

86A2 DATA SELECTIVE CALLING SERVICE
HALF-DUPLEX—150-WORD PER MINUTE DATA STATION
TEST PROCEDURE

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1. GENERAL

1.01 This section describes the installation and maintenance test procedures for a half-duplex (HDX), 150-word per minute (wpm) data station which incorporates Model 37-type teletypewriters and is used in the 86A2 Data Selective Calling Service.

1.02 This section is reissued to include reference material for data sets 108E and 109E, add trouble locating chart and revise Fig. 1.

1.03 The tests covered are:

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

B. Remote Test of Data Set 108A, **▶108E, or **109E:◀**** This test requires gaining access to the controller and is made by the serving test center (STC).

C. **▶Attended Station Testing With STC:**

This is a concurrent test between an attended station and an STC in which voice communication must be established and maintained throughout the test. When a step cannot be verified, refer to the same step number in Table A for a listing of components or items that may be the cause of the trouble condition or malfunction. Several steps in Table A refer to Action A and Action B which are defined as follows:

Action A: Initialize station by having the STC send DLE-DLE-EOT-DLE-+-EOT which returns the controller logic to the idle condition and then repeat the step.

Action B: Operate the NORM/MTCE switch to MTCE and have the STC perform a check of the line facilities and data set. After the check, operate the NORM/MTCE switch to NORM.

Note: 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.◀

D. Continuity Test of Data Auxiliary Set (DAS) 804R3 (TERM ONLY) Station Attendant Set): This test checks the continuity of the keys, lamps, and cabling associated with the RO TTY attendant set.

E. Continuity Tests of DAS 804R4 (ORIG/TERM Station Attendant Set): This test checks the continuity of the keys, lamps, and cabling of the ASR TTY 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.



Test procedures for the data station are controlled by the STC.

1.05 Both installation and maintenance test procedures are given. Since some of the tests are identical for installation and maintenance, each test is presented only once. For best results, final range finder adjustments should be made with the STC. This setting should be at the midpoint of the overall range for the terminal unit taken with signals received over the line and then regenerated by the controller. If the setting is made using signals generated from the local station keyboard or tape while in the *off-line* mode, the signals will bypass the regenerative capability of the controller.



Transmission from the data station to the STC will require preparation of special test tapes. The same tapes are used for both installation and maintenance testings.

Installation Testing

1.06 The installation tests are designed to verify that the data station has been properly assembled and is operative. The test procedure should be performed in the following sequence:

- (1) Test A—Local Test
- (2) Test C—Attended Station Testing With STC.

Maintenance Testing

1.07 The maintenance test procedure should be in accordance with the maintenance philosophy given in the section entitled 86A2 Data Selective Calling Service—Half-Duplex—150-Word Per Minute Data Station—Maintenance (581-136-301).

1.08 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 1.07.

TTY Maintenance

1.09 Maintenance procedures for the TTYs should be in accordance with the appropriate Field Maintenance Practice (FMP).

Note: FMP 579-400-350 covers the 37-type KSR as used for keyboard send and receive applications in DATA PHONE® service. When necessary, reference may be made to certain parts of this practice for information concerning TTY maintenance.

1.10 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.



Take proper steps to insure that the customer is not billed for telephone calls made to STC. See the section entitled Crediting Charges on Test Calls (010-250-001).

1.11 Lettered Steps: A letter a, b, c, etc, added to a step number in Part 4 of this section, indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

2. APPARATUS

TESTS A, B, C, D, AND E

- 2.01** STC.
- 2.02** KS-14510-L1 volt-ohm-milliammeter.
- 2.03** KS-16786-L3 connector.

3. PREPARATION OF TEST TAPES

STEP	ACTION	VERIFICATION
ORIGINATE-TYPE STATIONS ONLY		
1	At ASR TTY— Ensure OUT OF SVC key is not operated and operate OFF LINE and PUNCH ON keys. OUT OF SVC lamp lights.	
2	At ASR TTY keyboard— Operate DEL key completely until approximately three inches of DEL characters are punched on tape.	
3	Prepare test tape: DEL...DEL-SOH-A-B-C-STX-TEXT-ETX-DEL...DEL-SOH-A-B-C-CR-LF-STX-TEXT 2-FF-DEL-ETX-EOT-DEL-DEL-DEL. Insert this tape into gate at initial DELs; operate READER ON key. Momentarily operate BID key in attendant set. Initialize: DLE-DLE-EOT-DLE-+-EOT.	Tape runs to SOH and then stops. BID lamp lights. OUT OF SVC lamp flashes once.

4. TEST PROCEDURE

STEP	ACTION	VERIFICATION
A. Local Test		
1	Using nearby telephone— Call STC and request that the data station leg be connected to a test hub.	
2	Momentarily disconnect the data station power cord.	Controller circuits will initialize (UNATT lamp lighted, PUNCH ON lamp extinguished, READER ON lamp extinguished, AUX RCVR lamp extinguished, and EOT lamp extinguished).
3a	If AUD OFF lamp is lighted at either ASR or RO TTY— Depress AUD OFF key.	AUD OFF lamp extinguished.
ASR TTY		
4	Operate ON LINE key.	ON LINE and PERF lamps light.
5	Depress OUT OF SVC key.	OUT OF SVC lamp lighted. Audible alarm sounded.
6	Depress OUT OF SVC key.	OUT OF SVC lamp extinguished. Audible alarm silenced.

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STEP	ACTION	VERIFICATION
7	Depress OFF LINE key.	OFF-LINE and OUT OF SVC lamps light. ON LINE and PERF lamps extinguished.
8	Check the general operation of the TTY (typing, end-of-line counter and lamp, tabulation, form feed, etc).	

Primary RO TTY

9	Remove paper supply.	PAPER LOW lamp lighted. Audible alarm sounded.
10	Depress AUD OFF key.	AUD OFF lamp lighted. Audible alarm silenced.
11	Replace paper supply.	PAPER LOW lamp remains lighted.
12	Depress PAPER LOW and AUD OFF keys.	PAPER LOW and AUD OFF lamps extinguished.
13	Repeat Steps 5 and 6 for RO TTY.	

Primary ROTR

14	Remove tape supply.	TAPE LOW lamp lighted and audible alarm sounded.
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.	
17b	If no further tests are to be performed— Perform the customer verification procedure described in Part 6.	

B. Remote Test of Data Set ♦108-Type or 109E-Type♦

1	Gain access to the controller as described in the section referenced in 1.07.	
2	Call STC and request a remote test of data set ♦108-type or 109E-type.♦	
3	When instructed to do so— Operate R switch on the controller to the MTCE position.	At attendant set— OUT OF SVC lamps lighted.

Note: The test of the data set is now under control of the STC.

STEP	ACTION	VERIFICATION
4	When informed of the test results by the STC— Operate the R switch to the NORM position.	At attendant set— OUT OF SVC lamp extinguishd.
5a	If no further tests are to be made— Perform the customer verification described in Part 6.	

C. Attended Station Testing With STC

Note: STC will use Section 666-702-501 for testing.

1	Check paper form or tape supply in TTYs, clear all alarms that may be on, check that OUT OF SVC, HOLD, and AUD OFF keys in attendant sets are released. Check for no tape in tape reader.	In attendant set: all lamps extinguished and alarm silent; all keys released.
2	Check for ASR to be in ON-LINE mode.	COPY light ON, motor running, and ON LINE and PERF lamps light.
3	Operate T (carrier squelch) switch on controller to OFF.	None

Note: When a data set 109-type is provided, the loop current must be checked to determine if the data set is operative. Refer to the applicable section covering the data set used in the controller for information on the loop current requirements.

4	Operate R switch on controller to MTCE.	OUT OF SVC lamp lights. Motors stop. (Test with 911 TSG.)
5	Return R switch on controller to NORM. Return T (carrier squelch) switch to original position.	OUT OF SVC lamp extinguished. Motors start.
6	None	OUT OF SVC lamp flashes once, and motors stop and then restart.
7	Operate OUT OF SVC key in attendant set.	OUT OF SVC lamp flashes once and motors continue to run.
8	None	CALL lamp lights.
9	Release OUT OF SVC key.	CALL and OUT OF SVC lamps in attendant set extinguished.

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STEP	ACTION	VERIFICATION
10	Create paper alarm by real or simulated removal of paper form or tape from TTY machine.	PAPER LOW lamp lights, audible alarm in attendant set sounds.
11	None	CALL lamp lights.
12	Replace paper form or tape in machine. Momentarily operate PAPER LOW key.	PAPER LOW lamp off, audible alarm in attendant set off. CALL lamp off.
13	None	CALL lamp flashes once. TRANS/REC lamp on.
14	None	TTY prints (or punches) heading. <i>Note:</i> 1-character delay—A will not print.
15	None	TTY prints A.
16	None	Primary TTY prints TDM-TEXT 1 (TEXT 2 if no print suppression is on primary). Form feeds (if sprocket-feed RO). AUX machine types or punches TEXT 2.

Note: When the terminal being tested uses a model 37 wide platen TTY, it should be tested by sending 72 characters. The test center then operates the local carriage return and paper advance, followed by 60 additional characters, to check the 132-character line operation.

17	None	If primary receiver is ROTR, tape feeds out.
18	None	TRANS/REC lamp extinguishes.
19	None	CALL lamp flashes once. TRANS/REC lamp lights. TEXT 1 received on TTY.
20	None	ERROR lamp lights and audible alarm sounds. TEXT 2 received, then underline characters replace parity error character. If punched tape, the underline character will be ODD parity.
21	None	None
22	Release all alarms.	MSG REC lamp lights (audible alarm sounds). Lamps extinguished and audible alarm silent.
23	None	TRANS/REC and MSG REC lamps light and alarm sounds. TEXT received.

STEP	ACTION	VERIFICATION
24	Release the alarm.	TRANS/REC lamp extinguishes. Alarms canceled.
25	None	CALL lamp flashes, once. TRANS/REC lamp on.
26	None	MSG REC lamp lights and audible alarm sounds. ERROR lamp <i>may</i> light. TRANS/REC lamp off.
27	Cancel the alarms.	All lamps extinguished and audible alarm silent.
28	Check that the ASR is in ON LINE mode; with no tape in gate of tape reader. Operate OUT OF SVC key in attendant set.	OUT OF SVC lamp in attendant set lights.
29	None	None
30	None	None
31	None	CALL lamp lights.
32	None	None
33	Release OUT OF SVC key.	CALL lamp extinguished. OUT OF SVC lamp extinguished.
34	None	None
35	Prepare test tape: DEL...DEL-SOH-A-B-C-STX-TEXT-EXT-DEL...DEL-SOH-A-B-C-CR-LF-STX-TEXT 2-FF-DEL-ETX-EOT-DEL-DEL-DEL. Insert this tape into gate at initial DELs; operate READER ON key. Momentarily operate BID key in attendant set. Initialize: DLE-DLE-EOT-DLE-+-EOT.	Tape runs to SOH and then stops. BID lamp lights. OUT OF SVC lamp flashes once.
36	None	None
37	None	TRANS/REC lamp in attendant set lights.
38	None	Heading 1 received on ASR typing unit.
39	None	A-B-C LOCAL COPY tape runs and stops at STX.
40	None	TEXT—local copy. Tape runs and stops at ETX.
41	None	Tape runs and stops at second SOH.
42	None	A-B-C local copy tape runs and stops at STX.

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STEP	ACTION	VERIFICATION
43	None	TEXT 2 local copy: tape runs and stops for form feeding (if ASR is sprocket feed) and then restarts and stops at ETX.
<p>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.</p>		
44	None	Station unselects as transmitter when EOT is detected. TRANS/REC lamp extinguished. Tape continues to run until out. BID lamp extinguished.
45	Insert tape as in Step 35. Initialize: DLE-DLE-EOT-DLE-+-EOT.	Tape runs and stops at SOH. OUT OF SVC lamp flashes once.
46	None	TRANS/REC lamp on; tape runs and stops at STX. A-B-C local copy.
47	Remove tape from tape reader gate.	TAPE lamp lights. Audible alarm sounds. BID lamp off.
48	Silence tape alarm.	EMG STOP lamp lights. Audible alarm sounds.
49	Silence EMG STOP alarm.	EMG MSG received on ASR typing unit.
50	Operate TAPE and EMG STOP key to extinguish TAPE and EMG STOP alarms.	TRANS/REC lamp extinguished.
51	Check that: (1) OUT OF SVC, HOLD, and AUD OFF keys in attendant set are released. (2) Test tape is removed from reader. (3) Form or tape supply in TTYs. (4) All keys and switches are set as they were prior to these tests.	In attendant sets, all lamps extinguished and alarm silent. 37 ASR control panel may show a light on.

D. Continuity Test of DAS 804R3 (TERM ONLY Station Attendant Set)

Caution: Remove power cord to the customer-provided ac receptacle before performing this test.

- 1 Gain access to the controller as described in the section referenced in 1.07.
- 2 Disconnect the N plug from the controller.

STEP	ACTION	VERIFICATION
3	Connect N plug to the KS-16786-L3 connector.	
4	Using a KS-14510-L1 volt-ohm-milliammeter— Perform the continuity tests shown in Table A 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.	
6a	If no further tests are to be made— Perform the customer verification described in Part 6.	

E. Continuity Test of DAS 804R4 (ORIG/TERM Station Attendant Set)

Caution: *Remove power cord to the customer-provided ac receptacle before performing this test.*

1	Gain access to the controller as described in the section referenced in 1.07.	
2	Disconnect N plug from the controller.	
3	Connect N plug to KS-16786-L3 connector.	
4	Using KS-14510-L1 volt-ohm-milliammeter— Perform continuity test shown in Table B by using the pins of the KS-16786-L3 connector to make connections.	See Table C.
5	Disconnect N plug from KS-16786-L3 connector and reconnect to controller.	
6a	If no further tests are to be made— Perform the customer verification described in Part 6.	

5. ADDITIONAL TROUBLESHOOTING TESTS AND ALTERNATE PROCEDURES FOR DAS 820B6 (CONTROLLER)◆

5.01 Maintenance of the controller can be accomplished by substitution of CPs. Refer to Fig. 1 and Table D for information on CP substitution.

5.02 Table D outlines the more likely trouble conditions and gives the suggested CP

substitutions to isolate the CP or CPs that are faulty.



The following tests and substitutions should not be performed until the line facilities and associated data set have been checked and verified to be operative as indicated in the section entitled 86A2 Data Selective Calling Service—Half-Duplex—150-Word Per Minute Data Station—Maintenance (581-136-301). When the CPs of the controller are

to be replaced or substitutions are to be made, refer to the previously mentioned section for information on the procedure to be followed.

5.03 The numbers in the Properly Performing Functions column correspond to the number of the feature in the Trouble column that must be operating correctly for the fault to be isolated to the CPs designated.



Disconnect the power from the station and visually inspect the pins of the wiring terminals for shorting before proceeding with the following circuit pack substitutions.

5.04 Table D shows the relationship between groups of circuit packs and the controller functions. They also list specific functional troubles and the circuit packs that may be suspected of causing this trouble. The columns are designated (from left to right) as follows:

- (a) Trouble (probable troubles to be encountered)
- (b) Properly Performing Feature (those features in the station that are all right by their number in the Trouble column)
- (c) Probable Location of Fault (CPs to be replaced).

5.05 Table D may be used, if desired, to narrow down the list of possible CPs in trouble. All previously substituted circuit packs should be left in place until further substitutions eliminate the trouble condition. In order to determine the circuit packs which caused the trouble, replace the new CPs with the old CPs 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 circuit packs have been replaced, then a replacement of the entire controller is recommended.

5.06 The elimination of all trouble conditions by the substitution of circuit packs is not always possible since the source of trouble may be associated with nest wiring, connectors, power supply, etc. In such cases, replacement of the complete station controller DAS 820B6 will be required.

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 to itself. 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 FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820B6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
1	OUT OF SVC lamp lights		ESU				R switch operated to MAINT position; check that M, N connectors are secure
	PAPER OUT lamp lights		Paper out switch	AR547			
2	Motor not running (37 ASR)		Motor, ESU	AR548	Send, Receive		Check TTY mode switch, out-of-service key contacts, M connectors, TTY motor fuse
3		No tones		D/S		Loop	Check dc power, tip and ring short, carrier squench switch
		Low level		D/S			
		High level		D/S			
		Off frequency		D/S			
		Continuous space			AR272, AR556, D/S		Check nest wiring; replace data set
4	Motor does not stop		ESU	AR548, AR546			TTY MAINT switch in MAINT position
	OUT OF SVC lamp does not light				Send, Receive		Check lamp

ESU = Electrical Service Unit

D/S = Data Set

NST = Nest Wiring

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TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
4 Cont		High distortion		D/S		Loop, D/S, 811C	
		No response		D/S		Loop, D/S, 811C	
		Garbled copy		D/S		Loop, D/S, 811C	Check out- going copy
5	OUT OF SVC lamp not extinguished		ESU				Check M connector, TTY mode switch
		Hits received		D/S			Check R switch, nest wiring
6	OUT OF SVC lamp does not flash			AR548, AR547, AR546, AR549, AR358, AR272, AR271, AR39, AR64, AR66, D/S, NST		Loop, D/S,	Check lamp
		Hits received		D/S		Loop, D/S, 811C	Check distortion with 911 DTS.
7	OUT OF SVC lamp does not light			AR546	Send, Receive		Check lamp, N connector, nest wiring
8	CALL lamp does not light			AR548, AR272, AR556, AR39, AR66			Check lamp
	TRANS/REC lamp lights			AR546			Check out-of- service not ready to receive indication, selector or receiver

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
8 Cont		No response		AR358, AR272, D/S, NST		Loop, D/S, 811C	Actions A and B
		Response other than SIC-NAK		AR272			
		Single- character response		AR272		811C	Action A
		Wrong SIC character		AR272			Check connections on SIC wind- ing of shift register
9	CALL lamp lights			AR548, AR39, AR66	Send, Receive		
	OUT OF SVC lamp lights				Send, Receive		Initial controller may be in loop-back mode
		Hit character		D/S, NST	Send, Receive	Loop	M, N connect- ors; nest wiring
10	PAPER LOW lamp does not light		Contact, ESU	AR547	Send, Receive		Check lamp, M connector, PAPER OUT switch, nest wiring, speaker
	Audible alarm does not sound			AR547	Send, Receive		Check M connector, PAPER OUT switch, nest wiring, speaker
11	CALL lamp does not light			AR548, AR546			Check lamp
	TRANS/REC lamp lights						Check not ready to receive condition

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
11 Cont		No response		AR358, AR272, D/S, NST		Loop, 811C	Actions A and B
		Response other than SIC-NAK		AR272	Send, Receive	811C	Action A
		Single- character response		AR272			Action A
		Hit character		D/S		Loop, 811C	
12	PAPER LOW lamp lights		Contact, ESU	AR547, NST			Check M, N connectors ; nest wiring
	CALL lamp lights			AR548, AR546, NST			
	Audible alarm sounds			AR547			
		Hits received	ESU	D/S		D/S, other	Check nest wiring, grounding system
13	CALL lamp does not flash			AR548, AR358, AR66			Check lamp
	CALL lamp lights			AR548, AR358		Other	Check that station is ready to receive
	TRANS/REC lamp does not light			AR548, AR546			Check lamp
	Motor does not start		Motor, ESU	AR548, AR546, AR549		Other	Check M connector and cable, nest wiring ; motor fuse circuit breaker
		No response		AR358, AR272, D/S		Loop, D/S, 811C	Actions A and B

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820B6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
13 Cont		Response other than SIC-ACK	Contact, ESU	AR548, AR547, AR546, AR272	Send, Receive	Other	Check STC send parity (even) ; correct CEC character (upper or lower case)
		Single- character response		AR548, AR547, AR546, AR272			Action A
		Wrong SIC character		AR272			
		Hit characters	Noise net, motor, contact, ESU	AR34, AR39, D/S		Loop, D/S, 811C, other	Check grounding system
14	Heading does not print or punch on TTY		Motor, ESU, typing unit	AR549, AR556, AR271			Check M connector, nest wiring
	Garbled copy		ESU, typing unit	AR358, AR272, AR39, D/S		Loop, D/S, 811C	Check with 911 DTS when control- ler R switch is set to MAINT
	Underline characters		Noise net	AR34, AR39, D/S		Loop, D/S, 811C	Check test center TTY for parity
		Receives heading					Station in loop-back mode; Action A
15	TTY prints character other than A		Noise net, typing unit	AR549, AR34, AR272			Action A
		Hit character	Noise net	AR34, AR272, AR39		D/S, 811C	Actions A and B

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820B6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
16	TTY does not copy TDM or text		Noise net	AR34, AR272, D/S			Station terminal did not unblind; resend unblind sequence ENQ-DC2; Action B
	TTY prints underline characters			AR547, AR34, AR272, D/S			Check test position, TTY for parity errors
	ERROR lamp lights		ESU, typing unit				
	No form feed if sprocket TTY; no copy on ROTR, if provided		ROTR motor, contact, ESU, typing unit				Check PR1 TTY DC2 stunt box contacts; send line feed followed by F/F delete
	False alarms on attn set audible, visual, or both		Noise net, ESU	AR547			Check grounding system
		False response	Noise net, typing unit	AR549, AR34, AR272, AR556			Station failed to detect ENQ-DC2
		Prints copy		AR271			Station may be in loop-back mode; Action A
17	No tape feed-out, if ROTR is provided		ESU, ROTR, typing unit	AR548, AR546			Check M connector pin 25
	ERROR lamp lights; audible alarm sounds		Noise net	AR547, AR34		Loop, D/S, 811C	Check nest wiring and repeat steps; Action A; check test-board on TTY for parity errors

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
17 Cont		Single character response		AR39, AR64, NST			Check nest wiring and repeat steps; Action A;
		Response other than SIC-CAN or SIC-NAK		AR272, AR271, AR39, AR64, D/S			check test-board on TTY for parity errors
		No response		AR34, AR272, AR39, AR64, D/S, NST		Loop, D/S, 811C	Actions A and B
		SIC-NAK response	Contact, ESU			Loop, D/S, 811C	Check receive parity error; Action A
18	TRANS/REC lamp does not extinguish			AR548, AR546, AR358, NST		Loop, D/S, 811C	Station failed to detect EOT, resend EOT; check N connector pin 4
	Motors remain running, mode switch in unatt		Motor relay, contact, ESU	AR548, AR546			Check M connector pin 24 for ground trouble
	False alarm on attn set (audible, visual, or both)		Noise net, contact, ESU	NST			Check grounding system for noise, noise protection network
		Hits received	Noise net	AR34, D/S, NST			Check grounding system
19	No response		Contact, ESU	AR548, AR547, AR546, AR556	Send, Receive		Station out-of-service

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
19 Cont	CALL lamp lights; CALL lamp does not flash			NST	Send, Receive		Check lamp, M connector pin 2
	TRANS/REC lamp does not light						Check lamp, M connector pin 4
	Motor does not run; OUT OF SVC lamp lights		Motor, Noise net, ESU	AR548, AR546, NST		Loop, D/S	Check noise protection network, motor relay, motor fuses, maintenance switch to NORM ON, M connector pin 24
	MSG error lamp lights		ESU, typing unit	AR549			Check M connector pin 43
	No copy		ESU, typing unit	AR549		Loop, D/S, 811C	Station in loop-back mode; Action A
	Garbled copy or underline characters			AR272, D/S, NST			Receive parity errors; Action B; check position TTY and line
		No response		AR34, AR272, AR39, AR64, D/S, NST		Loop, D/S, 811C	Actions A and B
	Two character response other than SIC-ACK	Contact, ESU	AR548, AR547, AR546, AR556			Station not ready to receive; check M connector, TTY ESU paper out switch, TTY F/F-H.T. contacts	
	Single character response		AR272, AR556, NST				

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820B6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
19 Cont		Wrong SIC character		AR272	Send, Receive		Check shift register windings
20	No response ; ERROR lamp does not light			AR547, AR34	Send, Receive		Check lamp, N connector pins 18 and 27, speaker ; Actions A and B
	Audible alarm does not sound			AR547, AR34, AR272	Speaker		Check AUD OFF key (EMB) contacts, ERROR (EMB) contacts
	Does not print under- line characters in text ; garbled copy		ESU, typing unit	AR549, D/S, NST		Loop, D/S, 811C	Check that position TTY or SIG generator is sending parity errors
		Hit characters	ESU, typing unit	AR34, D/S		Loop, D/S, 811C	Station in loop-back mode ; Action A
21	MSG REC lamp does not light ; audible alarm does not sound			AR547, NST	Send, Receive		Check lamp, MSG REC key (EMB) contacts, N connector pins 15 and 16
	False alarms ; TRANS/REC lamp does not extinguish		Noise net	AR546, AR34, NST	Send, Receive	Loop, D/S, 811C	
		No response		AR358, AR34, AR272, AR556, AR39, AR64, D/S, NST		Loop, D/S, 811C	Actions A and B

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
21 Cont		Two character response other than SIC-CAN or SIC-NAK	Noise net	AR34, AR272, AR556			Check grounding system for noise; Actions A and B
		Single character response		AR272, AR39, AR64, AR66		Loop, D/S, 811C	Action A and B
22	Alarms not canceled			NST	Send, Receive		Check for trouble in (EMB) contacts of 804 attn set and connector cable
		Hits received		D/S, NST	Send, Receive	Loop, D/S, 811C	Check nest for power supply trouble (grounds)
23	No response		ESU, typing unit		Send, Receive		
	TRANS/REC lamp does not light			AR547, AR272, AR556, NST	Send, Receive		Check lamp; station failed to detect DLE
	MSG REC lamp does not light; alarm does not sound			AR547, NST	Send, Receive		Check DAS 804 contacts; check lamp
	No text		Typing unit	NST			Station failed to detect DC1
		No response			AR358, AR34, AR272, AR39, AR64, D/S, NST	Send, Receive	Loop, D/S, 811C

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820B6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
23 Cont		SIC-NAK	Contact, ESU	AR39, AR64			Station not ready to receive
24	No response, TRANS/REC lamp does not extinguish, motor running		Motor, contact, ESU	AR548, AR546, AR358, NST	Send, Receive		Station failed to detect EOT; resend EOT
	False alarms		Noise net	NST			Check noise protection network
		Hit characters	Noise net	AR34, AR66, NST			Check grounding system
25	No response			AR34, AR272, AR39, AR64, D/S, NST	Send, Receive	Loop, D/S, 811C	
		No response		AR34, AR272, AR39, AR64, D/S, NST	Send, Receive	Loop, D/S, 811C	
26	MSG REC lamp does not light			AR547, AR34, D/S, NST	Send, Receive		Check lamp; N connector
	Audible alarm does not sound			AR547, AR34, D/S, NST			Check speaker; N connector pin 26
	Station remains selected as receiver			AR547, D/S			
	TRANS/REC lamp does not extinguish			D/S, NST	Send, Receive		
	Motor remains running		Motor, contact, ESU	AR547, NST			

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
27	All lamps are not extinguished, audible alarm not silenced		ESU	AR547, NST	Send, Receive		Check for grounds in connector cable and nest wiring; Actions A and B; repeat steps
28	OUT OF SVC lamp does not light			AR548, AR546, NST	Send, Receive		Check lamp; +12V supply voltage
		Hit characters		D/S			Check N connector; Action A
29	False alarms			AR547, NST	Send, Receive		Check grounding system, N connector and cable
		No response		AR358, AR34, AR272, AR39, AR64, AR66, D/S, NST		Loop, D/S, 811C	Actions A and B
		Response other than CAN	Contact, ESU	AR546, AR272			Check N connector
30		Hit characters		D/S		Loop, D/S, 811C	Failed to detect DC1; resend DC1; Actions A and B
		CAN		AR272, AR556, AR39, NST			Check nest wiring; DLE F/F not cleared

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
31	CALL lamp does not light			AR548, AR546, NST			Check lamp, N connector and cable
		No response		AR358, AR34, AR272, AR39, AR64, AR66, D/S, NST		Loop, D/S, 811C	Actions A and B
		Response other than SIC-NAK		AR34, AR272			Check that station is out-of- service
32	All alarms are not canceled except OUT- OF-SVC and CALL lamps, audible alarm sounds			AR548, AR547, AR546, AR66, NST			Check grounding system, nest wiring
		No response		AR358, AR34, AR272, AR39, AR64, AR66, D/S, NST		Loop, D/S, 811C	Action A and B
		Response other than NAK		AR548, AR546, AR272, NST	Send, Receive		Check out-of- service contacts
		Two character response	ESU	AR548, AR546	Send, Receive		Actions A and B
		Hit character		AR34, AR556		Loop, D/S, 811C	
33	OUT OF SVC lamp does not extinguish		Contact, ESU	AR548, AR547, AR546	Send, Receive		Check M connector and cable

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
33 Cont	CALL lamp does not extinguish		Contact, ESU	AR548, AR66	Send, Receive		Check M connector and cable
		No response		AR358, AR34, AR272, AR39, AR64, D/S, NST	Send, Receive	Loop, D/S, 811C	Actions A and B
		Single character response other than CAN	Contact, ESU	AR548, AR547, AR546, NST	Send, Receive		
34	EMG STOP alarm or other false alarm indication			AR548, AR547, AR546, AR66, NST			Check grounding system
		CAN		AR39, NST			Failed to detect EOT; resend EOT
35	BID lamp does not light			AR548, AR546	Send, Receive		Check lamp, N connector pin 5, M connector and cable
	Motor does not run		Motor, ESU	AR548, AR546, NST	Send, Receive		Check fuse, circuit breaker, motor start relay windings
	Tape does not run		ESU, tape read	AR549	Send, Receive		
	Tape fails to stop on SOH		ESU, tape read	AR549			Check M connector and cable; replace test tape and repeat test; check for ground noise
	Tape stops before SOH is detected		Noise net, contact, tape read	AR549, NST			

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
35 Cont		Hit characters		NST			Action A
36	Tape starts to run		Noise net				Check grounding system; Action A
	False alarms			AR548, AR547, AR546, AR66			
		No response		AR358, AR34, AR272, AR39, AR64, D/S, NST		Loop, D/S, 811C	Actions A and B
		Two character response other than R-ACK	Contact, ESU, tape read	AR548, AR547, AR546, AR34, AR272, NST	Send, Receive		Check station for traffic available and if ready to receive
	Single character response	Contact, ESU	AR548, AR547, AR546, NST	Send, Receive			
37	TRANS/REC lamp does not light			AR548, AR547	Send, Receive		Check lamp, N connector pin 4 and M connector pin 43
	Hits on ASR printer		Noise net, ESU, typing unit	AR34, NST	Send, Receive		
		No response		AR34, AR272, AR556, AR39, AR64, D/S, NST	Send, Receive	Loop, D/S, 811C	Actions A and B

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
37 Cont		Character other than SOH		AR272, AR64			Station fails to detect ENQ-CEC; repeat sequence DLE-ENQ- CEC
		Hit character with wrong parity		AR549, AR358, AR64, D/S, NST		D/S, 811C	
38	No response		Contact, ESU, typing unit	AR548, AR547, AR546, AR272, AR556			Station fails to detect DC1; Action A
	Garbled copy, underline characters		ESU, typing unit	AR358, AR34		Loop, D/S	Actions A and B
	False alarms			AR548, AR547, AR546, AR34, NST			Check grounding system
	EMG STOP alarm lights		Noise net				DLE DC1 may have been sent instead of DC1; Action A
		Hit characters		NST		Loop, D/S, 811C	Actions A and B
		Heading received					Station may be in loop- back mode
39	No response		Noise net, ESU, tape read, typing unit				
	Character A not printed		ESU, tape read				
	Garbled copy		Contact				

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820B6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
39 Cont	Tape fails to stop on STX		Noise net, ESU, tape read	AR272, AR556			Check stop on STX option
		No response		AR272, AR556, AR39, D/S, NST		Loop, D/S, 811C	Station failed to detect STX ; resend STX
		Garbled copy	Noise net, contact, ESU, tape read	D/S		Loop, D/S, 811C	Check grounding system for noise
		Character A response not received	Noise net, ESU, tape read				
		Fails to stop on STX		AR272, AR556, AR39			Check stop on STX option
40	Tape does not run						Check test tape ; station failed to detect ETX
	Tape does not stop on ETX						
	False alarms ; EMG stop alarm sounds			AR548, AR547, AR546, AR66, NST			
	Garbled copy		Tape read, typing unit	AR34, AR556, AR66		Loop, D/S, 811C	
		No response		AR272, AR556, AR39, D/S		Loop, D/S, 811C	Station failed to detect STX ; resend STX
		Garbled copy	Noise net, contact, ESU, tape read	D/S		Loop, D/S, 811C	

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
Cont 40		Fails to stop on ETX	Noise net, ESU, tape read	AR272, AR556, AR39			Check ETX option
		Parity errors on 911 DTS	Contact, ESU, tape read			Loop, D/S, 811C	
41	Tape does not run						Actions A and B
	Hit characters		Noise net, contact, ESU, tape read, typing unit				Station failed to detect SOH
	Tape does not stop on SOH			AR272, AR556			Check test tape for SOH; repeat test
		No response		AR272, AR556, D/S		Loop, D/S, 811C	Station failed to detect STX; resend STX
		DEL-DEL- SOH then text		AR272, AR556			
42	No response		Motor, ESU, tape read	AR548, AR547, AR546, AR272, AR556, D/S			Station failed to detect STX; resend STX; Actions A and B
	Character A not printed		ESU, tape read				
		No response		AR272, AR556, D/S			
		Hit characters	Noise net, contact, ESU, tape read	NST		Loop, D/S, 811C	
		Garbled copy	Noise net			Loop, D/S, 811C	

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820B6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
42 Cont		Character A response not received	Noise net, ESU, tape read	AR34			Station failed to detect STX; resend STX; Actions A and B
43	Does not copy text		Motor, ESU, tape read			Loop, D/S, 811C	Station failed to detect STX; resend STX
	Garbled local copy		ESU, tape read, typing unit	AR272, AR556, D/S		Loop, D/S, 811C	
	Tape fails to stop on ETX			AR556			Check stop on ETX option
		No response		AR272, AR556, D/S		Loop, D/S, 811C	Station failed to detect STX; resend STX
		Parity errors detected by 911 DTS	Contact, ESU, tape punch, tape read			Loop, D/S, 811C	Check test tape for parity error; local punch
44	Station does not unselect		Contact, tape read	AR272, AR556, AR39, NST			
	Tape stops after EOT is detected						Check test tape for EOT with even parity; EOT counter set
	BID lamp does not extinguish			AR548, AR547, AR546, NST			
		No response		AR272, AR556		Loop, D/S, 811C	Station failed to detect STX; resend STX; Actions A and B

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	82086 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
44 Cont		EOT not received	Noise net, contact, tape punch, tape read	AR34		Loop, D/S, 811C	Check test tape for EOT with even parity; EOT counter set
45	Tape does not run		Motor, ESU	AR549			Check test tape; M connector and cable
	Tape stops before SOH		Noise net, ESU, tape punch, tape read	AR549			
	Tape fails to stop on SOH		ESU, tape punch	AR549, NST			
		Hit characters		NST	Send, Receive		
46	Station fails to receive local copy		ESU, typing unit				Check tape reader, ESU, and typing unit in local mode with TST tape
	Garbled copy		Noise net, ESU, typing unit	AR272, AR556, NST			
	TRANS/REC lamp does not light			AR548, AR546			Check lamp
		No response		AR272, AR556, AR39, D/S		Loop, D/S, 811C	Action A and B
		Fails to receive heading	Noise net, contact, ESU, tape read				

TABLE A (Cont)

STEP FAIL- URE	TYPE OF TROUBLE		EQUIPMENT TO BE CHECKED				
	STATION	TEST CENTER	TTY	820B6 CONTROLLER	DAS 804	LINE OR HUB FACILITY	OTHER
47	Tape lamp does not light		Contact, ESU	AR547, NST	Send, Receive		Check lamp, speaker and connecting cable for short
	Audible alarm does not sound						
	BID lamp does not extinguish		Contact, ESU	AR548, AR546, NST	Send, Receive		
		Hit characters	Noise net, contact, ESU, tape read	D/S		Loop, D/S, 811C	
48	EMG STOP lamp does not light			AR547, AR34, AR272, AR556	Send, Receive		Check lamp
	Audible alarm does not sound			AR547, AR34	Send, Receive		Resend break DLE
49	EMG MSG not received					Loop, D/S, 811C	Station failed to detect DC1; Action A
	EMG MSG garbled		Noise net, ESU, typing unit	AR272, AR556			
		Hit characters	Noise net	D/S		Loop, D/S, 811C	
50	TRANS/REC lamp not extinguished, alarm not silenced			AR548, AR547, AR546, NST	Send, Receive		Actions A and B

TABLE B
CONTINUITY TEST OF DAS 804N2 OR 804R3

STEP	KEY OR LAMP	POSITION	VOLT-OHM-MILLIAMMETER			
			SCALE	CONNECT PROBE		READING OHMS
				+	-	
1	OUT OF SVC lamp		R × 1	3	12	55 ± 15
2	CALL lamp			3	2	55 ± 15
3	REC lamp			3	4	55 ± 15
4	ERROR lamp			3	18	55 ± 15
5	MSG REC lamp			3	16	55 ± 15
6	PAPER LOW* lamp			3	26	55 ± 15
7	AUD OFF key	RLS		3	8	∞
8	AUD OFF key	OPR		3	8	† 55 ± 15
9	AUD OFF key	OPR		25	8	∞
10	AUD OFF key	RLS		25	8	0 to 2
11	OUT OF SVC key	RLS		13	8	0 to 2
12	OUT OF SVC key	OPR		13	8	∞
13				9	8	0 to 2
14				6	8	0 to 2
15				19	8	0 to 2
16				21	8	0 to 2
17	PAPER LOW* key	RLS		14	23	0 to 2
18	PAPER LOW* key	OPR		14	23	∞
19	ERROR key	RLS		14	17	0 to 2
20	ERROR key	OPR		14	17	∞
21	MSG REC key	RLS		14	15	0 to 2
22	MSG REC key	OPR		14	15	∞
23				30	LSPK YEL-OR	0 to 2
24				27	LSPK YEL-BL	0 to 2
25				36	FRAME VIO-SL	0 to 2

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

† Checks AUD OFF lamp as well as contacts of key.

TABLE C
CONTINUITY TEST OF DAS 804N4

STEP	KEY OR LAMP	POSITION	VOLT-OHM-MILLIAMMETER			
			SCALE	CONNECT PROBE		READING OHMS
				+	-	
1	OUT OF SVC lamp		R × 1	3	12	55 ± 15
2	HOLD lamp			3	11	55 ± 15
3	PRIOR lamp			3	7	55 ± 15
4	BID lamp			3	5	55 ± 15
5	CALL lamp			3	2	55 ± 15
6	TRANS REC lamp			3	4	55 ± 15
7	PAPER LOW lamp			3	26	55 ± 15
8	EMG STOP lamp			3	22	55 ± 15
9	TAPE lamp			3	24	55 ± 15
10	ERROR lamp			3	18	55 ± 15
11	MSG REC lamp			3	16	55 ± 15
12				36	FRAME YEL-GN	0 to 2
13	AUD OFF key	RLS		3	8	∞
14	AUD OFF key	OPR		3	8	* 55 ± 15
15	OUT OF SVC key	RLS		13	8	0 to 2
16	OUT OF SVC key	OPR		13	8	∞
17	OUT OF SVC key	OPR		28	8	0 to 2
18	OUT OF SVC key	RLS		28	8	∞
19	HOLD key	RLS		10	8	∞
20	HOLD key	OPR		10	8	0 to 2
21	PRIOR key	RLS		9	8	0 to 2
22	PRIOR key	OPR		9	8	∞
23	BID key	RLS		6	8	0 to 2
24	BID key	OPR		6	8	∞
25	AUD OFF key	OPR		25	8	∞
26	AUD OFF key	RLS		25	8	0 to 2
27				LSPK GR-RD	8	0 to 2
28				LSPK RD-BR	27	0 to 2
29	PAPER LOW key	RLS		14	23	0 to 2

*Checks AUD OFF lamp as well as contacts of key.

TABLE C (Cont)
CONTINUITY TEST OF DAS 804N4

STEP	KEY OR LAMP	POSITION	VOLT-OHM-MILLIAMMETER			
			SCALE	CONNECT PROBE		READING OHMS
				+	-	
30	PAPER LOW key	OPR	R × 1	14	23	∞
31	EMG STOP key	RLS		14	21	0 to 2
32	EMG STOP key	OPR		14	21	∞
33	TAPE key	RLS		14	19	0 to 2
34	TAPE key	OPR		14	19	∞
35	ERROR key	RLS		14	17	0 to 2
36	ERROR key	OPR		14	17	∞
37	MSG REC key	RLS		14	15	0 to 2
38	MSG REC key	OPR		14	15	∞

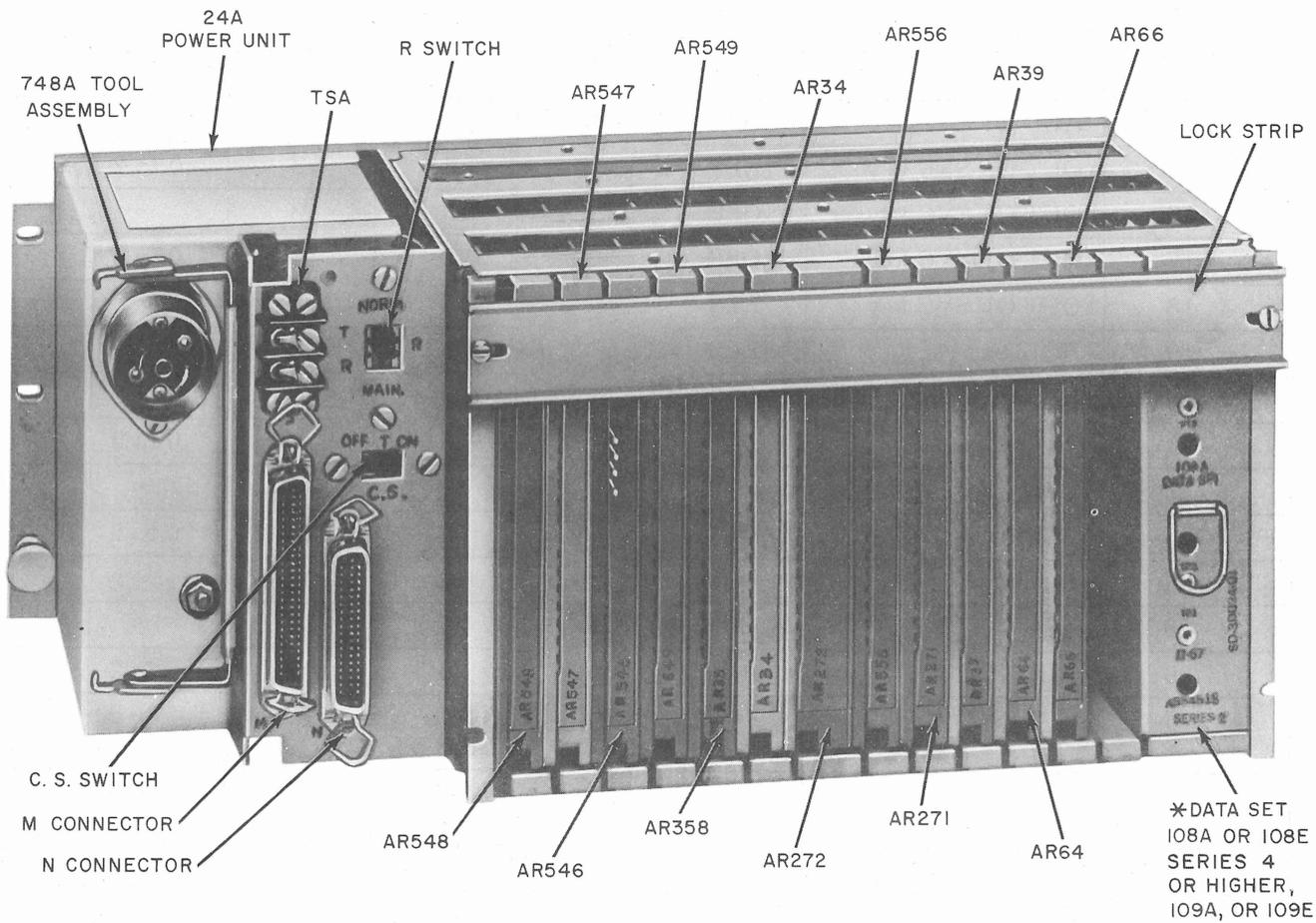


Fig. 1—Data Auxiliary Set 820B6—Location of Circuit Packs and Components

TABLE D
DAS 820B1

TROUBLE	PROPERLY PERFORMING FEATURE	PROBABLE LOCATION OF FAULT*												TTY	OTHER
		AR 32	AR 31	AR 67	AR 33	AR 35	AR 34	AR 272	AR 556	AR 271	AR 39	AR 64	AR 66		
1. Improper response to polling	None	X	X	X	X				X		X	X			
2. No response to polling	None	X	X	X	X	X	X	X	X	X	X	X	X		Check lines and data set
3. BID lamp does not light	None	X		X	X										BID lamp
4. Reader does not run	None	X	X	X	X				X					ASR	
5. Reader does not stop on SOH	1 and 2				X				X		X	X			
6. Station does not enter selected-to-send state	1, 2, and 5				X	X	X	X	X						
7. ASR TTY does not print time, date, and message number (TDM)	1, 2, 5, and 6					X	X		X		X			ASR	
8. Garbled transmission from tape	1, 2, 5, and 6					X								ASR	
9. Fails to return to unselected (idle) state after sending (EOT) from tape	1, 2, 5, 6, and 8				X			X	X	X	X			ASR	
10. Improper EMG STOP alarm operation	1 and 6		X				X	X	X						
11. Improper EOT counter operation	3, 4, and 9	X												ASR	
12. Improper TAPE alarm operation	6		X	X											
13. Improper audible operation in ASR	None		X												ASR speaker
14. No ASR TTY motor emergency stop with ASR OFF-LINE mode key and OUT OF SVC key operated	None			X											TTY maintenance switch in the maintenance position

TABLE D (Cont)

DAS 820B1

TROUBLE	PROPERLY PERFORMING FEATURE	PROBABLE LOCATION OF FAULT*													OTHER
		AR 32	AR 31	AR 67	AR 33	AR 35	AR 34	AR 272	AR 556	AR 271	AR 39	AR 64	AR 66	TTY	
15. Improper call-in response	None		X	X		X	X	X		X			X		Check wiring and solder connections in shift register
16. Call lamp does not light or flash	15			X				X	X		X		X		CALL lamp
17. TRANS/REC lamp does not light	15 and 16			X				X	X	X					TRANS/REC lamp
18. Improper unblinding	15, 16, and 17			X				X	X	X			X	ASR, RO TTY	
19. Excessive parity errors or garbled text received by primary TTY	15, 16, and 17						X	X	X		X			ASR, RO TTY	Check lines
20. Improper roll-call operation	15, 16, 17, and 19		X		X			X	X	X				Primary RO TTY	
21. No negative roll-call response due to lost character, form-feed while form is out in the middle of a message, or power loss in primary RO TTY	15, 16, and 17		X	X				X	X	X			X	Primary receiving TTY	
22. Improper MSG REC alarm operation	15, 16, and 17		X					X	X	X					MSG REC lamp
23. Improper ERROR alarm operation	15, 16, and 17		X			X	X								ERROR lamp
24. Improper PAPER or TAPE alarm operation	None		X											Primary receiving TTY	PAPER or TAPE lamp
25. Improper audible alarm operation in primary RO TTY	None		X												Speaker in primary RO TTY

TABLE D (Cont)

DAS 820B1

TROUBLE	PROPERLY PERFORMING FEATURE	PROBABLE LOCATION OF FAULT*											TTY	OTHER			
		AR 32	AR 31	AR 67	AR 33	AR 35	AR 34	AR 272	AR 556	AR 271	AR 39	AR 64			AR 66		
26. No motor start in ASR or RO TTY	15 and 17			X												Fuse, maint. switch, or no power in primary receiving TTY or ROTR	
• 27. No tape feed-out in primary ROTR TTY	15, 17, and 20			X												ROTR (pot. adjustment)	
28. Failure to enter loop-back mode	None					X	X	X	X	X				X		Ensure that Data Set 108A, 108E, or 109E is installed (no loop-back test when 109A is installed)	
29. No return to idle when carrier fails	6, 16, and 17						X		X		X					Data set	
30. No retransmission with R switch in the MTCE position	None															Data set	
31. Primary RO TTY motor runs continuously	None			X												FF contacts in primary RO TTY	

* The CPs listed are only the most likely causes of trouble. If changing the indicated CP(s) does not rectify the trouble, further action must be taken.