"DATASPEED*" MAGNETIC TAPE TERMINAL

TEST PROCEDURES

WITH A DTC USING A "DATASPEED" TEST SET

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1. GENERAL

1.01 This practice provides instructions for on-line testing. These test procedures, when performed, will verify that the station has been properly installed. These tests may also aid in locating a trouble condition in the DATASPEED Magnetic Tape Terminal if it was previously installed and operated.

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 These test procedures are for use by a telephone craft employee to follow the step-by-step actions of a Data Test Center (DTC) operator using a DATASPEED Test Set in conjunction with Section 668-122-500.

1.04 These tests generally apply to all 33/35/37/40 adjunct magnetic tape sets equipped with a 200 Series Data Set. Information that applies to only one version, or to a specific application of that version, is indicated.

1.05 Loop-back and off-line testing should be performed before any on-line testing (refer to Part 2, Preparation for Testing).

2. PREPARATION FOR ON-LINE TESTING

2.01 After initial installation or before trouble analysis begins, it is required that the station option card or list be brought up to date. The option list will be required when discussing the station with the DTC. This information will enable the DTC operator to recommend proper testing and allow complete evaluation of the test results.

2.02 Before testing a station for which a trouble report was filed, confirm the trouble report with the station operator. Try to determine the probable cause and location of the trouble. If the cause is apparent, repair should be made and testing used as a final checkout. If the cause is not apparent, an attempt should be made to isolate the trouble to the data set, the telephone line, or the magnetic tape terminal. Contact the DTC and request a loop-back test or other specific data set testing. In all other cases, full on-line testing of the station is required. Call the DTC and request a complete on-line test. Off-line testing should be done before calling the DTC or on a recommendation from the DTC. On-line testing will be under the coordination of the DTC.

2.03 Review the introductory material and Table and Chart in Part 3. This, along with the directions from the DTC operator, will speed the progress of the testing. Any results other than those explained in the procedure should be noted as possible troubles and mentioned to the DTC operator.

2.04 Perform a final visual inspection of the station, cords, cables, connectors, and data set. Eliminate any obvious physical or mechanical problems.

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2.05 Perform each step of the attended test procedures (Chart). Each action is followed by a required response. If the station does not respond as required and trouble analysis is required call the DTC for aid or refer to Section 582-900-300 (Checkout and Troubleshooting) or Section 579-504-350 (Field Installation and Maintenance Practices — FIMP).

LOOP-BACK TEST

2.06 This test allows the data set and line facilities to be checked by looping back the Data Test Center signals through the data set. The test is performed as follows:

(1) Verify that the station has been released from service.

(2) Call the DTC and request the loop-back test.

(3) When the DTC operator is ready, the TEST key on the data set is to be depressed.

Note: Test signals are then sent and received by the DTC. The signals are then checked for distortion.

(4) If the test results indicate that the line facilities or the data set is the problem, repair the line or replace the data set as required, and retest.

(5) If the test results indicate that the TTY equipment is the problem, proceed to off-line testing.

OFF-LINE TESTING

2.07 The off-line tests provide a method to verify proper operation of all individual components of a station. All of the actions can be performed without the use of tools or disassembly of the station.

2.08 The off-line test procedures are in Section 579-504-350 (Field Installation and Maintenance Practices — FIMP) or Section 582-900-500 (Test Procedures).

3. TEST PROCEDURES ON-LINE TESTING

3.01 The on-line testing is for use with a Data Test Center using a DATASPEED Test Set.

3.02 Verify that the station has been released from service. Call the DTC and inform the operator that a magnetic tape terminal is to be tested. The operator will then suggest the type of testing to use. Give the operator the station characteristics from the option card:

(a) Type of adjunct set: 33/35/37 or 40.

(b) Station area code and telephone number.

(c) Baud level of line (1050 or 1200).

(d) Data set characteristics — type and options:

(1) Reverse channel feature (present — yes or no).

(2) Automatic answer-back feature used (yes or no).

(e) Is TP322485 option card present at XZ5; if so, give information on card options used as in Table.

3.03 Inquire if the entire test is to be followed or just a portion of the test is to be used — refer to portions by step number.

Note: The attended test procedures apply only to magnetic tape terminals equipped with a 200 Series Data Set.

3.04 During conversation with a DTC operator, make sure that all initial steps of the testing are understood. Go over Steps 1 and 2 with the operator; also, what actions are required for the automatic answer feature of the data set (Steps 4, 5, 6, and 7). Then disconnect the call; the DTC call back will occur momentarily.

3.05 Ready the magnetic tape terminal for testing (check power, remove any testing apparatus, close doors, etc).

3.06 The two messages used when testing a magnetic tape terminal are FOX and FULL ASCII. Refer to the following for message character generation.

FOX

_" ← ≡

THE$_{SP}$QUICK$_{SP}$BROWN$_{SP}$FOX$_{SP}$JUMPED$_{SP}$OVER$_{SP}$THE$_{SP}$LAZY$_{SP}$DOG'S$_{SP}$BACK$_{SP}$1234567890$_{EX}$a

Note: Sp indicates a space (blank area).

FULL ASCII

— FS ← ≡

← ≡

$N_US_HS_XA_KB_LV_TS_OS_1D_LD_1D_2D_3D_4N_KS_YE_BC_NE_MS_BR_SU_S$ ← ≡

$N_US_HS_XA_KB_LV_TS_OS_1D_LD_1D_2D_3D_4N_KS_YE_BC_NE_MS_BR_SU_S$ ← ≡

S_P!"#$%&'()*+,-./0123456789:; < = > ? ← ≡

S_P!"#$%&'()*+,-./0123456789:; < = > ? ← ≡

@ABCDEFGHIJKLMNOPQRSTUVWXYZ [\] ^_ ← ≡

@ABCDEFGHIJKLMNOPQRSTUVWXYZ [\] ^_ ← ≡

`abcdefghijklmnopqrstuvwxyz {|} ~ // ← ≡

`abcdefghijklmnopqrstuvwxyz {|} ~ // E_T E_X F_S

Note: This preprogrammed test message contains 121 of the 128 ASCII characters and controls.

FOX and FULL ASCII Messages

TABLE

TERMINAL OPTIONS BY CARD

CARD	OPTION	NAME	OPTION DEVICE PERFORMED
TP322465	50	Search Char. A	Shunt Screw Insulator at [illegible]
	51	Search Char. B	Shunt Screw Insulator at S = Space Bit
	52	Search Char. C	
	53a	5A Stop Codes	Shunt Screw Insulator at SO
	53b	5A Stop Codes	Shunt Screw Insulator at SS
	54a	5B Stop Codes	Shunt Screw Insulator at SO
	54b	5B Stop Codes	Shunt Screw Insulator at SS
	55a	5C Stop Codes	Shunt Screw Insulator at SO
	55b	5C Stop Codes	Shunt Screw Insulator at SS
	56a	Parity Error	Shunt Screw Insulator at SO
	56b	Parity Error	Shunt Screw Insulator at SS or CCD
	57a	Line/Local Blocking	Strap 5D1 Intact/5D2 Cut
	57b	Line/Local Blocking	Strap 5D1 Cut/5D2 Intact
TP322485	58a	Premature Disconnect	Screw 5A on Card Back
	58b	Premature Disconnect	Screw 5A on Card Front
	59a	Rewind Over Receive	Strap 5B Intact
	59b	Rewind Over Receive	Strap 5B Cut
	60a	Rewind Over Send	Strap 5C Intact
	60b	Rewind Over Send	Strap 5C Cut
	61a	Data Blocking	Strap 5D Intact
	61b	Data Blocking	Strap 5D Cut
	62a	Stop Code	Shunt Screw Insulator at RS
	62b	Stop Code	Shunt Screw Insulator at ∧
TP322468	63a	Reverse Channel	Strap 8A Intact
	63b	Reverse Channel	Strap 8B Cut
TP322473	64a	Reverse Channel (Yes)	Strap 13A Intact — 13 B and C Cut
	64b	Reverse Channel (No)	Strap 13A and B Intact — 13C Cut
	64c	Reverse Channel	Straps 13A, B, and C Intact
	64d	Reverse Channel	Strap 13D Intact
TP322471	65a	External Clock	Strap 11A Intact
	65b	Internal Clock	Strap 11A Cut
TP322464	66a	Stop on EOT	Strap 4A1 Intact
	66b	Stop on EOT	Strap 4A1 Cut
TP322466	67a	Series Operation	Strap Intact
	67b	Parallel Operation	Strap Cut
TP322481	68a	Spec. Char. Hold	Shunt Screw Insulator at 14G1 (Friction)
	68b	Spec. Char. Hold	Shunt Screw Insulator at 14G2 (Sprocket)
TP322474	68c	Spec. Char. Hold	Shunt Screw Insulator at NC
	68d	Spec. Char. Hold	Shunt Screw Insulator at NO
TP322480	68e	Spec. Char. Hold	Shunt Screw Insulator at NC
	68f	Spec. Char. Hold	Shunt Screw Insulator at NO
	68g	Break Detect	Shunt Screw Insulator at NC
	68h	Break Detect	Shunt Screw Insulator at NO
TP322475	68j	10 Code	Shunt Screw Insulator on Land
	68k	11 Code	Shunt Screw Insulator off Land
TP322969	Receive	Parallel Terminal	Screw on Card Front at Right (B)
	Send	Parallel Terminal	Screw on Card Front at Left (A)
TP322467	Strap 7A1	Photosensor New/Old	Intact = New, Cut = Old

CHART

SECTIONALIZING TROUBLE — ATTENDED TESTING
WITH A DTC USING A "DATASPEED" TEST SET

STEP	ACTION OF ATTENDANT OR MTCE EMPLOYEE AT STATION TAKEN AT REQUEST OF TEST CENTER	RESPONSE OBSERVED AT THE STATION	TEST CENTER ACTION
1	Load a blank tape cartridge (with prerecorded clock track), move lever to RELEASE, thread tape, move lever to ENGAGE, depress SINGLE STEP FWD, and set TAPE POSITION indicator (counter) to zero.	Lamp under cover (next to tape) on. BEGIN OF TAPE lamp on then off.	Set up operation.
2	Turn STOP CODES switch to FS and depress DATA RECEIVE switch. For data set with AUTO ANS, turn DATA MODE switch to AUTO, and depress AUTO at data set. Wait for call back. For data set without AUTO ANS, turn DATA MODE switch to MAN and hang up. Wait for call back.	RECEIVE lamp on.	Set up operation.
3	None	None	Set up operation.

Note: For data sets without automatic answer feature, use Steps 4 and 5; for data sets with automatic answer feature, use Steps 6 and 7.

4	None	Data set rings.	Recall station.
5	Depress TALK, lift handset, establish voice contact, depress DATA, and hang up — go to Step 8.	DATA lamp on.	Gives any needed instructions.
6	None	Data set rings once.	Recall station.
7	None — proceed to Step 8.	DATA lamp on.	Goes to data mode.
8	None	RECEIVE lamp on, STOP lamp blinks, and tape advances and stops (message received).	Message sent.
9	Depress DATA STOP switch and turn DATA MODE switch to MAN (if in automatic mode).	STOP lamp on.	None

CHART (Cont)

SECTIONALIZING TROUBLE — ATTENDED TESTING
WITH A DTC USING A "DATASPEED" TEST SET

STEP	ACTION OF ATTENDANT OR MTCE EMPLOYEE AT STATION TAKEN AT REQUEST OF TEST CENTER	RESPONSE OBSERVED AT THE STATION	TEST CENTER ACTION
10	Depress REVERSE SEARCH switch.	STOP lamp blinks and then stays on. Tape moves in reverse.	None
11	Depress REVERSE SEARCH switch again.	STOP lamp on.	None
12	Depress SEND switch.	Tape advances and stops. STOP lamp blinks and then stays on.	Message received.
13	Depress FWD SINGLE STEP switch twice.	STOP lamp blinks.	None
14	Lift handset, depress TALK key.	Give results.	Gives results.
15	Depress DATA RECEIVE switch, then depress DATA key, and hang up.	RECEIVE and DATA lamps on.	Goes to data mode.
16	None	STOP lamp blinks and tape advances.	Sends message.
17	None	Tape stops.	Stops message.
18	None	Tape advances and stops.	Sends message.
19	Wait a few seconds after tape stops and then depress STOP and REVERSE SEARCH switches.	RECEIVE lamp off and tape moves in reverse. STOP lamp blinks and then stays on.	None
20	Depress SEND switch.	STOP lamp blinks and tape advances. STOP lamp on.	Receives message.
21	Lift handset and depress TALK key.	Give results.	Gives results.
Note: If TP322485 card is not present in XZ5, Step 21 concludes testing; if TP322485 is present, proceed to Step 22.			
22	None	Conform strapping options.	Set up operation and give test instructions.

CHART (Cont)

SECTIONALIZING TROUBLE — ATTENDED TESTING
WITH A DTC USING A "DATASPEED" TEST SET

STEP	ACTION OF ATTENDANT OR MTCE EMPLOYEE AT STATION TAKEN AT REQUEST OF TEST CENTER	RESPONSE OBSERVED AT THE STATION	TEST CENTER ACTION
23	Turn STOP CODES switch to (B). Depress DATA RECEIVE switch, depress DATA key, and hang up.	RECEIVE and DATA lamps on.	None
24	None	None	Goes to data mode, sends message, and then reverts to receive mode.
25	None	If strap 5D is CUT, tape advances and then stops — go to Step 28. If strap 5D is IN, tape advances and then stops. SEND lamp on — proceed to Step 26.	None
26	None	Tape advances and STOP lamp on.	Sends interrupt to release stop code.
27	None	Tape advances and STOP lamp on.	Sends interrupt again.
28	None	If strap 5B is CUT, SEND lamp off, REVERSE SEARCH lamp on, tape moves, and RECEIVE lamp on — go to Step 30. If strap 5B is IN, SEND lamp off, and RECEIVE lamp on — proceed to Step 29.	None
29	Depress STOP switch, turn STOP CODES switch to FS, and depress REVERSE SEARCH switch.	REVERSE lamp on, tape moves in reverse, and RECEIVE lamp off — go to Step 31.	None
30	Depress STOP switch.	RECEIVE lamp off.	None
31	Lift handset and depress TALK key.	Give results.	Gives results.

CHART (Cont)

SECTIONALIZING TROUBLE — ATTENDED TESTING
WITH A DTC USING A "DATASPEED" TEST SET

STEP	ACTION OF ATTENDANT OR MTCE EMPLOYEE AT STATION TAKEN AT REQUEST OF TEST CENTER	RESPONSE OBSERVED AT THE STATION	TEST CENTER ACTION
32	If strap 5D is IN, go to Step 38. If strap 5D is OUT, proceed to Step 33.	None	None
33	Turn STOP CODES switch to (C), depress SEND, then depress DATA key, and hang up.	SEND and DATA lamps on.	None
34	None	None	Goes to data mode and sends message.
35	None	Tape advances, STOP lamp blinks, RECEIVE lamp off, REVERSE lamp on and then off, and SEND lamp on.	None
36	None	Tape advances and STOP lamp on.	Sends interrupt to release stop code.
37	None	Tape advances and STOP lamp on — go to Step 44.	Sends interrupt again.
38	Turn STOP CODES switch to (A) and depress STOP, SEND, and DATA.	SEND and DATA lamps on.	
39	None	None	Goes to data mode.
40	None	If strap 5D is CUT, and tape stops — go to Step 43. If strap 5D is IN, tape stops, and SEND lamp on; then, tape advances, STOP lamp blinks, RECEIVE lamp off, REVERSE lamp on and then off, and SEND lamp on — proceed to Step 41.	Receives message.
41	None	Tape advances and STOP lamp on.	Sends interrupt to release stop code.

CHART (Cont)

SECTIONALIZING TROUBLE — ATTENDED TESTING
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STEP	ACTION OF ATTENDANT OR MTCE EMPLOYEE AT STATION TAKEN AT REQUEST OF TEST CENTER	RESPONSE OBSERVED AT THE STATION	TEST CENTER ACTION
42	None	Tape advances and STOP lamp on.	Sends interrupt again.
43	None	If strap 5C is IN, SEND lamp off, and RECEIVE lamp on — go to Step 44. If strap 5C is CUT, SEND lamp off, REVERSE lamp on, tape reverses and stops, and RECEIVE lamp on — proceed to Step 44.	None
44	Lift handset and depress TALK key.	Give results.	Gives results.
45	None	None	Set up operation.
46	With handset off-hook, depress DATA, and then hang up.	Tape advances and stops (data set drops line), RECEIVE lamp off, REVERSE lamp on, tape reverses, adjunct turns on, REVERSE lamp off, SEND lamp on, and print-out displayed at adjunct (except for control codes).	Goes to data mode and sends message.
47	None	If strap 5B is IN, SEND lamp will be off, RECEIVE lamp on, magnetic tape terminal motors off, and adjunct off. If strap 5B is CUT, SEND lamp will be off, REVERSE lamp on, tape reverses and stops, REVERSE lamp off, RECEIVE lamp on, magnetic tape terminal motors off, and adjunct off.	None

Note: If trouble occurs in the last portion of the test, recall the Data Test Center for a retest; if no trouble, Step 47 concludes the testing.