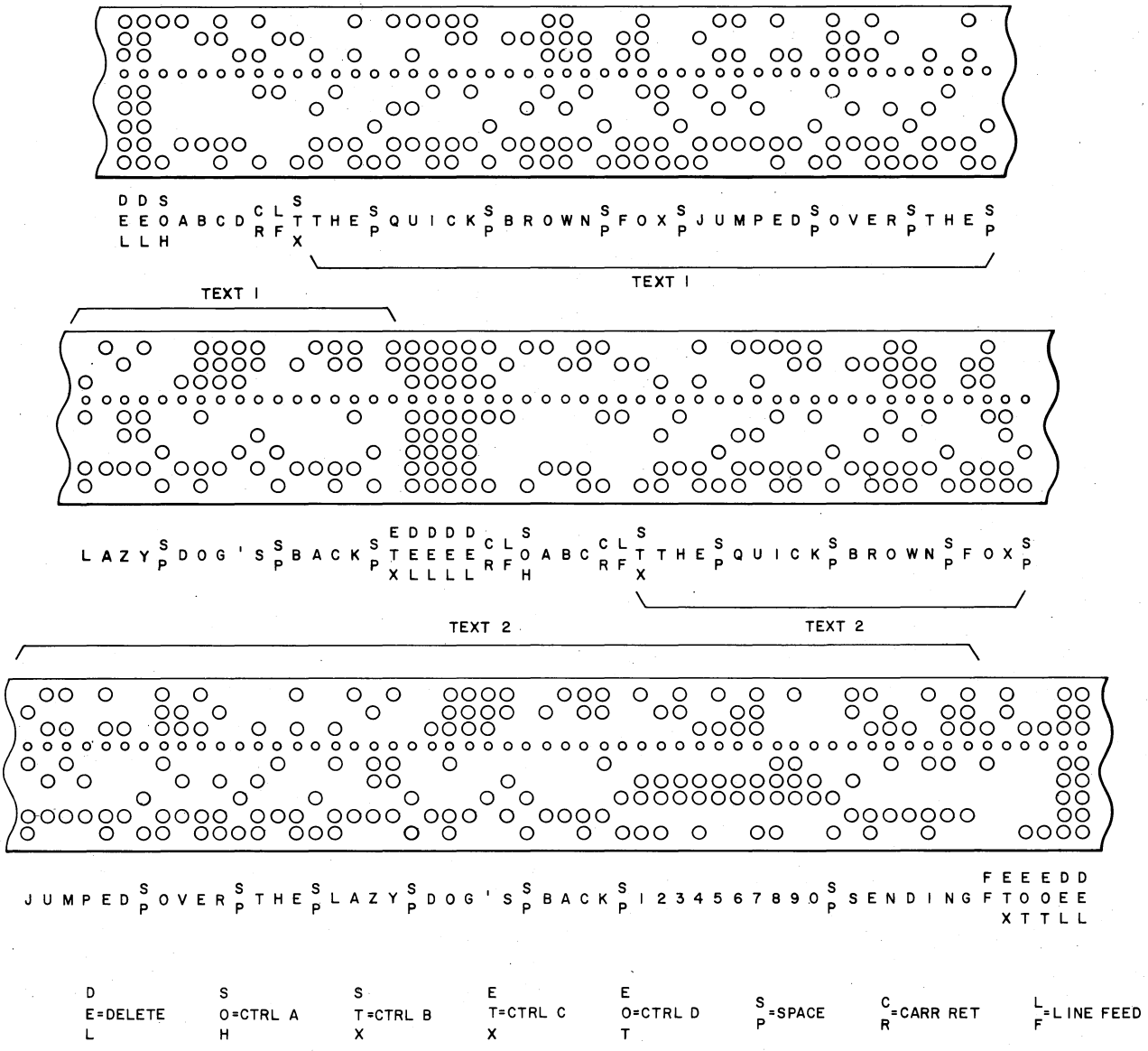

Fig. 1—Test Tape for Testing 86B1 Data Station

STEP	PROCEDURE
	Originate-Type Stations Only
1	At ASR TTY— Ensure that OUT OF SVC key is not operated and operate MODE switch to LOCAL (33 ASR TTY) or OFF-LINE (35 ASR TTY) position.
2	At ASR TTY keyboard— Operate DEL key several times until approximately 3 inches of DEL characters are punched on tape.

STEP	PROCEDURE
3	Type test tape as follows: DEL...DEL-SOH-A-B-C-D-CR-LF STX-TEXT 1-ETX-DEL...DEL-CR-LF SOH-A-B-C-CR-LF STX-TEXT 2-FF-ETX-EOT-EOT-DEL...DEL ***Note:*** TEXT 1 and TEXT 2 represent any group of test characters that are sent to check the transmission. It is suggested that at least two lines of "FOX..." be used as the TEXT 1 and TEXT 2 checks. Separate each text message by inserting approximately 4 inches of DELs between the ETX and the second SOH transmission. A test tape is shown in Fig. 1.

3.02 The station to be tested must be isolated to avoid disrupting the operation of the rest of the system. At this time **take the proper action to obtain a release of the station and isolate the station for testing.** Since the administrative procedures for removing a station from service will vary with location and service provided, they are not included in this BSP.

3.03 Prior to testing, the following information must be furnished to the STC:

- Type station being tested (ASR, RO, etc)
- Station call-in and polling code
- Type controller used at the station.

4. METHOD

A. Local Test

STEP	PROCEDURE
1	Momentarily disconnect the data station power cord. Controller circuits will initialize (assume idle).
2	If AUD OFF lamp is lighted at either ASR or RO TTY— Momentarily operate AUD OFF key. AUD OFF lamp is extinguished.
3	If the station has not been previously isolated for testing, call STC and request that the data station leg be connected to a test hub.
	ASR TTY
4	Operate mode switch to ON-LINE (33 ASR) or LINE (35 ASR) position.
5	Momentarily operate OUT OF SVC key. OUT OF SVC lamp lights. If TTY is a 35 ASR, TTY motor will stop.

STEP	PROCEDURE
6	Momentarily operate OUT OF SVC key. OUT OF SVC lamp extinguishes. If TTY is a 35 ASR, TTY motor will start.
7	Operate mode switch to OFF-LINE (35 ASR) or LOCAL (33 ASR) position. OUT OF SVC lamp lights.
8	Check the general operation of the TTY (typing, end-of-line counter and lamp, tabulation, etc).
	Primary RO TTY
9	Remove paper supply. PAPER LOW lamp lights and audible alarm sounds.
10	Momentarily operate AUD OFF key. AUD OFF lamp lights and audible alarm silences.
11	Replace paper supply. PAPER LOW lamp remains lighted.
12	Momentarily operate PAPER LOW and AUD OFF keys. PAPER LOW and AUD OFF lamps extinguish.
13	Repeat Steps 5 and 6 for RO TTY.
	Primary 35 ROTR
14	Remove tape supply. TAPE LOW lamp lights and audible alarm sounds.
15	Repeat Steps 10 through 12 substituting the TAPE LOW lamp and key for the PAPER LOW lamp and key.
16	Repeat Steps 5 and 6.
17	If no further tests are to be performed, perform the customer verification procedure described in Part 6.

B. Attended STC Test

Before starting this test, make sure the station leg is connected to a test hub and establish voice communication with the STC to aid in coordinating the test. Table A (Trouble Locating Chart) provides information on clearing trouble that may be observed at the station or STC during the test. Malfunctions that are observed at the STC are also shown in Table A under the appropriate step. This allows corrective action to be taken by the station when required. The step numbers in the following test procedure match the step numbers in the STC BSP. In order to make these steps match and to coordinate the test procedures, steps that do not require action by the station attendant are included so that the progress of the STC test procedure can be followed.

STEP	ACTION	VERIFICATION
Receiver Call-In		
1	Check the paper, form, or tape supply in the TTYs; clear all alarms, and check that OUT OF SVC, HOLD, and AUD OFF keys of all attendant sets are released; check that no tape is in the reader, and verify that station is in the on-line mode.	At all attendant sets— All lamps extinguished. Audible alarm silenced. All keys released. At standard ORIG/TERM and split ASR operation ORIG/TERM stations— ASR TTY motor running. At standard ORIG/TERM stations— RO TTY motor off.
2	Gain access to the controller and operate the MTCE-NORM (R) key on the controller to the MTCE position.	All OUT OF SVC lamps light. At this time the STC can check for tones or loop current as required.
3	None	STC will now perform loop-around test of station data set by sending characters and checking the distortion.
4	Operate MTCE-NORM (R) key on the controller to NORM.	All OUT OF SVC lamps extinguish.
5	None	The STC will now do a major initialization of the station during which the OUT OF SVC lamp(s) will light when + is received and then extinguish when EOT is received.
6	Operate OUT OF SVC key in attendant set of RO TTY (TERM ONLY and standard ORIG/TERM stations) or ASR TTY (split operation ORIG/TERM stations).	OUT OF SVC lamp lights.
7	None	The STC will now attempt to select the station as a receiver and the CALL lamp will light.
8	Release the OUT OF SVC key.	OUT OF SVC and CALL lamps extinguish.
9	Create a paper alarm by real or simulated removal of paper, form, or tape from the RO TTY (TERM ONLY and standard ORIG/TERM stations) or ASR TTY (split operation ORIG/TERM stations).	At TTY in which the alarm is created— PAPER LOW lamp lights. Audible alarm sounds.
10	None	The STC will attempt to select the station as a receiver and the CALL lamp will light.
11	Replace the paper, form, or tape and momentarily operate the PAPER LOW key associated with the PAPER LOW lamp.	PAPER LOW and CALL lamps extinguish. Audible alarm is silent.

STEP	ACTION	VERIFICATION
12	None	The STC will call the station in as a receiver, the CALL lamp will flash, the REC lamp on the attendant set of the RO TTY (TERM ONLY standard ORIG/TERM stations) or ASR TTY (split operation ORIG/TERM stations) will light, and the motor of the TTY associated with the lighted REC lamp will be running. After the REC lamp is lighted, actions taken at the STC will cause the following sequence of events (Steps 12 through 20) to occur at the station. These steps check the message receiving capabilities of the station.
13	None	The TTY with the lighted REC lamp will print (or punch) HEADING.
14	None	No action should be observed at station when STC performs this step.
15	None	The TTY with the lighted REC lamp prints (or punches) TDM STX TEXT 1 TEXT 2 (if without print suppression). If auxiliary receiver is provided, it will print or punch TEXT 2.
16	None	If primary receiver is an ROTR, the tape will feed out.
17	None	The REC lamp extinguishes and motor turns off.
18	None	The CALL lamp flashes and the REC lamp(s) will light. The TTY with the lighted REC lamp prints (or punches) TEXT 1.
19	None	The ERROR lamp lights, the audible alarm sounds, and underline prints for each parity error received.
20	None	The TTY with the lighted REC lamp prints (or punches) TEXT 2, the MSG REC lamp lights; if equipped with parity error alarm, the REC lamp extinguishes, and the motor stops.
21	Momentarily operate MSG REC and ERROR keys.	MSG REC and ERROR lamps extinguish and audible alarm is silent.
22	None	The STC will call the station in as a receiver, send TEXT, and perform a delivery abort. The REC lamp on the RO TTY (TERM ONLY

STEP	ACTION	VERIFICATION
		and standard ORIG/TERM stations) or ASR TTY (split operation ORIG/TERM stations) lights the TTY associated with the lighted REC lamp, and prints or punches TEXT; the MSG REC lamp lights and the audible alarm sounds.
23	Momentarily operate the MSG REC key.	MSG REC lamp extinguishes and audible alarm is silent.
24	None	The STC will call the station in as a receiver, causing the CALL lamp to flash and the REC lamp to light.
25	None	The station loop will be momentarily opened. This will cause the MSG REC lamp to light, the audible alarm to sound, and the REC lamp to extinguish. In addition, the ERROR lamp may also light.
26	Momentarily operate the MSG REC key and, if lighted, the ERROR key.	MSG REC and ERROR (if lighted) lamp(s) extinguish. Audible alarm is silent.

Sender Selection Test

Note: When stopping of the reader is indicated in the following test, the tape stops one or two characters (depending on the TTY used) beyond the control character. References that are made to copying while transmitting do not apply to split ASR stations.

27	Verify that the station is in the on-line mode (MODE switch in the ON LINE position) and ensure that there is no tape in the reader. Operate the OUT OF SVC key on the attendant set of the RO TTY (standard ORIG/TERM stations) or ASR TTY (split operation ORIG/TERM station).	OUT OF SVC lamp associated with the operated key lights. When the STC has been informed that the OUT OF SVC key has been operated, the STC will poll the station.
28	Release the OUT OF SVC key.	OUT OF SVC lamp extinguishes.
29	None	The STC will again poll the station. No action will be observed at the station.
30	Operate the ASR TTY MODE switch to the OFF LINE position. Operate the PUNCH ON or LOCAL PUNCH key and prepare the following tape: DEL...DEL-SOH-A-B-C-D-CR-LF STX-TEXT 1-ETX-DEL...DEL-CR-LF	OUT OF SVC lamp lights.

STEP	ACTION	VERIFICATION
	SOH-A-B-C-CR-LF STX-TEXT 2-FF-ETX-EOT-EOT-DEL...DEL	
	Note: TEXT 1 and TEXT 2 represent any group of test characters that are sent to check the transmission. It is suggested that at least two lines of "FOX..." be used as the TEXT 1 and TEXT 2 checks.	
31	Operate the MODE switch to ON LINE. Insert the tape into the gate at the initial DELs, operate the bat handle to RUN. Operate the EOT key twice for a 35 ASR with the EOT features. Operate the BID key for the 33 ASR.	OUT OF SVC lamp extinguishes. BID lamp lights. Reader runs and stops after the first SOH on the tape.
32	None	The STC will now poll the station.
33	None	TRANS lamp in attendant set of ASR TTY lights (ORIG ONLY and standard ORIG/TERM stations only).
34	None	HEADING 1 prints on ASR TTY (ORIG and standard ORIG/TERM stations only).
35	None	Reader runs, machine prints ABCD TEXT 1, tape stops after the second SOH (ORIG and standard ORIG/TERM stations only). On split ASR units, the reader functions in the same manner but no copy is provided by the ASR typing unit.
36	None	Tape runs, machine prints ABC TEXT 2, tape stops for form feed (if ASR TTY is a sprocket-feed machine ORIG and ORIG/TERM only), then runs and stops after the second EOT without the tape running out (35 ASR only). The TRANS and BID lamps extinguish. The split ASR reader functions in the same manner but no copy is provided by the typing unit. On 33 ASR, the tape runs out and the tape alarm is activated.
37	Reinsert tape in gate at initial DELs, operate the bat handle to RUN (M33 or M35 ASR). Operate the BID key and the HOLD key.	BID lamp lights. Reader runs and stops after the first SOH on test tape.
38	None	The STC will poll the station. TRANS lamp in attendant set of ASR TTY lights (ORIG ONLY and standard ORIG/TERM stations only). Reader runs and stops after the first ETX

STEP	ACTION	VERIFICATION
		on the tape, HOLD lamp lights, and audible alarm sounds.
39	Open and then reclose the reader gate or remove and replace tape at same point in the gate. Operate the AUD OFF key.	BID lamp extinguishes, and audible alarm is silent.
40	Release the HOLD key and momentarily operate the BID key.	HOLD lamp extinguishes. BID lamp lights. Reader runs and stops after the second SOH on the test tape.
41	None	The STC will restart the reader which will run, print ABC TEXT 2, stop while form feeds (if ASR TTY is a sprocket-feed machine but not split ASR), then run until the tape runs out. When the first EOT is sent, the TRANS lamp (ORIG ONLY and standard ORIG/TERM stations) extinguishes. When the tape runs out, the BID lamp extinguishes.
42	Insert tape in gate at initial DELs, operate the bat handle to RUN. Operate the BID and HOLD keys.	BID lamp lights. Reader runs and stops after the first SOH on the test tape.
43	None	The STC will select the station as a sender and the following sequence of events will occur. The TRANS lamp in the attendant set of the ASR TTY lights (ORIG ONLY and standard ORIG/TERM stations only). Tape runs, machine prints ABCD TEXT 1 and stops after the second SOH.
44	Open and then reclose the reader gate. Silence alarm by operating and releasing AUD OFF key.	BID lamp extinguishes. TAPE lamp lights. Audible alarm sounds.
45	None	The STC will perform an emergency stop, causing the following sequence of events to occur at the station: The EMG STOP lamp lights and the audible alarm sounds. EMG MSG is printed on the ASR TTY (not printed on split ASR). The TRANS lamp extinguishes (ORIG ONLY and standard ORIG/TERM stations only).
46	Momentarily operate the EMG STOP key on the ASR TTY attendant set.	EMG STOP lamp extinguishes. Audible alarm is silent.

STEP	ACTION	VERIFICATION
47	Momentarily depress TAPE key.	Tape lamp extinguishes.
48	Insert the tape in the gate past the first SOH. Operate the bat handle to RUN. Operate the BID key.	BID lamp lights. Reader runs. When the first ETX is detected— EMG STOP lamp lights. Audible alarm sounds. Reader stops.
49	Depress EMG STOP key.	EMG STOP lamp extinguishes and audible alarm is silent.

Note: Steps 51 through 69 require a high degree of coordination between the test center and the station personnel. It may be advantageous to have a tape with the TEXT 1 section that has at least two lines of "FOX..." for this test. Step 50 initializes the system before starting the test procedure. Lamp and alarm indications observed at the stations during Step 50 should be ignored.

50	None	None
51	Insert the tape in the gate at initial DELs, and operate the bat handle to RUN. Operate the BID key.	BID lamp lights. Reader runs and stops after the first SOH.
52	None	The STC will select the station as a sender and then select it as a receiver. The TRANS lamp on the ASR TTY will light (ORIG ONLY and standard ORIG/TERM stations only).

Note: The STC will send the entire sequence of control codes for Step 53 without interruption. The DLE-DC1-DC2 starts the selected station transmitting. The transmission should be stopped by the last DLE before the complete TEXT 1 is transmitted. After the transmission is stopped, the station is selected as a receiver (Step 54), and the transmission is resumed while the STC is sending to the station (Step 55).

53	None	ABCD TE (see preceding note).
54	None	The REC lamp on the RO TTY attendant set (standard ORIG/TERM station) or ASR TTY (split operation ORIG/TERM station) lights.
55	None	(Balance of TEXT 1) Stops after the second SOH. See preceding note.
56	None	Receiver verification text is received on the machine.
57	Disconnect power from all station TTYs, and then restore power to all station TTYs.	All lamps extinguish. Station initializes to the idle state.

STEP	ACTION	VERIFICATION
58	Check that the station is in the ON LINE mode. Insert the tape in the gate at initial DELS and operate the bat handle to RUN. Operate the BID key.	BID lamp lights. Reader runs and stops after the first SOH.

Note: After starting the tape in Step 59, the STC will open the line (Step 60) while TEXT 1 is being transmitted.

59	None	Tape runs and machine prints ABCD TEXT... until line is opened in next step (no print on split ASR). TRANS lamp lights except on split ASR.
60	None	Transmission is interrupted. The TRANS and BID lamps extinguish, the EMG STOP lamp lights, and the audible alarm sounds.
61	Momentarily operate the EMG STOP key in the ASR TTY attendant set.	EMG STOP lamp extinguishes. Audible alarm is silent.
62	None	None
63	Insert the tape in the gate at the initial DELs and operate the bat handle to RUN (M33 or M35 ASR). Operate the BID key.	BID lamp lights. Reader runs and stops after the first SOH on tape.
64	None	None
65	Create a paper alarm by real or simulated removal of the paper, form, or tape from the primary RO TTY (standard ORIG/TERM station) or ASR TTY (split ASR operation ORIG/TERM station). Operate AUD OFF key.	PAPER LOW lamp lights. Audible alarm sounds.
66	Restore paper, form, or tape supply to normal. ***DO NOT operate PAPER LOW key to cancel paper low alarm.***	The STC will perform a loop-back of the station controller. PAPER LOW lamp extinguishes. OUT OF SVC lamp is on. Station with 820A1 or A2 controller motor is on. Station with 820A5 or A6 controller motor is off.
67	None	The STC will check distortion during this step. if required, the STC will give instruction on setting the incoming clocks.

STEP	ACTION	VERIFICATION
68	None	The STC will remove the station from loop-back. The OUT OF SVC lamp is off and the receiving machine motor is off.
69	Test complete: If no further tests are to be made, perform the customer verification procedure and return the station to service.	

C. Remote Test of Data Set

STEP	PROCEDURE
1	Gain access to the controller as described in the BSP entitled 86B1 Data Selective Calling Service, Full Duplex, 100-Word per Minute Data Station, Maintenance (581-136-302).
2	Call STC and request a remote test of data set.
3	When instructed to do so— Operate MTCE-NORM (R) switch on the controller to the MTCE position. The OUT OF SVC lamp lights when the MTCE/NORM switch (R) is operated to the MTCE position. ***Note:*** The test of the data set is now under control of the STC which can send and receive from the looped-back data set to determine if it is operating properly. When a 109E is used, the loop current can be checked. If a 108A or E is used, the level and frequency of the tones can be checked at this time. Operate the MTCE-NORM (R) switch to the NORM position. The OUT OF SVC lamp extinguishes.
5	If no further tests are to be made— Perform the customer verification procedure described in Part 6.

D. Continuity Test of DAS 804N2 or 804R3 (Receive Attendant Set)

STEP	PROCEDURE
	Caution: Remove RO TTY and, if station is an ORIG/TERM station, ASR TTY power cord(s) from the customer-provided ac receptacle before performing this test.
1	Gain access to the controller.
2	Disconnect the N plug from the controller.
3	Connect N plug to the KS-16786-L3 connector.

STEP	PROCEDURE
4	Using a KS-14510-L1 volt-ohm-milliammeter— Perform the continuity tests shown in Table B by using the pins of KS-16786-L3 connector to make connections. See Table B.
5	Disconnect N plug from KS-16786-L3 connector and reconnect to the controller.
6	If no further tests are to be made— Perform the customer verification procedure described in Part 6.

E. Continuity Test of DAS 804N1 (Transmit Attendant Set)

STEP	PROCEDURE
	Caution: Remove power cord from the customer-provided ac receptacle before performing this test.
1	Gain access to the controller.
2	Disconnect P plug from the controller.
3	Connect P plug to KS-16786-L2 connector.
4	Using KS-14510-L1 volt-ohm-milliammeter— Perform continuity test shown in Table C by using the pins of the KS-16786-L2 connector to make connections. See Table C.
5	Disconnect P plug from KS-16786-L2 connector and reconnect to controller.
6	If no further tests are to be made— Perform the customer verification procedure described in Part 6.

5. TROUBLESHOOTING TESTS AND PROCEDURES FOR DAS 820A6 (CONTROLLER)

5.01 Maintenance of the controller can be accomplished by substitution of circuit packs (CPs). Refer to Fig. 2 and Table A for information on circuit pack substitution. Table A is keyed to the attended STC Test by the steps of the table corresponding to the test steps. When the station fails a step, the corresponding step in Table A gives the suggested CP substitutions and areas that should be checked for trouble.

5.02 Table A may be used, if desired, to narrow the list of possible CPs in trouble. All previously substituted CPs should be left in place until further substitutions eliminate the trouble condition. In order to determine the CPs which caused the trouble, replace the new CPs with the old ones in a reverse order until the trouble condition returns. Leave each old CP in place after determining that it is not in trouble. If the trouble condition persists after all of the suggested CPs have been replaced, then a replacement of the entire controller may be required.

5.03 The elimination of all trouble conditions by the substitution of CPs is not always possible since the source of trouble may be associated with nest wiring, connectors, power supply, etc. Table A indicates possible areas of trouble that should be checked. In such cases, replacement of the complete station controller DAS 820A6 or other defective components will be necessary.

6. CUSTOMER VERIFICATION

6.01 When a test is complete, all test requirements have been met, and no further tests are to be made, suggest that the customer verify that service is satisfactory by sending a message through the system and back to the station. If the customer has messages to deliver, verify that the service is satisfactory in this manner. If the customer has no messages to deliver, consider the station satisfactory for service. When customer verification has been completed, return the station to normal service.

TABLE A
TROUBLE LOCATING CHART

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
1	OUT OF SVC lamp not extinguished.		ESU	AR481			R switch operated to MTCE position; check that M, N connectors are secure; check local nest wiring.
	Receiving machine runs continuously		Contacts				
	ASR TTY motor does not run.		Motor	AR481			
	PAPER-OUT lamp not extinguished.		Contacts, ESU	AR484	Receiver		
	TAPE lamp not extinguished.		Contacts, ESU, tape reader	AR482	Receiver		Check RT unit 37 TTY taut-tape switch.
2		No tones		D/S		Loop, D/S	Check power supply transmission leads for T, R short; nest wiring.
		Low level		D/S		Loop	
		High level		D/S			
		Off frequency		D/S			
		Continuous space		AR477, 478, 480, and D/S			Check for grounds and nest wiring.
3		High distortion		D/S		Loop, D/S, 811C	
		No response		D/S		Loop, D/S, 811C	Carrier squelch circuit.
	ASR attn set OUT OF SVC lamp does not light.			AR482	Send, Receive		Check lamp.
	RO attn set OUT OF SVC lamp does not light.			AR484	Receiver		Check lamp.

ESU = Electrical Service Unit

D/S = Data Set

NST = Nest Wiring

Action A = Station is initialized by STC sending initializing sequence

Action B = R switch on the controller is operated to MTCE position to allow the STC to check the data set and line facilities

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
4	OUT OF SVC lamps are not extinguished.		ESU	AR482, 484			Check M connector; initialize system.
5	OUT OF SVC lamps do not light then extinguish.			AR482, 484, 18, 477, 480, and D/S	Send, Receive	Loop, D/S, 811C	Check N and P connectors; check lamp.
6	OUT OF SVC lamp in receiving attn set does not light.			AR481 NST	Receive		Check lamp in DAS 804; check N connector.
7	CALL lamp does not light.			AR481	Receiver		Check lamp.
	REC lamp lights and motor starts.			AR481	Receiver		Station ***not*** out of service; check nest wiring.
	REC lamp lights and motor does not start.						Station in loopback mode; initialize and repeat step.
		No response		AR18, 25, 477, and D/S		Loop, D/S, 811C	Action B.
		2-character response other than SIC-NAK		AR25			Station ready to receive.
		Single-character response		AR18, 25			Nest wiring; initialize station and repeat.
8	CALL lamp does not extinguish.		Contacts, ESU	AR481	Receiver		Check attn set keys; check M and N connectors; station is still out of service.
	OUT OF SVC lamp does not extinguish in receive machine attended set.		Contacts		Receiver		Nest wiring; station in loopback mode; initialize.

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
9	PAPER LOW lamp does not light.		Contacts, ESU	AR481	Receiver		Check lamp; N and V cable connectors; nest wiring.
	Audible alarm in RO set does not sound.		Contacts	AR484	Receiver		Speaker, AUD OFF key operated.
10	CALL lamp does not light.			AR481, 475	Receiver		Check CALL lamp; check V, W, and N connectors.
	REC lamp lights.		Contacts, ESU	AR484 NST	Receiver		Terminal is ready to receive.
		No response		AR18, 25, 477 and D/S		Loop, D/S, 811C	Check that terminal is not ready to receive; perform Actions A and B.
		Response other than SIC-NAK	Contacts, ESU	AR484 and NST	Receiver		
		Single-character response		AR484 and NST			
11	PAPER LOW lamp does not extinguish.		Contacts, ESU	AR484	Receiver		Check DAS paper low or tape low break contacts for proper operation; check PAPER OUT switch; check for grounds; check pins 10 of W, V, and N connectors; check X connector pins 23 and 31 for continuity through TTY PAPER OUT switch to connector C.
	CALL lamp does not extinguish.		Contacts, ESU	AR484			
	Audible alarm continues to sound.		Contacts, ESU	AR484	Receiver		

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
12	CALL lamp lights.			AR25, 481 NST	Receiver		Station not ready to receive.
	CALL lamp does not flash.			AR25, 481			Check lamp.
	REC lamp does not light.						Check REC lamp.
	Motor does not start.		Motor, ESU	AR484, NST			Check lead pin 24 through X, V, and N connectors to connector C; check fuse or circuit breaker.
		No response		AR18, 25, 477, D/S, NST		Loop, D/S, 811C	Actions A and B.
		Response other than SIC-NAK	Contacts, ESU	AR25, 484 NST	Receiver		Station not ready to receive.
		Single-character response		AR25, 71, 487			Action A.
13	TTY does not copy heading.		ESU, tape punch, typing unit	AR481, 475			Station terminal is blinded; send ENQ-DC2 and repeat test.
	Motor not running.		Motor, ESU	AR484 NST			Check SMD lead pins 32 through X, V, and N connectors to connector D.
	TTY prints underline characters.		Noise network	D/S		D/S, 811C	Action A.
	Garbled copy		ESU, typing unit	AR477, 480 D/S		D/S, 811C	
		Receives heading		AR479, NST		811C	Station may be in loop-back mode; check R switch.

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
14	Station copies heading.			AR18, 25, 71, NST			Station failed to blind on detection of ENQ; resend ENQ and repeat step.
	Station unselects, ERROR lamp lights, audible alarm sounds, and MSG ERROR lamp lights.			AR478, D/S		D/S, 811C	Carrier fail condition; Actions A and B.
		Hit characters		AR477, 480, NST, D/S		D/S, 811C	Actions A and B.
15	TTY does not print TDM or text.		Motor, ESU, tape punch, typing unit	AR18, 65, 71, 475, and D/S		Loop, D/S, 811C	Station terminal did not unblind; resend unblind sequence ENQ-DC2.
	TTY prints underline characters; ERROR lamp lights.		Noise network	AR477, 479, D/S, NST		Loop, D/S, 811C	Actions A and B; check grounding system.
	No form feed if sprocket TTY.		Contacts, ESU, typing unit				Send line feed, then form feed.
	No copy on ROTR if provided.		Motor, contacts, ESU, typing unit				ASR stunt box failed to detect DC2 in text.
		Prints copy				811C	Adjust test position for FDX operation.
16	No tape feedout.		Contacts, ESU, tape punch	AR481, NST			Check TFO lead pin 25 through X, V, and N connecnectors to connector D.

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
16 Cont	ERROR lamp lights and audible alarm sounds.		Contacts				Failed to go into roll call mode; detected parity, lost character, or format error.
		SIC-NAK response	Noise network contacts			Loop, D/S	Detected error.
		Response other than SIC-CAN or SIC-NAK					Failed to go into roll-call mode.
		No response		AR25, 477, and D/S		Loop, D/S, 811C	Repeat ENQ-CEC; Actions A and B.
17	REC lamp does not extinguish.			AR18, 71, 475, D/S, and NST		Loop, D/S, 811C	Station failed to detect or unselect on EOT; resend DC2-EOT; also check grounding system.
	Motor remains running.		Contacts, ESU				
	Lamps light on attn set.		Noise network, ESU	NST			
	False alarms on attn set audible, visual, or both.		Noise network				
		Hit received from station					
18	CALL lamp lights, CALL lamp does not flash.			AR25, 481, NST			Check station for ready-to-receive indication.
	REC lamp does not light, motor does not start, OUT OF SVC lamp lights.		Motor, ESU	AR484, NST			Check that station is not in the loop-back mode.
	MSG ERROR lamp lights, no copy, garbled copy, underline characters.		ESU, typing unit			Loop, D/S, 811C	Check transmission using automatic loop-back or Actions A and B.

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
18 Cont		No response		AR18, 25, 71, 479, 477, 480, D/S, NST		Loop, D/S, 811C	Initialize.
		2-character response other than SIC-ACK	Contacts, ESU	AR25	Receiver		Check station for ready-to-receive indications.
		Single-character response	Contacts, ESU	AR484	Receiver		
		Wrong SIC character		AR25			Actions A and B.
19	ERROR lamp does not light, MSG REC lamp does not light, audible alarm does not sound.			AR484, NST	Receiver		Check that negative roll call on parity error option is provided by AR69 card.
20	Text 2 not received.		Motor, ESU	AR481, 475, NST			
	Garbled copy		ESU, typing unit				
		No response		AR18, 25, 477, D/S, NST		Loop, D/S, 811C	Initialize; Actions A and B.
		SIC-CAN response		AR18, 478, NST			Check negative roll call on parity.
		Single-character response		AR18, 71, 478, and NST			
		Response other than SIC-CAN or SIC-NAK	Noise network	AR25, 478		Loop, D/S, 811C	
21	Alarms not canceled		Contacts, ESU	AR482, 484, NST	Receiver		Check for ground; 37-type TTY, power supply.

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
22	Does not copy text.		ESU, typing unit				Station not selected as a receiver or station is unblinded; send ENQ-DC2 or reselect station.
	MSG REC lamp does not light, audible alarm does not sound.			AR18, 484, 71	Receiver		Check lamp; check speaker.
		No response		AR25, 481, 477, and D/S			Initialize; repeat step.
		Response other than SIC-ACK		NST			Action B.
23	Alarms not canceled, motor running.		Contacts, ESU	AR482, 484			Check grounds.
	False alarms.		Noise network, contacts, ESU	AR482, 484	Receiver		Check grounds.
	REC lamps not extinguished.		Contacts, ESU	AR482	Receiver		Terminal is still not ready to receive or out of service.
		Hit character	Noise network	NST	Receiver	Loop, D/S, 811C	Check grounds; 37-type TTY, check power supply.
24	Printer runs open.		Noise network		Receiver		Actions A and B.
	REC and CALL lamps lighted.			AR484	Receiver		

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE	EQUIPMENT TO BE CHECKED					
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
24 Cont	No response		ESU, typing unit		Receiver		
		No response		AR25, 481, 71, 479, 478, 477, 480, D/S, NST		Loop, D/S, 811C	Actions A and B.
		Single-character response	Contacts, ESU	AR484	Receiver		
		Wrong SIC character		AR25			
25	MSG REC lamp does not light.			AR484, 478, D/S, NST	Receiver		Check MSG REC lamp; check terminal 2 through W, V, and N connectors to C connector.
	Audible alarm does not sound.			AR484	Receiver		
	Station remains selected as a receiver.			AR478, D/S, NST		Loop	Check grounding; check carrier fail detector.
	REC lamp does not extinguish.			D/S, NST	Receiver		
26	All lamps are not extinguished.						Actions A and B.
27	OUT OF SVC lamp does not light.			AR481	Receiver		Check OUT OF SVC lamp; Action A.
		No response		AR18, 25, 71, 479, 478, 477, 480, D/S		Loop, D/S, 811C	Actions A and B.
		Response other than NAK	Contacts, ESU, tape reader	AR25	Receiver		

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
28	OUT OF SVC lamp does not extinguish.		Contacts, ESU	AR481	Receiver		Actions A and B.
		No response		AR18, 25, 71, 479, 478, 477, 480, D/S, NST		Loop, D/S, 811C	
		Response other than CAN	Contacts, ESU	AR25, 481, NST	Receiver		
29		Hits		NST		Loop	DC2 did not remove polling state; resend DC2-SPC.
		CAN		AR18, 475, NST		D/S, 811C	
30 and 31	BID lamp does not light.		Contacts, ESU, tape reader	AR481, 483	Send		Check contacts; tape available, bat handle, etc. Check BID lamp; check pins, 9, 10 on P connector; check transistor Q24 AR68; send DC2-EOT to unlock tape reader.
	Tape does not run.		Motor	AR481, 482, 70, NST			
	Tape does not stop on SOH.		Contacts, ESU, tape reader	AR18, 482, 480, and NST			
		Hits		AR479		Loop, D/S, 811C	Station may be cocked; send DC2-EOT and repeat.
32	False alarm lamps.						Check grounding system for noise.
		Hit character		D/S, NST		Loop, D/S, 811C	
		No response		AR18, 25, 71, 479, 478, 477, 480, D/S		Loop, D/S	Actions A and B.
		2-character response other than R-ACK					

TABLE A (Cont)

STEP FAIL-URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
32 Cont		Single-character response	Contacts, ESU		Send		
33	False alarms		Noise network				
	TRANS lamp in attn set in ASR does not light.		Contacts, ESU, tape reader	AR481, 482	Send		Actions A and B.
		No response		AR18, 25, 71, 475, 478, 477, 480, D/S, and NST		Loop, D/S, 811C	
		NAK	Contacts, tape reader	AR481, 482			Check TRAFFIC AVAIL state.
34	Heading 1 not received.		Keyboard, tape reader, typing unit	AR18, 475		Loop, 811C	Station failed to detect DC1.
	Underline characters, garbled copy		Typing unit				Check grounding system and TTY protection network.
	EMG STOP alarm.		Noise network	AR481, 475		Loop, 811C	
		Heading received				811C	Test TTY position set for HDX operation; station in the loopback mode.
35	Tape fails to run.			AR18, 482, 71			
	Tape fails to stop on second SOH.		ESU, tape reader	AR25			
		No response	Motor, ESU, tape reader	AR18, 482, 71, 475, D/S, NST		Loop, D/S	Actions A and B.

TABLE A (Cont)

STEP FAIL-URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
35 Cont		Garbled copy	ESU, tape reader	AR482			Actions A and B.
36	Tape fails to run.		Motor, ESU				
	Tape fails to stop on F/F.		Contacts, ESU				
	Tape fails to stop on second EOT.		Contacts, ESU	AR483			EOT counter.
	TRANS lamp stays on.		Contacts, ESU, tape reader	NST			Failed to detect EOT from tape.
	BID lamp stays on.			AR483, NST	Send		
		No response	Tape reader	AR18, 71, 475, D/S, NST		Loop, D/S	Actions A and B.
		Garbled copy	ESU, tape reader	AR482			
		Parity errors detected on 911 DTS	Noise network, ESU, tape reader	D/S		Loop, D/S	
		EOT with wrong parity	ESU, tape reader	AR71, NST			
37	Tape does not run.						Check BID lamp and key contacts; check P connector.
	Tape does not stop on SOH.		Tape reader				
	BID lamp does not light.			AR483	Send		
		Hits received	Noise network, contacts, ESU	AR25			

TABLE A (Cont)

STEP FAIL-URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
38 and	TRANS lamp off.			AR71, 478	Send		Actions A and B.
39	Tape does not run.		ESU, tape reader	AR71, 478			
	Tape does not stop on ETX.			AR483			
	Hold lamp does not light.			AR482, 71, 478	Send		Check lamp.
	Audible alarm does not sound.			AR482	Send		Check speaker.
		No response		AR18, 25, 71, 475 479, 478, 477, 480, D/S and NST		Loop, D/S	Actions A and B.
		Garbled copy	Noise network, ESU, tape reader	D/S		Loop, D/S	
		Parity errors on 911 TMS	Noise network ESU, tape reader	D/S		Loop, D/S	
40	BID lamp does not light.		Contacts, ESU	AR482	Send		Actions A and B.
	Tape does not run.		Motor	AR482			
	Tape does not stop on SOH.		ESU, tape reader	AR482, 71			
		No response	Motor, ESU	AR18, 479	Send	Loop, D/S	
		Hit other than SOH	Tape reader				
41	Tape does not stop while form is feeding.		Contacts, ESU, keyboard, tape reader				Check RT unit, TAPE AVAIL switch, and contacts.

TABLE A (Cont)

STEP FAIL-URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
41 Cont	TRANS lamp does not extinguish, BID lamp does not exinguish.		Contacts, ESU, tape reader		Send		
		No response	Motor, ESU	AR18, 25, 71, 475, 478, 477, 480, D/S and NST		Loop, D/S	Action A.
		Garbled text, parity errors on 911 TMS	ESU, tape reader	D/S		Loop, D/S	
		Parity error on EOT	Noise network, ESU, tape reader	AR18, 478, NST		Loop, D/S	
42	Tape does not run.		Motor, contacts, ESU	AR482			Check M connector and terminal 40, 49.
	Tape does not stop on SOH.		Tape punch	AR25, 482, 71			
		Hit characters	Noise network	D/S, NST		Loop, D/S	
43	TRANS lamp does not light.				Send		Check TRANS lamp.
	Tape does not run.		Typing unit, contacts, ESU	AR482	Send		
	Tape does not stop on SOH.		ESU, tape reader	AR25, 482, 71			
		No response	Motor, ESU	AR18, 25, 71, 475, 478, 477, 480, D/S, NST		Loop, D/S	Action A.
		Garbled copy	Noise network, motor, ESU, tape reader	D/S		Loop, D/S	

TABLE A (Cont)

STEP FAIL-URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
44	TAPE lamp does not light.		Contacts, ESU	AR482, NST	Send	Loop, D/S	Check lamp; check N connector terminals 36 and 37.
	Audible alarm does not sound.			AR482	Send		
	BID lamp does not extinguish.		Contacts	AR482, 483	Send		
		Hit characters	Noise network, contacts, ESU, tape reader	D/S, NST			
45 thru 47	Audible alarm does not sound.			AR18, 482, 480	Send		Station failed to detect DLE-X-DC1; check lamp.
	EMG STOP lamp does not light.			AR482	Send		
		Hit characters		D/S		Loop, D/S, 811C	Station may be in loop-back mode; Action A.
	EMG MSG not received on ASR.		ESU, typing unit	AR18, 480, NST		D/S, 811C	Station failed to detect DC3; resend DLE-DC3-DC2.
	TRANS lamp not extinguished.			AR18, 480, NST			
	EMG STOP lamp not extinguished.						
	Audible alarm not silenced.			AR482, NST	Send		
48 and	BID lamp does not light.		Contacts, ESU	NST	Send		Check BID lamp.
49	Tape does not run.		Motor, tape reader				Send DC2.

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
48 and 49 Cont	EMG STOP lamp does not light; alarm does not sound.		Tape reader		Send		Check controller used.
	Tape does not stop on ETX.		Contacts, ESU, tape reader	AR482			
		Hit characters	Contacts, ESU	D/S, NST		Loop, D/S, 811C	
		SIC character		AR479			Station may be cocked; Action A.
50	Station not initialized.					Loop	Actions A and B.
51	Tape does not run. BID lamp does not light.		Motor, Contacts	AR482, NST, D/S	Send	Loop	Actions A and B.
52		No response				Loop, D/S	Action A.
53	Tape does not start.		Motor	AR482			Station failed to detect DLE-DC1-DC2; resend sequece.
		No response	Motor	AR18, 482, 71, 475, D/S, NST	Send	Loop, D/S	
		Garbled copy, parity errors	Noise network, tape reader	AR482		Loop, D/S	
54	Tape does not stop.		Contacts, ESU	AR18, 482, 71, 475			Station failed to detect DLE; resend DLE.
		No response		AR18, 25, 481, 71, 475, 479, 478, 477, 480, D/S, NST		Loop, D/S	Station failed to detect ENQ-CEC; resend ENQ-CEC.
		Single-character response	Contacts, ESU		Receiver		Actions A and B; station not ready.
		Garbled characters		AR71		Loop, D/S	

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
55	Tape does not start.		Contacts, tape reader	AR482		811C	
	Tape does not stop on SOH.		Contacts, ESU	AR25, 480, NST			
		No response	Motor, contacts, ESU, tape reader		Receiver	Loop, D/S	Station failed to detect ENQ-DC2; resend sequence.
		Garbled characters	Contacts, tape reader	AR482, NST		Loop, D/S, 811C	
56	No text received or text garbled.		ESU, typing unit	D/S		D/S	
	Parity error alarm.			AR480, D/S			
		Hit characters	Noise network contacts, typing unit	AR25, D/S		Loop, D/S	
		Text	ESU, typing unit				
57	All lamps not extinguished, CKT not restored to initialized condition.		Noise network contacts, ESU	AR479, D/S	Send Receive		
		Hit characters.		D/S		Loop, D/S, 811C	
58	Tape does not run.		Motor, contacts, ESU				
	Tape does not stop on SOH.		Tape punch, tape reader	AR482			Check tape for correct SOH punched in tape.
		Hit characters	Noise network	D/S, NST		Loop, D/S, 811C	

TABLE A (Cont)

STEP FAIL-URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
59	Tape does not run.		Motor, contacts	AR483			Resend DC2; Actions A and B.
		No response	ESU	AR18, 71, 475, 478, D/S		Loop, D/S, 811C	
60	Tape does not stop.			D/S			
	BID lamp does not extinguish.		Motor, contacts	AR478			
	EMG STOP lamp does not light, audible alarm does not sound.			AR482, D/S			
61	All alarms are not canceled.			AR482, 478			Check for nest wiring shorts.
		Hits		AR480, D/S	Send		
62		Hit character		AR479		Loop, D/S	
		SIC character					Check station for no traffic available.
63	Tape does not run.		Motor, contacts, ESU	AR482			Send DC2.
		No response		AR479, D/S		Loop, D/S	Actions A and B.
		Hit character	Noise network, contacts, ESU, tape reader				
		Improper SIC character		AR25, 479			
		Parity error on 911 TMS		D/S		Loop, D/S	

TABLE A (Cont)

STEP FAILURE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
64		Hit character		AR479, D/S		Loop, D/S	
65	PAPER LOW lamp does not light.		Contacts, ESU	AR484, NST	Receiver		Check lamp, check N connector.
		Hit character	Noise network				
66	PAPER LOW lamp does not go out, OUT OF SVC lamp does not light.			AR71, 479, NST	Receiver		
	Motor running in 820A5 and 820A6.		Contacts, ESU				Test machine must be in FDX mode.
	REC lamp does not light.						Check REC lamp.
		Hit characters				811C	
67		No response				Loop, D/S, 811C	Station not in loop-back mode.
		High distortion		AR480, D/S		Loop, D/S	
		Garbled copy		AR71, 479		Loop, D/S, 811C	
		Underline characters					Parity errors sent by test position.

TABLE A (Cont)

STEP FAIL-URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820A6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
68	OUT OF SVC lamp not extinguished, motor running.		Contacts, ESU				Check that TTY MAINT switch is in NORM position.
	False alarms.		Noise network contacts, ESU	AR481			
		Hit characters				Loop, D/S	

TABLE B

CONTINUITY TEST OF DAS 804N2 OR 804R3

STEP	KEY	POSITION	VOLT-OHM-MILLIAMMETER			
			SCALE	CONNECT PROBE		READING OHMS
				+	−	
1			R X 10	3	9	55 ± 15
2				3	6	55 ± 15
3				3	2	55 ± 15
4				3	14	55 ± 15
5				3	13	55 ± 15
6				3	12	55 ± 15
7	AUD OFF	RLS		3	8	∞
8		OPR		3	8	0 to 2
9	AUD OFF	OPR		3	11	∞
10		RLS		3	11	0 to 2
11	OUT OF SVC	RLS		8	15	0 to 2
12		OPR		8	15	∞
13	MSG REC	RLS		5	4	0 to 2
14		OPR		5	4	∞
15	ERROR	RLS		5	7	0 to 2
16		OPR		5	7	∞
17	*PAPER LOW	RLS		5	10	0 to 2
18		OPR		5	10	∞
19				36	FRAME VIO-SL	0 to 2
20				16	LDSPKR YEL-BL	0 to 2

* TAPE LOW designation substituted for PAPER LOW on DAS 804R3

TABLE C

CONTINUITY TEST OF DAS 804N1

STEP	KEY	POSITION	VOLT-OHM-MILLIAMMETER			
			SCALE	CONNECT PROBE		READING OHMS
				+	−	
1			R X 10	3	18	55 ± 15
2				3	2	55 ± 15
3				3	15	55 ± 15
4				3	13	55 ± 15
5				3	11	55 ± 15
6				3	9	55 ± 15
7				3	7	55 ± 15
8				LDSPKR BL-VIO	8	0 to 2
9	AUD OFF	RLS		3	8	∞
10		OPR		3	8	0 to 2
11	AUD OFF	OPR		17	8	∞
12		RLS		17	8	0 to 2
13	OUT OF SVC	RLS		16	8	0 to 2
14		OPR		16	8	∞
15	OUT OF SVC	OPR		21	8	0 to 2
16		RLS		21	8	∞
17	HOLD	RLS		14	8	∞
18		OPR		14	8	0 to 2
19	PRIOR	RLS		12	8	0 to 2
20		OPR		12	8	∞
21	BID	RLS		10	8	0 to 2
22		OPR		10	8	∞
23	TAPE	RLS		5	4	0 to 2
24		OPR		5	4	∞
25	EMG STOP	RLS		5	6	0 to 2
26		OPR		5	6	∞
27				19	LDSPKR YEL-SL	0 to 2
28				24	FRAME VIO-SL	0 to 2

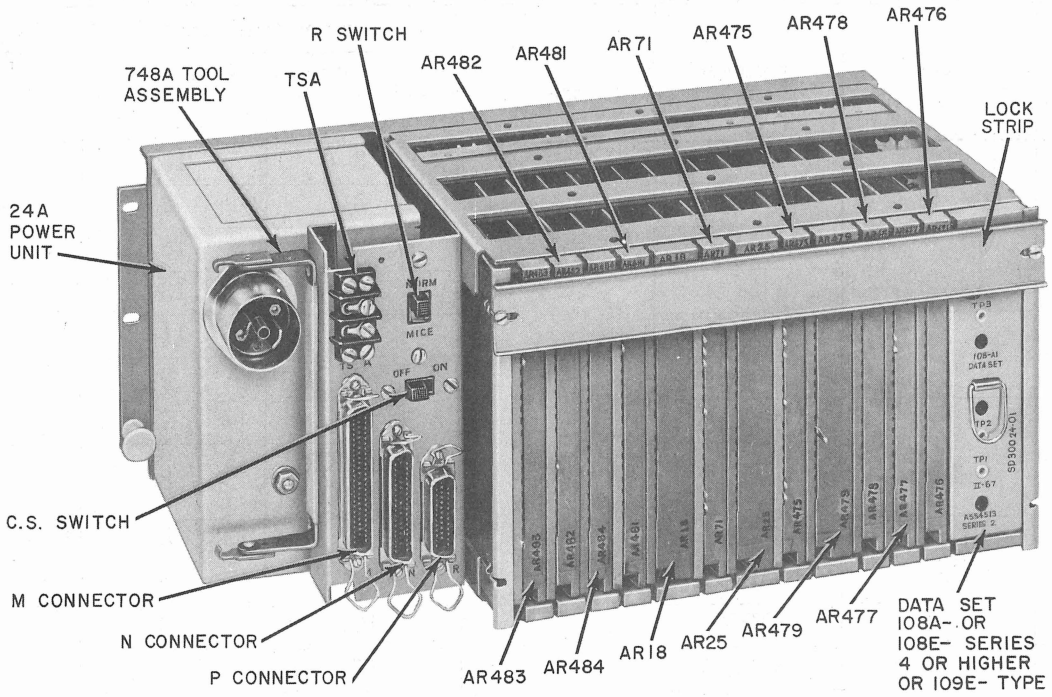

Fig. 2—DAS 820A6—Location of Circuit Packs and Components