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0.0 4963 TEST SEQUENCE

FOR A COMPLETE TEST OF THE DEVICE, LOAD AND EXECUTE THE FOLLOWING MAP(S). (USE LIST BELOW).

SEE 3.1 FOR DESCRIPTION OF EACH MAP, IF NECESSARY.

7A00

THIS MAP TESTS THE ATTACHMENT CARD.

7A10

TESTS THE COMMON ADAPTER AREA.

7A20

TESTS THE FILE AREA OF THE 4963 ATTACHMENT.

7A30

TESTS THE FILE AREA FOR HEAD ACCESS.

THIS MAP IS THE LAST AUTO MAP .

7A31

THIS MAP IS A MANUAL MAP AND .

TESTS THE FILE AREA FOR HEAD ACCESS.

7A40

THIS MAP IS A MANUAL MAP AND .

DOES THE WRITE, SCAN AND DIAGNOSTIC BITS TEST.

*NOTE: ENSURE THAT THE CE TRACK IS RESERVED FOR MAINTENANCE BEFORE EXECUTING 7A40 WRITE TEST.

1.0 GENERAL INFORMATION:

1.1 MINIMUM CONFIGURATION

THE SERIES/1 MAINTENANCE MATERIAL USES A MINIMUM SYSTEM CONFIGURATION OF:

- SERIES/1 PROCESSING UNIT.
- 16K STORAGE.
- DISKETTE DRIVE.
- PROGRAMMER CONSOLE.

1.2 LOADING PROCEDURE(S)

ALL MDI MAPS, DIAGNOSTICS, UTILITIES AND EXERCISERS ARE ON DIAGNOSTIC DISKETTE(S).

SEE THE DISKETTE LABEL FOR THIS INFORMATION

USE STANDARD DCP LOADING PROCEDURE(S):
WHEN THE CONSOLE IS ASSIGNED TO A KEYBOARD CONSOLE, PRESS 'C' (TO LOAD AND WAIT FOR OPTION SELECTION) OR 'B' (FOR LOAD AND GO) FOLLOWED BY THE FOUR CHARACTER MAP OR PROGRAM I.D.
SEE DIAGNOSTIC SERVICE GUIDE 07.00.00.
TO LOAD USING THE PROGRAMMER CONSOLE SEE 4.1 THIS DOCUMENT.

1.3 MESSAGE FORMAT

ALTERNATE CONSOLE MESSAGE FORMAT:

```
**** I3CXX MAP=YYYY STEP=ZZZZ ****
                          ZZZZ=MAP STEP #
               YYYY=MAP #
```

I3CXX WILL IDENTIFY THE STOP AS A MDI/MAP HALT

IF MAP=3CXX THE STOP IS BECAUSE OF A MDI SUPERVISOR DECISION INSTEAD OF A MAP DECISION (SEE MDI HALT LIST FOLLOWING).

MDI HALT LIST

MAP =	DESCRIPTION/ACTION
3C01	ENTER ADDRESS OF DEVICE TO BE TESTED (2 CHARACTERS, THAT IS, FOR ADDRESS 01 ENTER F01)
3C05	ENTER 'FROM' STEP (4 CHAPACTERS, THAT IS, FOR STEP 001 ENTER F0001)
3C06	ENTER 'TO' STEP (4 CHARACTERS, THAT IS, FOR STEP 099 ENTER F0099)
3C08	DEVICE ADDRESS NOT VALID.

3C0E DEVICE OR MAP NOT FOUND

MESSAGES THAT ARE NOT DISPLAYED IN THIS FORMAT ARE DCP MESSAGES.
FOR MORE INFORMATION CONCERNING ANY DCP HALT OR MDI SUPERVISOR HALT (MAP=3CXX).
SEE THE DIAGNOSTIC SERVICE GUIDE 06.00.00, COMMON HALT LIST.

PROGRAMMER OR CE CONSOLE HALT FORMAT
SEE DIAGNOSTIC SERVICE GUIDE 07.01.00

'WAIT' LAMP ON
DATA LAMPS=MAP# OR MDI/DCP HALT CODE

LEVEL 3 REGISTERS WILL CONTAIN:

R0 = MAP STEP #
R1 = DEVICE ADDRESS AND TYPE CODE (AATT)
R3 = POINTER TO ADDITIONAL DATA
SEE DIAGNOSTIC SERVICE GUIDE 05.03.00 AND 05.04.00

1.4 COMMENTS

THE CONFIGURATION TABLE MUST BE CORRECT BEFORE THE MAPS/PROGRAMS WILL EXECUTE CORRECTLY.
SEE 5.1 THIS DOCUMENT.
SEE DIAGNOSTIC SERVICE GUIDE 08.00.00

A 'SYSTEM LEVEL' FAILURE MAY APPEAR TO BE A DEVICE FAILURE.
ALWAYS START AT THE SYSTEM ENTRY MAP FOR THE BEST RESULT.
GO TO MAP 0020, ENTRY POINT A.

UNLESS YOU ARE INSTRUCTED BY THE MAP TO USE AN OSCILLOSCOPE OR SOME OTHER MULTIMETER, USE THE IBM GENERAL LOGIC PROBE, P/N453212, AND THE CE MULTIMETER.

2.0 SPECIAL TOOL(S) & ADDITIONAL DOCUMENT(S):

2.1 SPECIAL TOOL(S);

* JUMPER WIRES (6) P/N 452655
THE JUMPER WIRES HAVE BEEN INCLUDED IN THE 4963 SHIPPING GROUP AND ARE LOCATED UNDER THE ELECTRONIC GATE. ALSO INCLUDED ARE TWO (2) PIN EXTENDING TERMINALS P/N 2594238 WHICH THE CE IS TO USE WHEN MEASURING VOLTAGE ON THE ELECTRONIC BOARD.

2.2 ADDITIONAL DOCUMENT(S):

DIAGNOSTIC SERVICE GUIDE.
4963 THEORY DIAGRAMS MANUAL.
4963 MAINTENANCE INFORMATION MANUAL.
SERIES 1 LOGIC, MAINTENANCE LOGIC DIAGRAMS VOLUME 01.
SERIES 1 INSTALL INSTRUCTIONS.

3.0 PURPOSE:

THE 7AXX MAPS WILL VERIFY CORRECT OPERATION OR FIND AND ISOLATE FAILING FIELD REPLACEMENT UNIT(S) IN THE 4963 ATTACHMENT.

3.1 'AUTO' MODE MAPS:

THE DEVICE ENTRY MAP (MAP # 7A00) IS THE FIRST 'AUTO' MODE MAP.
IF A COMPLETE AUTO TEST NEEDS ADDITIONAL MAPS, MDI WILL AUTOMATICALLY LOAD AND EXECUTE THEM IN THE CORRECT SEQUENCE.
SEE DIAGNOSTIC SERVICE GUIDE 05.00.00.

7A00

EXECUTES ALL DPC INSTRUCTIONS AND TESTS THE MICRO CONTROLLER ON THE ATTACHMENT CARD. 7A00 LOADS 7A10.

7A10

EXECUTES INSTRUCTIONS TO TEST THE CONTROLLER AREA OF THE 4963 DISK SUBSYSTEM. 7A10 LOADS 7A20.

7A20

EXECUTES INSTRUCTIONS TO TEST THE FILE AREA OF THE 4963 DISK SUBSYSTEM. IT TESTS THE FOLLOWING AREAS:

DISK SPEED
AVERAGE SEEK SPEED
SEEK AND RECALIBRATE
READ DATA
READ ID
7A20 LOADS 7A30.

7A30

EXECUTES INSTRUCTIONS TO TEST THE FILE AREA OF THE 4963 DISK SUBSYSTEM. IT TESTS THE FOLLOWING AREAS:

CONFIGURATION JUMPERS ON A2 - C2

ACCESS OF ALL HEADS

NOTE; MAPS 7A00 AND 7A10 TEST ONLY THE BASE ADDRESS

3.2 'MANUAL' MODE MAPS:

THE FOLLOWING 'MANUAL' MODE MAPS PERFORM ADDITIONAL TEST(S) AND/OR ISOLATE FAILURES FOUND BY THE 'AUTO' MAPS:
* NOTE. RUN THESE MAPS ONLY AFTER THE AUTO RUN IS COMPLETE. TO GET TO MANUAL MODE ENTER A '3'. IF YOU USE A 'B' TO RUN THESE MAPS YOU MUST RUN THE MAP AGAIN WHEN A FAILURE IS LISTED. LOAD THE MAP AGAIN (CXXXX) FOR THE ADDRESS OF THE FIRST FAILURE LISTED.

7A01
WILL TEST THE ATTACHMENT CARD WITH THE CABLES REMOVED, TO PREVENT ANY NOISE PROBLEM

7A31

EXECUTES INSTRUCTIONS TO TEST THE FILE AREA OF THE 4963 DISK SUBSYSTEM. IT TESTS THE FOLLOWING AREAS:

ACCESS OF ALL HEADS

AFTER THE CONFIGURATION JUMPERS HAVE BEEN CHECKED.

7A40
WILL TEST THE WRITE OPERATIONS ON ALL HEAD(S)
THIS MAP NEEDS CE INPUT BEFORE THE
TWO (2) WRITE ROUTINES, MOVING AND FIXED HEAD(S)
THE CE HAS THE OPTION FOR DOING ONE OR BOTH.

THE SCAN OPERATIONS AND DIAGNOSTIC HARDWARE

WRITE IDS AND WRITE DATA OPERATIONS.

SCAN EQUAL, HIGH/EQUAL, LOW/EQUAL.

CHECKS THE DIAGNOSTIC HARDWARE.

IN THIS MAP (SOME OTHERS ALSO), TEST ROUTINES ARE USED WHICH WRITE DATA ON THE CE TRACK (# 359), LOGICAL SECTOR 0 OR NEXT GOOD SECTOR. IT IS POSSIBLE BECAUSE OF SOME SPECIFIC HARDWARE FAILURES SOME CUSTOMER DATA ON THESE TRACKS COULD BE DESTROYED.
IT IS RECOMMENDED THAT YOU INFORM THE CUSTOMER AND ENSURE THAT THE DATA IS KEPT SAFE.
ALL MAPS USING DISK WRITE ROUTINES, OPEN WITH A WARNING STATEMENT AND THE CE HAS THE OPTION TO CONTINUE WITH THE MAP OR TERMINATE. NOTE* IF YOU TERMINATE MAP7A40 YOU STILL TEST THE DIAGNOSTIC HARDWARE FOR CORRECT OPERATION WITHOUT WRITING.

7A68
WILL LOOP ON SINGLE FUNCTION TESTS FOR
SCOPING OF POSSIBLE PROBLEMS

- READ ID
- READ CYCLE STEAL STATUS
- RECALIBRATE
- SEEK
- READ SECTOR ID
- WRITE SECTOR ID
- WRITE DATA
- READ DATA

3.3 'PAPER ONLY' MAPS:

THE FOLLOWING PAPER ONLY MAPS ARE CALLED BY THE AUTO OR MANUAL MAPS.

MAP 7A70.

MAP 7A71.

MAP 7A72.

MAP 7A73.

MAP 7A74.

MAP 7A75 BOARD A1 NET LIST.

MAP 7A76.

MAP 7A77.

MAP 7A78.

MAP 7A79.

MAP 7A80 POWER SUPPLY MAP.

MAP 7A81 POWER SUPPLY MAP.

MAP 7A90 IPL MAP.

MAP 7A91 FILE LOCATE MAP.

3.4 'FAILURE ONLY' MAPS:

THE FOLLOWING MAPS ASSUME A FAILURE. USE THEM ONLY WHEN INSTRUCTED BY ANOTHER MAP.

MAP 7A13 NEEDS MAP 7A10 TO BE RUN FIRST.

MAP 7A14 SAME AS ABOVE.

MAP 7A16 SAME AS ABOVE.

MAP 7A21 NEEDS MAP 7A20,7A30 OR 7A40 TO BE RUN FIRST.

MAP 7A22 SAME AS ABOVE.

MAP 7A23 SAME AS ABOVE.

MAP 7A24 SAME AS ABOVE.

MAP 7A25 SAME AS ABOVE.

MAP 7A26 SAME AS ABOVE.

MAP 7A27 SAME AS ABOVE.

MAP 7A28 SAME AS ABOVE.

MAP 7A51 SAME AS ABOVE.

3.5 DIAGNOSTICS, UTILITIES, EXERCISERS, OFF LINE TEST(S):

MAP 7A69 ON THE DIAGNOSTIC DISKETTE IS A CE GENERAL UTILITY FOR THE 4963 FILE.

SEE 06.01 FOR THE PROGRAM DESCRIPTION.

MAP 7AF9 ON THE DIAGNOSTIC DISKETTE IS A CE GENERAL UTILITY FOR THE 4963 FILE.

SEE 06.02 FOR THE PROGRAM DESCRIPTION.

MAP 7AF0 ON THE DIAGNOSTIC DISKETTE IS A MOVE BAD SECTORS UTILITY FOR THE 4963 FILE.

SEE 06.03 FOR THE PROGRAM DESCRIPTION.

MAP 7AF1 ON THE DIAGNOSTIC DISKETTE IS A BAD SECTOR KEEP UTILITY FOR THE 4963 FILE.

SEE 06.04 FOR THE PROGRAM DESCRIPTION.

MAP 7AF2 ON THE DIAGNOSTIC DISKETTE IS A BAD SECTOR STORE UTILITY FOR THE 4963 FILE.

SEE 06.05 FOR THE PROGRAM DESCRIPTION.

MAP 7AF5 ON THE DIAGNOSTIC DISKETTE IS A CE FORMAT UTILITY FOR THE 4963 FILE.

SEE 06.06 FOR THE PROGRAM DESCRIPTION.

4.0 PROGRAMMER'S COMMENTS:

THIS MAP USES 'TU ABORT' AT SOME STEPS.
SEE DIAGNOSTIC SERVICE GUIDE, 05.04.00.

THIS MAP WILL DISPLAY 'EXPECTED/RECEIVED' DATA WHEN AN ALTERNATE CONSOLE IS ASSIGNED.
SEE DIAGNOSTIC SERVICE GUIDE, 05.03.00.

4.1 LOADING WITH THE PROGRAMMER OR CE MAINTENANCE CONSOLE.

*NOTE: WHEN USING THE CE PROBE, A FLOATING LINE IS INTERPRETED AS AN UP LINE.

IF THE DISK ENCLOSURE IS NAMED AS THE FAILING FIELD REPLACEMENT UNIT, USE MAP 7A69 TO VERIFY/CORRECT ID'S/DATA BEFORE EXCHANGING THE DISK ENCLOSURE AND USE 7AF1 TO KEEP THE FAILING ID(S) FOR KEEPING SHOULD THE DISK GET WRITTEN TO IN ERROR.

IF PROBLEM IS KNOWN (OR SUSPECTED) TO BE IN THE BOX (NOT IN THE ATTACHMENT LOGIC) ALWAYS USE MAP 7A20 BEFORE RUNNING THE 'MANUAL' MAPS.

TO EXECUTE THE MAPS USING THE PROGRAMMER CONSOLE ENTER DATA AS FOLLOWS:
WHERE:
(B)=DATA BUFFER
(I)=CONSOLE INTERRUPT.

MAP	CONSOLE ENTRY
7A00	(B),B,(I)(B),7,A,0,0,(I),(I)
7A01	(B),B,(I)(B),7,A,0,1,(I),(I)
7A10	(B),B,(I)(B),7,A,1,0,(I),(I)
7A13	(B),B,(I)(B),7,A,1,3,(I),(I) *
7A14	(B),B,(I)(B),7,A,1,4,(I),(I) *
7A16	(B),B,(I)(B),7,A,1,6,(I),(I) *
7A20	(B),B,(I)(B),7,A,2,0,(I),(I)
7A21	(B),B,(I)(B),7,A,2,1,(I),(I) *
7A22	(B),B,(I)(B),7,A,2,2,(I),(I) *
7A23	(B),B,(I)(B),7,A,2,3,(I),(I) *
7A24	(B),B,(I)(B),7,A,2,4,(I),(I) *
7A25	(B),B,(I)(B),7,A,2,5,(I),(I) *
7A26	(B),B,(I)(B),7,A,2,6,(I),(I) *
7A27	(B),B,(I)(B),7,A,2,7,(I),(I) *
7A28	(B),B,(I)(B),7,A,2,8,(I),(I) *
7A30	(B),B,(I)(B),7,A,3,0,(I),(I)

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7A31	(B),B,(I)(B),7,A,3,1,(I),(I)
7A40	(B),B,(I)(B),7,A,4,0,(I),(I)
7A51	(B),B,(I)(B),7,A,5,1,(I),(I) *
7A68	(B),B,(I)(B),7,A,6,8,(I),(I)
7A69	(B),B,(I)(B),7,A,6,9,(I),(I)
7AF0	(B),B,(I)(B),7,A,F,0,(I),(I)
7AF1	(B),B,(I)(B),7,A,F,1,(I),(I)
7AF2	(B),B,(I)(B),7,A,F,2,(I),(I)
7AF5	(B),B,(I)(B),7,A,F,5,(I),(I)
7AF9	(B),B,(I)(B),7,A,F,9,(I),(I)

*NOTE: THESE MAPS CAN NOT BE RUN WITHOUT PRECEDING MAPS.

5.0 SERVICE INFORMATION:

*NOTE: TO RUN THE DIAGNOSTICS AGAIN - POWER THE FILES OFF AND THEN ON.

*NOTE: WHEN USING THE CE PROBE, A FLOATING LINE IS INTERPRETED AS AN UP LINE.

*NOTE: WHEN ALL CARDS HAVE BEEN TRIED FROM THE FIELD REPLACEMENT UNIT THEN CHECK THE CABLES FOR SHORTS TO GROUND, AND ALSO TEST THE CABLES FOR OPENS.

ALL MAPS USING DISK WRITE ROUTINES, OPEN WITH A WARNING STATEMENT AND THE CE HAS THE OPTION TO CONTINUE WITH THE MAP OR TERMINATE.

IF THE MDI MAPS DO NOT FAIL, USE MAP 7A69 TO CHECK THE FILE FOR FORMAT FROBLEM(S) IN THE ID(S) OR DATA AREA.
IF THE MAPS INDICATE A FAILURE BUT DO NOT LOCATE THE FILE, USE THE MAP 7A91 FOR FREELANCE MODE TO ISOLATE TO A SINGLE FILE.
IF THE MAPS INDICATE A FAILURE BUT DO NOT CORRECT THE PROBLEM, USE THE SCOPE LOOP MAP 7A68 FOR FREELANCE MODE.

FOR ANY SYSTEM 'CHECK' CONDITION (MCK, PCK, PWR/THERM):
GO TO MAP 3871, ENTRY POINT A.
FOR ANY 4963 'CHECK' CONDITION (LED LIGHT OFF):
GO TO MAP 7A80, ENTRY POINT A.

IF THE FIELD REPLACEMENT UNIT IS THE 4963 ATTACHMENT CARD AND THE SYSTEM STILL FAILS AFTER EXCHANGING THE CARD, ANOTHER ATTACHMENT MAY BE CAUSING THE FAILURE.
MAP 0070 IS A CHANNEL ISOLATE PROCEDURE FOR THIS PROBLEM.
GO TO MAP 0070, ENTRY POINT A.

5.1 CONFIGURATION INFORMATION:

CONFIGURATION TABLE ENTRY FORMAT:
CARD NAME FEAT# 4963, DEVICE TYPE 7A

|DA|TT|00|BA|00|00|XX|XX|XX|X0|00|00|00|00|ID|ID|

WHERE DA = DEVICE ADDRESS
TT = DEVICE TYPE = 7A

DEVICE DEPENDANT DATA:

BA = BASE ADDRESS (FIRST FILE)

XX = DISK ENCLOSURE ID FROM LABEL ON THE DRIVE

ID = DEVICE ID WHICH WILL BE -3X06-
X= 1 OR 2 DEPENDING ON THE BASE
FOR 1/2 FILES USE 1
FOR 3/4 FILES USE 2

EXAMPLE:

|48|7A|00|48|00|00|XX|XX|XX|X0|00|00|00|00|31|06|

(DA) 48 = STARTING DEFAULT ADDRESS FOR BASE
4 DEVICES.(DECIMAL 72)
(TT) 7A = 4963 DEVICE TYPE
(BA) 48 = THE FIRST FILE ADDRESS
(XX) STARTING IN BYTE 6 IS THE DISK ENCLOSURE ID
WHICH IS REQUIRED FOR MAPS 7AF1/7AF2
(ID) 3106 = DEVICE ID FOR 4963 WITH 2 FILES

TO ADD THE ENTRY FOR THIS ATTACHMENT, DO THE FOLLOWING:
IF THE OUTPUT DEVICE HAS A KEYBOARD INSTALLED:
GO TO MAP 3880, ENTRY POINT A.

IF THE PROGRAMMER OR CE CONSOLE IS THE INPUT DEVICE:
GO TO MAP 3881, ENTRY POINT A.

IF THE OUTPUT DEVICE HAS NO KEYBOARD INSTALLED:
GO TO MAP 3882, ENTRY POINT A.

NOTE:

WHEN THE BASIC DIAGNOSTIC DISKETTE CONFIGURATION TABLE IS CORRECT:
USE THE CONFIGURATION PROGRAM 38F0, OPTION 'D' TO COPY THE CONFIGURATION TABLE (38F1) FROM THE BASIC DISKETTE TO THE DIAGNOSTIC, SYSTEM TEST AND RPQ DISKETTES WITH THE SYSTEM.
SEE DIAGNOSTIC SERVICE GUIDE 08.01.02.

6.0 DEVICE UTILITIES:

06.01 4963 DISK SUPPORT UTILITY (ID 7A69)

06.01.00 PURPOSE:

THIS PROGRAM IS FOR CE SUPPORT IN CHECKING AND VERIFYING THE DISK(S) CONDITION AND CHECKS THE CONFIGURATION JUMPERS ON THE A2 - C2 CARD.

06.01.01 SPECIFICATION:

06.01.02 PROGRAM:

THIS PROGRAM WILL RUN UNDER CONTROL OF DCP.

06.01.03 EQUIPMENT:

A SERIES/1 PROCESSING UNIT, WITH AT LEAST ONE 4963 AND ANY OTHER SUITABLE INPUT/OUTPUT DEVICES.

06.01.04 THE FOLLOWING IS ASSUMED:

ALL PROCESSING UNIT DIAGNOSTICS HAVE RUN WITHOUT ERROR.

06.01.05 OPERATING PROCEDURE:

STANDARD DCP OPERATING PROCEDURE.

06.01.06 LOADING:

ALTERNATE CONSOLE: ENTER B 7A69,
PROGRAMMER CONSOLE: (B),B,(I)(B),7,A,6,9,(I),(I)

STEPS 1 THROUGH 10 CHECK THE CONFIGURATION JUMPERS ON THE A2 - C2 CARD. IF THE JUMPERS ARE CORRECT THE FOLLOWING MESSAGE WILL PRINT:
'

MAP 7A69 STEP 11 DOES:

(1) DISK VERIFY:

'READ VERIFY' EVERY SECTOR ON THE DISK AND LOG ALL ALTERNATE SECTORS, ALL SECTORS WHICH ARE FLAGGED BAD, AND ALL SECTORS WHICH GENERATE ERRORS. USE DCP COMMAND '0 OR 1' (ANSWER TO PROGRAM) .

NOTE IF THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE. R3(LEVEL3) WILL POINT TO THIS LOG IN STORAGE. SEE HARD COPY MAP 7A69 FOR FORMAT.

06.01.07 NORMAL END:

DURING VERIFY A HISTORY TABLE WILL BE DISPLAYED INDICATING:
THE 'SHOULD BE' SECTOR, HEAD, AND CYLINDER AND THE ID FIELD AS READ BY THE PROGRAM.
THE FOLLOWING SECTORS WILL BE DISPLAYED:

(1) ALL SECTORS FLAGGED BAD (FLAG BITS 2 OR 6).
(2) ALL SECTORS FLAGGED WITH PROTECT BITS.
(3) ALL SECTORS FLAGGED AS SECONDARY ALTERNATE.
(4) ALL SECTORS THAT HAVE SECTOR ID'S THAT ARE NOT VALID. (BOTH NORMAL AND SKEWED).

(5) ALL SECTORS THAT RETURNED DATA CHECK TO THE READ DATA.

NOTE: PRIMARY ALTERNATE(S) WILL NOT BE DISPLAYED.

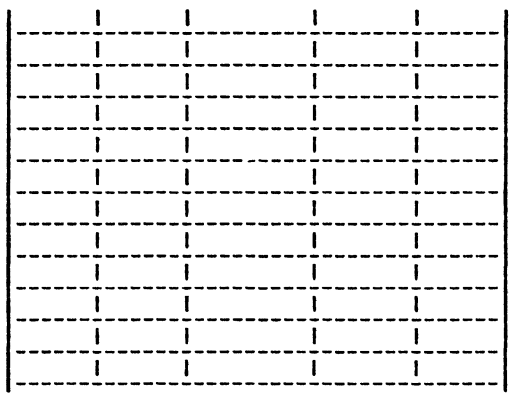
EXAMPLE:

S/B	FG/SC	HD/CYL	HD/PH#	FG/SC	HD/CYL	
0002	0005	0001	8E40	0405		ASSIGNED TO ALTERNATE
0040	0405	0120	0502	0005		ASSIGNED ALTERNATE
0040	0808	0220	C240	0808		FLAGGED BAD
0018	010A	0002	0018	010A		DATA CRC RECORD#1
0006	0006	0003	2006	0006		FLAGGED DEFECTIVE SKEWED
0008	0000	0000	FFFF	FFFF		SECTOR ID UNREADABLE
012E	0000	0000	0101	3456		ILLEGAL FLAG/ID
0002	45FF	1101	0002	4400		ILLEGAL FLAG/ID

NOTE: THIS HISTORY TABLE INDICATES THE 'FLAGGED OR BAD SECTORS' FOUND WHEN THE VERIFY OPTION WAS EXECUTED. THE INFORMATION IN THIS TABLE SHOULD BE RECORDED AND KEPT FOR FUTURE REFERENCE. IF THE CONSOLE FUNCTION IS NOT ASSIGNED TO A HARD COPY PRINTER, IT IS RECOMMENDED THAT THE CE COPY THE HISTORY TABLE FOR FUTURE REFERENCE

IF THE PROGRAMMER CONSOLE IS THE ACTIVE CONSOLE:
AT HALT 7AF3, R3 (LEVEL 3) WILL CONTAIN A POINTER TO THE TABLE IN (HEXADECIMAL). DISPLAY AND RECORD THE HISTORY TABLE PER CHART.

< SHOULD BE >			< REAL ID >	
FLG/SC	HD/CYL	HD/PHY#	FLG/SC	HD/CYL
0000	0000	0000	0000	0000



RUN MAP 7A69 FOR A DISPLAY OF:

1. SECTORS WITH VALID ID BUT BAD DATA.

USE MAP 7AF9 WRITE OPTION TO WRITE THE DATA FIELD WITH TEST DATA. IF YOU CANNOT WRITE GOOD DATA (TU ABORT IN 7AF9) USE 7AF9 TO ASSIGN AN ALTERNATE.

2. SECTORS WITH BAD ID FIELDS(FF'S IN ID FIELD).

USE FORMAT OPTION TO WRITE ID NORMAL. IF AN ERROR IS FOUND THE TU WILL ABORT. LOAD MAP7AF9 AND WRITE THE ID SKEWED, THEN RUN 7AF9 TO ASSIGN AN ALTERNATE.
IF YOU CANNOT WRITE ID EITHER NORMAL OR SKEWED (TU ABORT IN 7AF9) EXCHANGE THE DISK ENCLOSURE.
IF THE CONSOLE IS ASSIGNED TO THE PROGRAMMER CONSOLE R3 (LEVEL 3) WILL CONTAIN A POINTER TO THE ERROR DATA IN STORAGE WHEN THE '7AF2' HALT IS DISPLAYED.

RUNNING TIME FOR THIS PROGRAM IS ABOUT 4 MINUTES.

06.01.08 ERROR TERMINATION:
IF FOR ANY REASON THE PROGRAM CANNOT EXECUTE TO THE END, IT WILL DISPLAY ERROR DATA AS FOLLOWS:

```
TUID IOIN ISB INST SECT ID DATA CSCC
---- ---- ---- ---- ---- ---- ---- ----

CNTL DCB2 DCB3 DCB4 DCB5 CHAD BYCT ADRS
---- ---- ---- ---- ---- ---- ---- ----

CS-0 CS-1 CS-2 CS-3 CS-4 CS-5 CS-6 CS-7
---- ---- ---- ---- ---- ---- ---- ----

CS-8 CS-9 CS-A CS-B CS-C
---- ---- ---- ---- ----
```

WHERE:
'TUID' = TEST UNIT ID
'IOIN' = LAST OIO AND INTERRUPT CONDITION CODE RECEIVED.
'ISB' = LAST INTERRUPT STATUS BYTE RECEIVED.
'INST' = STORAGE ADDRESS OF LAST OIO INSTRUCTION GIVEN.
'SECT' = FLAG/SECTOR BYTES RECEIVED FROM LAST SECTOR ID READ
'ID ' = HEAD/CYLINDER # RECEIVED FROM LAST SECTOR ID READ
'DATA' = DATA PATTERN USED IN WRITE DATA OPERATION
'CSCC' = CYCLE STEAL STATUS OIO AND INTERRUPT CONDITION CODE
'CNTL - ADRS' = DCB OF LAST OIO GIVEN.
'CS-0 - CS-C' = THE RESULT OF THE LAST START CYCLE STEAL STATUS.

'NOTE: '0708' IN 'IOIN' INDICATES 'NO INTERRUPT RECEIVED'.

06.01.09 PROGRAMMER CONSOLE CODED MESSAGES

NORMAL 7AF1 = REQUEST 4963 ADDRESS

ERROR 7AF2 = ABORT, R3 (LEVEL 3) POINTS TO ABORT DATA IN STORAGE.
7AF3 = ERROR LOG IS AVAILABLE, R3 (LEVEL 3) POINTS TO THE ERROR LOG IN STORAGE.

06.02 4963 DISK SUPPORT UTILITY (ID 7AF9)

06.02.00 PURPOSE:
THIS PROGRAM IS FOR CE SUPPORT IN CHECKING AND ASSIGNING ALTERNATE SECTORS ON THE 4963.

06.02.01 SPECIFICATION:

06.02.02 PROGRAM:

THIS PROGRAM WILL RUN UNDER CONTROL OF DCP.

06.02.03 EQUIPMENT:

A SERIES/1 PROCESSING UNIT, WITH AT LEAST ONE 4963 AND ANY OTHER SUITABLE INPUT/OUTPUT DEVICES.

06.02.04 THE FOLLOWING IS A SPECIFICATION:

ALL PROCESSING UNIT AND DEVICE DIAGNOSTICS HAVE RUN WITHOUT ERROR.

06.02.05 OPERATING PROCEDURE:

STANDARD DCP OPERATING PROCEDURE.

06.02.06 LOADING:

ALTERNATE CONSOLE: ENTER B 7AF9,
PROGRAMMER CONSOLE: (B),B,(I)(B),7,A,F,9,(I),(I)

ON LOADING THE FOLLOWING MESSAGE WILL PRINT:

USE DCP COMMAND '0 OR 1' (ANSWER TO PROGRAM) .

MAP 7AF9 STEP 1 DOES:(SEE MAP FOR DETAILS)

(1) GO TO STEP 3

(0) END MAP

MAP 7AF9 STEP 3 DOES:

(0) SECTOR/TRACK TEST:

WRITE TEST DATA AND READ VERIFY WHAT WAS WRITTEN.

(1) SECTOR/TRACK FORMAT:
WRITE SECTOR ID'S AND VERIFY. DATA IS NOT CHANGED.

(2) ASSIGN ALTERNATE SECTOR:

ASSIGN ALTERNATE SECTOR AND RECOVER DATA IF POSSIBLE.

(3) LIST IDS.

READS AND DISPLAYS ONE TRACK(S) SECTOR ID(S).

(4) LIST DATA RECORD ONE OR TWO

READS AND DISPLAYS DATA RECORD ONE OR TWO

06.02.07 NORMAL END:

06.03 4963 DISK SUPPORT UTILITY (ID 7AF0)

06.03.00 PURPOSE:
THIS PROGRAM IS FOR CE SUPPORT IN ASSIGNING ALTERNATE SECTORS FROM CYL 64 TO THE NEAREST AVAILABLE SPARE SECTOR.

06.03.01 SPECIFICATION:

THIS UTILITY ASSIGNS ALTERNATE SECTORS ON CYL 64 TO THE NEAREST AVAILABLE SPARE SECTOR TO THE ORIGINAL BAD SECTOR. CYLINDER 64 IS THEN RESET AS A NORMAL CYLINDER. THIS UTILITY IS RUN AFTER EXCHANGING A DISK ENCLOSURE IN THE FIELD. SEE INSTALL OR REPLACEMENT INSTRUCTIONS FOR DETAILS.

NOTE: THE DISK ENCLOSURE IS MAUFACTURED WITH CYLINDER 64 AS THE ALTERNATE. SERIES/1 DOES NOT SUPPORT ANY ALTERNATE CYLINDER.

06.03.02 PROGRAM:

THIS PROGRAM WILL RUN UNDER CONTROL OF DCP.

06.03.03 EQUIPMENT:

A SERIES/1 PROCESSING UNIT, WITH AT LEAST ONE 4963 AND ANY OTHER SUITABLE INPUT/OUTPUT DEVICES.

06.03.04 THE FOLLOWING IS A SPECIFICATION.

ALL PROCESSING UNIT AND DEVICE DIAGNOSTICS HAVE RUN WITHOUT ERROR.

06.03.05 OPERATING PROCEDURE:

STANDARD DCP OPERATING PROCEDURE.

06.03.06 LOADING:

ALTERNATE CONSOLE: ENTER B 7AF0,
PROGRAMMER CONSOLE: (B),B,(I)(B),7,A,F,0,(I),(I)

RUNNING TIME FOR THIS PROGRAM IS ABOUT 1 MINUTE

06.04 4963 DISK SUPPORT UTILITY (ID 7AF1)

06.04.00 PURPOSE:
THIS PROGRAM IS FOR CE SUPPORT IN KEEPING BAD AND FLAGGED SECTOR INFORMATION FOR THE FILE.

06.04.01 SPECIFICATION:

THIS UTILITY FINDS ALL BAD OR FLAGGED SECTORS ON THE 4963 DISK AND RECORDS THEM ON THE DIAGNOSTIC DISKETTE. THIS INFORMATION IS NEEDED IN ORDER TO RESET THE ORIGINAL IDS IN CASE OF A DISK OR PROGRAM FAILURE. THE INFORMATION IS WRITTEN IN ONE OF SIXTEEN LISTS ON THE DIAGNOSTIC DISKETTE. LIST NAMES ARE 7AD0 THROUGH 7ADF.

06.04.02 PROGRAM:

THIS PROGRAM WILL RUN UNDER CONTROL OF DCP.

06.04.03 EQUIPMENT:

A SERIES/1 PROCESSING UNIT, WITH AT LEAST ONE 4963 AND ANY OTHER SUITABLE INPUT/OUTPUT DEVICES.

06.04.04 THE FOLLOWING IS A SPECIFICATION:

ALL PROCESSING UNIT AND DEVICE DIAGNOSTICS HAVE RUN WITHOUT ERROR.

06.04.05 OPERATING PROCEDURE:

STANDARD DCP OPERATING PROCEDURE.

06.04.06 LOADING:

ALTERNATE CONSOLE: ENTER B 7AF1,
PROGRAMMER CONSOLE: (B),B,(I)(B),7,A,F,1,(I),(I)

ONCE STARTED, THE PROGRAM WILL READ AND VERIFY ALL SIXTEEN LISTS ON THE DIAGNOSTIC DISKETTE TO ENSURE THE QUALITY OF THE DISKETTE IS SATISFACTORY FOR WRITING. IF ANY LIST ON THE DISKETTE HAS A HARD ERROR, THE PROGRAM WILL ABORT. A NEW DISKETTE IS REQUIRED TO CORRECT THE PROBLEM. AFTER A CORRECT READ, A TABLE OF CONTENTS WILL BE LISTED IN THE FOLLOWING FORMAT:

EXAMPLE:

DEFECTIVE LIST	DEID	DATE
7AD0	5700123	101278
7AD1	0000000	000000
7AD2	0000000	000000
----	-------	------
7ADF	0000000	000000

ZEROS IN THE DEID AND DATE INDICATES THAT THE LIST IS AVAILABLE FOR KEEPING BAD SECTOR INFORMATION. THE PROGRAM WILL AUTOMATICALLY FIND AN AVAILABLE LIST TO KEEP IDS. A NUMBER IN THE DEID AND DATE INDICATES THAT THE LIST CONTAINS BAD SECTOR INFORMATION AND ALSO WHEN THE LIST WAS WRITTEN.
AFTER PRINTING THE TABLE,THE FOLLOWING MESSAGE WILL BE LISTED

ENTER - DEVICE ADDRESS,DE ID,DATE.

REPLY - FDVDEIDXXXMMDDYY

DV - DEVICE ADDRESS 2 DIGITS (HEX)

DEIDXXX - 7 DIGITS - DISK ENCLOSURE ID - OBTAINED FROM LABEL

ON TOP FRAME OF 4963.

MMDDYY - 6 DIGITS - CURRENT MONTH,DAY,YEAR.(EX: MAY 2,1978

050278).

ENTRY MUST BE ENTERED IN HEX WITH NO SPACES

(EX - DEVICE ADDRESS =48,DE ID=1234567,DATE=050278

ENTER - F481234567050278)

NOTE: DE ID ENTERED MUST MATCH DE ID IN THE CONFIGURATION TABLE FOR THE SPECIFIC DEVICE ADDRESS USED. IF DE ID DOES NOT MATCH ENTRY IN CONFIGURATION TABLE, A ERROR MESSAGE WILL DISPLAY 'DE ID DOES NOT MATCH ENTRY IN CONFIGURATION TABLE, ENTER DEVICE ADDRESS,DE ID,DATE'.
AFTER WRITING THE INFORMATION IN A LIST OR LISTS (EACH LIST CAN KEEP UP TO 863 BAD IDS - IF MORE THAN ONE LIST IS REQUIRED, THE PROGRAM WILL AUTOMATICALLY WRITE IN THE NEXT AVAILABLE LIST) THE PROGRAM WILL READ/VERIFY ALL 16 LISTS TO ENSURE THAT ALL LISTS CAN BE READ WITHOUT ERRORS. IF ANY LIST IS UNREADABLE, THE PROGRAM WILL ABORT NEEDING THE PROGRAM TO BE RUN AGAIN USING A NEW RAS DISKETTE. AFTER A CORRECT READ OF ALL LISTS, A TABLE OF CONTENTS WILL BE LISTED IN THE SAME FORMAT AS BEFORE. THE TABLE OF CONTENTS WILL SHOW HOW MANY LISTS ARE USED AND WHEN THE LIST WAS WRITTEN, INCLUDING THE LIST OR LISTS JUST WRITTEN.

EACH TIME THIS UTILITY IS RUN IT WILL MAKE A NEW LIST OR UPDATES AN EXISTING LIST ON THE DISKETTE. IT IS RECOMMENDED THAT THIS UTILITY BE RUN

AFTER AN ALTERNATE SECTOR HAS BEEN ASSIGNED. THIS ENSURES THAT THE INFORMATION WRITTEN IN THE LIST IS ALWAYS THE CURRENT SECTOR STATUS OF THE FILE.

RUNNING TIME FOR THIS PROGRAM IS ABOUT 4 OR 5 MINUTES.

06.05 4963 DISK SUPPORT UTILITY (ID 7AF2)

06.05.00 PURPOSE:
THIS PROGRAM IS FOR CE SUPPORT IN RESETTING BAD AND FLAGGED SECTOR INFORMATION FOR THE FILE.

06.05.01 SPECIFICATION:

THIS UTILITY WRITES ALL SECTOR IDS FOR THE 4963 DISK. THE BAD/FLAGGED SECTOR IDS ARE READ FROM THE SELECTED LIST ON THE DIAGNOSTIC DISKETTE (DE ID SUPPLIED BY USER) AND ARE USED TO RESET THE SECTOR IDS TO THEIR ORIGINAL STATUS. NOTE: ALL IDS ARE WRITTEN ON THE FILE,DATA IS NOT READ OR WRITTEN

06.05.02 PROGRAM:

THIS PROGRAM WILL RUN UNDER CONTROL OF DCP.

06.05.03 EQUIPMENT:

A SERIES/1 PROCESSING UNIT, WITH AT LEAST ONE 4963 AND ANY OTHER SUITABLE INPUT/OUTPUT DEVICES.

06.05.04 THE FOLLOWING IS A SPECIFICATION:

ALL PROCESSING UNIT AND DEVICE DIAGNOSTICS HAVE RUN WITHOUT ERROR.

06.05.05 OPERATING PROCEDURE:

STANDARD DCP OPERATING PROCEDURE.

06.05.06 LOADING:

ALTERNATE CONSOLE: ENTER B 7AF2,
PROGRAMMER CONSOLE: (B),B,(I)(B),7,A,F,2,(I),(I)

ONCE STARTED, THE PROGRAM WILL READ AND VERIFY ALL SIXTEEN LISTS ON THE DIAGNOSTIC DISKETTE (7AD0 - 7ADF). AFTER A CORRECT READ, A TABLE OF CONTENTS WILL BE LISTED IN THE FOLLOWING FORMAT:

EXAMPLE:

DEFECTIVE LIST	DEID	DATE
7AD0	5700123	101278
7AD1	0000000	000000
7AD2	0000000	000000
----	-------	------
7ADF	0000000	000000

ZEROS IN THE DEID AND DATE INDICATES THAT THE LIST IS NEW. A NUMBER IN THE DEID AND DATE INDICATES THAT THE LIST CONTAINS BAD SECTOR INFORMATION AND ALSO WHEN THE LIST WAS WRITTEN. BEFORE CONTINUING WITH THE RESET FUNCTION OF THE PROGRAM (INPUT OF DEVICE ID AND DEID) THE USER SHOULD REVIEW THE TABLE OF CONTENTS AND DETERMINE HOW OLD THE LIST IS. REMEMBER, THIS RESET PROGRAM WRITES ALL IDS USING THE INFORMATION IT FINDS IN THE SELECTED LIST. CAUTION: ALL IDS THAT HAVE BEEN WRITTEN OR ASSIGNED AS ALTERNATE SINCE THE DATE LISTED IN THE TABLE OF CONTENTS, WILL BE LOST. CARE MUST BE TAKEN BEFORE GOING ON WITH THIS RESET PROGRAM. ANALYZE THE USE OF UTILITY 7AF9 TO RESET THE BAD SECTOR/SECTORS. 7AF9 CAN WRITE FROM ONE TO A FULL TRACK OF IDS IN ONE OPERATION.

AFTER THE TABLE IS PRINTED,THE FOLLOWING MESSAGE WILL BE LISTED

ENTER - DEVICE ADDRESS,DE ID.

REPLY - FDVDEIDXXX

DV - DEVICE ADDRESS 2 DIGITS (HEX)

DEIDXXX - 7 DIGITS - DISK ENCLOSURE ID - OBTAINED FROM LABEL

ON TOP FRAME OF 4963.

ENTRY MUST BE ENTERED IN HEX WITH NO SPACES

(EX - DEVICE ADDRESS =48,DE ID=1234567

ENTER - F481234567)

NOTE: DE ID ENTERED MUST MATCH DE ID ENTER IN CONFIGURATION TABLE FOR THE SPECIFIC DEVICE ADDRESS INVOLVED. IF DE ID DOES NOT MATCH ENTRY IN CONFIGURATION TABLE, A ERROR MESSAGE WILL DISPLAY 'DE ID DOES NOT MATCH ENTRY IN CONFIGURATION TABLE, ENTER DEVICE ADDRESS,DE ID'.

CORRECT CONFIGURATION TABLE AND/OR ENTER CORRECT DEID.

RUNNING TIME FOR THIS PROGRAM IS ABOUT 4 OR 5 MINUTES.

06.06 4963 DISK SUPPORT UTILITY (ID 7AF5)

06.06.00 PURPOSE:
THIS PROGRAM IS FOR CE SUPPORT IN INITIALIZING A DISK ENCLOSURE .

06.06.01 SPECIFICATION:

THIS UTILITY IS RUN AFTER EXCHANGING A DISK ENCLOSURE IN THE FIELD IN ORDER TO FORMAT THE DISK ENCLOSURE TO SERIES/1 FORMAT. IT IS POSSIBLE TO RECEIVE A NEW DISK ENCLOSURE FROM STOCK THAT IS FORMATTED DIFFERENTLY THAN WHAT SERIES/1 EXPECTS. SERIES/1 EXPECTS TO FIND ALL ALTERNATE SECTORS ON CYLINDER 64 WITH 100% CROSS REFERENCE. THE FORMAT CAN BE DETERMINED BY RUNNING MAP 7A69 AND INSPECTING THE RESULTS. (SEE MAP 7A69 FOR SAMPLE PRINT OUT).

NOTE: THE PROGRAM HAS TWO SEPARATE PARTS INDEPENDENT OF EACH OTHER.

PART 1:

.READS ALL ID'S (NORMAL OR SKEWED) LOOKING FOR FACTORY FLAGGED DEFECTS (FLAG BIT 6). ALL OTHER FLAG BITS WILL BE IGNORED.

.WRITES ALL ID'S PRESERVING ALL FACTORY DEFECTS AND ASSIGNS ALTERNATE SECTORS WHEN NECESSARY.

NOTE 1: IF AN ID IS UNREADABLE, THE PROGRAM WILL 'ABORT'. (AUTOMATIC RETRIES ARE INCLUDED IN PROGRAM). IT IS ASSUMED THE ENCLOSURE IS NEW AND ANY ID THAT IS UNREADABLE INDICATES A DEFECTIVE DISK ENCLOSURE.

NOTE 2: WARNING PART 1 OF THIS PROGRAM IS TO BE RUN ONLY AFTER EXCHANGING A DISK ENCLOSURE.USE 7AF2 IF ID'S HAVE TO BE WRITTEN ON A USER DISK ENCLOSURE.IF FOR SOME REASON THIS PROGRAM (PART 1) IS RUN ON OTHER THAN A NEW DISK ENCLOSURE, ALL USER ASSIGNED DEFECTS AND DATA WILL BE LOST.

PART 2:

.WRITES AND VERIFIES ALL DATA FIELDS WITH ZEROS.

NOTE 1: IF NOT ABLE TO WRITE A DATA FIELD WITHOUT ERRORS, THIS PROGRAM WILL 'ABORT'. (AUTOMATIC RETRIES ARE INCLUDED IN PROGRAM). IT IS ASSUMED THE DISK ENCLOSURE IS NEW AND ANY WRITE DATA FAILURE INDICATES A DEFECTIVE DISK ENCLOSURE.

NOTE 2: WARNING IF FOR SOME REASON THIS PROGRAM (PART 2) IS RUN ON OTHER THAN A NEW DISK ENCLOSURE, ALL USER DATA WILL BE LOST.

06.06.02 PROGRAM:

THIS PROGRAM WILL RUN UNDER CONTROL OF DCP.

06.06.03 EQUIPMENT:

A SERIES/1 PROCESSING UNIT, WITH AT LEAST ONE 4963 AND ANY OTHER SUITABLE INPUT/OUTPUT DEVICES.

06.06.04 THE FOLLOWING IS A SPECIFICATION:

ALL PROCESSING UNIT AND DEVICE DIAGNOSTICS HAVE RUN WITHOUT ERROR.

06.06.05 OPERATING PROCEDURE:

STANDARD DCP OPERATING PROCEDURE.

06.06.06 LOADING:

ALTERNATE CONSOLE: ENTER B 7AF5,
PROGRAMMER CONSOLE: (B),B,(I)(B),7,A,F,5,(I),(I)

A 'WARNING' MESSAGE WILL BE GIVEN FOLLOWED BY:

'4963 ID FORMAT PROG RUN ONLY AFTER EXCHANGING DISK ENCLOSURE.'
'ENTER '1' TO FORMAT ALL ID'S, '0' TO SELECT WRITE DATA PROG'
'ENTER'
REPLY - '1' OR '0'

IF '1' WAS ENTERED

'ENTER DEVICE ADDR OF FILE TO FORMAT ALL ID'S'
'ENTER'
REPLY 'FXX'

(XX=DEVICE ADDRESS)

'SELECTED DISK ENCLOSURE IS A XXMB,YY FIXED HEAD FILE'

(XX= SIZE- 23,29,58 OR 64 MB, YY= NO FIXED HEADS OR FIXED HEAD FILE)

'DEID# XXXXXXX AS INDICATED IN CONFIG TABLE'
'ENTER '1' TO FORMAT FILE, '0' TO TERMINATE PROG'
'ENTER'
REPLY '1' OR '0'

RUNNING TIME FOR PART 1 IS ABOUT 4 TO 6 MINUTES.

IF '0' WAS ENTERED TO SELECT PART 2 (WRITE DATA), ANOTHER WARNING MESSAGE

WILL BE GIVEN FOLLOWED BY

'4963 WRITE DATA PROGRAM ALL USER DATA WILL BE LOST'
'ENTER '1' TO ZERO ALL DATA, '0' TO TERMINATE PROG'

IF '1' WAS ENTERED

'ENTER DEVICE ADDR OF FILE TO ZERO ALL DATA'
'ENTER'
REPLY 'FXX'

(XX=DEVICE ADDRESS)

'SELECTED DISK ENCLOSURE IS A XXMB,YY FIXED HEAD FILE'

(XX= SIZE- 23,29,58 OR 64 MB, YY= NO FIXED HEADS OR FIXED HEAD FILE)

'DEID# XXXXXXX AS INDICATED IN CONFIG TABLE'
'ENTER '1' TO ZERO ALL DATA, '0' TO TERMINATE PROG'
'ENTER'
REPLY '1' OR '0'

RUNNING TIME FOR PART 2 IS ABOUT 6-8 MINUTES.

7.0 DEVICE EXERCISERS:

NONE

8.0 DIAGNOSTICS:

NONE

9.0 OFF LINE TEST(S):

NONE

```
001
(ENTRY POINT A)

THIS IS AN MDI 'MANUAL MODE' MAP. (SEE
DIAGNOSTIC SERVICE GUIDE 05.00.00).
TO USE IT: LOAD AND EXECUTE THE MAP PROGRAM
(C7AF9 WHERE 7AF9=MAP#).
WHEN CE ACTION IS NEEDED DCP HALTS AND
DISPLAYS MAP # AND STEP #. SEE THE HARD COPY
MAP FOR THE CE ACTION.

*CE RESPONSE NECESSARY.*
DO YOU WANT TO FORMAT A SECTOR, WRITE AND
VERIFY DATA,LIST DATA RECORD 1 OR 2,LIST TRACK
IDS OR ASSIGN A SINGLE ALTERNATE SECTOR?
MDI=$QUES
Y N
 002
 END
 MDI=$STOP
```

003
(ENTRY POINT B)

```
*****************************************
* THIS STEP LETS THE USER PERFORM       *
* THE FOLLOWING:                        *
* 0. TEST SECTORS (WRITE AND VERIFY DATA)*
* 1. FORMAT IDS (WRITE SECTOR ID(S))    *
* 2. ASSIGN ALTERNATE SECTORS           *
* 3. LIST TRACK SECTOR IDS              *
* 4. LIST DATA RECORD ONE OR TWO        *
*                                       *
*      **** TEST  SECTORS ***           *
*                                       *
* WRITES A TEST PATTERN FROM USER INPUT *
* (BYTE 6) OR FROM THE DATA BUFFER AFTER *
* EXECUTING MODE 04 (LIST DATA RECORD   *
* ONE OR TWO).BYTE 7 DETERMINES WHERE   *
* THE DATA IS TO BE WRITTEN FROM.A SECTOR*
* OR SECTORS BEING TESTED MUST CONTAIN A *
* GOOD FLAG(00) FOR THE WRITE OP TO     *
* COMPLETE CORRECTLY OR IF A SECTOR HAS  *
* BEEN ASSIGNED AN ALTERNATE, SE BIT MUST*
* BE TURNED ON (INPUT BYTE SEVEN = X1).  *
* THE SPECIFIED SECTOR NUMBER OR STARTING*
* SECTOR NUMBER FOR MORE THAN ONE SECTOR *
* OPERATIONS MUST BE INPUT AS A LOGICAL  *
* SECTOR NUMBER.                        *
* ONLY ONE DATA FIELD IS TESTED AT A TIME*
* USING INPUT BYTE 0.                   *
* BYTE 0 = 00 -- DATA RECORD ONE TESTED. *
* BYTE 0 = 10 -- DATA RECORD TWO TESTED. *
*                                       *
* BYTE 7 = 0X - DATA WRITTEN FROM BYTE 6.*
* BYTE 7 = 1X - DATA WRITTEN FROM DATA   *
*  BUFFER AFTER A MODE 04 IS EXECUTED.  *
*                                       *
* THE PROGRAM WILL TERMINATE IF A       *
* SECTOR WITH A BAD FLAG IS TESTED AND  *
* THE 'SE' BIT IT IS NOT ON.            *
*      *****  WARNING *****             *
* TEST MODE WILL DESTROY EXISTING DATA. *
*                                       *
*      **** FORMAT SECTOR ID(S) ****    *
*                                       *
*      *****    NOTE   *****            *
* THIS MODE WRITES THE ID FOR THE       *
* SPECIFIED SECTOR(S) USING THE FLAG    *
* SUPPLIED BY THE USER.                 *
* THE SPECIFIED SECTOR NUMBER OR STARTING*
* SECTOR NUMBER FOR MORE THAN ONE SECTOR *
* OPERATIONS MUST BE INPUT AS A LOGICAL  *
* SECTOR NUMBER.                        *
* THIS REQUEST WILL NOT RECOGNIZE SECTORS*
* ALREADY MARKED BAD OR DISPLACED.      *
* IF FORMATTING A KNOWN BAD OR DISPLACED *
* SECTOR, INPUT FLAG MUST CONTAIN BAD   *
* AND/OR DISPLACED FLAG BIT(S).         *
* FOLLOWING IS MEANING OF MESSAGES:  *
* MESSAGE #3-(NOT VALID FLAG FOR SKEWED  *
* ID)-                                  *
*                SPECIFIED FLAG BYTE    *
* FOR WRITING A SKEWED ID MUST CONTAIN  *
* A BAD FLAG.(BIT 2 OR 6)               *
* MESSAGE #5-(ERROR IN WRITING SECTOR ID)*
* IF AN ERROR WAS FOUND WHEN ATTEMPTING  *
* TO WRITE AN ID NORMAL, OR SKEWED.     *
* IF YOU CAN NOT WRITE ID WITHOUT ERROR  *
* (NORMAL OR SKEWED) THE DISK ENCLOSURE  *
* SHOULD BE EXCHANGED.                  *
* EXCHANGING IS A USER OPTION.          *
*                                       *
*                                       *
*                                       *
*   **** ASSIGN ALTERNATE SECTOR ***    *
*                                       *
* NOTE: IT IS RECOMMENDED THAT MAP 7A69  *
* BE RUN BEFORE ASSIGNING ALTERNATE     *
* SECTORS. THE OUTPUT OF MAP7A69        *
* INDICATES SECONDARY ALTERNATE         *
* SECTORS, BAD IDS AND BAD DATA FIELDS.  *
* THE BAD IDS AND DATA FIELDS SHOULD    *
* BE CORRECTED AND WRITTEN (IF POSSIBLE) *
* BEFORE ANY ALTERNATE ASSIGN IS MADE.   *
* ALTERNATE ASSIGN MODE ASSIGNS AN      *
* ALTERNATE SECTOR FOR THE LOGICAL SECTOR*
* SPECIFIED BY THE USER.                *
*(IDS WRITTEN WITH THE CORRECT FLAG BITS *
* WITH EXCHANGED SECTOR ADDRESSES).     *
* DATA IN THE SPECIFIED SECTOR WILL BE   *
* RECOVERED (IF POSSIBLE) AND WILL BE    *
* WRITTEN IN THE ALTERNATE SECTOR.       *
* AN ERROR FOUND IN RECOVERING DATA      *
* WILL DISPLAY MESSAGE#1.               *
* (ASSIGN OK, DATA CRC FOUND    HDCY,    *
* REC# XXXX XX).                        *
(STEP 003 CONTINUES)
```

```
*****************************************
* NOTE: ALL INPUT DATA MUST BE ENTERED  *
*  IN HEXADECIMAL.                      *
* BYTE ZERO:00=TEST/WRITE/VERIFY DATA   *
*                 RECORD ONE.           *
*           10=TEST/WRITE/VERIFY DATA   *
*                 RECORD TWO.           *
*           01=FORMAT                   *
*           02=ASSIGN ALTERNATE SECTOR  *
*           03=LIST TRACK IDS           *
*           04=LIST DATA RECORD 1 OR 2  *
*                                       *
* BYTE ONE:00=SINGLE SECTOR             *
*          01='MULTI' SECTOR            *
*                                       *
*        'MULTI' REQUEST                *
* TEST SECT. OR FORMAT OF MORE THAN ONE  *
* SECTOR. IF 'MULTI' IS SELECTED, ALL    *
* SECTORS STARTING WITH THE INPUT SECTOR *
* AND ENDING WITH THE LAST LOGICAL       *
* SECTOR (3E FOR DATA, 40 FOR IDS)       *
* ON THE TRACK ARE WRITTEN OR FORMATTED  *
* (SEE REF TABLE)                       *
* NOTE: IN ORDER TO FORMAT ALL SECTORS   *
* IN ANY GIVEN TRACK, THE INPUT SECTOR   *
* NUMBER MUST BE ZERO (00).             *
*                                       *
*      *****  WARNING  *****            *
* (WHEN FORMATTING MULTI SECTORS ALL FLAG*
* BYTES WILL BE MADE THE SAME VALUE).   *
*                                       *
* NOTE:BYTE ONE NOT USED FOR ALTERNATE   *
* SEC MODE, LIST DATA OR LIST SECTOR IDS.*
*                                       *
* BYTE TWO: FLAG BYTE                   *
* THE FLAG BYTE IS DESCRIBED AS FOLLOWS: *
* BIT                                   *
* 0 = DEFECTIVE DATA FIELD TWO (*)      *
* 1 = DEFECTIVE DATA FIELD ONE (*)      *
* 2 = USER ASSIGNED DEFECT              *
* 3 = USER PROGRAMMABLE PROTECT BIT     *
* 4 = SECTOR DISPLACED                  *
* 5 = SECTOR ASSIGNED TO ALTERNATE CYL  *
* 6 = MANUFACTURING ASSIGNED DEFECT     *
* 7 = ASSIGNED ALTERNATE SECTOR         *
*                                       *
* (*) THESE BITS HAVE NO MEANING EXCEPT  *
* WHEN USED BY MANUFACTURING TO INDICATE *
* BAD DATA FIELDS. THE USER MAY         *
* USE THEM AS PROGRAMMABLE PROTECT BITS. *
*                                       *
* NOTE: IN MODE 01 (FORMAT) USER MUST    *
* SPECIFY IF THE SECTOR ID IS TO BE      *
* WRITTEN DISPLACED (FLAG BIT 4). USE    *
* MODE 03 (LIST SECTOR IDS) TO DETERMINE *
* IF SECTOR IS TO BE WRITTEN DISPLACED.  *
*                                       *
* NOTE: BYTE TWO NOT USED IN ALTERNATE   *
*   SECTOR MODE OR LIST SECTOR IDS.     *
*                                       *
* BYTE THREE: LOGICAL SECTOR            *
*          00 TO 40 - HEXADECIMAL       *
*                     (BY 2(S))         *
* NOTE: INPUT FOR BYTE 3 MUST BE A VALID *
* LOGICAL SECTOR NUMBER.(SEE REF TABLE). *
* LOGICAL 40 NOT VALID FOR READ OR WRITE *
* DATA OPERATIONS.                      *
* THE LOGICAL SECTOR IS NOT CHECKED FOR  *
* VALIDITY.                             *
* NOTE: BYTE 3 NOT USED IN LIST IDS MODE *
*                                       *
* BYTE FOUR:HEAD SELECTION              *
*           (BITS 1-5)                  *
*           (BIT 1=1 INDICATES FIXED    *
*                 HEADS IF INSTALLED)   *
*           (BITS 2-5 = HEAD(S) (0-A)   *
*                                       *
* BYTES FOUR AND FIVE (BITS 7-15)       *
*             = CYLINDER # (0-359)      *
*              (HEXADECIMAL 0-167)      *
*                                       *
*                                       *
*                                       *
*                                       *
*                                       *
*                                       *
* BYTE SIX: WRITE SECTOR ID MODE (01)   *
*             00=WRITE ID NORMAL        *
*             01=WRITE ID SKEWED        *
*           LIST DATA MODE        (04)  *
*             00=LIST DATA RECORD ONE   *
*             01=LIST DATA RECORD TWO   *
*           TEST MODE               (00)*
*             00-FF - TEST PATTERN FOR  *
(STEP 003 CONTINUES)
```

```
(STEP 003 CONTINUED)
*                                                                *
* MESSAGE #1 AND 2:                                              *
* IF SPECIFIED SECTOR IS ALREADY                                 *
* ASSIGNED, DATA IN THE ALTERNATE SECTOR                         *
* WILL BE VERIFIED. IF DATA VERIFIES                             *
* CORRECTLY MESSAGE #2 WILL BE DISPLAYED                         *
* (SECTOR ALREADY ASSIGNED). IF A DATA                           *
* ERROR IS FOUND IN THE ASSIGNED DATA                            *
* FIELD, MESSAGE#1 WILL DISPLAY (ASSIGN                          *
* OK, DATA CRC FOUND HDCY, REC# XXXX XX).                        *
* XXXX  = (HD/CYL) - HEAD AND CYL#                               *
* (BITS 1-5) OF WORD = HEAD#                                     *
* (BITS 7-15) OF WORD = CYLINDER#                                *
* XX = DATA RECORD #                                             *
* (SEE TABLE BELOW TO CONVERT TO LOGICAL                         *
* SECTOR #).                                                     *
*                                                                *
* NOTE:SPECIFIED SECTOR IDS THAT ARE                             *
* TO BE ASSIGNED ALTERNATE, MUST BE                              *
* READABLE IF THE ALTERNATE SECTOR IS                            *
* TO BE A PRIMARY, ALL SECTORS ON THE                            *
* AFFECTED TRACK MUST BE READABLE.                               *
* (IDS AND DATA).                                                *
*                                                                *
* NOTE: IF A DATA CRC IS FOUND WHEN                              *
* ASSIGNING A PRIMARY ALTERNATE, MESSAGE                         *
* #1 WILL DISPLAY (ASSIGN OK,DATA CRC                            *
* FOUND     HDCY,REC# XXXX XX).                                  *
* LIST DATA (MODE 4) FOR THE FAILING                             *
* RECORD AND VERIFY THAT THE DATA IS                             *
* CORRECT. CORRECT THE DATA IF POSSIBLE                          *
* AND WRITE DATA RECORD USING MODE X0.                           *
* USE TABLE BELOW TO OBTAIN CORRECT                              *
* LOGICAL SECTOR NUMBER.                                         *
* NOTE: WHEN ASSIGNING ALTERNATE SECTORS                         *
* ALL DATA IS READ AND WRITTEN IN THE                            *
* ALTERNATE SECTOR(S) WITH CORRECT CRC                           *
* CHARACTERS EVEN IF A DATA CRC IS                               *
* FOUND WHEN THE DATA IS READ.                                   *
*                                                                *
* MESSAGE #4:                                                    *
* BAD SECTORS WILL DISPLAY MESSAGE                               *
* #4 (SECTOR ID NOT READABLE, WRITE).                            *
* USE MODE 03-(LIST TRACK IDS)                                   *
* TO LIST IDS ON A BAD TRACK.                                    *
* BAD IDS WILL LIST TWO WORDS OF                                 *
* F'S. DETERMINE LOGICAL SECTOR NUMBER                           *
* AND WRITE ID WITH A BAD FLAG                                   *
* (USE MODE 01-FORMAT). IF STILL CAN                             *
* NOT READ ID WITHOUT ERRORS,                                    *
* WRITE ID SKEWED.                                               *
*                                                                *
*      **** LIST SECTOR IDS ****                                 *
*                                                                *
*READS A FULL TRACK OF IDS AND LISTS THEM*
* IN PHYSICAL SECTOR ORDER STARTING WITH                         *
* PHY SECTOR 0, TWO SECTORS TO A LINE,                           *
* IN THE FOLLOWING FORMAT:                                       *
*   WORD0  WORD1  WORD2   WORD3                                  *
*                                                                *
* WORD0 - (FG/SEC) - FLAG AND LOG SECT#                          *
* WORD1 - (HD/CYL) - HEAD AND CYL#                               *
* (BITS 1-5) OF WD1 OR 3= HEAD#                                  *
* (BITS 7-15) OF WD1 OR 3 = CYLINDER#                            *
*                                                                *
* WORD2 - SAME AS WORD0 BUT NEXT SECTOR#                         *
* WORD3 - SAME AS WORD1 BUT NEXT SECTOR#                         *
*  NOTE: IF A SECTOR IS WRITTEN SKEWED,                          *
*  THE HIGH ORDER BIT (BIT 8 OF WORD 0 OR*
*  WORD 2) OF THE LOGICAL SECTOR NUMBER                          *
*  WILL BE FORCED ON BY THE PROGRAM.                             *
*  THIS IS ONLY A VISUAL INDICATION.                             *
*  IF THE ID IS BAD, TWO WORDS OF                                *
*  F'S WILL BE DISPLAYED.                                        *
*                                                                *
*   **** LIST DATA RECORD ONE OR TWO ***                         *
*                                                                *
* READS DATA RECORD ONE OR TWO(256 BYTES)*
* SPECIFIED BY THE USER AND LISTS THE                            *
* DATA,FOUR WORDS TO A LINE. NOTE: USER                          *
* SPECIFIES LOGICAL SECTOR NUMBER AND                            *
* SELECTS DATA RECORD ONE OR TWO.                                *
* NOTE: IF A DATA CRC IS FOUND A                                 *
* MESSAGE,"DATA CRC FOUND" AND "DATA                             *
* BUFFER ADDRESS IS XXXX" WILL BE                                *
* DISPLAYED ALONG WITH THE DATA.                                 *
* NOTE: DATA CAN NOT BE GUARANTEED WITH                          *
* A CRC BUT IT IS POSSIBLE TO ASSEMBLE                           *
* THE DATA AGAIN.                                                *
*  NOTE: DATA CAN BE DISPLAYED AND                               *
* CORRECTED IN MAIN STORAGE                                      *
* (PROGRAMMER CONSOLE) USING THE DATA                            *
* BUFFER ADDRESS DISPLAYED IN XXXX.                              *
* XXXX = STARTING MAIN STORAGE ADDRESS                           *
* OF THE READ BUFFER.                                            *
* USE MODE X0 TO WRITE CORRECTED DATA.                           *
(STEP 003 CONTINUES)
```

```
(STEP 003 CONTINUED)
*                    WRITING DATA                                *
*                                                                *
* NOTE: BYTE SIX NOT USED IN ALTERNATE                           *
*   SECTOR MODE OR LIST IDS.                                     *
*       BYTE SIX NOT USED IN MODE X0                             *
*   IF BYTE 7 = 1X.                                              *
*                                                                *
* BYTE SEVEN: SET CONTROL WORD SE BIT                            *
*       00=SET BIT OFF                                           *
*       01=SET BIT ON (AUTO ERROR RETRY)                         *
* BYTE SEVEN WHEN USED IN MODE X0-                               *
*       00=USE DATA FROM BYTE 6,SET SE                           *
*          BIT OFF.                                              *
*       10=USE DATA FROM DATA BUFFER,SET                         *
*          SE BIT OFF.                                           *
*       01=USE DATA FROM BYTE6,SET SE                            *
*          BIT ON.                                               *
*       11=USE DATA FROM DATA BUFFER,SET                         *
*          SE BIT ON.                                            *
* NOTE: BYTE SEVEN NOT USED IN ALTERNATE                         *
*   SECTOR MODE OR LIST IDS.                                     *
* FOR EXAMPLE:                                                   *
*                                                                *
* TO FORMAT THE COMPLETE CE TRACK HEAD 0                         *
*   FLAG ZERO,WRITTEN NORMAL                                     *
* INPUT= F0101 0000 0167 0000                                    *
* PROGRAMMER CONSOLE INPUT:                                      *
* (B),4,F,(I),(B),0,1,0,1,(I),                                   *
* (B),0,0,0,0,(I),(B),0,1,6,7,(I),                               *
* (B),0,0,0,0,(I),(I)                                            *
*                                                                *
* TO FORMAT LOG SECTOR 16, FIXED HEAD 0,                         *
*  BAD FLAG, WRITTEN SKEWED                                      *
* NOTE: IF FIXED HEAD IS SPECIFIED,                              *
* CYLINDER# MUST BE 01FF                                         *
* INPUT= F0100 2016 41FF 0100                                    *
* PROGRAMMER CONSOLE INPUT:                                      *
* (B),4,F,(I),(B),0,1,0,0,(I),                                   *
* (B),2,0,1,6,(I),(B),4,1,F,F,(I),                               *
* (B),0,1,0,0,(I),(I)                                            *
*                                                                *
* WRITE DATA (89)IN LOGICAL SECTOR 0A,                           *
* DATA RECORD 1.DATA FROM BYTE SIX.                              *
* FIXED HEAD 07. NO RETRIES (SE BIT OFF)                         *
* INPUT= F0000 000A 5DFF 8900                                    *
* NOTE: IF FIXED HEAD IS SPECIFIED,                              *
* CYLINDER# MUST BE 01FF                                         *
* PROGRAMMER CONSOLE INPUT:                                      *
* (B),4,F,(I),(B),0,0,0,0,(I),                                   *
* (B),0,0,0,A,(I),(B),5,D,F,F,(I)                                *
* (B),8,9,0,0,(I),(I)                                            *
*                                                                *
* TO WRITE DATA IN LOG SECTORS 16-3E,                            *
* DATA RECORD TWO. DATA FROM DATA BUFFER.                        *
* HD 1, CYL 7, NO RETRIES (SE BIT OFF)                           *
* INPUT= F1001 0016 0407 0010                                    *
* PROGRAMMER CONSOLE INPUT:                                      *
* (B),4,F,(I),(B),1,0,0,1,(I),                                   *
* (B),0,0,1,6,(I),(B),0,4,0,7,(I),                               *
* (B),0,0,1,0,(I),(I)                                            *
*                                                                *
* ASSIGN ALTERNATE FOR LOGICAL SECTOR 12,                        *
* CYLINDER 008, HEAD 01                                          *
* INPUT= F0200 0012 0408                                         *
* PROGRAMMER CONSOLE INPUT:                                      *
* (B),4,F,(I),(B),0,2,0,0,(I),                                   *
* (B),0,0,1,2,(I).(B),0,4,0,8,(I),(I)                            *
*                                                                *
* LIST SECTOR IDS FOR HEAD 01, CYLINDER                          *
* 008.                                                           *
* INPUT= F0300 0000 0408                                         *
* PROGRAMMER CONSOLE INPUT:                                      *
* (B),4,F,(I),(B),0,3,0,0,(I),                                   *
* (B),0,0,0,0,(I).(B),0,4,0,8,(I),(I)                            *
*                                                                *
*                                                                *
* LIST DATA RECORD 2 , LOGICAL SECTOR 12,                        *
* CYLINDER 008, HEAD 01,SE BIT ON                                *
* INPUT= F0400 0012 0408 0101                                    *
* PROGRAMMER CONSOLE INPUT:                                      *
* (B),4,F,(I),(B),0,4,0,0,(I),                                   *
* (B),0,0,1,2,(I).(B),0,4,0,8,(I)                                *
* (B),0,1,0,1,(I),(I)                                            *
*                                                                *
*                                                                *
* LIST DATA RECORD 1 , LOGICAL SECTOR 22,                        *
* CYLINDER 156, HEAD 0A,SE BIT OFF                               *
* INPUT= F0400 0022 2956 0000                                    *
* PROGRAMMER CONSOLE INPUT:                                      *
* (B),4,F,(I),(B),0,4,0,0,(I),                                   *
* (B),0,0,2,2,(I).(B),2,9,5,6,(I)                                *
* (B),0,0,0,0,(I),(I)                                            *
*                                                                *
*                                                                *
*                                                                *
(STEP 003 CONTINUES)
```

(STEP 003 CONTINUED)

(STEP 003 CONTINUED)

REFERENCE TABLE SHOWING PHYSICAL SECTOR NUMBER, LOGICAL SECTOR NUMBERS AND DATA RECORD NUMBERS FOR ALL HEADS. NOTE: ALL NUMBERS ARE SHOWN IN (HEXADECIMAL). ALSO SHOWN IS SECTOR ID FORMAT AS WRITTEN ON DISK AND CYCLE STEAL STATUS.

PHYSICAL SECT# AS CODED IN DCB FOR WR/RD SECT ID	LOGICAL SECTOR AND RECORD NUMBERS (SEE NOTE 2 BELOW) MOVEABLE HEADS 0,4,8	1,5,9	2,6,A	3,7	FIXED HDS 0-7
20 INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX
00	00 00 20	30 18 38	20 10 30	10 08 28	00 00 20
01	02 01 21	32 19 39	22 11 31	12 09 29	02 01 21
02	04 02 22	34 1A 3A	24 12 32	14 0A 2A	04 02 22
03	06 03 23	36 1B 3B	26 13 33	16 0B 2B	06 03 23
04	08 04 24	38 1C 3C	28 14 34	18 0C 2C	08 04 24
05	0A 05 25	3A 1D 3D	2A 15 35	1A 0D 2D	0A 05 25
06	0C 06 26	3C 1E 3E	2C 16 36	1C 0E 2E	0C 06 26
07	0E 07 27	3E 1F 3F	2E 17 37	1E 0F 2F	0E 07 27
08	10 08 28	00 00 20	30 18 38	20 10 30	10 08 28
09	12 09 29	02 01 21	32 19 39	22 11 31	12 09 29
0A	14 0A 2A	04 02 22	34 1A 3A	24 12 32	14 0A 2A
0B	16 0B 2B	06 03 23	36 1B 3B	26 13 33	16 0B 2B
0C	18 0C 2C	08 04 24	38 1C 3C	28 14 34	18 0C 2C
0D	1A 0D 2D	0A 05 25	3A 1D 3D	2A 15 35	1A 0D 2D
0E	1C 0E 2E	0C 06 26	3C 1E 3E	2C 16 36	1C 0E 2E
0F	1E 0F 2F	0E 07 27	3E 1F 3F	2E 17 37	1E 0F 2F
10	20 10 30	10 08 28	00 00 20	30 18 38	20 10 30
11	22 11 31	12 09 29	02 01 21	32 19 39	22 11 31
12	24 12 32	14 0A 2A	04 02 22	34 1A 3A	24 12 32
13	26 13 33	16 0B 2B	06 03 23	36 1B 3B	26 13 33
14	28 14 34	18 0C 2C	08 04 24	38 1C 3C	28 14 34
15	2A 15 35	1A 0D 2D	0A 05 25	3A 1D 3D	2A 15 35
16	2C 16 36	1C 0E 2E	0C 06 26	3C 1E 3E	2C 16 36
17	2E 17 37	1E 0F 2F	0E 07 27	3E 1F 3F	2E 17 37
18	30 18 38	20 10 30	10 08 28	00 00 20	30 18 38
19	32 19 39	22 11 31	12 09 29	02 01 21	32 19 39
1A	34 1A 3A	24 12 32	14 0A 2A	04 02 22	34 1A 3A
1B	36 1B 3B	26 13 33	16 0B 2B	06 03 23	36 1B 3B
1C	38 1C 3C	28 14 34	18 0C 2C	08 04 24	38 1C 3C
1D	3A 1D 3D	2A 15 35	1A 0D 2D	0A 05 25	3A 1D 3D
1E	3C 1E 3E	2C 16 36	1C 0E 2E	0C 06 26	3C 1E 3E
1F	3E 1F 3F	2E 17 37	1E 0F 2F	0E 07 27	3E 1F 3F
20 INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX

NOTE 1 - SECTOR 32 (/40) IS RESERVED AS AN ALTERNATE SECTOR AND IS ALWAYS THE SECTOR BEFORE INDEX.

NOTE 2 - COLUMN 1 = LOGICAL SECTOR# OF SECTOR AS WRITTEN ON FILE
COLUMN 2 = RECORD# 1 AS CODED IN DCB FOR WRT/RD/SCAN OPS
COLUMN 3 = RECORD# 2 AS CODED IN DCB FOR WRT/RD/SCAN OPS

SECTOR ID FORMAT AS WRITTEN ON FILE (2 WORDS)

WORD 0 (FLAG)	(SECTOR#)	WORD 1 (HEAD#)	(CYLINDER#)
01234567	89101112131415	01234567	89101112131415
FFFFFFFF	0S S S S S S 0	0HHHHH0C	CC C C C C C C

NOTE: FIXED HEADS ARE INDICATED BY BIT ONE (1) OF HEAD#
BIT1 = 0 - NO FIXED HEADS
BIT1 = 1 - FIXED HEADS

**** CYCLE STEAL STATUS ****

WORD 0: RESIDUAL ADDRESS
WORD 1: RESIDUAL COUNT
WORD 2: RETRY COUNTS WORD 1
WORD 3: RETRY COUNTS WORD 2
WORD 4: ERROR STATUS WORD 1
BIT 00 - HARD ERROR
01 - ATTACHMENT FOUND INTERFACE PARITY CHECK
02 - ATTACHMENT GLOBAL TIMEOUT
03 - ALTERNATE SECTOR PROCESSED
04 - SOFT ERROR RETRY
05 - *DISK UNIT
06 - *CONFIGURATION
07 - *BITS
08 - SCAN NOT HIT
09 - SCAN EQUAL HIT
10 - ATTACHMENT EQUIPMENT CHECK
11 - WRITE ERROR

(STEP 003 CONTINUES)

```
(STEP 003 CONTINUED)
*          12 - CYCLE STEAL STATUS ERROR                              *
*          13 - END OF DISK                                           *
*          14 - ATTACHMENT LOCAL TIMEOUT                              *
*          15 - DISK INTERFACE ERRORS                                 *
* WORD 5: ERROR STATUS WORD 2                                         *
*       BIT 00 - CRC CHECK                                            *
*           01 - DISK UNIT PARITY CHECK                               *
*           02 - DISK UNIT FOUND INTERFACE PARITY CHECK               *
*           03 - WRITE GATE CHECK                                     *
*           04 - NO RECORD FOUND                                      *
*           05 - NOT VALID COMMAND PARAMETER                          *
*           06 - MISSING SECTOR PULSE                                 *
*           07 - DISK UNIT TIME OUT                                   *
*           08 - FIXED HEAD NOT SELECTED                              *
*           09 - BRAKE APPLIED                                        *
*           10 - TRACK UNAVAILABLE                                    *
*           11 - DISK UNIT COMMAND ERROR                              *
*           12 - DATA UNSAFE                                          *
*           13 - SEEK NOT COMPLETE                                    *
*           14 - HOME                                                 *
*           15 - NOT READY                                            *
* WORD 6: LAST DCB ADDRESS                                            *
* WORD 7: CURRENT HEAD/CYLINDER                                       *
* WORD 8: PREVIOUS HEAD/CYLINDER                                      *
* WORD 9: FLAG SECTOR/RECORD#                                         *
* WORD10: HEAD/CYLINDER                                               *
* WORD11: DISK UNIT SENSE BYTES 1 AND 2                               *
* WORD12: DISK UNIT DIAGNOSTIC SENSE BYTE 3 AND WRAP BYTE             *
*                                                                     *
***********************************************************************
*CE RESPONSE NECESSARY.*
ENTER FOUR WORDS
MDI=$INPT,DATA=HEX,FIELD=PARM,LNG=08,
LOW=0000000000000000,HIGH=FFFFFFFFFFFFFFFF
Y N
|
|  004
|  RESPONSE NOT VALID
|  GO TO PAGE 2, STEP 003, ENTRY POINT B.
|  MDI=$GOTO,TYPE=INTRNL,EP=B
|
005
FUNCTION NOW BEING EXECUTED
FUNCTION CORRECT?
MDI=$TUXX,T7AAA,2,0000,EQ
Y N
|
|  006
|  NOT VALID
|  CONTINUE ON 'YES' LEG.                    IF THE TU CANNOT WRITE DATA OR FORMAT IT WILL
|                                            ABORT.  (SEE DIAGNOSTIC SERVICE GUIDE
|                                            05.04.00.)
|                                            IF NO ALTERNATE CONSOLE ASSIGNED---R3 (LEVEL
|                                            3) WILL HOLD THE STORAGE ADDRESS OF THE ABORT
|                                            DATA.
|
|  MDI=$NVLD
|
007
END
GO TO PAGE 1, STEP 001, ENTRY POINT A.
MDI=$GOTO,TYPE=INTRNL,EP=A
```

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0020	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
6	066	7A80	A

001
(ENTRY POINT A)

THIS IS AN MDI 'AUTO MODE' MAP (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).
TO USE IT IN MANUAL MODE: LOAD AND EXECUTE THE MAP PROGRAM (C7A00 WHERE 7A00=MAP#).
NO CE RESPONSE IS NEEDED. IF A FAILURE IS FOUND, THE PROGRAM WILL EITHER; . IDENTIFY THE FAILING FIELD REPLACEMENT UNIT OR . LOAD 'MANUAL MODE' MAPS AND EXECUTE UNTIL A FIELD REPLACEMENT UNIT CAN BE IDENTIFIED OR A CE ACTION IS NEEDED. (SEE DIAGNOSTIC SERVICE GUIDE 05.01.00).

TEST 4963 FILE ATTACHED
MDI=$TUXX,T7A50,01,80,OF
Y N

002
NO FILE ATTACHED
MDI=$FIXT

003
TEST BASE FILE?
MDI=$TUXX,T7A52,01,80,OF
Y N

004
NOT BASE FILE
MDI=$GOTO,TYPE=XTRNL,MAP=7A10,EP=A

005
SEND AN I/O RESET
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=6F0000
Y N

006
I/O CC=0?
MDI=$TUXX,T7A02,02,0008,EQ,
Y N

007
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

008
READ DEVICE I.D.
I/O CC=0?
MDI=$TUXX,T7A01,02,0008,EQ,PLNG=6,
PARM=200000
Y N

009
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

010
WRONG DEVICE ADDRESS
CHECK THE DEVICE ADDRESS AGAINST THE CONFIGURATION.
IF THE DEVICE ADDRESS IS WRONG, RUN TEST AGAIN WITH
THE CORRECT DEVICE ADDRESS.
IF THE DEVICE ADDRESS IS CORRECT,:
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

011
SEND A READ DEVICE I.D. COMMAND
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=200000
Y N

012

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I/O CC=5?
MDI=$TUXX,T7A02,02,0508,EQ
Y N

013

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I/O CC=3?
MDI=$TUXX,T7A02,02,0308,EQ
Y N

014

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I/O CC=2?
MDI=$TUXX,T7A02,02,0208,EQ
Y N

015
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

016
SEND A READ DEVICE I.D. COMMAND
I/O CC=7
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=200000
Y N

017
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

018
BUSY STATUS - OK ON RETRY
GO TO STEP 021,
ENTRY POINT C.
MDI=$GOTO,TYPE=INTRNL,EP=C

019
COMMAND REJECT - EXCHANGE 4963 ATTACHMENT CARD
VERIFY THE REPAIR.
MDI=$FIXT

020
INTERFACE DATA CHECK - EXCHANGE 4963 ATTACHMENT CARD
VERIFY THE REPAIR.
MDI=$FIXT

021
(ENTRY POINT C)

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I.D. OK?
MDI=$TUXX,T7A02,04,07083006,ON
Y N

022
WRONG DEVICE ADDRESS
CHECK THE DEVICE ADDRESS AGAINST THE CONFIGURATION.
IF THE DEVICE ADDRESS IS WRONG, RUN TEST AGAIN WITH
THE CORRECT DEVICE ADDRESS.
IF THE DEVICE ADDRESS IS CORRECT,:
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

023
SEND A READ COMMAND
FUNCTION = 00
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,PLNG=6,PARM=000000
Y N

024
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

025
SEND A READ COMMAND
FUNCTION = 01
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,PLNG=6,PARM=100000
Y N

026
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

027
SEND A READ STATUS COMMAND
FUNCTION = 10
MODIFIER = NOT 0000
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,PLNG=6,PARM=270000
Y N

028
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

029
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = 0000
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=600000
Y N

030
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

031
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = 2222
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=602222
Y N

032
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

033
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = FFFE
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=60FFFE
Y N

034
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

035
SEND A CONTROL COMMAND
FUNCTION = 10
MODIFIER NOT = 0000 OR 1111
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,PLNG=6,PARM=650000
Y N

036
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

037
SEND AN I/O RESET
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=6F0000
Y N

038
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

039
(ENTRY POINT B)

SEND A PREPARE COMMAND - LEVEL 0
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=600001
Y N

040
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

041

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WERE THERE ANY INTERRUPT(S)DURING DURING THIS OPERATION?
MDI=$TUXX,T7A02,02,0708,EQ
Y N

042
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

043
SEND AN INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,PLNG=6,PARM=4D0000
Y N

044
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

045
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS SHOWN
CC=2, ISB=/40, D.A.=TESTED DEVICE
(EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICE(S))
ARE ALL INDICATOR(S) OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

046
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

047
SEND A PREPARE COMMAND - LEVEL 1
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=600003
Y N

048
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

049

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WERE THERE ANY INTERRUPT(S)DURING DURING THIS OPERATION?
MDI=$TUXX,T7A02,02,0708,EQ
Y N

050
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

051
SEND AN NOT VALID INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,PLNG=6,PARM=4C0000
Y N

052
CHECK THE VOLTAGES TO THE ATTACHMENT CARD,
THEN DISCONNECT THE CABLES FROM THE 4963
ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

053
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS SHOWN
CC=2, ISB=/40, D.A.=TESTED DEVICE
(EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICES)
ARE ALL INDICATOR(S) OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

054
CHECK THE VOLTAGES TO THE ATTACHMENT CARD,
THEN DISCONNECT THE CABLES FROM THE 4963
ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

055
SEND A PREPARE COMMAND - LEVEL 2
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=600005
Y N

056
CHECK THE VOLTAGES TO THE ATTACHMENT CARD,
THEN DISCONNECT THE CABLES FROM THE 4963
ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

057

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WAS OPERATION FREE OF INTERRUPT(S)?
MDI=$TUXX,T7A02,02,0708,EQ
Y N

058
CHECK THE VOLTAGES TO THE ATTACHMENT CARD,
THEN DISCONNECT THE CABLES FROM THE 4963
ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

059
SEND AN INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,PLNG=6,PARM=500000
Y N

060
CHECK THE VOLTAGES TO THE ATTACHMENT CARD,
THEN DISCONNECT THE CABLES FROM THE 4963
ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

061
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS FOLLOWS
CC=2, ISB=/40, D.A.=TESTED DEVICE
(EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICE(S))
ALL INDICATORS OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

062
CHECK THE VOLTAGES TO THE ATTACHMENT CARD,
THEN DISCONNECT THE CABLES FROM THE 4963
ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

063
MDI=TUXX,T7A04
RUN INTERRUPT INTERFACE TEST
RUNS OK?
MDI=$TUXX,T7A04,02,0000,EQ
Y N

064
CHECK THE VOLTAGES TO THE ATTACHMENT CARD,
THEN DISCONNECT THE CABLES FROM THE 4963
ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

065

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

IS DEVICE READY?
MDI=$TUXX,T7A02,02,0008,OF
Y N

066
DEVICE IS NOT READY
GO TO MAP 7A80, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A80,EP=A

067
MDI=TUXX,T7A05
RUN START DIAGNOSTIC TESTS.
DID TESTS RUN OK?
MDI=$TUXX,T7A05,01,00,EQ
Y N

068
CHECK THE VOLTAGES TO THE ATTACHMENT CARD, THEN DISCONNECT THE CABLES FROM THE 4963 ATTACHMENT CARD AND LOAD (C) MAP 7A01.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A01

069
CONTINUE WITH 4963 DISK UNIT DEVICE MAPS.
MDI=$GOTO,TYPE=XTRNL,EP=A,MAP=7A10

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A00	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
5	064	7A78	E

001
(ENTRY POINT A)
CE RESPONSE IS REQUIRED
DISCONNECT THE CABLES TO THE ATTACHMENT CARD
ARE THE CABLES DISCONNECTED?
MDI=$QUES
Y N

002
NO IS NOT VALID CONTINUE ON YES LEG.
MDI=$NVLD

003
SEND AN I/O RESET
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=6F0000
Y N

004
I/O CC=0?
MDI=$TUXX,T7A02,02,0008,EQ,
Y N

005
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

006
SEND A READ I.D. COMMAND
I/O CC=0?
MDI=$TUXX,T7A01,02,0008,EQ,PLNG=6,
PARM=200000
Y N

007
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

008
WRONG DEVICE ADDRESS
CHECK DEVICE ADDRESS AGAINST CONFIGURATION.
IF WRONG: RUN AGAINST CORRECT ADDRESS.
IF CORRECT ADDRESS:
EXCHANGE I/O ATTACHMENT CARD.
MDI=$FIXT

009
SEND A READ I.D. COMMAND
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=200000
Y N

010

I/O CC=5?
MDI=$TUXX,T7A02,02,0508,EQ
Y N

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

011

I/O CC=3?
MDI=$TUXX,T7A02,02,0308,EQ
Y N

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

012

I/O CC=2?
MDI=$TUXX,T7A02,02,0208,EQ
Y N

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

013
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

014
SEND A READ I.D. COMMAND
I/O CC=?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,
PARM=200000
Y N

015
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

016
BUSY STATUS - O.K. ON RETRY
GO TO STEP 019,
ENTRY POINT C.
MDI=$GOTO,TYPE=INTRNL,EP=C

017
COMMAND REJECT - EXCHANGE I/O ATTACHMENT CARD
VERIFY THE REPAIR.
MDI=$FIXT

018
INTERFACE DATA CHECK - EXCHANGE I/O ATTACHMENT CARD
VERIFY THE REPAIR.
MDI=$FIXT

019
(ENTRY POINT C)

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

I.D. OK?
MDI=$TUXX,T7A02,04,07083006,ON
Y N

020
WRONG DEVICE ADDRESS
CHECK DEVICE ADDRESS AGAINST CONFIGURATION.
IF WRONG: RUN AGAINST CORRECT ADDRESS.
IF CORRECT ADDRESS:
EXCHANGE I/O ATTACHMENT CARD.
MDI=$FIXT

021
SEND A READ COMMAND
FUNCTION = 00
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,PLNG=6,PARM=000000
Y N

022
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

023
SEND A READ COMMAND
FUNCTION = 01
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,PLNG=6,PARM=100000
Y N

024
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

025
SEND A READ STATUS COMMAND
FUNCTION = 10
MODIFIER = NOT 0000
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,PLNG=6,PARM=270000
Y N

026
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

027
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = 0000
ANY LEVEL
I/O CC=?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=600000
Y N

028
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

029
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = 2222
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=602222
Y N
| 030
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

031
SEND A PREPARE COMMAND
I-BIT OFF
IDCB +2 = FFFE
ANY LEVEL
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=60FFFE
Y N
| 032
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

033
SEND A CONTROL COMMAND
FUNCTION = 10
MODIFIER NOT = 0000 OR 1111
I/O CC=3?
MDI=$TUXX,T7A01,02,0308,EQ,PLNG=6,PARM=650000
Y N
| 034
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

035
SEND AN I/O RESET
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=6F0000
Y N
| 036
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

037
(ENTRY POINT B)
SEND A PREPARE COMMAND - LEVEL 0
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=600001
Y N
| 038
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

039
IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

WAS OPERATION FREE OF INTERRUPT(S)?
MDI=$TUXX,T7A02,02,0708,EQ
Y N
| 040
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

041
SEND AN INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,PLNG=6,PARM=4D0000
Y N
| 042
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

043
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS FOLLOWS
CC=2, ISB=/40, D.A.=TESTED DEVICE
(EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICE(S))
ALL INDICATORS OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N
| 044
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT
IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

045
SEND A PREPARE COMMAND - LEVEL 1
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=600003
Y N
| 046
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

047
IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.
WAS OPERATION FREE OF INTERRUPT(S)?
MDI=$TUXX,T7A02,02,0708,EQ
Y N
| 048
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

049
SEND A NOT VALID INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,PLNG=6,PARM=4C0000
Y N
| 050
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

051
IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS FOLLOWS
CC=2, ISB=/40, D.A.=TESTED DEVICE
(EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICE(S))
ALL INDICATORS OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N
| 052
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

053
SEND A PREPARE COMMAND - LEVEL 2
I/O CC=7?
MDI=$TUXX,T7A01,02,0708,EQ,PLNG=6,PARM=600005
Y N
| 054
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

055
IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.
WAS OPERATION FREE OF INTERRUPT(S)?
MDI=$TUXX,T7A02,02,0708,EQ
Y N
| 056
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

057
SEND AN INTERRUPTING COMMAND
FUNCTION = 00
I/O CC=7?
MDI=$TUXX,T7A03,02,0702,EQ,PLNG=6,PARM=500000
Y N
| 058
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

059
IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.
INTERRUPT SHOULD OCCUR AT THIS TIME
INDICATORS SHOULD BE AS FOLLOWS
(EXPECT DELAYED COMMAND REJECT IN ISB)
(ISB=/C0 VALID FOR SOME DEVICE(S))
ALL INDICATORS OK?
MDI=$TUXX,T7A02,03,070240,ON
Y N
| 060
| EXCHANGE THE 4963 ATTACHMENT CARD.
| MDI=$FIXT

061
RUN INTERRUPT INTERFACE TEST
RUNS OK?
MDI=$TUXX,T7A04,02,0000,EQ
Y N

062
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

063

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

IS DEVICE READY?
MDI=$TUXX,T7A02,02,0008,OF
Y N

064
DEVICE IS NOT READY
GO TO MAP 7A78, ENTRY POINT E.
MDI=$CALL,TYPE=XTRNL,MAP=7A78,EP=E

065
RUN START DIAGNOSTIC TEST(S).
DID TESTS RUN OK?
MDI=$TUXX,T7A05,01,00,EQ
Y N

066
EXCHANGE THE 4963 ATTACHMENT CARD.
MDI=$FIXT

067
FAILURE IS WITH CABLES OR COMMON ADAPTER.
RECONNECT THE CABLES THEN,
LOAD AND EXECUTE MAP 7A10
MDI=$FIXT

4963 DISK UNIT CONTROLLER MAP

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ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A00	A	1	003

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
1	008	7A80	A

001
ISSUE HIO COMMAND
MDI=$TUXX,T7A56,01,00,EQ
Y N
| 002
| NO IS NOT VALID
| MDI=$NVLD

003
(ENTRY POINT A)
TEST BASE FILE
MDI=$TUXX,T7A52,01,80,OF
Y N
| 004
| NOT BASE FILE
| MDI=$GOTO,TYPE=XTRNL,MAP=7A20,EP=A

005
TEST TAG AND DATA BUS LINES, AND THAT THE FILE WILL RESPOND TO COMMANDS.
WRITE TO DIAGNOSTIC WORD #1 (INTERFACE I/O BUFFER). READ DIAGNOSTIC WORD #1 AND COMPARE FOR CORRECT DATA.
DATA PATTERNS = FFFF,AAAA,5555,1010
TEST P CKS,TIMEOUT
MDI=$TUXX,T7A13,02,0000,EQ
Y N
| 006
| TEST FILE NOT READY?
| MDI=$TUXX,T7A02,06,000000000001,ON
| Y N
| | 007
| | LOAD (C) MAP 7A10 IN MANUAL MODE
| | MDI=$CALL,TYPE=XTRNL,MAP=7A13,EP=A
| 008
| GO TO POWER MAP 7A80,A
| GO TO MAP 7A80, ENTRY POINT A.
| MDI=$FIXT

009
TEST CABLE CONTINUITY.

PERFORMS FUNCTIONAL TESTS OF THE COMMON ADAPTER TO ENSURE IT IS OPERATING CORRECTLY.
LOGIC CARDS TESTED
A2-C2,A2-D2

A CABLE CONTINUITY LINE IS SUPPLIED THROUGH THE FILE CABLES AND IS CHECKED BY THE SYSTEM.

IS THE CABLE CONTINUITY GOOD?
MDI=$TUXX,T7A18,02,0080,OF,PLNG=13,
PARM=0002/A00065E5
Y N
| 010
| GO TO MAP 7A71,A
| MDI=$FIXT

011
IS CONTROL SAMPLE RECEIVED OK?
MDI=$TUXX,T7A02,02,0040,OF
Y N
| 012
| GO TO MAP7A77 ENTRY POINT A
| MDI=$FIXT

013
TEST GLOBAL TIME OUT.
FILE FAILURES MAY CAUSE THIS END
IS GLOBAL TIME OUT OK?
MDI=$TUXX,T7A38,03,000020,OF
Y N
| |

014
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A13,EP=A

015
TO VERIFY THAT FILE CONTROL AREAS WILL RECEIVE DATA AND RETURN DATA TO SYSTEM CORRECTLY, WRITE TO ALL FCB WORDS, READ FCB WORDS AND VERIFY CORRECT DATA.
DATA PATTERN = 1212
DID THE TEST RUN OK?.
MDI=$TUXX,T7A14,02,0000,EQ
Y N

016
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A13,EP=A

017
TO FARTHER TEST TAG AND DATA BUS LINES AND FILE RESPONSE TO COMMANDS.
ISSUE CAP RESET, READ FCB ISW AND ERROR STATUS WORD FOR NO ERRORS.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0700,ON,PLNG=6,PARM=4F0000
Y N

018
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=B

019
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
LOAD ACC WITH 00, ADD 1 TO ACC, WRT FCB 0 WD 4 LO
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0001,ON,PLNG=17,
PARM=0003/40004C0065E5
Y N

020
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

021
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
LOAD ACC WITH 01, WRT TO FCB 0 WD 4 HI, WRT FCB 0 WD 4 LO
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0101,EQ,PLNG=17,
PARM=0003/40016DE565E5
Y N

022
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

023
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
LOAD ACC WITH 00, WRT TO FCB 0 WD 4 LO, ADD 1 TO ACC, WRT FCB 0 WD 5 LO
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0102,EQ,PLNG=33,
PARM=0007/40016DE54C0065E461E4D80065E5
Y N

024
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

025
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
WRT FILE SELECT REG, LOAD ACC WITH 00, READ FILE SELECT REG TO ACC, WRT ACC TO FCB 0 WD 4 LO
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0055,ON,PLNG=21,
PARM=0004/44554000430065E5
Y N

4963 DISK UNIT CONTROLLER MAP

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026
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

027
TEST THE SER/DES, THE SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
WRT FILE SELECT REG, LOAD ACC WITH 00, READ FILE SELECT REG TO ACC, WRT ACC TO FCB 0 WD 4 LO
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0055,ON,PLNG=21,
PARM=0004/44554000430065E5
Y N

028
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

029
TEST THE SER/DES, SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
DESELECT ALL FILES, READ REG 3 FOR INDEX AND SECTOR WRT ACC TO FCB 0 WD 4 LO.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,ON,PLNG=09,
PARM=0001/9ADF
Y N

030
NO IS NOT VALID
MDI=$NVLD

031
TEST THE SER/DES, SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
DESELECT ALL FILES, READ REG 3 FOR INDEX AND SECTOR WRT ACC TO FCB 0 WD 4 LO.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,PLNG=06,PARM=490908
Y N

032
NO IS NOT VALID
MDI=$NVLD

033
TEST THE SER/DES, SHIFT REGISTER, AND THE CONTROLS TO THESE PARTS.
DESELECT ALL FILES, READ REG 3 FOR INDEX AND SECTOR WRT ACC TO FCB 0 WD 4 LO.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0040,ON,PLNG=13,
PARM=0002/980065E5
Y N

034
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

035
TO FARTHER TEST TAG AND DATA BUS LINES AND FILE RESPONSE TO COMMANDS.
ISSUE CAP RESET, READ FCB ISW AND ERROR STATUS WORD FOR NO ERRORS.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0700,ON,PLNG=6,PARM=4F0000
Y N

036
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=B

037
TO FARTHER TEST TAG AND DATA BUS LINES AND FILE RESPONSE TO COMMANDS.
ISSUE CAP RESET, READ FCB ISW AND ERROR STATUS WORD FOR NO ERRORS.
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0700,ON,PLNG=6,PARM=4D0000
Y N

038
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=B

039
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ ID FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,PLNG=17,
PARM=0003/92804400CA40
Y N

040
NO IS NOT VALID
MDI=$NVLD

041
TEST THE SER/DES, THE SHIFT REGISIER, AND THE
CONTROLS TO THESE PARTS.
TEST READ ID FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=21,
PARM=0005/8200E37FEB7F8A00
Y N

042
NO IS NOT VALID
MDI=$NVLD

043
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ ID FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,PLNG=06,PARM=490908
Y N

044
NO IS NOT VALID
MDI=$NVLD

045
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ ID FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=17,
PARM=0003/8A80880065E5
Y N

046
NO IS NOT VALID
MDI=$NVLD

047
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ ID FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A33,04,24924924,EQ,PLNG=09,
PARM=0001/0075
Y N

048
CHECK IF ANY FILE ERROR BIT ON
MDI=$TUXX,T7A02,02,FFFF,EQ
Y N

049
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

050
LOAD (C) MAP 7A20 IN MANUAL MODE
POSSIBLE FILE ERROR
MDI=$CALL,TYPE=XTRNL,MAP=7A20,EP=A

051
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ ID EXTENDED FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,PLNG=17,
PARM=0003/92804400CA40
Y N

052
NO IS NOT VALID
MDI=$NVLD

053
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ ID EXTENDED FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=21,
PARM=0004/8203E37FEB7F8A00
Y N

054
NO IS NOT VALID
MDI=$NVLD

055
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ ID EXTENDED FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,PLNG=06,PARM=490908
Y N

056
NO IS NOT VALID
MDI=$NVLD

057
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ ID EXTENDED FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=17,
PARM=0003/8A80880065E5
Y N

058
NO IS NOT VALID
MDI=$NVLD

059
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ ID EXTENDED FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A33,04,24924924,EQ,PLNG=09,
PARM=0001/0075
Y N

060
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

061
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 1 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,PLNG=17,
PARM=0003/92804400CA40
Y N

062
NO IS NOT VALID
MDI=$NVLD

063
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 1 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=21,
PARM=0004/8234E37FEB7F8A00
Y N

064
NO IS NOT VALID
MDI=$NVLD

065
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 1 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,PLNG=06,PARM=490908
Y N

066
NO IS NOT VALID
MDI=$NVLD

067
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 1 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=17,
PARM=0003/8A80880065E5
Y N

068
NO IS NOT VALID
MDI=$NVLD

069
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 1 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A33,06,249249249249,EQ,PLNG=09,
PARM=0001/0075
Y N

070
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

071
TEST THE SER/DES AND SHIFT REGISTER AND THE
CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 2 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,PLNG=17,
PARM=0003/92804400CA40
Y N

072
NO IS NOT VALID
MDI=$NVLD

073
TEST THE SER/DES AND SHIFT REGISTER AND THE
CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 2 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=21,
PARM=0004/8238E37FEB7F8A00
Y N

074
NO IS NOT VALID
MDI=$NVLD

075
TEST THE SER/DES AND SHIFT REGISTER AND THE
CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 2 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,PLNG=06,PARM=490908
Y N

076
NO IS NOT VALID
MDI=$NVLD

077
TEST THE SER/DES AND SHIFT REGISTER AND THE
CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 2 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=17,
PARM=0003/8A80880065E5
Y N

078
NO IS NOT VALID
MDI=$NVLD

079
TEST THE SER/DES AND SHIFT REGISTER AND THE
CONTROLS TO THESE PARTS.
TEST READ DIAGNOSTIC DATA 2 FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A33,06,249249249249,EQ,PLNG=13,
PARM=0001/0075
Y N

080
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

081
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,PLNG=33,
PARM=0007/40556D7F657F6D7E657E4400CA40
Y N

082
NO IS NOT VALID
MDI=$NVLD

083
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A32,02,0000,EQ,PLNG=25,
PARM=0005/8220E37FEB7F9ADF8A30
Y N

084
NO IS NOT VALID
MDI=$NVLD

085
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,PLNG=06,PARM=490B08
Y N

086
NO IS NOT VALID
MDI=$NVLD

087
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A32,02,0000,EQ,PLNG=17,
PARM=0003/8A80880065E5
Y N

088
NO IS NOT VALID
MDI=$NVLD

089
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A32,02,0000,EQ,PLNG=25,
PARM=0005/9A048200E37FEB7F8A30
Y N

090
NO IS NOT VALID
MDI=$NVLD

091
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,PLNG=06,PARM=490B08
Y N

092
NO IS NOT VALID
MDI=$NVLD

093
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A32,02,0000,EQ,PLNG=17,
PARM=0003/8A80880065E5
Y N

094
NO IS NOT VALID
MDI=$NVLD

095
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST CRC GENERATION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A33,04,039A039A,EQ,PLNG=09,
PARM=0001/0075
Y N

096
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

097
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,PLNG=37,
PARM=0008/40246DFF409265FF40496DFE402465FE
Y N

098
NO IS NOT VALID
MDI=$NVLD

099
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,PLNG=17,
PARM=0003/4400CA409280
Y N

100
NO IS NOT VALID
MDI=$NVLD

101
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=21,
PARM=0004/8214E37FEB7F8A00
Y N

102
NO IS NOT VALID
MDI=$NVLD

103
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,PLNG=06,PARM=490908
Y N

104
NO IS NOT VALID
MDI=$NVLD

105
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=17,
PARM=0003/8A80880065E5
Y N

106
NO IS NOT VALID
MDI=$NVLD

107
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST ID SCAN HIT FUNCTION IN CAP
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0080,ON,PLNG=13,
PARM=0002/980065E5
Y N

108
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

109
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,PLNG=37,
PARM=0008/40246DFF409365FF40496DFE402465FE
Y N

110
NO IS NOT VALID
MDI=$NVLD

111
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A30,02,0000,EQ,PLNG=17,
PARM=0003/4400CA409280
Y N

112
NO IS NOT VALID
MDI=$NVLD

113
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=21,
PARM=0004/8214E37FEB7F8A00
Y N

114
NO IS NOT VALID
MDI=$NVLD

115
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A55,02,0703,EQ,PLNG=06,PARM=490908
Y N

116
NO IS NOT VALID
MDI=$NVLD

117
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A31,02,0000,EQ,PLNG=17,
PARM=0003/8A80880065E5
Y N

118
NO IS NOT VALID
MDI=$NVLD

119
TEST THE SER/DES, THE SHIFT REGISTER, AND THE
CONTROLS TO THESE PARTS.
TEST NO ID SCAN HIT FUNCTION IN CONTROLLER
DID THE TEST RUN OK?.
MDI=$TUXX,T7A18,02,0080,OF,PLNG=13,
PARM=0002/910065E5
Y N

120
LOAD (C) MAP 7A10 IN MANUAL MODE
MDI=$CALL,TYPE=XTRNL,MAP=7A16,EP=D

121
GO TO MAP7A20
MDI=$GOTO,TYPE=XTRNL,MAP=7A20,EP=A

4963 DISK UNIT CONTROLLER MAP

PAGE 1 OF 2

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A10	A	1	001

001
(ENTRY POINT A)
CHECK ERROR SYMPTOM.

ANALYZE RESULT WORD TO DETERMINE FAILING FIELD REPLACEMENT UNIT .
CARDS TESTED:
A2-D2 AND A2-C2
- INSPECT AND RESEAT TOP CARD CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
IF THIS FAILS TO CORRECT THE PROBLEM EXCHANGE BOARD A2 .
IF THIS FAILS TO REPAIR LOAD (C) MAP7A20 AND TOP CARD CONNECTOR(S).

CYCLE STEAL STATUS ERROR BIT OFF?
MDI=$TUXX,T7A02,04,00000008,OF
Y N

002
GOTO ENTRY POINT B
MDI=$GOTO,TYPE=INTRNL,EP=B

003
TAG/DATA BUS PARITY BIT OFF?
MDI=$TUXX,T7A02,04,00004000,OF
Y N

004
GOTO ENTRY POINT B
MDI=$GOTO,TYPE=INTRNL,EP=B

005
CHECK ERROR SYMPTOM.
RESPONSE TIMEOUT ERROR BIT OFF?
MDI=$TUXX,T7A02,04,00000002,OF
Y N

006
GOTO ENTRY POINT B
MDI=$GOTO,TYPE=INTRNL,EP=B

007
CHECK ERROR SYMPTOM.
LOST INTERRUPT ERROR BIT ON?
MDI=$TUXX,T7A02,04,00002000,ON
Y N

008
CHECK ERROR SYMPTOM.
DATA NOT COMPARE ERROR BIT ON?
MDI=$TUXX,T7A02,04,00100000,ON
Y N

009
EXCHANGE CARD(S)
- INSPECT AND RESEAT CABLES
BETWEEN ATTACH. AND 4963.
- EXCHANGE CARD -A2-C2.
- EXCHANGE CARD -A2-D2.
- INSPECT AND RESEAT TOP CARD CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
- EXCHANGE THE 4963 ATTACH. CARD.
IF THIS FAILS TO REPAIR LOAD (C) MAP7A20
MDI=$FIXT

010
GOTO ENTRY POINT A
MDI=$GOTO,TYPE=XTRNL,EP=A,MAP=7A14

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011
(ENTRY POINT B)
WRITE DIAG. REG 1
DATA/TAG BUS PARITY CHECK.

PROBE (VTL) THE FOLLOWING;

AT COMMON ADAPTER BOARD,

REQUEST OUT.....A5B04
ACKNOWLEDGE REQUEST OUT.....A5B05
STROBE OUT.....A5B06
TAG BUS BIT 0 .....A5D03
TAG BUS BIT 1 .....A5D04
ALL LINE(S) PULSING?

MDI=$QUXX,T7A28,REPT=L7A28,PLNG=4,PARM=FFFF
Y N

012
- INSPECT AND RESEAT CABLES
BETWEEN ATTACH. AND 4963.
- INSPECT AND RESEAT TOP CARD CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
- EXCHANGE CARD -A2-C2.
- EXCHANGE THE 4963 ATTACH. CARD.
- EXCHANGE CARD -A2-D2.
IF THIS FAILS TO REPAIR LOAD (C) MAP7A20

THE 4963 ATTACH CARD TC BOARD A2 CABLES ARE THE SAME. YOU CAN SWAP BOTH ENDS TO CHECK THE CABLES. IF THE SYMPTOM CHANGES, EXCHANGE THE CABLES.

MDI=$FIXT

013
(ENTRY POINT C)
WRITE DIAG. REG 1
DATA/TAG BUS PARITY CHECK.

PROBE (VTL) THE FOLLOWING;

AT COMMON ADAPTER BOARD,

TAG BUS BIT 4 .....A5D07.....DOWN
TAG BUS BIT 5 .....A5D09.....UP
TAG BUS BIT 6 .....A5D10.....UP
TAG BUS BIT 7 .....A5D11.....UP
ALL LINE(S) AS EXPECTED?

MDI=$QUXX,T7A28,REPT=L7A28,PLNG=4,PARM=FFFF
Y N

014
- INSPECT AND RESEAT CABLES
BETWEEN ATTACH. AND 4963.
- EXCHANGE THE 4963 ATTACH. CARD.
MDI=$FIXT

015
- INSPECT AND RESEAT CABLES
BETWEEN ATTACH. AND 4963.
- EXCHANGE CARD -A2-C2.
- EXCHANGE CARD -A2-D2.
- INSPECT AND RESEAT TOP CARD CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
- EXCHANGE THE 4963 ATTACH. CARD.
IF THIS FAILS TO REPAIR LOAD (C) MAP7A20

THE 4963 ATTACH CARD TC BOARD A2 CABLES ARE THE SAME. YOU CAN SWAP BOTH ENDS TO CHECK THE CABLES. IF THE SYMPTOM CHANGES, EXCHANGE THE CABLES.

MDI=$FIXT

4963 DISK UNIT CONTROLLER MAP

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A10	A	1	001

001
(ENTRY POINT A)
CHECK ERROR SYMPTOM.

ANALYZES RESULT WORDS TO DETERMINE FAILING UNIT.
CARDS TESTED:
INSPECT AND RESEAT TOP CARD CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
EXCHANGE CARD(S)
A2-D2 AND A2-C2
IF THIS FAILS TO CORRECT THE
PROBLEM INSPECT AND RESEAT
CABLES BETWEEN ATTACH. AND 4963.
IF THIS FAILS TO CORRECT THE
PROBLEM EXCHANGE BOARD A2.
AND TOP CONNECTOR CABLES.

ERROR ON WRITE BIT OFF?
MDI=$TUXX,T7A02,02,0040,OF
Y N
|
| 002
| INSPECT AND RESEAT TOP CARD CONNECTORS.
| BETWEEN A2-C2 AND A2-D2.
| EXCHANGE CARD(S)
| A2-D2 AND A2-C2
| IF THIS FAILS TO CORRECT THE
| PROBLEM INSPECT AND RESEAT
| CABLES BETWEEN ATTACH. AND 4963.
| IF THIS FAILS TO CORRECT THE
| PROBLEM EXCHANGE BOARD A2.
| MDI=$FIXT
|
003
CHECK ERROR SYMPTOM.
ERROR ON READ BIT OFF?
MDI=$TUXX,T7A02,02,0020,OF
Y N
|
| 004
| INSPECT AND RESEAT TOP CARD CONNECTORS.
| BETWEEN A2-C2 AND A2-D2.
| EXCHANGE CARD(S)
| A2-D2 AND A2-C2
| IF THIS FAILS TO CORRECT THE
| PROBLEM INSPECT AND RESEAT
| CABLES BETWEEN ATTACH. AND 4963.
| IF THIS FAILS TO CORRECT THE
| PROBLEM EXCHANGE BOARD A2.
| MDI=$FIXT
|
005
CHECK ERROR SYMPTOM.
TAG/DATA BUS PARITY BIT OFF?
MDI=$TUXX,T7A02,04,00004000,OF
Y N
|
| 006
| INSPECT AND RESEAT TOP CARD CONNECTORS.
| BETWEEN A2-C2 AND A2-D2.
| EXCHANGE CARD(S)
| A2-D2 AND A2-C2
| IF THIS FAILS TO CORRECT THE
| PROBLEM INSPECT AND RESEAT
| CABLES BETWEEN ATTACH. AND 4963.
| IF THIS FAILS TO CORRECT THE
| PROBLEM EXCHANGE BOARD A2.
| MDI=$FIXT
|
007
CHECK ERROR SYMPTOM.
DATA NOT COMPARE BIT ON?
MDI=$TUXX,T7A02,02,0010,ON
Y N
| |
| |
| |
| |
| |
| |

008
GO TO MAP 7A13-A
MDI=$GOTO,TYPE=XTRNL,EP=A,MAP=7A13

009
WRITE DIAGNOSTIC REG 1
DATA/TAG BUS PARITY CHECK.

PROBE THE FOLLOWING;

AT COMMON ADAPTER BOARD A2,

STROBE OUT.....A5B06
IS LINE PULSING ?
MDI=$QUXX,T7A28,REPT=L7A28,PLNG=4,PARM=FFFF
Y N

010
INSPECT AND RESEAT TOP CARD CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
EXCHANGE CARD(S)
A2-D2 AND A2-C2
IF THIS FAILS TO CORRECT THE
PROBLEM INSPECT AND RESEAT
CABLES BETWEEN ATTACH. AND 4963.
IF THIS FAILS TO CORRECT THE
PROBLEM EXCHANGE BOARD A2.
MDI=$FIXT

011
INSPECT AND RESEAT TOP CARD CONNECTORS.
BETWEEN A2-C2 AND A2-D2.
EXCHANGE CARD(S)
A2-D2 AND A2-C2
IF THIS FAILS TO CORRECT THE
PROBLEM INSPECT AND RESEAT
CABLES BETWEEN ATTACH. AND 4963.
IF THIS FAILS TO CORRECT THE
PROBLEM EXCHANGE BOARD A2.
MDI=$FIXT

4963 DISK UNIT CONTROLLER MAP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A10	A	1	001
7A10	B	2	008
7A10	D	5	039
7A10	F	2	010

001
(ENTRY POINT A)
WR/RD FILE CONTROL BLOCK 0.
CHECK ERROR SYMPTOM.

PERFORMS FUNCTIONAL TESTS OF THE COMMON ADAPTER TO ENSURE IT IS OPERATING CORRECTLY.
CARDS TESTED:
A2-C2, A2-D2
AND/OR CONNECTOR CABLES.

IS ERROR ON WRITE BIT ON?
MDI=$TUXX,T7A02,02,0040,ON
Y N

002
WR/RD FILE CONTROL BLOCK 0.
CHECK ERROR SYMPTOM.
IS ERROR ON READ BIT ON?
MDI=$TUXX,T7A02,02,0020,ON
Y N

003
WR/RD FILE CONTROL BLOCK 0.
CHECK ERROR SYMPTOM.
IS DATA NOT COMPARE BIT ON?
MDI=$TUXX,T7A02,02,0010,ON
Y N

004
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE CARD A2-D2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT

005
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT

006
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

007
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

```
008
(ENTRY POINT B)
TEST CURRENT AND PREVIOUS CYL #S
ARE THEY CORRECT?
MDI=$TUXX,T7A02,02,00000018,OF
Y N
|
| 009
| INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
| INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2
| TO A2-D2
| EXCHANGE CARD A2-C2
| EXCHANGE CARD A2-D2
| EXCHANGE 4963 ATTACHMENT CARD
| MDI=$FIXT
|
010
(ENTRY POINT F)
TEST ERROR CONDITION IN CAP
NO END OP INTERRUPT BIT OF?
MDI=$TUXX,T7A02,02,00000020,OF
Y N
|
| 011
| INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
| INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2
| TO A2-D2
| EXCHANGE CARD A2-C2
| EXCHANGE CARD A2-D2
| EXCHANGE 4963 ATTACHMENT CARD
| MDI=$FIXT
|
012
TEST ERROR CONDITION IN CAP
IS NOT VALID COMMAND ERROR OFF?
MDI=$TUXX,T7A02,06,000000000400,OF
Y N
|
| 013
| INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
| INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2
| TO A2-D2
| EXCHANGE CARD A2-C2
| EXCHANGE 4963 ATTACHMENT CARD
| EXCHANGE CARD A2-D2
| MDI=$FIXT
|
014
TEST ERROR CONDITION IN CAP
IS COMMON INTERFACE P CHECK OFF?
MDI=$TUXX,T7A02,06,000000002000,OF
Y N
|
| 015
| TEST ERROR CONDITION IN CAP
| TAG P CHECK WRAP BACK BIT OF?
| MDI=$TUXX,T7A02,07,00000000000010,OF
| Y N
| |
| | 016
| | INSPECT AND RESEAT CABLE TO ATTACHMENT
| | CARD
| | INSPECT AND RESEAT TOP CARD CONNECTORS
| | A2-C2 TO A2-D2
| | EXCHANGE CARD A2-C2
| | EXCHANGE 4963 ATTACHMENT CARD
| | EXCHANGE CARD A2-D2
| | MDI=$FIXT
| |
| 017
| INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
| INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2
| TO A2-D2
| EXCHANGE CARD A2-C2
| EXCHANGE CARD A2-D2
| EXCHANGE 4963 ATTACHMENT CARD
| MDI=$FIXT
|
018
TEST ERROR CONDITION IN CAP
IS TIME OUT HARDWARE CHECK BIT OFF?
MDI=$TUXX,T7A02,06,000000000100,OF
Y N
| |
| |
| |
| |
| |
```

019
TEST ERROR CONDITION IN CAP
IS NOT VALID ROS ADDRESS BIT OFF?
MDI=$TUXX,T7A02,07,00000000000020,OF
Y N

020
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

021
TEST ERROR CONDITION IN CAP
IS NOT NORMAL RESET ERROR BIT OFF
MDI=$TUXX,T7A02,07,00000000000040,OF
Y N

022
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

023
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT

024
TEST ERROR CONDITION IN CAP
IS COMMON ADAPTER P CHECK BIT OFF
MDI=$TUXX,T7A02,06,000000004000,OF
Y N

025
TEST ERROR CONDITION IN CAP
IS PROCESSING UNIT P CHECK BIT OFF?
MDI=$TUXX,T7A02,07,00000000000001,OF
Y N

026
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

027
TEST ERROR CONDITION IN CAP
IS PROCESSING UNIT DATA BUFFER PORT P CHECK ON?
MDI=$TUXX,T7A02,07,00000000000004,OF
Y N

028
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2 TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
EXCHANGE CARD A2-D2
MDI=$FIXT

029
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2
TO A2-D2
EXCHANGE CARD A2-D2
EXCHANGE CARD A2-C2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT

030
TEST ERROR CONDITION IN CAP
62 PC INTFC ERROR BIT OFF?
MDI=$TUXX,T7A02,04,00000001,OF
Y N

031
TEST ERROR CONDITION IN CAP
62 PC CABLE CONTINUITY BIT OFF?
MDI=$TUXX,T7A02,07,00000000000080,OF
Y N

032
EXECUTE MAP 7A20
MDI=$CALL,TYPE=XTRNL,MAP=7A20,EP=A

033
TEST ERROR CONDITION IN CAP
62 PC NO CNTL SAMPLE REC BIT OFF?
MDI=$TUXX,T7A02,07,00000000000040,OF
Y N

034
INSPECT AND RESEAT CABLE TO DISK DRIVE
INSPECT AND RESEAT TOP CARD CONNECTORS
A2-C2 TO A2-D2
EXCHANGE CARD A2-D2
EXCHANGE CARD A2-C2
MDI=$FIXT

035
TEST ERROR CONDITION IN CAP
62 PC DAISY BUS P CHECK BIT OFF?
MDI=$TUXX,T7A02,07,00000000000020,OF
Y N

036
INSPECT AND RESEAT CABLE TO DISK DRIVE
INSPECT AND RESEAT TOP CARD CONNECTORS
A2-C2 TO A2-D2
EXCHANGE CARD A2-D2
EXCHANGE CARD A2-C2
MDI=$FIXT

037
EXECUTE MAP 7A20
MDI=$CALL,TYPE=XTRNL,MAP=7A20,EP=A

038
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2
TO A2-D2
EXCHANGE CARD A2-D2
EXCHANGE CARD A2-D2
EXCHANGE 4963 ATTACHMENT CARD
MDI=$FIXT

039
(ENTRY POINT D)
INSPECT AND RESEAT CABLE TO ATTACHMENT CARD
INSPECT AND RESEAT TOP CARD CONNECTORS A2-C2
TO A2-D2
EXCHANGE CARD A2-C2
EXCHANGE CARD A2-D2
EXCHANGE 4963 ATTACHMENT CARD
IF THE ABOVE FAILS TO REPAIR THE PROBLEM
LOAD (C) MAP7A20 FOR FILE PROBLEM.
MDI=$FIXT

4963 DISK FILE DIAGNOSTIC

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A10	A	1	003

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
2	014	7A21	A
2	019	7A21	A
3	023	7A21	A
3	029	7A21	A
3	032	7A21	A
4	039	7A21	A
4	045	7A21	A
4	048	7A21	A
5	053	7A21	A
5	058	7A21	A
5	065	7A21	A
6	070	7A21	A
6	076	7A21	A
6	082	7A21	A
7	088	7A21	A
7	092	7A21	A
8	099	7A21	A
8	104	7A21	A
9	111	7A21	A
9	116	7A21	A
9	123	7A21	A
10	131	7A21	A
10	136	7A21	A
11	147	7A21	A
11	156	7A21	A
11	141	7A28	A
11	150	7A30	A
12	157	7A30	A
2	010	7A77	A
3	024	7A78	A
3	034	7A78	A
5	060	7A78	A
6	073	7A78	A
6	079	7A78	A
7	085	7A78	A
7	094	7A78	A
8	106	7A78	A
9	118	7A78	A
10	126	7A78	A
11	143	7A78	A
11	152	7A78	A

```
001
ISSUE HIO COMMAND
MDI=$TUXX,T7A56,01,00,EQ
Y N
|
| 002
| NO IS NOT VALID
| MDI=$NVLD
|
003
(ENTRY POINT A)
TEST IF THE FILE IS ATTACHED?
MDI=$TUXX,T7A50,01,80,OF
Y N
|
| 004
| NO FILE ATTACHED
| MDI=$FIXT
|
005
ISSUE A FILE RESET
MDI=$TUXX,T7A03,02,0703,EQ,PLNG=6,PARM=4F0000
Y N
|
| 006
| NO IS NOT VALID GO TO NEXT STEP.
| MDI=$NVLD
|
007
ISSUE A RECALIBRATE TO THE FILE
DID THE RECALIBRATE FUNCTION OK ?
MDI=$TUXX,T7A06,01,82,EQ,PLNG=4,PARM=0001
Y N
| |
| |
| |
| |          COPYRIGHT IBM CORP 1976                    30JUL79    PN8327652
| |
          REVISED 1979                                  EC375609   PEC375376
2 2
A B                                                              MAP 7A20-1
```

008
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

009
CHECK GLOBAL TIMEOUT?
MDI=$TUXX,T7A02,06,000020000000,OF
Y N

010
GO TO MAP7A77-A
GO TO MAP 7A77, ENTRY POINT A.
MDI=$FIXT

011
IS INTERRUPT ACTIVE BEFORE TIMEOUT?
MDI=$TUXX,T7A02,06,000000000100,OF
Y N

012
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D5,EQ,PLNG=1,PARM=@N
Y N

013
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

014
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

015

TIMEOUT INDICATES A DEFAULT TIME AFTER WHICH THE SYSTEM MUST ASSUME THAT INTERRUPT AND/OR CONTROL SAMPLE RECEIVED WILL NEVER BECOME ACTIVE.
MINIMUM TIMEOUT IS >3.5 SECONDS FOR START GMP FROM A FILE RECALIBRATE PLUS 20 SECONDS FOR START FROM FILE POWER ON.

IS 'CONTROL SAMPLE RECEIVED' ACTIVE INSIDE TIMEOUT PERIOD ?
MDI=$TUXX,T7A02,04,00000001,OF
Y N

016
IS 'CONTROL SAMPLE RECEIVED' ACTIVE INSIDE TIMEOUT PERIOD ?
MDI=$TUXX,T7A02,10,00000000000000000040,OF
Y N

017
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C3,EQ,PLNG=1,PARM=@C
Y N

018
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

019
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

020
IS INTERRUPT RESET ?
MDI=$TUXX,T7A02,10,00000000000000000010,OF
Y N

021
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D5,EQ,PLNG=1,PARM=@N
Y N

022
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

4963 DISK FILE DIAGNOSTIC


```
023
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

024
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
GO TO MAP 7A78, ENTRY POINT A.
MDI=$FIXT

025
CHECK DISK SPEED                                  DISK SPEED IS CHECKED BEFORE ANY DATA MOVE
(NOMINAL SPEED 3125RPM)                           OPERATION IS PERFORMED
IS DISK SPEED IN 2.5% OF NOMINAL SPEED?
MDI=$TUXX,T7A12,06,800000000001,OF
Y N
|
| 026
| TEST FILE NOT READY
| MDI=$TUXX,T7A02,06,000000000101,OF
| Y N
| |
| | 027
| | READ AND STORE THE DIAGNOSTIC SENSE BYTES
| | FOR THE NEXT MAP.
| | MDI=$TUXX,T7A08,01,D5,EQ,PLNG=1,PARM=@N
| | Y N
| | |
| | | 028
| | | NO IS NOT VALID GO TO NEXT STEP.
| | | MDI=$NVLD
| | |
| | 029
| | LOAD (C) MAP 7A20 IN MANUAL MODE
| | GO TO MAP 7A21, ENTRY POINT A.
| | MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A
| |
| 030
| READ AND STORE THE DIAGNOSTIC SENSE BYTES
| FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C4,EQ,PLNG=1,PARM=@D
| Y N
| |
| | 031
| | NO IS NOT VALID GO TO NEXT STEP.
| | MDI=$NVLD
| |
| 032
| LOAD (C) MAP 7A20 IN MANUAL MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A
|
033                                               WRAP BACK TESTS USING TAGS'010' AND '011'
CHECK BUS WRAP BACK                               TYPICAL WRAP BYTES ARE '00' 'FF' AND 'E0'

IF WRAP BACK FAILS NOTE FAILURE AND CONTINUE.     THIS CHECKS TO SEE IF FILE IS READY, AT HOME
                                                  AND CAN READ ID.
READ AND STORE SENSE.                             NOTE: CORRECT END OF MAP7A20 WITH WRONG WRAP
CHECK PARITY OF BUS DATA                          BYTE WILL BE TESTED IN MAP7A51
IS PARITY GOOD ?
MDI=$TUXX,T7A19,02,8000,OF
Y N
|
| 034
| GO TO PARITY FAILURE MAP 7A78 ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
|
035
IS SENSE CORRECT?
MDI=$TUXX,T7A08,02,0082,ON
Y N
|
| 036
| (PARITY BIT IS SET WHEN BIT 3 IS '1')
| (***1****)
| IS PARITY BIT SET?
| MDI=$TUXX,T7A02,04,00001000,ON
| Y N
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
```

4963 DISK FILE DIAGNOSTIC

037
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D5,EQ,PLNG=1,PARM=@N
Y N

038
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

039
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

040
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
MDI=$FIXT

041
READ TRACK ID USING HEAD 1
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,02,0400,EQ,PLNG=4,PARM=201C
Y N

042
IS FILE READY OFF?
MDI=$TUXX,T7A02,06,000000000001,OF
Y N

043
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D5,EQ,PLNG=1,PARM=@N
Y N

044
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

045
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

046
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C1,EQ,PLNG=1,PARM=@A
Y N

047
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

048
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

049
SEEK TO TRACK 001. THIS CHECKS IF THE FILE CAN PERFORM SEEKS.
CHECK AND STORE SENSE
(CORRECT SENSE IS HEXADECIMAL 80 (10000000))
IS SENSE CORRECT?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=09,
PARM=0000/0401
Y N

050
(PARITY BIT IS SET WHEN BIT 3 IS '1')
IS PARITY BIT SET?
MDI=$TUXX,T7A02,06,000000004000,ON
Y N

051
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C6,EQ,PLNG=1,PARM=@F
Y N

052
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

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053
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

054
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
MDI=$FIXT

055
READ TRACK ID USING HEAD 1
(TRACK 001 ID)
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,2,0401,EQ,PLNG=4,PARM=201C
Y N

056
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C1,EQ,PLNG=1,PARM=@A
Y N

057
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

058
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

059
SEEK TO TRACK 000
CHECK AND STORE SENSE
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=09,
PARM=0000/0400
Y N

060
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
GO TO MAP 7A78, ENTRY POINT A.
MDI=$FIXT

061
(CORRECT SENSE HEXADECIMAL 80 (10000000))
IS SENSE CORRECT?
MDI=$TUXX,T7A02,01,80,EQ
Y N

062
(PARITY BIT IS SET WHEN BIT 3 IS '1'.)
IS PARITY BIT SET?
MDI=$TUXX,T7A02,06,000000004000,ON
Y N

063
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C2,EQ,PLNG=1,PARM=@B
Y N

064
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

065
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

066
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
MDI=$FIXT

067
READ TRACK ID USING HEAD 1
(TRACK 000 ID)
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,2,0400,EQ,PLNG=4,PARM=201C
Y N

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068
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C1,EQ,PLNG=1,PARM=@A
Y N

069
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

070
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

071
RECALIBRATE TO HOME
CHECK AND STORE SENSE
(CORRECT SENSE HEXADECIMAL 82 (10000010))
IS SENSE CORRECT?
MDI=$TUXX,T7A06,01,82,EQ,PLNG=4,PARM=0001
Y N

072
IS PARITY GOOD ?
MDI=$TUXX,T7A02,06,000000004000,ON
Y N

073
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
GO TO MAP 7A78, ENTRY POINT A.
MDI=$FIXT

074
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D9,EQ,PLNG=1,PARM=@R
Y N

075
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

076
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

077
SEEK TO TRACK 128
CHECK AND STORE SENSE
(CORRECT SENSE IS HEXADECIMAL 80 (10000000))
IS SENSE CORRECT?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=9,PARM=0000/0480
Y N

THESE STEPS PERFORM SERVO CALIBRATION AND ACCESS SPEED CHECKS.

078
IS PARITY GOOD ?
MDI=$TUXX,T7A02,06,000000004000,OF
Y N

079
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
GO TO MAP 7A78, ENTRY POINT A.
MDI=$FIXT

080
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D6,EQ,PLNG=1,PARM=@O
Y N

081
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

082
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

```
083
RECALIBRATE TO HOME
CHECK AND STORE SENSE
(CORRECT SENSE HEXADECIMAL 82 (10000010))
IS SENSE CORRECT?
MDI=$TUXX,T7A06,01,82,EQ,PLNG=4,PARM=0001
Y N
| 084
| IS PARITY GOOD ?
| MDI=$TUXX,T7A02,06,000000004000,OF
| Y N
| | 085
| | GO TO PARITY FAILURE MAP 7A78 ENTRY A.
| | GO TO MAP 7A78, ENTRY POINT A.
| | MDI=$FIXT
| 086
| READ AND STORE THE DIAGNOSTIC SENSE BYTES
| FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,D9,EQ,PLNG=1,PARM=@R
| Y N
| | 087
| | NO IS NOT VALID GO TO NEXT STEP.
| | MDI=$NVLD
| 088
| LOAD (C) MAP 7A20 IN MANUAL MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A
089
PERFORM SEEK SPEED CHECKS.                    MINIMUM CONDITIONS ARE SEEK TIMINGS
                                              1 TRACK < 9.0MSEC.
                                              359 TRACKS < 70MSEC.
                                              MANY SEEKS WHICH INCLUDE 1 AND 359 TRACK
                                              LENGTH SEEKS AND NOT LESS THAN 25 ACCESSES
                                              SHOULD HAVE AN AVERAGE ACCESS TIME OF <
                                              27MSEC.
ARE SPEED CHECKS OK?
MDI=$TUXX,T7A11,01,80,OF
Y N
| 090
| READ AND STORE THE DIAGNOSTIC SENSE BYTES
| FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,E2,EQ,PLNG=1,PARM=@S
| Y N
| | 091
| | NO IS NOT VALID GO TO NEXT STEP.
| | MDI=$NVLD
| 092
| LOAD (C) MAP 7A20 IN MANUAL MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A
093
SEEK TO CE TRACK 359                          THIS STEP PREPARES FOR FIRST FILE DATA
CHECK AND STORE SENSE                         OPERATION BY READING AND WRITING ON THE CE
CHECK PARITY OF BUS DATA                      TRACK.
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=9,PARM=0000/0567
Y N
| 094
| GO TO PARITY FAILURE MAP 7A78 ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT
095
(CORRECT SENSE HEXADECIMAL 80 (10000000))
IS SENSE CORRECT?
MDI=$TUXX,T7A02,01,80,EQ
Y N
| |
| |
| |
| |
| |
| |
| |
| |
```

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096
(PARITY BIT IS SET WHEN BIT 3 IS '1'.)
IS PARITY BIT SET?
MDI=$TUXX,T7A02,06,000000004000,OF
Y N

097
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D6,EQ,PLNG=1,PARM=@O
Y N

098
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

099
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

100
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
MDI=$FIXT

101
READ TRACK ID USING HEAD 1
(TRACK 359 ID)
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,02,0567,EQ,PLNG=4,PARM=201C
Y N

102
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C1,EQ,PLNG=1,PARM=@A
Y N

103
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

104
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

105
SEEK TO TRACK 000. THIS COMPLETES CHECK OF SEEK AND RECALIBRATE.
CHECK AND STORE SENSE
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=9,PARM=0000/0400
Y N

106
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
GO TO MAP 7A78, ENTRY POINT A.
MDI=$FIXT

107
(CORRECT SENSE IS HEXADECIMAL 80 (10000000))
IS SENSE CORRECT?
MDI=$TUXX,T7A02,01,80,EQ
Y N

108
(PARITY BIT IS SET WHEN BIT 3 IS '1'.)
IS PARITY BIT SET?
MDI=$TUXX,T7A02,06,000000004000,OF
Y N

109
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C9,EQ,PLNG=1,PARM=@I
Y N

110
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

```
111
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

112
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
MDI=$FIXT

113
READ TRACK ID USING HEAD 1
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,02,0400,EQ,PLNG=04,PARM=201C
Y N

114
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C1,EQ,PLNG=1,PARM=@A
Y N

115
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

116
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

117
SEEK TO TRACK 359
CHECK AND STORE SENSE
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,80,EQ,PLNG=9,PARM=0000/0567
Y N

118
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
GO TO MAP 7A78, ENTRY POINT A.
MDI=$FIXT

119
(CORRECT SENSE 10000000 )
IS SENSE CORRECT?
MDI=$TUXX,T7A02,01,80,EQ
Y N

120
(PARITY BIT IS SET WHEN BIT 3 IS '1'.)
IS PARITY BIT SET?
MDI=$TUXX,T7A02,04,00000100,ON
Y N

121
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D6,EQ,PLNG=1,PARM=@O
Y N

122
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

123
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

124
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
MDI=$FIXT

125
RECALIBRATE TO HOME.
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,82,EQ,PLNG=04,PARM=0001
Y N
```

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126
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
GO TO MAP 7A78, ENTRY POINT A.
MDI=$FIXT

127
(CORRECT SENSE IS HEXADECIMAL 82 (10000010))
IS SENSE CORRECT?
MDI=$TUXX,T7A02,01,82,EQ
Y N

128
(PARITY BIT IS SET WHEN BIT 3 IS '1'.)
IS PARITY BIT SET?
MDI=$TUXX,T7A02,06,000000004000,OF
Y N

129
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,D9,EQ,PLNG=1,PARM=@R
Y N

130
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

131
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

132
GO TO PARITY FAILURE MAP 7A78 ENTRY A.
MDI=$FIXT

133
READ TRACK ID USING HEAD 1
(TRACK 000 ID)
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,02,0400,EQ,PLNG=4,PARM=201C
Y N

134
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,C1,EQ,PLNG=1,PARM=@A
Y N

135
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

136
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

137
RUN RANDOM SEEK PROGRAM READING IDS.
CHECK SENSE AFTER EACH COMMAND COMPLETE.
LEAVE TO CORRECT MAP CHART IF FAILURE OCCURS.

THIS STEP IS LAST VERIFY THAT FILE IS OPERATING CORRECTLY.

RANDOM SEEK PROGRAM SHOULD INCLUDE ODD AND EVEN ADDRESSES SELECTED OVER THE FULL CYLINDER RANGE. A MINIMUM OF 100 ADDRESSES SHOULD BE INCLUDED.

RANDOM SEEK PROGRAM RUN OK?
MDI=$TUXX,T7A09,02,00E0,OF
Y N

138
IS THE SEEK OK ?
MDI=$TUXX,T7A02,01,04,OF
Y N

139
READ AND STORE THE DIAGNOSTIC SENSE BYTES
FOR THE NEXT MAP.
MDI=$TUXX,T7A08,01,E7,EQ,PLNG=1,PARM=@X
Y N

140
NO IS NOT VALID GO TO NEXT STEP.
MDI=$NVLD

```
141
LOAD (C) MAP 7A20 IN MANUAL MODE
GO TO MAP 7A28, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A28,EP=A

142
IS PARITY GOOD ?
MDI=$TUXX,T7A02,06,000000004000,OF
Y N
|
| 143
| GO TO PARITY FAILURE MAP 7A78 ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT

144
IS TRACK ID CORRECT?
MDI=$TUXX,T7A02,02,0020,OF
Y N
|
| 145
| READ AND STORE THE DIAGNOSTIC SENSE BYTES
| FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C1,EQ,PLNG=1,PARM=@A
| Y N
| |
| | 146
| | NO IS NOT VALID GO TO NEXT STEP.
| | MDI=$NVLD
| |
| 147
| LOAD (C) MAP 7A20 IN MANUAL MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A

148
SHOULD NEVER GET HERE
MDI=$GOTO,TYPE=INTRNL,EP=B,MAP=7A20

149
ARE FIXED HEADS USED ON THIS FILE?
MDI=$TUXX,T7A08,04,00000400,ON
Y N
|
| 150
| GO TO MAP7A30
| LOAD (C) MAP 7A30 IN MANUAL MODE
| GO TO MAP 7A30, ENTRY POINT A.
| MDI=$GOTO,TYPE=XTRNL,MAP=7A30,EP=A

151
SEEK TO FIXED HEAD
CHECK AND STORE SENSE
CHECK PARITY OF BUS DATA
IS PARITY GOOD ?
MDI=$TUXX,T7A06,01,00,EQ,PLNG=9,PARM=0000/41FF
Y N
|
| 152
| GO TO PARITY FAILURE MAP 7A78 ENTRY A.
| GO TO MAP 7A78, ENTRY POINT A.
| MDI=$FIXT

153
READ TRACK ID USING FIXED HEAD
(TRACK 41FF ID)
IS TRACK ID CORRECT?
MDI=$TUXX,T7A06,02,41FF,EQ,PLNG=4,PARM=201C
Y N
|
| 154
| READ AND STORE THE DIAGNOSTIC SENSE BYTES
| FOR THE NEXT MAP.
| MDI=$TUXX,T7A08,01,C1,EQ,PLNG=1,PARM=@A
| Y N
| |
| | 155
| | NO IS NOT VALID GO TO NEXT STEP.
| | MDI=$NVLD
| |
| 156
| LOAD (C) MAP 7A20 IN MANUAL MODE
| GO TO MAP 7A21, ENTRY POINT A.
| MDI=$CALL,TYPE=XTRNL,MAP=7A21,EP=A
|
```

157
GO TO MAP7A30
LOAD (C) MAP 7A30 IN MANUAL MODE
GO TO MAP 7A30, ENTRY POINT A.
MDI=$GOTO,TYPE=XTRNL,MAP=7A30,EP=A

ENTRY POINTS

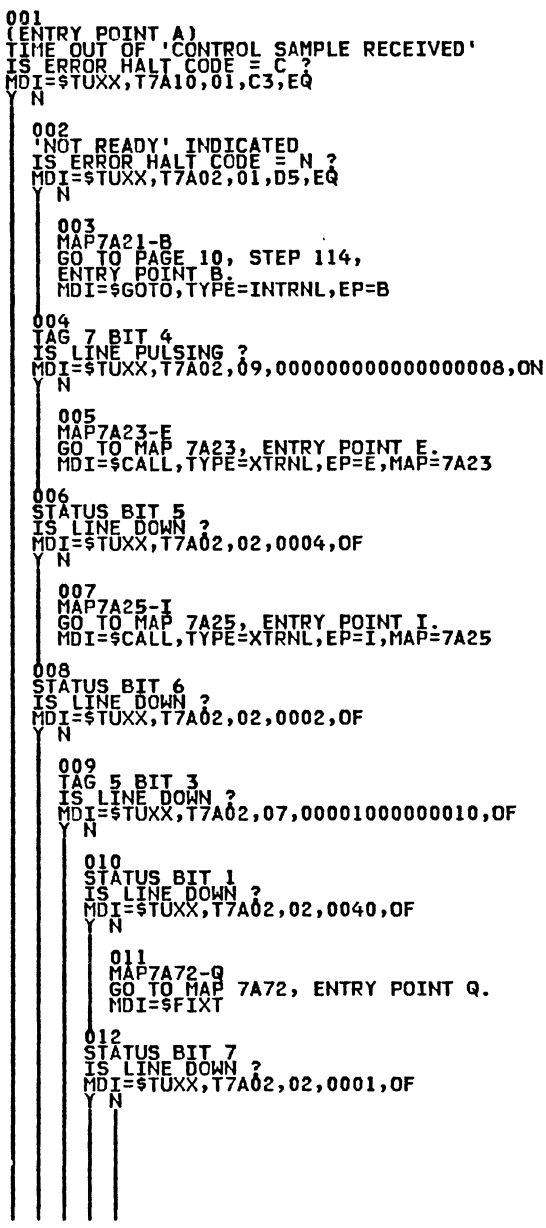
FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	2	001
7A20	B	10	114
7A40	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
10	116	7A22	C
2	005	7A23	E
2	007	7A25	I
3	025	7A27	J
8	099	7A70	A
3	018	7A70	B
7	077	7A70	B
8	097	7A70	B
8	108	7A70	B
11	123	7A70	B
12	141	7A70	B
12	142	7A70	B
12	146	7A70	B
13	169	7A70	B
14	171	7A70	B
14	173	7A70	B
15	189	7A70	B
15	191	7A70	B
3	016	7A70	C
4	029	7A70	C
5	055	7A70	C
5	056	7A70	C
5	060	7A70	C
7	081	7A70	C
9	109	7A70	C
11	126	7A70	C
13	153	7A70	C
15	186	7A70	C
15	196	7A70	C
5	061	7A70	D
11	127	7A70	D
4	040	7A70	E
5	047	7A70	E
6	066	7A70	E
7	082	7A70	E
15	193	7A70	E
16	203	7A70	E
16	201	7A70	I
9	111	7A70	J
12	144	7A70	J
13	157	7A70	J
16	204	7A72	A
7	084	7A72	C
7	090	7A72	C
13	158	7A72	D
11	130	7A72	E
11	137	7A72	E
12	140	7A72	E
4	035	7A72	F
4	041	7A72	F
5	050	7A72	F
5	054	7A72	F
5	057	7A72	F
5	062	7A72	F
8	106	7A72	F
15	194	7A72	F
7	083	7A72	I
7	088	7A72	I
7	091	7A72	I
3	020	7A72	J
11	136	7A72	J
14	176	7A72	K
8	095	7A72	M
3	021	7A72	O
2	011	7A72	Q
3	017	7A72	U
3	019	7A72	U
8	103	7A72	U
6	069	7A72	V
15	200	7A72	V
16	208	7A73	B
13	163	7A76	D
13	164	7A76	D
11	131	7A76	E
7	086	7A76	F
8	100	7A76	F
15	190	7A76	F
8	104	7A76	G
11	129	7A76	G
14	175	7A76	H
15	197	7A76	H
15	198	7A76	H
13	154	7A76	I
13	162	7A76	I
13	165	7A76	I
12	147	7A76	J
9	112	7A76	L
11	132	7A76	P
6	068	7A76	Q

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	036	7A76	R
4	044	7A76	R
6	065	7A76	R
6	067	7A76	R
7	078	7A76	R
7	079	7A76	R
13	156	7A76	S
14	181	7A76	S
16	206	7A76	S
14	174	7A76	T
16	207	7A76	T
4	030	7A76	U
4	038	7A76	U
4	043	7A76	U
9	113	7A77	A



013
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,05,0000000080,OF
Y N

014
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N

015
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,
0000000001000000I,OF
Y N

016
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

017
MAP7A72-U
GO TO MAP 7A72, ENTRY POINT U.
MDI=$FIXT

018
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

019
MAP7A72-U
GO TO MAP 7A72, ENTRY POINT U.
MDI=$FIXT

020
MAP7A72-J
GO TO MAP 7A72, ENTRY POINT J.
MDI=$FIXT

021
MAP7A72-O
GO TO MAP 7A72, ENTRY POINT O.
MDI=$FIXT

022
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000000100000001,OF
Y N

023
TAG 7 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000001000000010,OF
Y N

024
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00008000000080000,OF
Y N

025
MAP7A27-J
GO TO MAP 7A27, ENTRY POINT J.
MDI=$CALL,TYPE=XTRNL,EP=J,MAP=7A27

026
TAG 5 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00010000000100000,OF
Y N

027
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000008000000080,OF
Y N

028
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,0000000000000004,ON
Y N

029
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

030
MAP7A76-U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

031
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00008000000080,OF
Y N

032
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000020,ON
Y N

033
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000040000000400,OF
Y N

034
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,0000000000000040,ON
Y N

035
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

036
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

037
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000080,ON
Y N

038
MAP7A76-U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

039
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000004000000040,OF
Y N

040
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

041
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

042
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000100000001,OF
Y N

043
MAP7A76-U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

044
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

045
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000020,ON
Y N

```
046
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000000800000008,OF
Y N
  047
  MAP7A70-E
  GO TO MAP 7A70, ENTRY POINT E.
  MDI=$FIXT

048
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,0000000000000004,ON
Y N
  049
  TAG 5 BIT 1
  IS LINE PULSING ?
  MDI=$TUXX,T7A02,07,00000000000040,ON
  Y N
    050
    MAP7A72-F
    GO TO MAP 7A72, ENTRY POINT F.
    MDI=$FIXT

  051
  TAG 6 BIT 0
  IS LINE DOWN ?
  MDI=$TUXX,T7A02,08,0000008000000080,OF
  Y N
    052
    TAG 6 BIT 0
    IS LINE PULSING ?
    MDI=$TUXX,T7A02,08,0000000000000080,ON
    Y N
      053
      WERE ALL WRAP BACK CHECKS OK ?
      MDI=$TUXX,T7A02,06,000000000080,OF
      Y N
        054
        MAP7A72-F
        GO TO MAP 7A72, ENTRY POINT F.
        MDI=$FIXT

      055
      MAP7A70-C
      GO TO MAP 7A70, ENTRY POINT C.
      MDI=$FIXT

    056
    MAP7A70-C
    GO TO MAP 7A70, ENTRY POINT C.
    MDI=$FIXT

  057
  MAP7A72-F
  GO TO MAP 7A72, ENTRY POINT F.
  MDI=$FIXT

058
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000008000000080,OF
Y N
  059
  TAG 5 BIT 1
  IS LINE PULSING ?
  MDI=$TUXX,T7A02,07,00000000000040,ON
  Y N
    060
    MAP7A70-C
    GO TO MAP 7A70, ENTRY POINT C.
    MDI=$FIXT

  061
  MAP7A70-D
  GO TO MAP 7A70, ENTRY POINT D.
  MDI=$FIXT

062
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
```

063
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

064
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000001000000010,OF
Y N

065
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

066
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

067
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

068
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

069
MAP7A72-V
GO TO MAP 7A72, ENTRY POINT V.
MDI=$FIXT

070
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000020,ON
Y N

071
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

072
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000040,ON
Y N

073
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,0000000000000004,ON
Y N

074
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000000400000004,OF
Y N

075
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00008000000080,OF
Y N

076
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000004000000040,
OF
Y N

077
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

078
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

079
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

080
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000800000008,OF
Y N

081
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

082
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

083
MAP7A72-I
GO TO MAP 7A72, ENTRY POINT I.
MDI=$FIXT

084
MAP7A72-C
GO TO MAP 7A72, ENTRY POINT C.
MDI=$FIXT

085
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N

086
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

087
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,0000000000000004,ON
Y N

088
MAP7A72-I
GO TO MAP 7A72, ENTRY POINT I.
MDI=$FIXT

089
TAG 6 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,0000000000000080,ON
Y N

090
MAP7A72-C
GO TO MAP 7A72, ENTRY POINT C.
MDI=$FIXT

091
MAP7A72-I
GO TO MAP 7A72, ENTRY POINT I.
MDI=$FIXT

092
STATUS BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0080,OF
Y N

093
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0008,OF
Y N

094
TAG 7 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000000400000040,OF
Y N

095
TAG 7 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000000400000004,OF
Y N

096
MAP7A72-M
GO TO MAP 7A72, ENTRY POINT M.
MDI=$FIXT

097
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

098
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0001,OF
Y N

099
MAP7A70-A
GO TO MAP 7A70, ENTRY POINT A.
MDI=$FIXT

100
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

101
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

102
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0001,OF
Y N

103
MAP7A72-U
GO TO MAP 7A72, ENTRY POINT U.
MDI=$FIXT

104
MAP7A76-G
GO TO MAP 7A76, ENTRY POINT G.
MDI=$FIXT

105
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000002000000020,OF
Y N

106
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

107
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00008000000080,OF
Y N

108
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

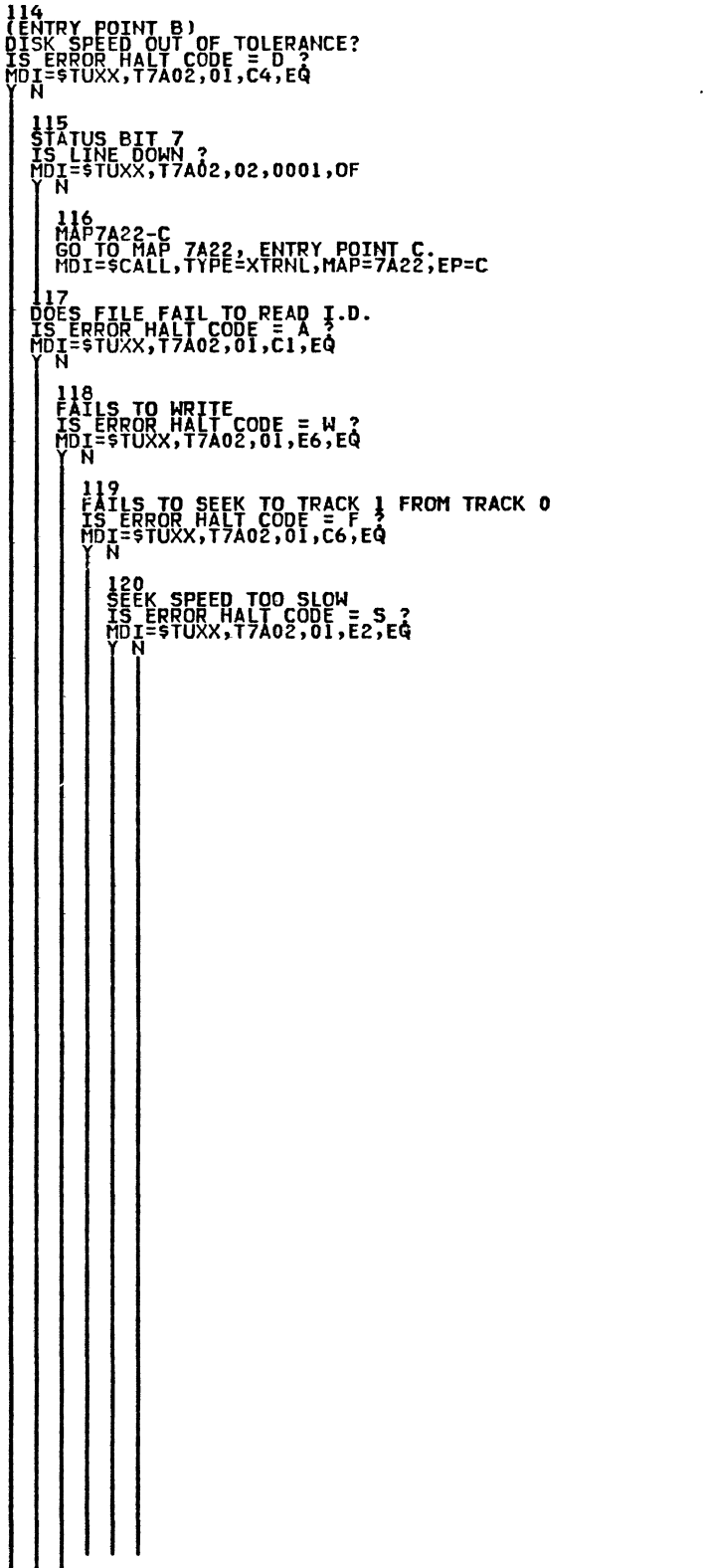
109
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

110
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0040,OF
Y N

111
MAP7A70-J
GO TO MAP 7A70, ENTRY POINT J.
MDI=$FIXT

112
MAP7A76-L
GO TO MAP 7A76, ENTRY POINT L.
MDI=$FIXT

113
MAP7A77-A
GO TO MAP 7A77, ENTRY POINT A.
MDI=$FIXT


114
(ENTRY POINT B)
DISK SPEED OUT OF TOLERANCE?
IS ERROR HALT CODE = D ?
MDI=$TUXX,T7A02,01,C4,EQ
Y N
115
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0001,OF
Y N
116
MAP7A22-C
GO TO MAP 7A22, ENTRY POINT C.
MDI=$CALL,TYPE=XTRNL,MAP=7A22,EP=C
117
DOES FILE FAIL TO READ I.D.
IS ERROR HALT CODE = A ?
MDI=$TUXX,T7A02,01,C1,EQ
Y N
118
FAILS TO WRITE
IS ERROR HALT CODE = W ?
MDI=$TUXX,T7A02,01,E6,EQ
Y N
119
FAILS TO SEEK TO TRACK 1 FROM TRACK 0
IS ERROR HALT CODE = F ?
MDI=$TUXX,T7A02,01,C6,EQ
Y N
120
SEEK SPEED TOO SLOW
IS ERROR HALT CODE = S ?
MDI=$TUXX,T7A02,01,E2,EQ
Y N
1 1 1 1 1 1
6 4 2 A A A
X Y Z A B C

```
121
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

122
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0002,OF
Y N

123
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

124
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000020,ON
Y N

125
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000008000000080,OF
Y N

126
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

127
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

128
DOES FILE FAIL TO SEEK OUT TO 359
IS ERROR HALT CODE = 0 ?
MDI=$TUXX,T7A02,01,D6,EQ
Y N

129
MAP7A76-G
GO TO MAP 7A76, ENTRY POINT G.
MDI=$FIXT

130
MAP7A72-E
GO TO MAP 7A72, ENTRY POINT E.
MDI=$FIXT

131
MAP7A76-E
GO TO MAP 7A76, ENTRY POINT E.
MDI=$FIXT

132
MAP7A76-P
GO TO MAP 7A76, ENTRY POINT P.
MDI=$FIXT

133
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000000100,OF
Y N

134
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000008000000080,OF
Y N

135
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

136
MAP7A72-J
GO TO MAP 7A72, ENTRY POINT J.
MDI=$FIXT

137
MAP7A72-E
GO TO MAP 7A72, ENTRY POINT E.
MDI=$FIXT
```

```
138
STATUS BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0010,OF
Y N
  139
  STATUS BIT 6
  IS LINE DOWN ?
  MDI=$TUXX,T7A02,02,0002,OF
  Y N
    140
    MAP7A72-E
    GO TO MAP 7A72, ENTRY POINT E.
    MDI=$FIXT
  141
  MAP7A70-B
  GO TO MAP 7A70, ENTRY POINT B.
  MDI=$FIXT
142
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT
143
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000008000000080,OF
Y N
  144
  MAP7A70-J
  GO TO MAP 7A70, ENTRY POINT J.
  MDI=$FIXT
145
STATUS BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0010,OF
Y N
  146
  MAP7A70-B
  GO TO MAP 7A70, ENTRY POINT B.
  MDI=$FIXT
147
MAP7A76-J
GO TO MAP 7A76, ENTRY POINT J.
MDI=$FIXT
148
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0008,OF
Y N
  149
  TAG 7 BIT 1
  IS LINE DOWN ?
  MDI=$TUXX,T7A02,09,0000000040000040,OF
  Y N
    150
    TAG 7 BIT 6
    IS LINE DOWN ?
    MDI=$TUXX,T7A02,09,0000000020000002,OF
    Y N
      151
      TAG 5 BIT 2
      IS LINE PULSING ?
      MDI=$TUXX,T7A02,07,0000000000020,ON
      Y N
        152
        TAG 6 BIT 1
        IS LINE DOWN ?
        MDI=$TUXX,T7A02,08,0000004000000040,OF
        Y N
```

153
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

154
MAP7A76-I
GO TO MAP 7A76, ENTRY POINT I.
MDI=$FIXT

155
TAG 7 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000000400000004,OF
Y N

156
MAP7A76-S
GO TO MAP 7A76, ENTRY POINT S.
MDI=$FIXT

157
MAP7A70-J
GO TO MAP 7A70, ENTRY POINT J.
MDI=$FIXT

158
MAP7A72-D
GO TO MAP 7A72, ENTRY POINT D.
MDI=$FIXT

159
TAG 7 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,09,00000000000000020,ON
Y N

160
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00008000000080,OF
Y N

161
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000080,ON
Y N

162
MAP7A76-I
GO TO MAP 7A76, ENTRY POINT I.
MDI=$FIXT

163
MAP7A76-D
GO TO MAP 7A76, ENTRY POINT D.
MDI=$FIXT

164
MAP7A76-D
GO TO MAP 7A76, ENTRY POINT D.
MDI=$FIXT

165
MAP7A76-I
GO TO MAP 7A76, ENTRY POINT I.
MDI=$FIXT

166
STATUS BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0080,OF
Y N

167
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000000400000004,OF
Y N

168
STATUS BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0010,OF
Y N

169
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

170
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000002000000020,OF
Y N

171
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

172
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N

173
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

174
MAP7A76-T
GO TO MAP 7A76, ENTRY POINT T.
MDI=$FIXT

175
MAP7A76-H
GO TO MAP 7A76, ENTRY POINT H.
MDI=$FIXT

176
MAP7A72-K
GO TO MAP 7A72, ENTRY POINT K.
MDI=$FIXT

177
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000002000000020,OF
Y N

178
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000080,ON
Y N

179
TAG 7 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000001000000010,OF
Y N

180
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0008,OF
Y N

181
MAP7A76-S
GO TO MAP 7A76, ENTRY POINT S.
MDI=$FIXT

182
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N

183
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

184
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000004000000040,OF
Y N

185
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0002,OF
Y N

186
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

187
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000008000000080,
OF
Y N

188
STATUS BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0010,OF
Y N

189
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

190
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

191
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

192
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000100000001,OF
Y N

193
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

194
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

195
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0004,OF
Y N

196
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

197
MAP7A76-H
GO TO MAP 7A76, ENTRY POINT H.
MDI=$FIXT

198
MAP7A76-H
GO TO MAP 7A76, ENTRY POINT H.
MDI=$FIXT

199
TAG 5 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00001000000010,OF
Y N

200
MAP7A72-V
GO TO MAP 7A72, ENTRY POINT V.
MDI=$FIXT

```
201
MAP7A70-I
GO TO MAP 7A70, ENTRY POINT I.
MDI=$FIXT

202
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

203
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

204
MAP7A72-A
GO TO MAP 7A72, ENTRY POINT A.
MDI=$FIXT

205
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0008,OF
Y N

206
MAP7A76-S
GO TO MAP 7A76, ENTRY POINT S.
MDI=$FIXT

207
MAP7A76-T
GO TO MAP 7A76, ENTRY POINT T.
MDI=$FIXT

208
MAP7A73-B
GO TO MAP 7A73, ENTRY POINT B.
MDI=$FIXT
```

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	C	2	001
7A21	D	11	110

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
15	171	7A70	A
4	017	7A70	B
4	019	7A70	B
4	020	7A70	B
6	042	7A70	B
9	087	7A70	B
14	155	7A70	B
14	156	7A70	B
15	170	7A70	B
17	190	7A70	B
17	193	7A70	B
18	213	7A70	B
18	216	7A70	B
5	030	7A70	C
9	085	7A70	C
6	041	7A70	D
7	060	7A70	D
7	065	7A70	D
9	092	7A70	D
9	097	7A70	D
10	103	7A70	D
10	105	7A70	D
15	167	7A70	D
16	182	7A70	D
16	183	7A70	D
4	023	7A70	E
5	024	7A70	E
6	047	7A70	E
6	049	7A70	E
7	059	7A70	E
7	067	7A70	E
8	075	7A70	E
8	080	7A70	E
13	141	7A70	E
13	142	7A70	E
14	145	7A70	E
5	037	7A70	J
6	051	7A72	B
7	055	7A72	B
7	066	7A72	B
7	068	7A72	B
8	069	7A72	B
8	070	7A72	B
8	071	7A72	B
8	074	7A72	B
9	088	7A72	B
13	137	7A72	B
15	172	7A72	C
4	014	7A72	F
4	018	7A72	F
4	021	7A72	F
4	022	7A72	F
5	027	7A72	F
5	029	7A72	F
12	116	7A72	F
12	125	7A72	F
12	127	7A72	F
13	130	7A72	F
13	135	7A72	F
13	140	7A72	F
14	151	7A72	F
14	154	7A72	F
14	157	7A72	F
14	159	7A72	F
17	200	7A72	F
17	203	7A72	F
17	204	7A72	F
17	194	7A72	G
17	195	7A72	G
12	119	7A72	R
12	122	7A72	R
12	129	7A72	R
13	131	7A72	R
13	132	7A72	R
14	146	7A72	R
15	160	7A72	R
15	161	7A72	R

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
18	207	7A72	R
18	210	7A72	S
18	215	7A72	S
9	093	7A72	X
18	211	7A72	X
10	109	7A72	Z
9	098	7A76	D
10	099	7A76	D
10	106	7A76	E
10	107	7A76	E
10	108	7A76	E
5	025	7A76	F
8	079	7A76	F
8	083	7A76	F
12	118	7A76	F
15	165	7A76	F
15	168	7A76	F
16	178	7A76	F
16	181	7A76	F
16	184	7A76	F
16	187	7A76	F
17	191	7A76	F
17	197	7A76	F
17	202	7A76	F
5	033	7A76	M
18	206	7A76	M
5	032	7A76	N
6	048	7A76	N
6	052	7A76	N
6	039	7A76	R
9	084	7A76	U

```
001
(ENTRY POINT C)
FAILS TO WRITE
IS ERROR HALT CODE = W ?
MDI=$TUXX,T7A10,1,E6,EQ
Y N
|
| 002
| FAILS TO SEEK TO TRACK 1 FROM TRACK 0
| IS ERROR HALT CODE = F ?
| MDI=$TUXX,T7A02,1,C6,EQ
| Y N
| |
| | 003
| | MAP7A22D
| | GO TO PAGE 11, STEP 110,
| | ENTRY POINT D.
| | MDI=$GOTO,TYPE=INTRNL,EP=D
| |
| 004
| TAG 7 BIT 4
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,9,000000000000000008,ON
| Y N
| |
| | 005
| | TAG 6 BIT 5
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,0000000400000004,OF
| | Y N
| | |
| | | 006
| | | TAG 7 BIT 7
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,9,000000000100000001,OF
| | | Y N
| | | |
| | | | 007
| | | | TAG 5 BIT 0
| | | | IS LINE PULSING ?
| | | | MDI=$TUXX,T7A02,7,00000000000080,ON
| | | | Y N
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
9 5 5 5 5 3
A B C D E F
```

```
008
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N
| 009
| TAG 5 BIT 4
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,00000000000008,ON
| Y N
| | 010
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,00004000000040,OF
| | Y N
| | | 011
| | | TAG 6 BIT 1
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,8,0000004000000040,OF
| | | Y N
| | | | 012
| | | | TAG 6 BIT 6
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,8,0000000200000002,OF
| | | | Y N
```

H J K L M
3 3 3 3 3

FAILURE ISOLATION MAP


```
013
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N
|
014
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
|
015
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N
|
016
WERE ALL WRAP BACK CHECKS OK ?
MDI=$TUXX,T7A02,06,000000000080,OF
Y N
|
017
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT
|
018
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
|
019
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT
|
020
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT
|
021
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
|
022
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
|
023
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT
```

024
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

025
MAP7A76F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

026
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

027
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

028
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0004,OF
Y N

029
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

030
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

031
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

032
MAP7A76N
GO TO MAP 7A76, ENTRY POINT N.
MDI=$FIXT

033
MAP7A76M
GO TO MAP 7A76, ENTRY POINT M.
MDI=$FIXT

034
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

035
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N

036
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0002,OF
Y N

037
MAP7A70-J
GO TO MAP 7A70, ENTRY POINT J.
MDI=$FIXT

038
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

039
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

040
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

041
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

042
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

043
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

044
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

045
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,ON
Y N

046
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,00000004000000004,OF
Y N

047
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

048
MAP7A76N
GO TO MAP 7A76, ENTRY POINT N.
MDI=$FIXT

049
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

050
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000004,OF
Y N

051
MAP7A72B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

052
MAP7A76N
GO TO MAP 7A76, ENTRY POINT N.
MDI=$FIXT

053
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,000000400000040,OF
Y N

```
054
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,0000000080000080,OF
Y N
| 055
| MAP7A72B
| GO TO MAP 7A72, ENTRY POINT B.
| MDI=$FIXT
|
056
TAG 6 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000080,ON
Y N
| 057
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00000100000001,OF
| Y N
| | 058
| | TAG 6 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,0000001000000010,OF
| | Y N
| | | 059
| | | MAP7A70-E
| | | GO TO MAP 7A70, ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 060
| | MAP7A70-D
| | GO TO MAP 7A70, ENTRY POINT D.
| | MDI=$FIXT
| |
| 061
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,0000008000000080,OF
| Y N
| | 062
| | TAG 6 BIT 5
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,0000000000000004,ON
| | Y N
| | | 063
| | | TAG 6 BIT 3
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,8,0000001000000010,OF
| | | Y N
| | | | 064
| | | | TAG 5 BIT 0
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,7,00008000000080,OF
| | | | Y N
| | | | | 065
| | | | | MAP7A70-D
| | | | | GO TO MAP 7A70, ENTRY POINT D.
| | | | | MDI=$FIXT
| | | | |
| | | | 066
| | | | MAP7A72B
| | | | GO TO MAP 7A72, ENTRY POINT B.
| | | | MDI=$FIXT
| | | |
| | | 067
| | | MAP7A70-E
| | | GO TO MAP 7A70, ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 068
| | MAP7A72B
| | GO TO MAP 7A72, ENTRY POINT B.
| | MDI=$FIXT
| |
| |
| |
| |
```

069
MAP7A72B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

070
MAP7A72B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

071
MAP7A72B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

072
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

073
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

074
MAP7A72B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

075
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

076
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

077
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

078
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000008000000080,OF
Y N

079
MAP7A76F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

080
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

081
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000000100000001,OF
Y N

082
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,ON
Y N

083
MAP7A76F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

084
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

085
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

086
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0040,OF
Y N

087
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

088
MAP7A72B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

089
STATUS BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0080,OF
Y N

090
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
0000000000000000000000000100,OF
Y N

091
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N

092
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

093
MAP7A72X
GO TO MAP 7A72, ENTRY POINT X.
MDI=$FIXT

094
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0008,OF
Y N

095
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

096
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000008000000080,OF
Y N

097
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

098
MAP7A76D
GO TO MAP 7A76, ENTRY POINT D.
MDI=$FIXT

```
099
MAP7A76D
GO TO MAP 7A76, ENTRY POINT D.
MDI=$FIXT

100
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

101
TAG 7 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,0000000000000080,ON
Y N

102
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

103
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

104
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N

105
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

106
MAP7A76E
GO TO MAP 7A76, ENTRY POINT E.
MDI=$FIXT

107
MAP7A76E
GO TO MAP 7A76, ENTRY POINT E.
MDI=$FIXT

108
MAP7A76E
GO TO MAP 7A76, ENTRY POINT E.
MDI=$FIXT

109
MAP7A72Z
GO TO MAP 7A72, ENTRY POINT Z.
MDI=$FIXT
```

110
(ENTRY POINT D)
FAILS TO SEEK TO TRACK 0 FROM TRACK 1
IS ERROR HALT CODE = B ?
MDI=$TUXX,T7A10,1,C2,EQ
Y N

111
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N

112
DOES FILE FAIL TO READ I.D.
IS ERROR HALT CODE = A ?
MDI=$TUXX,T7A02,1,C1,EQ
Y N

113
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0040,OF
Y N

114
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,0000010000000 1,OF
Y N

1 1 1 1 1 1
8 5 5 3 2 2
A A A A A A
C D E F G H

```
| |
| |
| 115
| STATUS BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,2,0004,OF
| Y N
| |
| | 116
| | MAP7A72F
| | GO TO MAP 7A72, ENTRY POINT F.
| | MDI=$FIXT
| |
| 117
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,0000008000000080,OF
| Y N
| |
| | 118
| | MAP7A76F
| | GO TO MAP 7A76, ENTRY POINT F.
| | MDI=$FIXT
| |
| 119
| MAP7A72R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
120
TAG 7 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,10,0000000010000000 10,OF
Y N
|
| 121
| TAG 5 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00000800000008,OF
| Y N
| |
| | 122
| | MAP7A72R
| | GO TO MAP 7A72, ENTRY POINT R.
| | MDI=$FIXT
| |
| 123
| TAG 5 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00008000000080,OF
| Y N
| |
| | 124
| | STATUS BIT 5
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,2,0004,OF
| | Y N
| | |
| | | 125
| | | MAP7A72F
| | | GO TO MAP 7A72, ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 126
| | TAG 6 BIT 2
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,0000002000000020,OF
| | Y N
| | |
| | | 127
| | | MAP7A72F
| | | GO TO MAP 7A72, ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 128
| | TAG 7 BIT 2
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,0000000020000000 20,OF
| | Y N
| | |
| | | 129
| | | MAP7A72R
| | | GO TO MAP 7A72, ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | |
| | |
```

130
MAP7A72F
GO TO MAP 7A72, ENTRY POINI F.
MDI=$FIXT

131
MAP7A72R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

132
MAP7A72R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

133
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

134
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

135
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

136
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

137
MAP7A72B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

138
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

139
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

140
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

141
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

142
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

143
DOES FILE FAIL TO SEEK OUT TO 359
IS ERROR HALT CODE = 0 ?
MDI=$TUXX,T7A02,1,E2,EQ
Y N

144
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

```
145
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

146
MAP7A72R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

147
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,0000000200000020,OF
Y N

148
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

149
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000008000000080,OF
Y N

150
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000040,ON
Y N

151
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

152
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

153
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

154
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

155
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

156
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

157
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

158
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

159
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
```

```
160
MAP7A72R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

161
MAP7A72R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

162
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,ON
Y N

  163
  TAG 6 BIT 0
  IS LINE DOWN ?
  MDI=$TUXX,T7A02,8,0000008000000080,OF
  Y N

    164
    TAG 5 BIT 1
    IS LINE DOWN ?
    MDI=$TUXX,T7A02,7,00004000000040,OF
    Y N

      165
      MAP7A76F
      GO TO MAP 7A76, ENTRY POINT F.
      MDI=$FIXT

    166
    TAG 5 BIT 2
    IS LINE PULSING ?
    MDI=$TUXX,T7A02,7,00000000000020,ON
    Y N

      167
      MAP7A70-D
      GO TO MAP 7A70, ENTRY POINT D.
      MDI=$FIXT

    168
    MAP7A76F
    GO TO MAP 7A76, ENTRY POINT F.
    MDI=$FIXT

  169
  TAG 5 BIT 1
  IS LINE DOWN ?
  MDI=$TUXX,T7A02,7,00004000000040,OF
  Y N

    170
    MAP7A70-B
    GO TO MAP 7A70, ENTRY POINT B.
    MDI=$FIXT

  171
  MAP7A70-A
  GO TO MAP 7A70, ENTRY POINT A.
  MDI=$FIXT

172
MAP7A72C
GO TO MAP 7A72, ENTRY POINT C.
MDI=$FIXT

173
TAG 7 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000000800000008,OF
Y N

174
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N
```

```
|
|
175
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N
|
| 176
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,0000001000000010,OF
| Y N
| |
| | 177
| | TAG 7 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,00000008000000080,OF
| | Y N
| | |
| | | 178
| | | MAP7A76F
| | | GO TO MAP 7A76, ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 179
| | TAG 6 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,0000004000000040,OF
| | Y N
| | |
| | | 180
| | | DOES FILE FAIL TO SEEK OUT TO 359
| | | IS ERROR HALT CODE = 0 ?
| | | MDI=$TUXX,T7A02,1,D6,EQ
| | | Y N
| | | |
| | | | 181
| | | | MAP7A76F
| | | | GO TO MAP 7A76, ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 182
| | | MAP7A70-D
| | | GO TO MAP 7A70, ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 183
| | MAP7A70-D
| | GO TO MAP 7A70, ENTRY POINT D.
| | MDI=$FIXT
| |
| 184
| MAP7A76F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
185
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N
|
| 186
| DOES FILE FAIL TO SEEK OUT TO 359
| IS ERROR HALT CODE = 0 ?
| MDI=$TUXX,T7A02,1,D6,EQ
| Y N
| |
| | 187
| | MAP7A76F
| | GO TO MAP 7A76, ENTRY POINT F.
| | MDI=$FIXT
| |
| 188
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00000100000001,OF
| Y N
| |
| | 189
| | TAG 7 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,00000008000000080,OF
| | Y N
| | | |
| | | | |
| | | | |
```

```
| | | | |
| | | | 190
| | | | MAP7A70-B
| | | | GO TO MAP 7A70, ENTRY POINT B.
| | | | MDI=$FIXT
| | | |
| | | 191
| | | MAP7A76F
| | | GO TO MAP 7A76, ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 192
| | TAG 5 BIT 2
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,00000000000020,ON
| | Y N
| | |
| | 193
| | MAP7A70-B
| | GO TO MAP 7A70, ENTRY POINT B.
| | MDI=$FIXT
| |
| 194
| MAP7A72G
| GO TO MAP 7A72, ENTRY POINT G.
| MDI=$FIXT
|
195
MAP7A72G
GO TO MAP 7A72, ENTRY POINT G.
MDI=$FIXT
|
196
DOES FILE FAIL TO SEEK OUT TO 359
IS ERROR HALT CODE = 0 ?
MDI=$TUXX,T7A02,1,D6,EQ
Y N
|
197
MAP7A76F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT
|
198
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N
|
199
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000800000008,OF
Y N
| |
| 200
| MAP7A72F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
201
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N
| |
| 202
| MAP7A76F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
203
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
|
204
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT
```

```
| |
| |
| 205
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00004000000040,OF
| Y N
| |
| | 206
| | MAP7A76M
| | GO TO MAP 7A76, ENTRY POINT M.
| | MDI=$FIXT
| |
| 207
| MAP7A72R
| GO TO MAP 7A72, ENTRY POINT R.
| MDI=$FIXT
|
208
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N
|
| 209
| TAG 6 BIT 2
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,0000002000000020,OF
| Y N
| |
| | 210
| | MAP7A72S
| | GO TO MAP 7A72, ENTRY POINT S.
| | MDI=$FIXT
| |
| 211
| MAP7A72X
| GO TO MAP 7A72, ENTRY POINT X.
| MDI=$FIXT
|
212
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N
|
| 213
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
214
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N
|
| 215
| MAP7A72S
| GO TO MAP 7A72, ENTRY POINT S.
| MDI=$FIXT
|
216
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT
```

FAILURE ISOLATION MAP

PAGE 1 OF 13

ENTRY POINTS

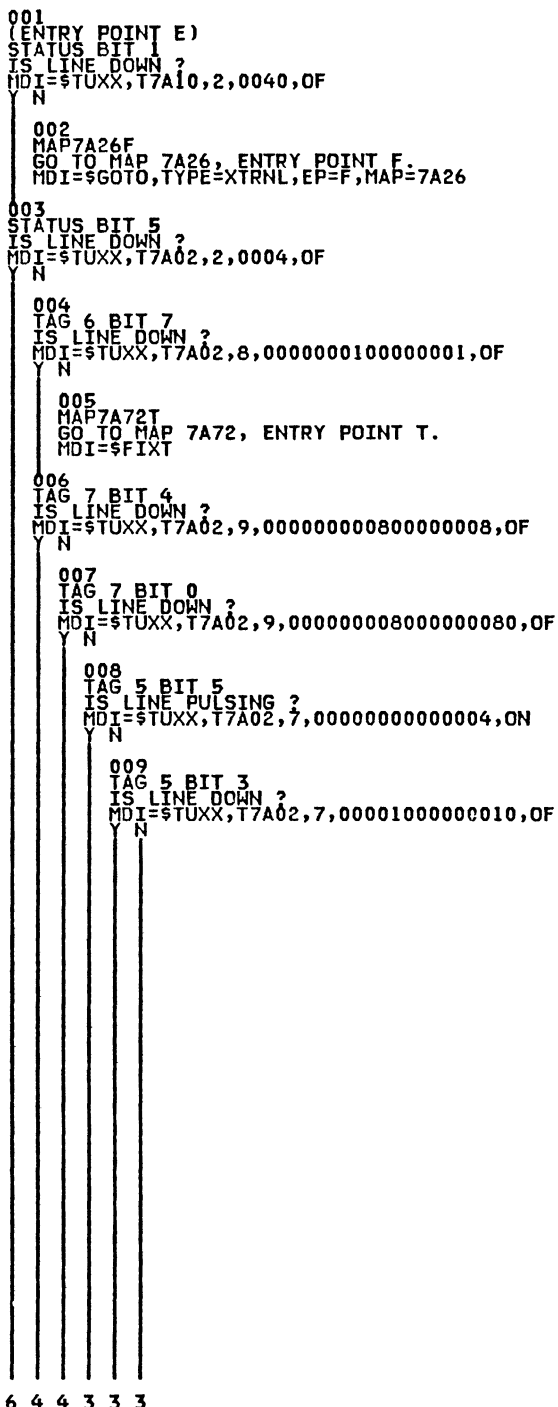
FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	E	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
13	187	7A24	H
2	002	7A26	F
6	063	7A70	B
7	087	7A70	B
12	166	7A70	B
13	180	7A70	B
13	184	7A70	B
13	186	7A70	B
3	014	7A70	C
4	031	7A70	C
4	030	7A70	C
4	029	7A70	C
4	038	7A70	C
5	058	7A70	C
8	090	7A70	C
9	112	7A70	C
12	159	7A70	C
12	163	7A70	C
12	168	7A70	C
12	170	7A70	C
13	176	7A70	C
3	023	7A70	D
3	021	7A70	E
4	032	7A70	E
7	077	7A70	E
7	083	7A70	E
7	088	7A70	E
9	120	7A72	F
11	142	7A72	F
5	047	7A72	P
5	050	7A72	P
2	005	7A72	T
11	157	7A72	Y
12	162	7A72	Y
12	164	7A72	Y
4	041	7A76	A
6	066	7A76	A
4	035	7A76	B
4	044	7A76	F
10	126	7A76	F
11	150	7A76	F
11	145	7A76	H
11	149	7A76	M
5	051	7A76	O
6	062	7A76	O
8	099	7A76	O
10	124	7A76	O
12	171	7A76	O
3	015	7A76	Q
10	129	7A76	Q
10	131	7A76	Q
11	147	7A76	Q
13	175	7A76	Q
13	177	7A76	Q
13	185	7A76	Q
3	011	7A76	R
3	019	7A76	R
3	022	7A76	R
5	055	7A76	R
5	060	7A76	R
7	082	7A76	R
7	084	7A76	R
8	096	7A76	R
9	107	7A76	R
9	110	7A76	R
9	111	7A76	R
9	119	7A76	R
10	125	7A76	R
10	130	7A76	R
10	138	7A76	R
11	146	7A76	R
11	155	7A76	R
13	181	7A76	R
4	040	7A76	U
6	065	7A76	U
7	078	7A76	U
7	080	7A76	U
7	085	7A76	U
8	091	7A76	U
8	093	7A76	U
8	095	7A76	U
8	103	7A76	U
9	108	7A76	U
9	109	7A76	U
9	118	7A76	U
10	134	7A76	U
10	139	7A76	U
11	140	7A76	U
11	141	7A76	U

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	012	7A79	A
4	028	7A79	A
4	036	7A79	A
5	046	7A79	A
5	057	7A79	A



010
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000002,ON
Y N

011
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

012
F08 GO TO POWER FAILURE MAP 7A79
GO TO MAP 7A79, ENTRY POINT A.
MDI=$FIXT

013
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

014
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

015
MAP7A76Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

016
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000040,ON
Y N

017
TAG 5 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000010,ON
Y N

018
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

019
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

020
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

021
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

022
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

023
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

024
TAG 5 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000010,ON
Y N

025
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000002000000020,OF
Y N

026
TAG 7 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,0000000000000020,ON
Y N

FAILURE ISOLATION MAP

027
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

028
F08 GO TO POWER FAILURE MAP 7A79
GO TO MAP 7A79, ENTRY POINT A.
MDI=$FIXT

029
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

030
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

031
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

032
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

033
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000800000008,OF
Y N

034
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

035
MAP7A76B
GO TO MAP 7A76, ENTRY POINT B.
MDI=$FIXT

036
F08 GO TO POWER FAILURE MAP 7A79
GO TO MAP 7A79, ENTRY POINT A.
MDI=$FIXT

037
TAG 5 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000400000004,OF
Y N

038
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

039
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

040
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

041
MAP7A76A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

042
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

043
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

044
MAP7A76F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

045
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

046
F08 GO TO POWER FAILURE MAP 7A79
GO TO MAP 7A79, ENTRY POINT A.
MDI=$FIXT

047
MAP7A72P
GO TO MAP 7A72, ENTRY POINT P.
MDI=$FIXT

048
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000002000000020,OF
Y N

049
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

050
MAP7A72P
GO TO MAP 7A72, ENTRY POINT P.
MDI=$FIXT

051
MAP7A76O
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

052
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N

053
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

054
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

055
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

056
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

057
F08 GO TO POWER FAILURE MAP 7A79
GO TO MAP 7A79, ENTRY POINT A.
MDI=$FIXT

058
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

059
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000040,ON
Y N

060
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

061
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000008000000080,OF
Y N

062
MAP7A76O
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

063
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

064
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

065
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

066
MAP7A76A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

067
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000002000000020,OF
Y N

068
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

069
TAG 7 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,00000000000000010,ON
Y N

070
TAG 7 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000001000000010,OF
Y N

071
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

```
072
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N
|
|  073
|  TAG 6 BIT 6
|  IS LINE DOWN ?
|  MDI=$TUXX,T7A02,8,0000000200000002,OF
|  Y N
|  |
|  |  074
|  |  TAG 5 BIT 2
|  |  IS LINE PULSING ?
|  |  MDI=$TUXX,T7A02,7,00000000000020,ON
|  |  Y N
|  |  |
|  |  |  075
|  |  |  TAG 5 BIT 7
|  |  |  IS LINE DOWN ?
|  |  |  MDI=$TUXX,T7A02,7,00000100000001,OF
|  |  |  Y N
|  |  |  |
|  |  |  |  076
|  |  |  |  TAG 5 BIT 1
|  |  |  |  IS LINE DOWN ?
|  |  |  |  MDI=$TUXX,T7A02,7,00004000000040,OF
|  |  |  |  Y N
|  |  |  |  |
|  |  |  |  |  077
|  |  |  |  |  MAP7A70-E
|  |  |  |  |  GO TO MAP 7A70, ENTRY POINT E.
|  |  |  |  |  MDI=$FIXT
|  |  |  |  |
|  |  |  |  078
|  |  |  |  MAP7A76U
|  |  |  |  GO TO MAP 7A76, ENTRY POINT U.
|  |  |  |  MDI=$FIXT
|  |  |  |
|  |  |  079
|  |  |  TAG 5 BIT 1
|  |  |  IS LINE DOWN ?
|  |  |  MDI=$TUXX,T7A02,7,00004000000040,OF
|  |  |  Y N
|  |  |  |
|  |  |  |  080
|  |  |  |  MAP7A76U
|  |  |  |  GO TO MAP 7A76, ENTRY POINT U.
|  |  |  |  MDI=$FIXT
|  |  |  |
|  |  |  081
|  |  |  TAG 5 BIT 0
|  |  |  IS LINE PULSING ?
|  |  |  MDI=$TUXX,T7A02,7,00000000000080,ON
|  |  |  Y N
|  |  |  |
|  |  |  |  082
|  |  |  |  MAP7A76R
|  |  |  |  GO TO MAP 7A76, ENTRY POINT R.
|  |  |  |  MDI=$FIXT
|  |  |  |
|  |  |  083
|  |  |  MAP7A70-E
|  |  |  GO TO MAP 7A70, ENTRY POINT E.
|  |  |  MDI=$FIXT
|  |  |
|  |  084
|  |  MAP7A76R
|  |  GO TO MAP 7A76, ENTRY POINT R.
|  |  MDI=$FIXT
|  |
|  085
|  MAP7A76U
|  GO TO MAP 7A76, ENTRY POINT U.
|  MDI=$FIXT
|
086
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N
|
|  087
|  MAP7A70-B
|  GO TO MAP 7A70, ENTRY POINT B.
|  MDI=$FIXT
|
088
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT
```

089
WERE ALL WRAP BACK CHECKS OK ?
MDI=$TUXX,T7A02,06,000000000080,OF
Y N

090
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

091
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

092
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

093
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

094
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000008000000080,OF
Y N

095
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

096
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

097
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

098
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000008000000080,OF
Y N

099
MAP7A76O
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

100
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

101
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

102
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000040,ON
Y N

103
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

104
TAG 5 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000008,ON
Y N

105
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

```
106
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000002,
ON
Y N

107
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

108
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

109
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

110
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

111
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

112
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

113
TAG 6 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000200000002,OF
Y N

114
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000002,ON
Y N

115
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

116
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

117
TAG 5 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000008,ON
Y N

118
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

119
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

120
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

121
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

122
TAG 6 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000080,ON
Y N
```

123
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000040,ON
Y N

124
MAP7A76O
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

125
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

126
MAP7A76F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

127
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000040,ON
Y N

128
TAG 6 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000080,ON
Y N

129
MAP7A76Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

130
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

131
MAP7A76Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

132
TAG 6 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000080,ON
Y N

133
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

134
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

135
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

136
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

137
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

138
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

139
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

```
140
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

141
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

142
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

143
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

144
WERE ALL WRAP BACK CHECKS OK ?
MDI=$TUXX,T7A02,06,000000000080,OF
Y N

145
MAP7A76H
GO TO MAP 7A76, ENTRY POINT H.
MDI=$FIXT

146
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

147
MAP7A76Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

148
TAG 5 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00001000000010,OF
Y N

149
MAP7A76M
GO TO MAP 7A76, ENTRY POINT M.
MDI=$FIXT

150
MAP7A76F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

151
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000040,ON
Y N

152
TAG 7 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000000800000008,OF
Y N

153
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

154
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000008000000080,OF
Y N

155
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

156
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

157
MAP7A72Y
GO TO MAP 7A72, ENTRY POINT Y.
MDI=$FIXT
```

158
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

159
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

160
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

161
WERE ALL WRAP BACK CHECKS OK ?
MDI=$TUXX,T7A02,06,000000000080,OF
Y N

162
MAP7A72Y
GO TO MAP 7A72, ENTRY POINT Y.
MDI=$FIXT

163
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

164
MAP7A72Y
GO TO MAP 7A72, ENTRY POINT Y.
MDI=$FIXT

165
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0008,OF
Y N

166
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

167
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

168
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

169
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

170
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

171
MAP7A76O
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

172
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

173
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

174
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

175
MAP7A76Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

176
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

177
MAP7A76Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

178
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

179
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

180
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

181
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

182
TAG 5 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00002000000020,OF
Y N

183
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

184
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

185
MAP7A76Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

186
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

187
MAP7A24H
GO TO MAP 7A24, ENTRY POINT H.
MDI=$GOTO,TYPE=XTRNL,EP=H,MAP=7A24

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A23	G	1	001
7A23	H	3	018

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
5	039	7A70	B
6	054	7A70	B
6	059	7A70	B
6	064	7A70	B
7	069	7A70	B
7	072	7A70	B
8	091	7A70	B
2	015	7A70	C
4	027	7A70	C
4	028	7A70	C
4	032	7A70	C
7	080	7A70	C
9	100	7A70	C
9	113	7A70	C
10	117	7A70	C
10	119	7A70	C
4	030	7A70	E
8	098	7A70	E
2	007	7A72	F
4	033	7A72	F
5	040	7A72	F
5	050	7A72	F
5	052	7A72	F
6	068	7A72	F
7	071	7A72	F
8	086	7A72	F
8	089	7A72	F
9	106	7A72	F
9	108	7A72	F
9	112	7A72	F
2	005	7A72	H
2	011	7A72	H
2	013	7A72	H
5	042	7A72	U
5	044	7A72	U
7	075	7A72	U
2	008	7A76	A
2	012	7A76	A
2	016	7A76	B
2	017	7A76	C
8	095	7A76	F
8	097	7A76	F
9	109	7A76	K
5	049	7A76	O
6	055	7A76	O
6	061	7A76	O
6	067	7A76	O
8	084	7A76	O
8	088	7A76	O
8	092	7A76	O
3	023	7A76	R
4	026	7A76	R
9	101	7A76	R
9	104	7A76	R
10	120	7A76	R
10	121	7A76	R
10	122	7A76	R
5	043	7A76	U
6	060	7A76	U
7	074	7A76	U
7	079	7A76	U
7	082	7A76	U

```
001
(ENTRY POINT G)
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A10,8,0000001000000010,OF
Y N
|
| 002
| TAG 6 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,0000000200000002,OF
| Y N
| | |
| | |
| | |
| | |
| | |
```

003
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000000100000001,OF
Y N

004
TAG 7 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,0000000000000010,ON
Y N

005
MAP7A72H
GO TO MAP 7A72, ENTRY POINT H.
MDI=$FIXT

006
TAG 7 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,0000000800000008,OF
Y N

007
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

008
MAP7A76A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

009
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,0000000800000080,OF
Y N

010
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000C04000000040,OF
Y N

011
MAP7A72H
GO TO MAP 7A72, ENTRY POINT H.
MDI=$FIXT

012
MAP7A76A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

013
MAP7A72H
GO TO MAP 7A72, ENTRY POINT H.
MDI=$FIXT

014
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0002,OF
Y N

015
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

016
MAP7A76B
GO TO MAP 7A76, ENTRY POINT B.
MDI=$FIXT

017
MAP7A76C
GO TO MAP 7A76, ENTRY POINT C.
MDI=$FIXT

```
018
(ENTRY POINT H)
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A10,8,0000001000000010,OF
Y N
|
| 019
| TAG 7 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,9,00000000010000000 1,OF
| Y N
| |
| | 020
| | TAG 7 BIT 4
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,000000000800000008,OF
| | Y N
| | |
| | | 021
| | | TAG 5 BIT 2
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,7,00000000000020,ON
| | | Y N
| | | |
| | | | 022
| | | | TAG 5 BIT 7
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,7,00000100000001,OF
| | | | Y N
| | | | |
| | | | | 023
| | | | | MAP7A76R
| | | | | GO TO MAP 7A76, ENTRY POINT R.
| | | | | MDI=$FIXT
| | | | |
| | | | 024
| | | | TAG 5 BIT 1
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,7,00004000000040,OF
| | | | Y N
| | | | | |
9 8 4 4 4 4
D E F G H J
```

025
TAG 7 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000000100000010,OF
Y N

026
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

027
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

028
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

029
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

030
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

031
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000000800000080,OF
Y N

032
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

033
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

034
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

035
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

036
TAG 7 BIT 7
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,0000000000000001,ON
Y N

037
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

038
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0002,OF
Y N

039
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

040
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

041
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

042
MAP7A72U
GO TO MAP 7A72, ENTRY POINT U.
MDI=$FIXT

043
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

044
MAP7A72U
GO TO MAP 7A72, ENTRY POINT U.
MDI=$FIXT

045
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

046
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000800000008,OF
Y N

047
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000008000000080,OF
Y N

048
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000008000000080,OF
Y N

049
MAP7A76O
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

050
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

051
TAG 7 BIT 7
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,00000000000000001,ON
Y N

052
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

053
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

```
| | |
| | 054
| | MAP7A70-B
| | GO TO MAP 7A70, ENTRY POINT B.
| | MDI=$FIXT
| |
| 055
| MAP7A760
| GO TO MAP 7A76, ENTRY POINT O.
| MDI=$FIXT
|
056
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000008000000080,OF
Y N
|
| 057
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,00000000000020,ON
| Y N
| |
| | 058
| | TAG 5 BIT 6
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,00000200000002,OF
| | Y N
| | |
| | | 059
| | | MAP7A70-B
| | | GO TO MAP 7A70, ENTRY POINT B.
| | | MDI=$FIXT
| | |
| | 060
| | MAP7A76U
| | GO TO MAP 7A76, ENTRY POINT U.
| | MDI=$FIXT
| |
| 061
| MAP7A760
| GO TO MAP 7A76, ENTRY POINT O.
| MDI=$FIXT
|
062
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000008000000080,OF
Y N
|
| 063
| TAG 5 BIT 6
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00000200000002,OF
| Y N
| |
| | 064
| | MAP7A70-B
| | GO TO MAP 7A70, ENTRY POINT B.
| | MDI=$FIXT
| |
| 065
| TAG 7 BIT 7
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,9,000000000000000001,ON
| Y N
| |
| | 066
| | WERE ALL WRAP BACK CHECKS OK ?
| | MDI=$TUXX,T7A02,06,000000000080,OF
| | Y N
| | |
| | | 067
| | | MAP7A760
| | | GO TO MAP 7A76, ENTRY POINT O.
| | | MDI=$FIXT
| | |
| | 068
| | MAP7A72F
| | GO TO MAP 7A72, ENTRY POINT F.
| | MDI=$FIXT
| |
| |
7 7
V W
```

069
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

070
TAG 7 BIT 7
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,0000000000000001,ON
Y N

071
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

072
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

073
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,0000000080000080,OF
Y N

074
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

075
MAP7A72U
GO TO MAP 7A72, ENTRY POINT U.
MDI=$FIXT

076
TAG 7 BIT 7
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,0000000000000001,ON
Y N

077
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,0000100000001,OF
Y N

078
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

079
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

080
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

081
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,0000000080000080,OF
Y N

082
MAP7A76U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

083
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000008000000080,OF
Y N

084
MAP7A760
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

085
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

086
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

087
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

088
MAP7A760
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

089
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

090
TAG 5 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00002000000002,OF
Y N

091
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

092
MAP7A760
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

093
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

094
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

095
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

096
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

097
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

098
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

099
TAG 5 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000008,ON
Y N

100
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

101
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

102
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

103
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000008000000080,OF
Y N

104
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

105
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

106
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

107
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

108
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

109
MAP7A76K
GO TO MAP 7A76, ENTRY POINT K.
MDI=$FIXT

110
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

111
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

112
MAP7A72F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

113
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

```
|
|
114
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N
|
| 115
| TAG 7 BIT 7
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,9,0000000000000001,ON
| Y N
| |
| | 116
| | TAG 7 BIT 4
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,0000000080000008,OF
| | Y N
| | |
| | | 117
| | | MAP7A70-C
| | | GO TO MAP 7A70, ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 118
| | TAG 5 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,00008000000080,OF
| | Y N
| | |
| | | 119
| | | MAP7A70-C
| | | GO TO MAP 7A70, ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 120
| | MAP7A76R
| | GO TO MAP 7A76, ENTRY POINT R.
| | MDI=$FIXT
| |
| 121
| MAP7A76P
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
122
MAP7A76R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT
```

ENTRY POINTS

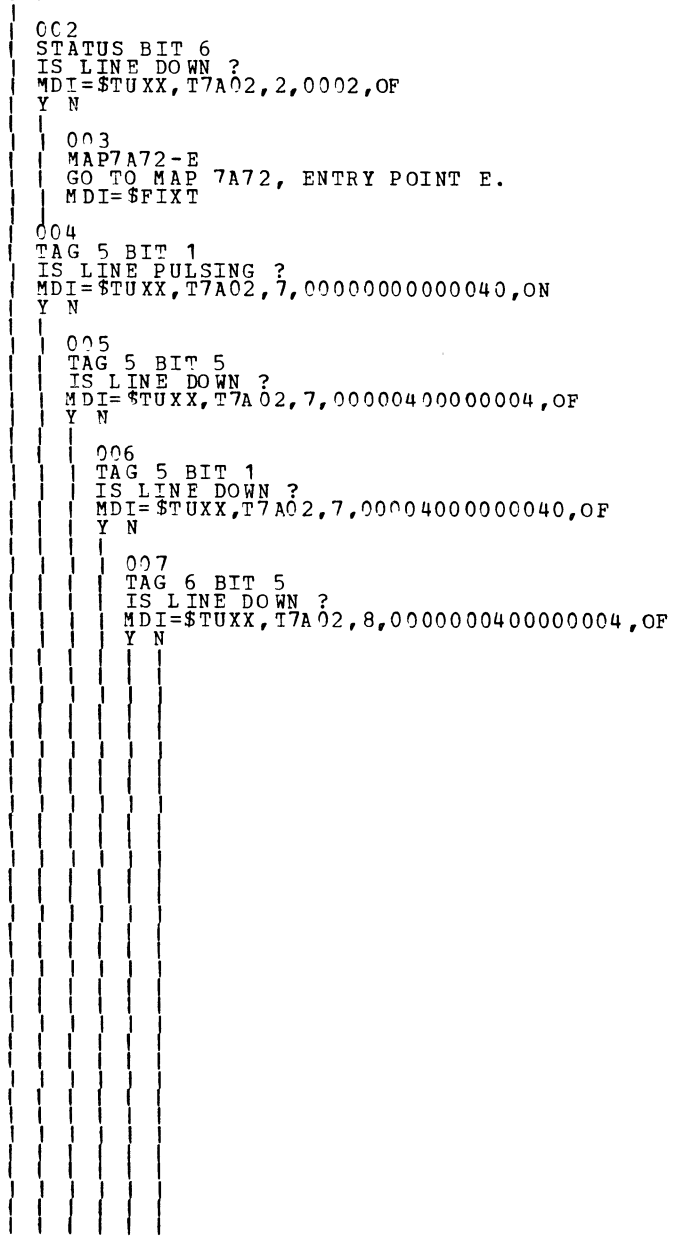
FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	I	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
12	142	7A70	B
13	150	7A70	B
3	018	7A70	C
3	022	7A70	C
4	036	7A70	C
5	042	7A70	C
5	045	7A70	C
5	048	7A70	C
6	055	7A70	C
7	071	7A70	C
9	091	7A70	C
9	094	7A70	C
9	099	7A70	C
13	164	7A70	C
4	034	7A70	D
6	063	7A70	D
9	100	7A70	D
10	109	7A70	D
12	136	7A70	D
3	019	7A70	E
3	021	7A70	E
5	049	7A70	E
11	125	7A70	E
11	128	7A70	E
12	147	7A70	E
10	112	7A70	K
10	114	7A70	K
2	003	7A72	E
4	029	7A72	F
4	037	7A72	F
6	054	7A72	F
7	074	7A72	F
7	076	7A72	F
7	082	7A72	F
8	083	7A72	F
10	119	7A72	F
11	126	7A72	F
11	130	7A72	F
12	138	7A72	F
12	141	7A72	F
12	143	7A72	F
13	157	7A72	F
13	159	7A72	F
13	160	7A72	F
13	163	7A72	F
3	012	7A72	P
6	056	7A72	P
6	058	7A72	P
6	062	7A72	P
3	017	7A76	F
4	035	7A76	F
6	059	7A76	F
11	131	7A76	F
14	165	7A76	F
7	081	7A76	K
8	084	7A76	K
4	028	7A76	O
5	044	7A76	O
5	047	7A76	O
3	010	7A76	Q
6	065	7A76	Q
9	093	7A76	Q
9	095	7A76	Q
10	108	7A76	Q
10	113	7A76	Q
3	011	7A76	R
4	023	7A76	R
4	030	7A76	R
5	050	7A76	R
6	066	7A76	R
7	072	7A76	R
7	077	7A76	R
9	103	7A76	R
10	105	7A76	R
11	129	7A76	R
12	140	7A76	R
12	149	7A76	R

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
13	155	7A76	R
13	158	7A76	R
9	098	7A76	U
9	104	7A76	U
11	120	7A76	U
12	148	7A76	U



6 6 5 4 3 3
A B C D E F

008
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

009
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

010
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

011
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

012
MAP7A72-P
GO TO MAP 7A72, ENTRY POINT P.
MDI=$FIXT

013
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,ON
Y N

014
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

015
TAG 5 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000008,ON
Y N

016
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

017
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

018
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

019
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

020
TAG 5 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000004,ON
Y N

021
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

022
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

```
| |
| 023
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
024
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N
|
| 025
| TAG 6 BIT 1
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,8,0000000000000040,ON
| Y N
| |
| | 026
| | TAG 5 BIT 4
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,00000800000008,OF
| | Y N
| | |
| | | 027
| | | STATUS BIT 7
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,2,0001,OF
| | | Y N
| | | |
| | | | 028
| | | | MAP7A76-O
| | | | GO TO MAP 7A76, ENTRY POINT O.
| | | | MDI=$FIXT
| | | |
| | | 029
| | | MAP7A72-F
| | | GO TO MAP 7A72, ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 030
| | MAP7A76-R
| | GO TO MAP 7A76, ENTRY POINT R.
| | MDI=$FIXT
| |
| 031
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,0000000400000004,OF
| Y N
| |
| | 032
| | STATUS BIT 7
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,2,0001,OF
| | Y N
| | |
| | | 033
| | | TAG 5 BIT 2
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,7,00000000000020,ON
| | | Y N
| | | |
| | | | 034
| | | | MAP7A70-D
| | | | GO TO MAP 7A70, ENTRY POINT D.
| | | | MDI=$FIXT
| | | |
| | | 035
| | | MAP7A76-F
| | | GO TO MAP 7A76, ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 036
| | MAP7A70-C
| | GO TO MAP 7A70, ENTRY POINT C.
| | MDI=$FIXT
| |
| 037
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
|
5
H
```

```
038
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N
|
| 039
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,00000000000080,ON
| Y N
| |
| | 040
| | TAG 5 BIT 4
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,00000000000008,ON
| | Y N
| | |
| | | 041
| | | TAG 5 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,00008000000080,OF
| | | Y N
| | | |
| | | | 042
| | | | MAP7A70-C
| | | | GO TO MAP 7A70, ENTRY POINT C.
| | | | MDI=$FIXT
| | | |
| | | 043
| | | STATUS BIT 7
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,2,0001,OF
| | | Y N
| | | |
| | | | 044
| | | | MAP7A76-O
| | | | GO TO MAP 7A76, ENTRY POINT O.
| | | | MDI=$FIXT
| | | |
| | | 045
| | | MAP7A70-C
| | | GO TO MAP 7A70, ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 046
| | TAG 7 BIT 2
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,9,00000002000000020,OF
| | Y N
| | |
| | | 047
| | | MAP7A76-O
| | | GO TO MAP 7A76, ENTRY POINT O.
| | | MDI=$FIXT
| | |
| | 048
| | MAP7A70-C
| | GO TO MAP 7A70, ENTRY POINT C.
| | MDI=$FIXT
| |
| 049
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
050
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

051
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N
|
| 052
| TAG 6 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,0000004000000040,OF
| Y N
| | |
| | |
| | |
| | |
| | |
```

053
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

054
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

055
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

056
MAP7A72-P
GO TO MAP 7A72, ENTRY POINT P.
MDI=$FIXT

057
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

058
MAP7A72-P
GO TO MAP 7A72, ENTRY POINT P.
MDI=$FIXT

059
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

060
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
0000000000000000000000000100,OF
Y N

061
TAG 5 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000010,ON
Y N

062
MAP7A72-P
GO TO MAP 7A72, ENTRY POINT P.
MDI=$FIXT

063
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

064
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

065
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

066
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

067
TAG 5 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000008,ON
Y N

```
068
TAG 5 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000004,ON
Y N
|
| 069
| TAG 5 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00000400000004,OF
| Y N
| |
| | 070
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,00004000000040,OF
| | Y N
| | |
| | | 071
| | | MAP7A70-C
| | | GO TO MAP 7A70, ENTRY POINT C.
| | | MDI=$FIXT
| | |
| | 072
| | MAP7A76-R
| | GO TO MAP 7A76, ENTRY POINT R.
| | MDI=$FIXT
| |
| 073
| TAG 5 BIT 4
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00000800000008,OF
| Y N
| |
| | 074
| | MAP7A72-F
| | GO TO MAP 7A72, ENTRY POINT F.
| | MDI=$FIXT
| |
| 075
| 'INTERRUPT' RECEIVED ?
| MDI=$TUXX,T7A02,14,
| 0000000000000000000000000100,OF
| Y N
| |
| | 076
| | MAP7A72-F
| | GO TO MAP 7A72, ENTRY POINT F.
| | MDI=$FIXT
| |
| 077
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
078
WERE ALL WRAP BACK CHECKS OK ?
MDI=$TUXX,T7A02,06,000000000080,OF
Y N
|
| 079
| TAG 5 BIT 1
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00004000000040,OF
| Y N
| |
| | 080
| | TAG 6 BIT 5
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,0000000000000004,ON
| | Y N
| | |
| | | 081
| | | MAP7A76-K
| | | GO TO MAP 7A76, ENTRY POINT K.
| | | MDI=$FIXT
| | |
| | 082
| | MAP7A72-F
| | GO TO MAP 7A72, ENTRY POINT F.
| | MDI=$FIXT
| |
| |
| |
| |
| |
| |
```

083
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

084
MAP7A76-K
GO TO MAP 7A76, ENTRY POINT K.
MDI=$FIXT

085
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000040,ON
Y N

086
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

087
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,0000000000000080,ON
Y N

088
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

089
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000004,ON
Y N

```
090
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N
|
| 091
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
092
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000008000000080,OF
Y N
|
| 093
| MAP7A76-Q
| GO TO MAP 7A76, ENTRY POINT Q.
| MDI=$FIXT
|
094
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT
|
095
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT
|
096
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N
|
| 097
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,0000008000000080,OF
| Y N
| |
| | 098
| | MAP7A76-U
| | GO TO MAP 7A76, ENTRY POINT U.
| | MDI=$FIXT
|
099
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT
|
100
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT
|
101
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N
|
| 102
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,7,00000100000001,OF
| Y N
| |
| | 103
| | MAP7A76-R
| | GO TO MAP 7A76, ENTRY POINT R.
| | MDI=$FIXT
|
104
MAP7A76-U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT
|
|
|
|
|
|
```

105
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

106
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

107
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

108
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

109
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

110
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0001,OF
Y N

111
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

112
MAP7A70-K
GO TO MAP 7A70, ENTRY POINT K.
MDI=$FIXT

113
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

114
MAP7A70-K
GO TO MAP 7A70, ENTRY POINT K.
MDI=$FIXT

115
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

116
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

117
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,ON
Y N

118
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

119
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

```
120
MAP7A76-U
GO TO MAP 7A76, ENTRY POINT U.
MDI=$FIXT

121
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
0000000000000000000000000100,OF
Y N

122
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N

123
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

124
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

125
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

126
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

127
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

128
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

129
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

130
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

131
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

132
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

133
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

134
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0001,OF
Y N
```

```
| | | |
| | | |
| | | 135
| | | TAG 6 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,8,0000008000000080,OF
| | | Y N
| | | |
| | | | 136
| | | | MAP7A70-D
| | | | GO TO MAP 7A70, ENTRY POINT D.
| | | | MDI=$FIXT
| | | |
| | | 137
| | | TAG 5 BIT 7
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,0000010000000001,OF
| | | Y N
| | | |
| | | | 138
| | | | MAP7A72-F
| | | | GO TO MAP 7A72, ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 139
| | | TAG 6 BIT 5
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,8,0000000000000004,ON
| | | Y N
| | | |
| | | | 140
| | | | MAP7A76-R
| | | | GO TO MAP 7A76, ENTRY POINT R.
| | | | MDI=$FIXT
| | | |
| | | 141
| | | MAP7A72-F
| | | GO TO MAP 7A72, ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 142
| | MAP7A70-B
| | GO TO MAP 7A70, ENTRY POINT B.
| | MDI=$FIXT
| |
| 143
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
144
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0001,OF
Y N
|
| 145
| TAG 6 BIT 5
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,8,0000000000000004,ON
| Y N
| |
| | 146
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,0000400000000040,OF
| | Y N
| | |
| | | 147
| | | MAP7A70-E
| | | GO TO MAP 7A70, ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 148
| | MAP7A76-U
| | GO TO MAP 7A76, ENTRY POINT U.
| | MDI=$FIXT
| |
| 149
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT
|
|
|
|
|
```

```
| | |
| | |
| 150
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
151
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N
|
| 152
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,00000000000080,ON
| Y N
| |
| | 153
| | TAG 6 BIT 5
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,0000000400000004,OF
| | Y N
| | |
| | | 154
| | | TAG 5 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,7,00008000000080,OF
| | | Y N
| | | |
| | | | 155
| | | | MAP7A76-R
| | | | GO TO MAP 7A76, ENTRY POINT R.
| | | | MDI=$FIXT
| | | |
| | | 156
| | | TAG 6 BIT 5
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,8,0000000000000004,ON
| | | Y N
| | | |
| | | | 157
| | | | MAP7A72-F
| | | | GO TO MAP 7A72, ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 158
| | | MAP7A76-R
| | | GO TO MAP 7A76, ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 159
| | MAP7A72-F
| | GO TO MAP 7A72, ENTRY POINT F.
| | MDI=$FIXT
| |
| 160
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
161
STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0001,OF
Y N
|
| 162
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,00000000000080,ON
| Y N
| |
| | 163
| | MAP7A72-F
| | GO TO MAP 7A72, ENTRY POINT F.
| | MDI=$FIXT
| |
| 164
| MAP7A70-C
| GO TO MAP 7A70, ENTRY POINT C.
| MDI=$FIXT
|
|
|
|
```

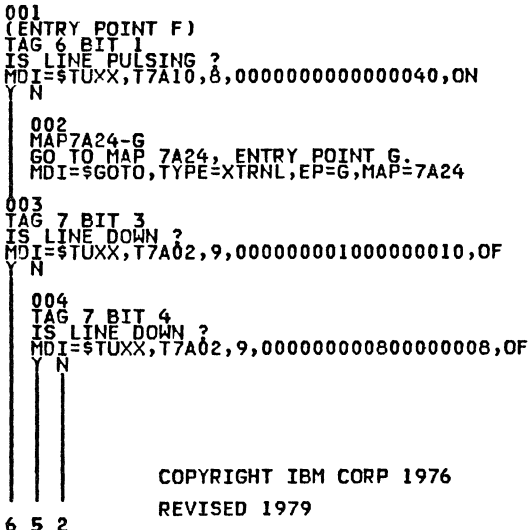
165
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	F	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
1	002	7A24	G
2	006	7A70	A
9	119	7A70	B
7	085	7A70	C
7	090	7A70	C
8	099	7A70	C
8	107	7A70	C
8	109	7A70	C
3	019	7A70	D
3	025	7A70	D
4	040	7A70	E
4	045	7A70	E
5	050	7A70	E
5	054	7A70	E
8	114	7A70	E
5	047	7A72	F
5	060	7A72	F
6	067	7A72	F
6	068	7A72	F
6	070	7A72	F
9	118	7A72	F
6	076	7A72	N
6	080	7A72	N
8	106	7A72	N
8	111	7A72	N
9	116	7A72	N
3	016	7A73	A
3	028	7A73	A
4	036	7A73	A
4	044	7A73	A
5	059	7A73	A
5	061	7A73	A
6	079	7A73	A
7	082	7A73	A
7	086	7A73	A
7	087	7A73	A
7	091	7A73	A
8	100	7A73	A
8	104	7A73	A
8	110	7A73	A
3	014	7A76	A
3	015	7A76	A
4	032	7A76	A
4	039	7A76	A
5	049	7A76	A
5	053	7A76	A
6	066	7A76	A
7	097	7A76	A
3	018	7A76	B
3	026	7A76	B
3	029	7A76	B
5	055	7A76	B
7	092	7A76	B
6	071	7A76	O
6	072	7A76	O
3	013	7A79	A
3	024	7A79	A
4	031	7A79	A
4	037	7A79	A
8	113	7A79	A



005
STATUS BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0008,OF
Y N

006
MAP7A70-A
GO TO MAP 7A70, ENTRY POINT A.
MDI=$FIXT

007
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000800000008,OF
Y N

008
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0004,OF
Y N

009
TAG 6 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000200000002,OF
Y N

010
TAG 5 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00002000000020,OF
Y N

011
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000002000000020,
OF
Y N

012
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

013
F08 GO TO POWER FAILURE MAP 7A79
GO TO MAP 7A79, ENTRY POINT A.
MDI=$FIXT

014
MAP7A76-A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

015
MAP7A76-A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

016
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

017
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

018
MAP7A76-B
GO TO MAP 7A76, ENTRY POINT B.
MDI=$FIXT

019
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

020
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

021
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000002000000020,OF
Y N

022
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

023
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

024
F08 GO TO POWER FAILURE MAP 7A79
GO TO MAP 7A79, ENTRY POINT A.
MDI=$FIXT

025
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

026
MAP7A76-B
GO TO MAP 7A76, ENTRY POINT B.
MDI=$FIXT

027
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000002,ON
Y N

028
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

029
MAP7A76-B
GO TO MAP 7A76, ENTRY POINT B.
MDI=$FIXT

030
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000800000008,OF
Y N

031
F08 GO TO POWER FAILURE MAP 7A79
GO TO MAP 7A79, ENTRY POINT A.
MDI=$FIXT

032
MAP7A76-A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

033
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

034
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

035
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

036
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

037
F08 GO TO POWER FAILURE MAP 7A79
GO TO MAP 7A79, ENTRY POINT A.
MDI=$FIXT

038
TAG 6 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000200000002,OF
Y N

039
MAP7A76-A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

040
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

041
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000000100000001,OF
Y N

042
TAG 7 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,00000000000000010,ON
Y N

043
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000002,ON
Y N

044
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

045
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

046
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000008000000080,OF
Y N

047
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

048
TAG 6 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000200000002,OF
Y N

049
MAP7A76-A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

050
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

051
TAG 6 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000200000002,OF
Y N

052
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000002,ON
Y N

053
MAP7A76-A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

054
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

055
MAP7A76-B
GO TO MAP 7A76, ENTRY POINT B.
MDI=$FIXT

056
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000000100000001,OF
Y N

057
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

058
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N

059
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

060
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

061
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

062
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000008000000080,OF
Y N

063
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00008000000080,OF
Y N

064
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000008000000080,OF
Y N

065
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

066
MAP7A76-A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

067
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

068
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

069
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

070
MAP7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

071
MAP7A76-O
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

072
MAP7A76-O
GO TO MAP 7A76, ENTRY POINT O.
MDI=$FIXT

073
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000002000000020,OF
Y N

074
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000000100000001,OF
Y N

075
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0004,OF
Y N

076
MAP7A72-N
GO TO MAP 7A72, ENTRY POINT N.
MDI=$FIXT

077
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

078
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000800000008,OF
Y N

079
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

080
MAP7A72-N
GO TO MAP 7A72, ENTRY POINT N.
MDI=$FIXT

081
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

082
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

083
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
00000000000000000000000100,OF
Y N

084
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000800000008,OF
Y N

085
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

086
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

087
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

088
TAG 6 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000200000002,OF
Y N

089
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,4,0000000800000080,OF
Y N

090
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

091
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

092
MAP7A76-B
GO TO MAP 7A76, ENTRY POINT B.
MDI=$FIXT

093
TAG 7 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000000800000008,OF
Y N

094
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000002,ON
Y N

095
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,00000000100000001,OF
Y N

096
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,2,0004,OF
Y N

097
MAP7A76-A
GO TO MAP 7A76, ENTRY POINT A.
MDI=$FIXT

098
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

099
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

100
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

101
TAG 5 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00002000000020,OF
Y N

102
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000008000000080,OF
Y N

103
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

104
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

105
WERE ALL WRAP BACK CHECKS OK ?
MDI=$TUXX,T7A02,06,000000000080,OF
Y N

106
MAP7A72-N
GO TO MAP 7A72, ENTRY POINT N.
MDI=$FIXT

107
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

108
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

109
MAP7A70-C
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

110
MAP7A73-A
GO TO MAP 7A73, ENTRY POINT A.
MDI=$FIXT

111
MAP7A72-N
GO TO MAP 7A72, ENTRY POINT N.
MDI=$FIXT

112
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

113
F08 GO TO POWER FAILURE MAP 7A79
GO TO MAP 7A79, ENTRY POINT A.
MDI=$FIXT

114
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

```
V
7
|
115
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N
|
| 116
| MAP7A72-N
| GO TO MAP 7A72, ENTRY POINT N.
| MDI=$FIXT
|
117
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000008000000080,OF
Y N
|
| 118
| MAP7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
119
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT
```

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	J	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
3	016	7A70	A
7	057	7A70	A
7	061	7A70	A
7	064	7A70	A
9	087	7A70	A
6	056	7A70	B
12	132	7A70	B
11	118	7A70	C
3	008	7A70	D
3	013	7A70	D
3	020	7A70	D
6	042	7A70	D
8	073	7A70	D
8	074	7A70	D
8	080	7A70	D
8	083	7A70	D
10	101	7A70	D
11	114	7A70	D
11	116	7A70	D
11	123	7A70	D
12	134	7A70	D
5	030	7A70	E
5	033	7A70	E
7	067	7A70	E
8	082	7A70	E
8	084	7A70	E
9	088	7A70	E
9	089	7A70	E
9	092	7A70	E
10	102	7A70	E
10	107	7A70	E
11	117	7A70	E
11	121	7A70	E
11	128	7A70	E
12	129	7A70	E
12	130	7A70	E
3	010	7A72	B
3	009	7A76	F
3	012	7A76	F
3	015	7A76	F
3	021	7A76	F
5	032	7A76	F
5	035	7A76	F
5	039	7A76	F
5	041	7A76	F
6	046	7A76	F
6	052	7A76	F
6	050	7A76	Q
6	053	7A76	Q
8	072	7A76	Q
9	098	7A76	Q
10	106	7A76	Q
11	127	7A76	Q
12	135	7A76	Q
3	018	7A76	R
5	028	7A76	R
5	036	7A76	R
5	038	7A76	R
6	047	7A76	R
6	048	7A76	R
7	063	7A76	R
8	075	7A76	R
8	076	7A76	R
9	094	7A76	R
9	096	7A76	R
9	099	7A76	R
10	108	7A76	R
11	120	7A76	U

001
(ENTRY POINT J)
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A10,7,00008000000080,OF
Y N
| |
| |
| |
| |
| |
1
0 2
A B

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002
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
0000000000000000000000000100,OF
Y N
|
| 003
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,00000000000020,ON
| Y N
| |
| | 004
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,00004000000040,OF
| | Y N
| | |
| | | 005
| | | TAG 5 BIT 1
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,7,00000000000040,ON
| | | Y N
| | | |
| | | | 006
| | | | TAG 6 BIT 1
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,8,0000004000000040,OF
| | | | Y N
| | | | | |
4 3 3 3 3 3
C D E F G H
```

```
007
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N
|
| 008
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
009
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT
|
010
MAP7A72-B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

011
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N
|
| 012
| MAP7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT

013
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

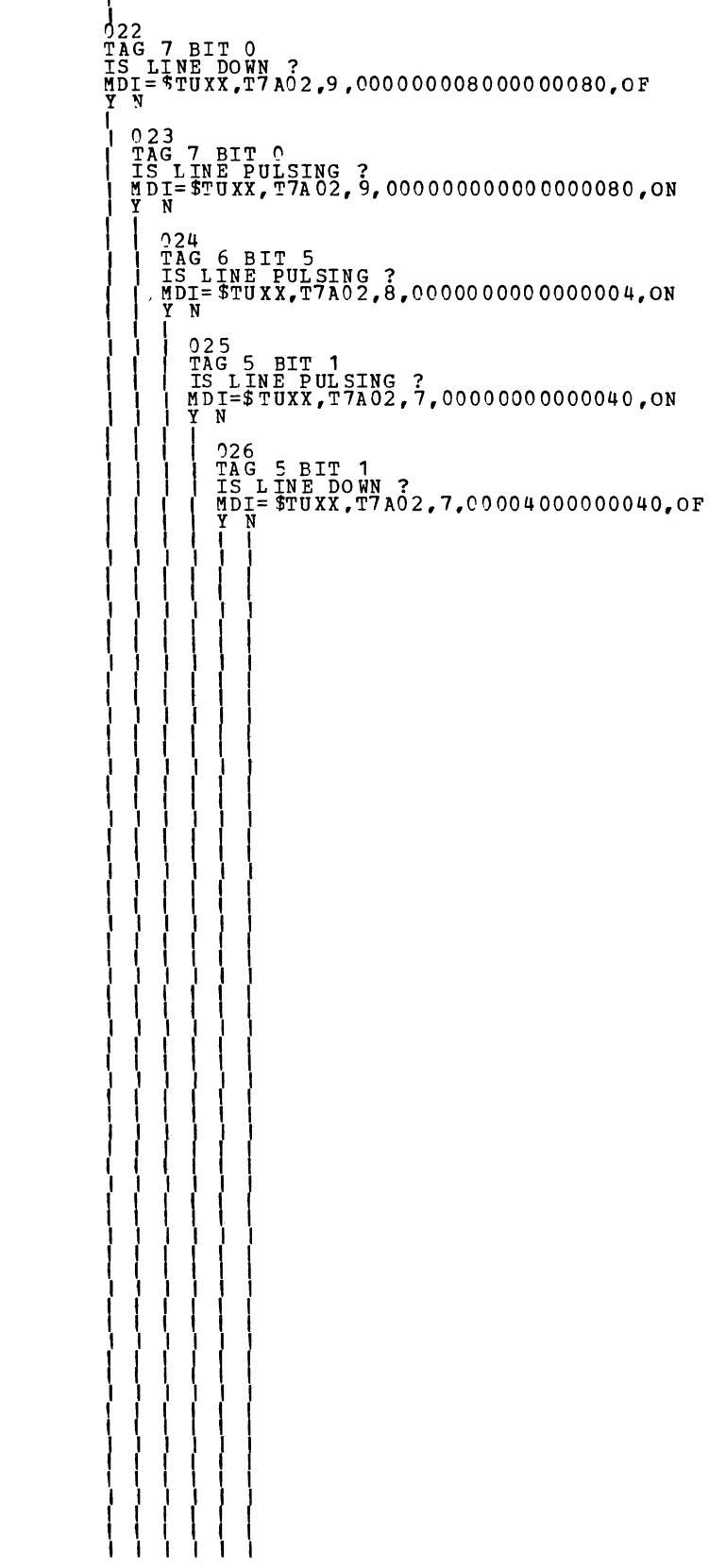
014
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N
|
| 015
| MAP7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT

016
MAP7A70-A
GO TO MAP 7A70, ENTRY POINT A.
MDI=$FIXT

017
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,0000400000040,OF
Y N
|
| 018
| MAP7A76-R
| GO TO MAP 7A76, ENTRY POINT R.
| MDI=$FIXT

019
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N
|
| 020
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT

021
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT
```


022
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,0000000080000080,OF
Y N
023
TAG 7 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,9,0000000000000080,ON
Y N
024
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000004,ON
Y N
025
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N
026
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

027
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

028
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

029
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

030
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

031
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

032
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

033
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

034
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,ON
Y N

035
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

036
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

037
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N

038
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

039
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

040
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

041
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

042
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

043
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N

044
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,ON
Y N

045
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

046
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

047
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

048
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

049
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,ON
Y N

050
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

051
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

052
MAP7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

053
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

054
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N

055
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

056
MAP7A70-B
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

```
| |
| 057
| MAP7A70-A
| GO TO MAP 7A70, ENTRY POINT A.
| MDI=$FIXT
|
058
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000008000000080,OF
Y N
|
| 059
| TAG 6 BIT 2
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,0000002000000020,OF
| Y N
| |
| | 060
| | TAG 5 BIT 1
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,00000000000040,ON
| | Y N
| | |
| | | 061
| | | MAP7A70-A
| | | GO TO MAP 7A70, ENTRY POINT A.
| | | MDI=$FIXT
| | |
| | 062
| | TAG 5 BIT 0
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,7,00000000000080,ON
| | Y N
| | |
| | | 063
| | | MAP7A76-R
| | | GO TO MAP 7A76, ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 064
| | MAP7A70-A
| | GO TO MAP 7A70, ENTRY POINT A.
| | MDI=$FIXT
| |
| 065
| TAG 5 BIT 0
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,00000000000080,ON
| Y N
| |
| | 066
| | TAG 6 BIT 5
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,8,0000000400000004,OF
| | Y N
| | |
| | | 067
| | | MAP7A70-E
| | | GO TO MAP 7A70, ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 068
| | TAG 5 BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,7,00004000000040,OF
| | Y N
| | |
| | | 069
| | | TAG 5 BIT 1
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,7,00000000000040,ON
| | | Y N
| | | |
| | | | 070
| | | | TAG 6 BIT 1
| | | | IS LINE DOWN ?
| | | | MDI=$TUXX,T7A02,8,0000004000000040,OF
| | | | Y N
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
9 8 8 8 8 8
T U V W X Y
```

071
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

072
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

073
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

074
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

075
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

076
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

077
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N

078
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

079
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

080
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

081
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

082
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

083
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

084
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

085
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

086
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000004000000040,OF
Y N

087
MAP7A70-A
GO TO MAP 7A70, ENTRY POINT A.
MDI=$FIXT

088
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

089
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

090
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

091
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

092
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

093
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

094
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

095
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N

096
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

097
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000080,ON
Y N

098
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

099
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

100
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000000400000004,OF
Y N

101
MAP7A70-D
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

102
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

103
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,0000001000000010,OF
Y N

104
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

105
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

106
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT

107
MAP7A70-E
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

108
MAP7A76-R
GO TO MAP 7A76, ENTRY POINT R.
MDI=$FIXT

109
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000020,ON
Y N

110
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00004000000040,OF
Y N

111
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000004,ON
Y N

112
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,9,000000002000000020,OF
Y N

113
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,7,00000000000040,ON
Y N

```
| | | | |
| | | | |
| | | | 114
| | | | MAP7A70-D
| | | | GO TO MAP 7A70, ENTRY POINT D.
| | | | MDI=$FIXT
| | | |
| | | 115
| | | 'INTERRUPT' RECEIVED ?
| | | MDI=$TUXX,T7A02,14,
| | | 0000000000000000000000000100,OF
| | | Y N
| | | |
| | | | 116
| | | | MAP7A70-D
| | | | GO TO MAP 7A70, ENTRY POINT D.
| | | | MDI=$FIXT
| | | |
| | | 117
| | | MAP7A70-E
| | | GO TO MAP 7A70, ENTRY POINT E.
| | | MDI=$FIXT
| | |
| | 118
| | MAP7A70-C
| | GO TO MAP 7A70, ENTRY POINT C.
| | MDI=$FIXT
| |
| 119
| TAG 5 BIT 1
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,7,00000000000040,ON
| Y N
| |
| | 120
| | MAP7A76-U
| | GO TO MAP 7A76, ENTRY POINT U.
| | MDI=$FIXT
| |
| 121
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
122
'INTERRUPT' RECEIVED ?
MDI=$TUXX,T7A02,14,
0000000000000000000000000100,OF
Y N
|
| 123
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
124
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,8,00000004000000040,OF
Y N
|
| 125
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,8,0000000400000004,OF
| Y N
| |
| | 126
| | TAG 6 BIT 5
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,8,0000000000000004,ON
| | Y N
| | |
| | | 127
| | | MAP7A76-Q
| | | GO TO MAP 7A76, ENTRY POINT Q.
| | | MDI=$FIXT
| | |
| | 128
| | MAP7A70-E
| | GO TO MAP 7A70, ENTRY POINT E.
| | MDI=$FIXT
| |
| |
| |
| |
| |
| |
```

```
| | |
| | 129
| | MAP7A70-E
| | GO TO MAP 7A70, ENTRY POINT E.
| | MDI=$FIXT
| |
| 130
| MAP7A70-E
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
131
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,7,00000100000001,OF
Y N
|
| 132
| MAP7A70-B
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
133
TAG 6 BIT 5
IS LINE PULSING ?
MDI=$TUXX,T7A02,8,0000000000000004,ON
Y N
|
| 134
| MAP7A70-D
| GO TO MAP 7A70, ENTRY POINT D.
| MDI=$FIXT
|
135
MAP7A76-Q
GO TO MAP 7A76, ENTRY POINT Q.
MDI=$FIXT
```

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	2	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	020	7A70	B
4	021	7A70	B
4	026	7A70	B
6	057	7A70	B
8	081	7A70	B
9	095	7A70	B
11	127	7A70	B
13	156	7A70	B
14	163	7A70	B
14	166	7A70	B
5	030	7A70	C
13	159	7A70	C
10	113	7A70	D
11	128	7A70	D
11	129	7A70	D
13	160	7A70	D
4	018	7A70	E
4	019	7A70	E
6	047	7A70	E
7	058	7A70	E
9	096	7A70	E
10	109	7A70	E
10	112	7A70	E
11	121	7A70	E
11	122	7A70	E
12	135	7A70	E
12	142	7A70	E
12	144	7A70	E
8	080	7A70	J
13	152	7A70	J
8	085	7A72	B
9	088	7A72	B
9	090	7A72	B
10	106	7A72	B
10	108	7A72	B
10	115	7A72	B
10	116	7A72	B
12	134	7A72	B
13	148	7A72	B
13	155	7A72	E
14	165	7A72	E
14	167	7A72	E
3	010	7A72	F
3	012	7A72	F
4	017	7A72	F
4	023	7A72	F
4	025	7A72	F
4	027	7A72	F
5	029	7A72	F
5	037	7A72	F
5	041	7A72	F
6	046	7A72	F
6	050	7A72	F
6	053	7A72	F
7	070	7A72	F
7	072	7A72	F
9	098	7A72	F
9	101	7A72	F
12	139	7A72	F
12	145	7A72	F
11	130	7A72	G
11	131	7A72	G
5	038	7A72	R
6	044	7A72	R
6	054	7A72	R
6	056	7A72	R
7	062	7A72	R
7	065	7A72	R
7	069	7A72	R
8	073	7A72	R
8	074	7A72	R
8	083	7A72	R
9	093	7A72	R
8	087	7A72	X
5	035	7A76	F
5	042	7A76	F
6	043	7A76	F

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
9	100	7A76	F
12	143	7A76	F
12	147	7A76	F
13	153	7A76	J
8	075	7A76	M
7	064	7A76	N
11	120	7A76	R

001
(ENTRY POINT A)

SEEK ERROR

STATUS BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A10,02,0001,OF
Y N

002
TAG 7 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,09,0000000000000008,ON
Y N

003
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000800000800,OF
Y N

004
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,0000100000000001,OF
Y N

005
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,0004000000000040,OF
Y N

```
006
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000001000000001,OF
Y N

  007
  TAG 6 BIT 1
  IS LINE DOWN ?
  MDI=$TUXX,T7A02,09,000000400000004000,OF
  Y N

    008
    TAG 6 BIT 0
    IS LINE DOWN ?
    MDI=$TUXX,T7A02,09,000000800000008000,OF
    Y N

      009
      TAG 5 BIT 1
      IS LINE PULSING ?
      MDI=$TUXX,T7A02,07,00000000000040,ON
      Y N

        010
        MAP 7A72-F
        GO TO MAP 7A72, ENTRY POINT F.
        MDI=$FIXT

      011
      TAG 6 BIT 1
      IS LINE PULSING ?
      MDI=$TUXX,T7A02,09,000000000000004000,ON
      Y N

        012
        MAP 7A72-F
        GO TO MAP 7A72, ENTRY POINT F.
        MDI=$FIXT

      013
      TAG 5 BIT 4
      IS LINE DOWN ?
      MDI=$TUXX,T7A02,07,00000800000008,OF
      Y N

        014
        TAG 6 BIT 6
        IS LINE DOWN ?
        MDI=$TUXX,T7A02,09,000000020000000200,
        OF
        Y N

5 4 4 4 4 4
G H J K L M
```

H J K L M
3 3 3 3 3

INTERMITTENT HARD ERROR MAP 7A28

PAGE 4 OF 14

015
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00008000000080,OF
Y N

016
TAG 5 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000008,ON
Y N

017
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

018
SERVO 2 CARD FAILURE (A1-F2)
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

019
SERVO 2 CARD FAILURE (A1-F2)
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

020
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

021
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

022
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000020,ON
Y N

023
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

024
TAG 6 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000020000000200,OF
Y N

025
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

026
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

027
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

```
028
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0040,OF
Y N
|
| 029
| MAP 7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
030
LOGIC 2 CARD FAILURE (A1-D2)
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

031
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00008000000080,OF
Y N
|
| 032
| TAG 6 BIT 5
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,00000040000000400,OF
| Y N
| |
| | 033
| | STATUS BIT 1
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,02,0040,OF
| | Y N
| | |
| | | 034
| | | TAG 6 BIT 0
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,09,00000800000008000,OF
| | | Y N
| | | |
| | | | 035
| | | | MAP 7A76-F
| | | | GO TO MAP 7A76, ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 036
| | | STATUS BIT 5
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,02,0004,OF
| | | Y N
| | | |
| | | | 037
| | | | MAP 7A72-F
| | | | GO TO MAP 7A72, ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 038
| | | MAP 7A72-R
| | | GO TO MAP 7A72, ENTRY POINT R.
| | | MDI=$FIXT
| | |
| | 039
| | TAG 5 BIT 0
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,07,00000000000080,ON
| | Y N
| | |
| | | 040
| | | TAG 5 BIT 2
| | | IS LINE PULSING ?
| | | MDI=$TUXX,T7A02,07,00000000000020,ON
| | | Y N
| | | |
| | | | 041
| | | | MAP 7A72-F
| | | | GO TO MAP 7A72, ENTRY POINT F.
| | | | MDI=$FIXT
| | | |
| | | 042
| | | MAP 7A76-F
| | | GO TO MAP 7A76, ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | |
| | |
| | |
| | |
```

043
MAP 7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

044
MAP 7A72-R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

045
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0040,OF
Y N

046
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

047
SERVO 2 CARD FAILURE (A1-F2)
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

048
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,0000800000080,OF
Y N

049
TAG 5 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000040,ON
Y N

050
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

051
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000020,ON
Y N

052
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000004000000004000,OF
Y N

053
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

054
MAP 7A72-R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

055
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000002000000002000,OF
Y N

056
MAP 7A72-R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

057
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

058
SERVO 2 CARD FAILURE (A1-F2)
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

059
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000020,ON
Y N

060
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000800000008,OF
Y N

061
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0040,OF
Y N

062
MAP 7A72-R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

063
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

064
MAP 7A76-N
GO TO MAP 7A76, ENTRY POINT N.
MDI=$FIXT

065
MAP 7A72-R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

066
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00008000000080,OF
Y N

067
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0040,OF
Y N

068
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

069
MAP 7A72-R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

070
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

071
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0004,OF
Y N

072
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

```
073
MAP 7A72-R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

074
MAP 7A72-R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

075
MAP 7A76-M
GO TO MAP 7A76, ENTRY POINT M.
MDI=$FIXT

076
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000080000000,OF
Y N

077
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

078
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000100000001,OF
Y N

079
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0002,OF
Y N

080
LOGIC 1 CARD (A1-C2)
OR SYSTEM ADAPTER/ CABLE FAILURE
GO TO MAP 7A70, ENTRY POINT J.
MDI=$FIXT

081
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

082
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0040,OF
Y N

083
MAP 7A72-R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

084
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000400000000,OF
Y N

085
MAP 7A72-B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

086
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000080,ON
Y N

087
MAP 7A72-X
GO TO MAP 7A72, ENTRY POINT X.
MDI=$FIXT
```

088
MAP 7A72-B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

089
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000020,ON
Y N

090
MAP 7A72-B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

091
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000004000000400,OF
Y N

092
STATUS BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0040,OF
Y N

093
MAP 7A72-R
GO TO MAP 7A72, ENTRY POINT R.
MDI=$FIXT

094
STATUS BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0004,OF
Y N

095
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

096
SERVO 2 CARD FAILURE (A1-F2)
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

097
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,00000080000000800,OF
Y N

098
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

099
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000100000001,OF
Y N

100
MAP 7A76-F
GO TO MAP 7A76, ENTRY POINT F.
MDI=$FIXT

101
MAP 7A72-F
GO TO MAP 7A72, ENTRY POINT F.
MDI=$FIXT

102
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

```
103
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000400000000400,OF
Y N
| 104
| TAG 6 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,00000800000000800O,OF
| Y N
| | 105
| | TAG 5 BIT 0
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,07,00008000000080,OF
| | Y N
| | | 106
| | | MAP 7A72-B
| | | GO TO MAP 7A72, ENTRY POINT B.
| | | MDI=$FIXT
| | 107
| | TAG 6 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,0000010000000001000,OF
| | Y N
| | | 108
| | | MAP 7A72-B
| | | GO TO MAP 7A72, ENTRY POINT B.
| | | MDI=$FIXT
| | 109
| | SERVO 2 CARD FAILURE (A1-F2)
| | GO TO MAP 7A70, ENTRY POINT E.
| | MDI=$FIXT
| 110
| TAG 5 BIT 7
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,07,00000100000001,OF
| Y N
| | 111
| | TAG 6 BIT 3
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,0000010000000001000,OF
| | Y N
| | | 112
| | | SERVO 2 CARD FAILURE (A1-F2)
| | | GO TO MAP 7A70, ENTRY POINT E.
| | | MDI=$FIXT
| | 113
| | SERVO 1 CARD FAILURE (A1-E2)
| | GO TO MAP 7A70, ENTRY POINT D.
| | MDI=$FIXT
| 114
| TAG 6 BIT 5
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,09,0000000000000400,ON
| Y N
| | 115
| | MAP 7A72-B
| | GO TO MAP 7A72, ENTRY POINT B.
| | MDI=$FIXT
| 116
| MAP 7A72-B
| GO TO MAP 7A72, ENTRY POINT B.
| MDI=$FIXT
117
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000100000001,OF
Y N
```

```
118
TAG 5 BIT 0
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000080,ON
Y N
|
| 119
| TAG 5 BIT 1
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,07,00000000000040,ON
| Y N
| |
| | 120
| | MAP 7A76-R
| | GO TO MAP 7A76, ENTRY POINT R.
| | MDI=$FIXT
| |
| 121
| SERVO 2 CARD FAILURE (A1-F2)
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
122
SERVO 2 CARD FAILURE (A1-F2)
GO TO MAP 7A70, ENTRY POINT E.
MDI=$FIXT

123
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,000000100000001000,OF
Y N
|
| 124
| TAG 5 BIT 2
| IS LINE PULSING ?
| MDI=$TUXX,T7A02,07,00000000000020,ON
| Y N
| |
| | 125
| | TAG 5 BIT 0
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,07,00000000000080,ON
| | Y N
| | |
| | | 126
| | | TAG 6 BIT 1
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,09,0000004000000004000,
| | | OF
| | | Y N
| | | |
| | | | 127
| | | | LOGIC 1 CARD FAILURE (A1-C2)
| | | | GO TO MAP 7A70, ENTRY POINT B.
| | | | MDI=$FIXT
| | | |
| | | 128
| | | SERVO 1 CARD FAILURE (A1-E2)
| | | GO TO MAP 7A70, ENTRY POINT D.
| | | MDI=$FIXT
| | |
| | 129
| | SERVO 1 CARD FAILURE (A1-E2)
| | GO TO MAP 7A70, ENTRY POINT D.
| | MDI=$FIXT
| |
| 130
| MAP 7A72-G
| GO TO MAP 7A72, ENTRY POINT G.
| MDI=$FIXT
|
131
MAP 7A72-G
GO TO MAP 7A72, ENTRY POINT G.
MDI=$FIXT

132
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000020,ON
Y N
| |
| |
| |
| |
```

```
| |
| |
| 133
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,0000001000000001000,OF
| Y N
| |
| | 134
| | MAP 7A72-B
| | GO TO MAP 7A72, ENTRY POINT B.
| | MDI=$FIXT
| |
| 135
| SERVO 2 CARD FAILURE (A1-F2)
| GO TO MAP 7A70, ENTRY POINT E.
| MDI=$FIXT
|
136
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000100000001,OF
Y N
|
| 137
| TAG 6 BIT 3
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,0000001000000001000,OF
| Y N
| |
| | 138
| | TAG 6 BIT 4
| | IS LINE DOWN ?
| | MDI=$TUXX,T7A02,09,0000008000000000800,OF
| | Y N
| | |
| | | 139
| | | MAP 7A72-F
| | | GO TO MAP 7A72, ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 140
| | TAG 5 BIT 0
| | IS LINE PULSING ?
| | MDI=$TUXX,T7A02,07,00000000000080,ON
| | Y N
| | |
| | | 141
| | | TAG 6 BIT 5
| | | IS LINE DOWN ?
| | | MDI=$TUXX,T7A02,09,0000000400000000400,OF
| | | Y N
| | | |
| | | | 142
| | | | SERVO 2 CARD FAILURE (A1-F2)
| | | | GO TO MAP 7A70, ENTRY POINT E.
| | | | MDI=$FIXT
| | | |
| | | 143
| | | MAP 7A76-F
| | | GO TO MAP 7A76, ENTRY POINT F.
| | | MDI=$FIXT
| | |
| | 144
| | SERVO 2 CARD FAILURE (A1-F2)
| | GO TO MAP 7A70, ENTRY POINT E.
| | MDI=$FIXT
| |
| 145
| MAP 7A72-F
| GO TO MAP 7A72, ENTRY POINT F.
| MDI=$FIXT
|
146
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00008000000080,OF
Y N
|
| 147
| MAP 7A76-F
| GO TO MAP 7A76, ENTRY POINT F.
| MDI=$FIXT
|
|
|
|
|
```

148
MAP 7A72-B
GO TO MAP 7A72, ENTRY POINT B.
MDI=$FIXT

149
STATUS BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0002,OF
Y N

150
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000800000080,OF
Y N

151
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000080000000080,OF
Y N

152
LOGIC 1 CARD (A1-C2)
OR SYSTEM ADAPTER/ CABLE FAILURE
GO TO MAP 7A70, ENTRY POINT J.
MDI=$FIXT

153
MAP 7A76-J
GO TO MAP 7A76, ENTRY POINT J.
MDI=$FIXT

154
STATUS BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0010,OF
Y N

155
MAP 7A72-E
GO TO MAP 7A72, ENTRY POINT E.
MDI=$FIXT

156
LOGIC 1 CARD FAILURE (A1-C2)
GO TO MAP 7A70, ENTRY POINT B.
MDI=$FIXT

157
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,0000000000020,ON
N

158
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000080000000080,OF
Y N

159
LOGIC 2 CARD FAILURE (A1-D2)
GO TO MAP 7A70, ENTRY POINT C.
MDI=$FIXT

160
SERVO 1 CARD FAILURE (A1-E2)
GO TO MAP 7A70, ENTRY POINT D.
MDI=$FIXT

161
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,0000400000000040,OF
Y N

162
STATUS BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,02,0010,OF
Y N

```
| | |
| | |
| | 163
| | LOGIC 1 CARD FAILURE (A1-C2)
| | GO TO MAP 7A70, ENTRY POINT B.
| | MDI=$FIXT
| |
| 164
| TAG 7 BIT 0
| IS LINE DOWN ?
| MDI=$TUXX,T7A02,09,00000008000000080,OF
| Y N
| |
| | 165
| | MAP 7A72-E
| | GO TO MAP 7A72, ENTRY POINT E.
| | MDI=$FIXT
| |
| 166
| LOGIC 1 CARD FAIIURE (A1-C2)
| GO TO MAP 7A70, ENTRY POINT B.
| MDI=$FIXT
|
167
MAP 7A72-E
GO TO MAP 7A72, ENTRY POINT E.
MDI=$FIXT
```

PAGE 1 OF 3

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	1	003

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	019	7A21	A
2	025	7A21	A
2	033	7A21	A
3	039	7A21	A
2	028	7A40	A
3	041	7A40	A
2	021	7A69	A
3	035	7A69	A
3	040	7A78	A

001

THIS MAP USES TEST ROUTINES THAT READ AND TEST ALL HEADS ON THE CE TRACK AND FIXED HEAD TRACKS.

ISSUE HIO COMMAND
MDI=$TUXX,T7A56,01,00,EQ
Y N

002
NO IS NOT VALID
MDI=$NVLD

003
(ENTRY POINT A)
TEST IF THE FILE IS ATTACHED?
MDI=$TUXX,T7A50,01,80,OF
Y N

004
NO FILE ATTACHED
MDI=$FIXT

005
(ENTRY POINT B)
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A59,01,80,OF
Y N

006
CORRECT THE CONFIGURATION JUMPERS ON THE A2-C2 CARD.
LOAD (C) MAP7A31 IN MANUAL MODE.
FILE SIZE IS 23MB
MDI=$FIXT

007
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,40,OF
Y N

008
CORRECT THE CONFIGURATION JUMPERS ON THE A2-C2 CARD.
LOAD (C) MAP7A31 IN MANUAL MODE.
FILE SIZE IS 29MB
MDI=$FIXT

009
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,20,OF
Y N

010
CORRECT THE CONFIGURATION JUMPERS ON THE A2-C2 CARD.
LOAD (C) MAP7A31 IN MANUAL MODE.
FILE SIZE IS 58MB
MDI=$FIXT

011
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,10,OF
Y N

012
CORRECT THE CONFIGURATION JUMPERS ON THE A2-C2 CARD.
LOAD (C) MAP7A31 IN MANUAL MODE.
FILE SIZE IS 64MB
MDI=$FIXT

013
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,08,OF
Y N

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014
CORRECT THE CONFIGURATION JUMPERS ON THE A2-C² CARD.
LOAD (C) MAP7A31 IN MANUAL MODE.
FILE NOT ATTACHED
MDI=$FIXT

015
RUN MOVEABLE HEADS TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A37,01,00,EQ
Y N

016
IS FILE READY?
MDI=$TUXX,T7A02,06,000020000001,OF
Y N

017

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,D5,EQ,PLNG=01,PARM=@N
Y N

018
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

019
LOAD (C) MAP7A30 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

020
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,80,OF
Y N

021
ID ERROR DISPLAY IT
GO TO MAP 7A69, ENTRY POINT A.
MDI=$STOP

022
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,08,OF
Y N

023

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,C1,EQ,PLNG=01,PARM=@A
Y N

024
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

025
LOAD (C) MAP7A30 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

026
BAD PARITY
MDI=$GOTO,TYPE=XTRNL,EP=A,MAP=7A78

027
DOES THIS UNIT HAVE FIXED HEADS ?
MDI=$TUXX,T7A08,03,000004,ON
Y N

028
FILE TESTS OK EXCEPT FOR WRITE
LOAD (C) MAP7A40 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A40, ENTRY POINT A.
MDI=$STOP

029
RUN FIXED HEADS TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A28,01,00,EQ
Y N

030
IS FILE READY?
MDI=$TUXX,T7A02,06,000020000001,OF
Y N

HEADS TESTS

PAGE 3 OF 3

031

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,D5,EQ,PLNG=01,PARM=@N
Y N

032
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

033
SET ERROR HALT CODE N
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

034
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,80,OF
Y N

035
ID ERROR DISPLAY IT - USE MAP7A69
GO TO MAP 7A69, ENTRY POINT A.
MDI=$STOP

036
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,08,OF
Y N

037

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,C1,EQ,PLNG=01,PARM=@A
Y N

038
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

039
LOAD (C) MAP7A30 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

040
BAD PARITY
GO TO MAP 7A78, ENTRY POINT A.
MDI=$GOTO,TYPE=XTRNL,EP=A,MAP=7A78

041
FILE TESTS OK EXCEPT FOR WRITE
LOAD (C) MAP7A40 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A40, ENTRY POINT A.
MDI=$STOP

PAGE 1 OF 2

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A30	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
1	009	7A21	A
2	015	7A21	A
2	023	7A21	A
2	029	7A21	A
2	018	7A40	A
2	031	7A40	A
1	011	7A69	A
2	025	7A69	A
2	030	7A78	A

001
(ENTRY POINT A)

THIS IS AN MDI 'MANUAL MODE' MAP. (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).
TO USE IT: LOAD AND EXECUTE THE MAP PROGRAM (BXXXX WHERE XXXX=MAP#).
WHEN CE ACTION IS NEEDED DCP HALTS AND DISPLAYS MAP # AND STEP #. SEE THE HARD COPY MAP FOR THE CE ACTION.
ISSUE HIO COMMAND
MDI=$TUXX,T7A56,01,00,EQ
Y N

002
NO IS NOT VALID
MDI=$NVLD

003
TEST IF THE FILE IS ATTACHED?
MDI=$TUXX,T7A50,01,80,OF
Y N

004
NO FILE ATTACHED
MDI=$FIXT

005
RUN MOVEABLE HEADS TEST,
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A37,01,00,EQ
Y N

006
IS FILE READY?
MDI=$TUXX,T7A02,06,000020000001,OF
Y N

007

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,D5,EQ,PLNG=01,PARM=ϑN
Y N

008
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

009
LOAD (C) MAP7A30 IN MANUAL MODE
FOR THIS ADDRESS,
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

010
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,80,OF
Y N

011
ID ERROR DISPLAY IT
GO TO MAP 7A69, ENTRY POINT A.
MDI=$STOP

012
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,08,OF
Y N

013

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,C1,EQ,PLNG=01,PARM=ϑA
Y N

THIS MAP USES TEST ROUTINES THAT READ AND TEST ALL HEADS ON THE CE TRACK AND FIXED HEAD TRACKS.

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014
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

015
LOAD (C) MAP7A30 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

016
BAD PARITY
MDI=$GOTO,TYPE=XTRNL,EP=A,MAP=7A78

017
DOES THIS UNIT HAVE FIXED HEADS ?
MDI=$TUXX,T7A08,03,000004,ON
Y N

018
FILE TESTS OK EXCEPT FOR WRITE
LOAD (C) MAP7A40 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A40, ENTRY POINT A.
MDI=$STOP

019
RUN FIXED HEADS TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A28,01,00,EQ
Y N

020
IS FILE READY?
MDI=$TUXX,T7A02,06,000020000001,OF
Y N

021

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,D5,EQ,PLNG=01,PARM=@N
Y N

022
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

023
SET ERROR HALT CODE N
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

024
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,80,OF
Y N

025
ID ERROR DISPLAY IT - USE MAP7A69
GO TO MAP 7A69, ENTRY POINT A.
MDI=$STOP

026
IS TRACK ID OK?
MDI=$TUXX,T7A02,01,08,OF
Y N

027

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,C1,EQ,PLNG=01,PARM=@A
Y N

028
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

029
LOAD (C) MAP7A30 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

030
BAD PARITY
GO TO MAP 7A78, ENTRY POINT A.
MDI=$GOTO,TYPE=XTRNL,EP=A,MAP=7A78

031
FILE TESTS OK EXCEPT FOR WRITE
LOAD (C) MAP7A40 IN MANUAL MODE
FOR THIS ADDRESS.
GO TO MAP 7A40, ENTRY POINT A.
MDI=$STOP

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
2	009	7A21	A
2	019	7A21	A
3	031	7A21	A
4	041	7A21	A
2	015	7A22	C
3	037	7A22	C
4	047	7A51	A
4	049	7A51	A
5	052	7A51	A

```
001
(ENTRY POINT A)

THIS IS AN MDI 'MANUAL MODE' MAP. (SEE
DIAGNOSTIC SERVICE GUIDE 05.00.00).
TO USE IT: LOAD AND EXECUTE THE MAP PROGRAM
(BXXXX WHERE XXXX=MAP#).
WHEN CE ACTION IS NEEDED DCP HALTS AND
DISPLAYS MAP # AND STEP #. SEE THE HARD COPY
MAP FOR THE CE ACTION.

******************************
**********WARNING*************
* THIS MAP WRITES ON THE DISK,*
* CE TRACK(0167) AND ON FIXED *
* HEADS, IT MAY RESULT IN     *
* LOSS OF CUSTOMER DATA       *
******************************

*CE RESPONSE NECESSARY.*
ISSUE HIO COMMAND
MDI=$TUXX,T7A56,01,00,EQ
Y N
|
| 002
| 'NO' IS NOT VALID, GO TO NEXT STEP.
| MDI=$NVLD
|
003
```

THIS MAP USES TEST ROUTINES THAT WRITE ON THE CE TRACK .

SOME HARDWARE FAILURES COULD CAUSE CUSTOMER DATA ON THESE TRACKS TO BE WRITTEN ON DURING EXECUTION OF THIS MAP.

BEFORE CONTINUING , INFORM THE CUSTOMER OF THIS, AND ENSURE THAT HIS DATA IS KEPT.

```
DO YOU WANT TO TEST MOVEABLE HEADS ?
MDI=$QUES
Y N
|
| 004
| TEST DIAGNOSTIC BITS
| MDI=$GOTO,TYPE=INTRNL,EP=B
|
005
RUN MOVEABLE HEADS WRITE TEST.
MOVEABLE HEAD TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A07,01,00,EQ
Y N
|
| 006
| IS TRACK ID CORRECT?
| MDI=$TUXX,T7A02,01,08,OF
| Y N
| | |
| | 007
| |
| |
| | MDI=$TUXX,T7A08,01,C1,EQ,PLNG=01,PARM=@A
| | Y N
| | | |
| | | |
| | | |
| | | |
| | | |
2 2 2 2
A B C D
```

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

008
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

009
SET ERROR HALT CODE A
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

010
IS PARITY GOOD ?
MDI=$TUXX,T7A02,01,40,OF
Y N

011
BAD PARITY
MDI=$GOTO,TYPE=XTRNL,MAP=7A78,EP=A

012
SENSE CORRECT AFTER WRITE?
MDI=$TUXX,T7A02,01,80,OF
Y N

013

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,E6,EQ,PLNG=01,PARM=@W
Y N

014
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

015
SET ERROR HALT CODE W
GO TO MAP 7A22, ENTRY POINT C.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

016
READ VERIFY OK?
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A02,01,10,OF
Y N

017

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,E5,EQ,PLNG=01,PARM=@V
Y N

018
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

019
SET ERROR HALT CODE V
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

020
SHOULD NEVER GET HERE
MDI=$FIXT

021
TEST SCAN DATA
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A54,01,10,OF
Y N

022
SCAN TEST FAILED
EXCHANGE CARDS A2-D2,A2-C2
MDI=$FIXT

023
FIXED HEAD TEST
DOES THIS UNIT HAVE FIXED HEADS ?
MDI=$TUXX,T7A08,03,000004,ON
Y N

PAGE 3 OF 5

024
TEST DIAGNOSTIC BITS
MDI=$GOTO,TYPE=INTRNL,EP=B

025

THIS MAP USES TEST ROUTINES THAT WRITE ON THE FIXED HEAD TRACKS.

SOME HARDWARE FAILURES COULD CAUSE CUSTOMER DATA ON THESE TRACKS TO BE WRITTEN ON DURING EXECUTION OF THIS MAP.

BEFORE CONTINUING, INFORM THE CUSTOMER OF THIS, AND ENSURE THAT HIS DATA IS KEPT.

DO YOU WANT TO TEST FIXED HEADS ?
MDI=$QUES
Y N

026
TEST DIAGNOSTIC BITS
MDI=$GOTO,TYPE=INTRNL,EP=B

027
RUN FIXED HEADS TEST.
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A17,01,00,EQ
Y N

028
IS TRACK ID CORRECT?
MDI=$TUXX,T7A02,01,08,OF
Y N

029

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,C1,EQ,PLNG=01,PARM=@A
Y N

030
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

031
SET ERROR HALT CODE A
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

032
IS PARITY GOOD ?
MDI=$TUXX,T7A02,01,40,OF
Y N

033
BAD PARITY
MDI=$GOTO,TYPE=XTRNL,MAP=7A78,EP=A

034
SENSE CORRECT AFTER WRITE?
MDI=$TUXX,T7A02,01,80,OF
Y N

035

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,E6,EQ,PLNG=01,PARM=@W
Y N

036
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

037
SET ERROR HALT CODE W
GO TO MAP 7A22, ENTRY POINT C.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

PAGE 4 OF 5

038
READ VERIFY OK?
DID TEST RUN W/O ERROR ?
MDI=$TUXX,T7A02,01,10,OF
Y N

039

IF 'LOOP STEP TO STEP' OPTION IS 'ON' (OPTION BYTE 02, BIT 01), THIS STEP NEEDS THE PRECEDING STEP FOR SETUP.

MDI=$TUXX,T7A08,01,E5,EQ,PLNG=01,PARM=@V
Y N

040
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

041
SET ERROR HALT CODE V
GO TO MAP 7A21, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,EP=A,MAP=7A21

042
SHOULD NEVER GET HERE
MDI=$FIXT

043
(ENTRY POINT B)
RECALIBRATE TO HOME
READ AND STORE DIAGNOSTIC SENSE BYTES 5,6,7
(CORRECT CODES
SENSE '10000010'
BYTE 5 '11P11100'
BYTE 6 '0P0P0011' OR '0P010011'
BYTE 7 '111PP110'
ARE CODES CORRECT?
MDI=$TUXX,T7A06,1,82,EQ,PLNG=4,PARM=0001
Y N

THIS IS A GOOD DEVICE END. THE FILE IS OPERATING CORRECTLY AS FAR AS THE MAP HAS TESTED. TO TEST THE WRITE FUNCTIONS GO TO MAP7A40. HOWEVER, A WRONG STATUS OR DIAGNOSTIC CODE INDICATES EITHER A FAILURE EXISTS OR ERROR DETERMINING HARDWARE IS FAILING.

044
'NO' IS NOT VALID, GO TO NEXT STEP.
MDI=$NVLD

045
TEST DIAGNOSTIC BITS OK?
MDI=$TUXX,T7A08,13,000000000000DC03E600205018,
ON
Y N

046
TEST DIAGNOSTIC BITS OK?
MDI=$TUXX,T7A02,13,
000000000000DC13E600204018,ON
Y N

047
POSSIBLE FAILURE EXISTS BUT FILE OPERATING OK
GO TO MAP 7A51, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A51,EP=A

048
TEST DIAGNOSTIC BITS OK?
MDI=$TUXX,T7A02,13,
000000000000003AC0100DFBFE7,OF
Y N

049
POSSIBLE FAILURE EXISTS BUT FILE OPERATING OK
GO TO MAP 7A51, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A51,EP=A

050
WRITE TESTS RAN W/O ERROR.
MDI=$FIXT

051
TEST DIAGNOSTIC BITS OK?
MDI=$TUXX,T7A02,13,000000000000003AC0100DFAFE7,
OF
Y N

PAGE 5 OF 5

052
POSSIBLE FAILURE EXISTS BUT FILE OPERATING
OK
GO TO MAP 7A51, ENTRY POINT A.
MDI=$CALL,TYPE=XTRNL,MAP=7A51,EP=A

053
WRITE TESTS RAN W/O ERROR.
MDI=$FIXT

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	1	001

001
(ENTRY POINT A)
TAG 7 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A10,09,0000000000000020,ON
Y N

002
TAG 6 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000000200000002,OF
Y N

003
TAG 6 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000000800000008,OF
Y N

004
TAG 6 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,000000000000001C,ON
Y N

005
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD
A1-F2,A1-E2,A1-D2,ACTUATOR DRIVER
CARD A1-C2
MDI=$FIXT

006
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000000400000004,OF
Y N

007
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

008
PROBE VTL A1-C2S02
IS LINE DOWN ?
MDI=$QUES
Y N

009
PROBE VTL A1-F2G13
IS LINE DOWN ?
MDI=$QUES
Y N

DORMANT FAILURES NOT FOUND BY 7A20

010
EXCHANGE CARD A1-D2
IF THIS CARD FAILS TO REPAIR
EXCHANGE CARD A1-F2
IF THIS CARD FAILS TO REPAIR
THERE IS PROBABLY A FAILURE IN THE
DE SERVO TRACK.
EARLY REPLACEMENT OF THE DISK ENCLOSURE
IS DESIRABLE.
MDI=$FIXT

011
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-F2,A1-E2,A1-D2,ACTUATOR
DRIVER CARD,A1-C2
MDI=$FIXT

012
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

013
TAG 6 BIT 6
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,0000000000000002,ON
Y N

014
TAG 7 BIT 4
IS LINE PULSING ?
MDI=$TUXX,T7A02,09,0000000000000008,ON
Y N

015
TAG 7 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000004000004,OF
Y N

016
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,0000000000000020,ON
Y N

017
SUSPECT WRONG DIAGNOSTIC SENSE
RUN TEST (MAP7A40) AGAIN
MDI=$FIXT

018
PROBE VTL A1-C2M10
IS LINE PULSING ?
MDI=$QUES
Y N

019
PROBE VTL A1-D2M04
IS LINE PULSING ?
MDI=$QUES
Y N

020
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-D2,A1-C2,A1-E2,A1-B2
MDI=$FIXT

021
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-D2,BOARD A1
MDI=$FIXT

022
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

023
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

024
TAG 5 BIT 2
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000020,ON
Y N

025
TAG 5 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,07,00000000000010,ON
Y N

026
PROBE VTL A1-C2G08
IS LINE PULSING ?
MDI=$QUES
Y N

027
PROBE VTL A1-D2P05
IS LINE PULSING ?
MDI=$QUES
Y N

028
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-D2,A1-C2,A1-E2,A1-B2
MDI=$FIXT

029
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-D2,BOARD A1
MDI=$FIXT

030
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

031
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

032
TAG 6 BIT 1
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,00000000000040,ON
Y N

033
PROBE VTL A1-C2B10
IS LINE PULSING ?
MDI=$QUES
Y N

034
PROBE VTL A1-D2P02
IS LINE PULSING ?
MDI=$QUES
Y N

035
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-D2,A1-C2,A1-E2,A1-B2
MDI=$FIXT

036
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-D2,BOARD A1
MDI=$FIXT

037
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

038
TAG 5 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000200000002,OF
Y N

039
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

040
TAG 7 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000080000080,OF
Y N

041
TAG 7 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,09,00000000000000010,ON
Y N

042
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

043
TAG 5 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00008000000080,OF
Y N

044
TAG 5 BIT 4
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000800000008,OF
Y N

045
TAG 7 BIT 6
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000200000002,OF
Y N

046
TAG 5 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00004000000040,OF
Y N

```
047
TAG 5 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,0000100000000001,OF
Y N
| 048
| PROBE VTL A1-C2U04
| IS LINE DOWN ?
| MDI=$QUES
| Y N
| | 049
| | PROBE VTL A1-D2D09
| | IS LINE DOWN ?
| | MDI=$QUES
| | Y N
| | | 050
| | | CHECK SEATING OF PROGRAM JUMPERS ON CARD
| | | INSPECT AND RESEAT CABLES BETWEEN BOARD
| | | A1 AND A2
| | | EXCHANGE CARD A1-D2,A1-C2,A1-E2,A1-B2
| | | MDI=$FIXT
| | 051
| | INSPECT AND RESEAT CABLES BETWEEN BOARD A1
| | AND A2
| | EXCHANGE CARD A1-C2,A1-D2,BOARD A1
| | MDI=$FIXT
| 052
| INSPECT AND RESEAT CABLES BETWEEN BOARD A1
| AND A2
| EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
| MDI=$FIXT
053
TAG 6 BIT 0
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000008000000080,OF
Y N
| 054
| PROBE VTL A1-C2D13
| IS LINE DOWN ?
| MDI=$QUES
| Y N
| | 055
| | PROBE VTL A1-D2U11
| | IS LINE DOWN ?
| | MDI=$QUES
| | Y N
| | | 056
| | | INSPECT AND RESEAT CABLES BETWEEN BOARD
| | | A1 AND A2
| | | EXCHANGE CARD A1-D2,A1-C2,A1-E2,A1-B2
| | | MDI=$FIXT
| | 057
| | INSPECT AND RESEAT CABLES BETWEEN BOARD A1
| | AND A2
| | EXCHANGE CARD A1-C2,A1-D2,BOARD A1
| | MDI=$FIXT
| 058
| INSPECT AND RESEAT CABLES BETWEEN BOARD A1
| AND A2
| EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
| MDI=$FIXT
059
TAG 7 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000000100000001,OF
Y N
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
6 6
X Y
```

060
PROBE VTL A1-C2U05
IS LINE DOWN ?
MDI=$QUES
Y N

061
PROBE VTL A1-D2P04
IS LINE DOWN ?
MDI=$QUES
Y N

062
INSPECT AND RESEAT CABLES BETWEEN BOARD
A1 AND A2
EXCHANGE CARD A1-D2,A1-C2,A1-E2,A1-B2
MDI=$FIXT

063
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-C2,A1-D2,BOARD A1
MDI=$FIXT

064
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

065
TAG 5 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,00000400000004,OF
Y N

066
TAG 6 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000002000000020,OF
Y N

067
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

068
TAG 6 BIT 5
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000000400000004,OF
Y N

069
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

070
TAG 6 BIT 7
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000000100000001,OF
Y N

071
TAG 7 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000040000000,OF
Y N

072
TAG 7 BIT 2
IS LINE DOWN ?
MDI=$TUXX,T7A02,09,0000000020000000,OF
Y N

073
TAG 5 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,07,0000100000000010,OF
Y N

074
TAG 6 BIT 3
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000001000000010,OF
Y N

075
DATA WRAP OK?
MDI=$TUXX,T7A02,11,
0000000000800000000000,OF
Y N

076
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

077
THIS IS A GOOD DEVICE END
MDI=$FIXT

078
PROBE VTL A1-C2G07
IS LINE DOWN ?
MDI=$QUES
Y N

079
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

080
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD
A1-F2,A1-E2,A1-D2,ACTUATOR DRIVER
CARD,A1-C2
MDI=$FIXT

081
INSPECT AND RESEAT CABLES BETWEEN BOARD
A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

082
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

083
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

084
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND
A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

DORMANT FAILURES NOT FOUND BY 7A20

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085
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD
A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

086
INSPECT AND RESEAT CABLES BETWEEN
BOARD A1 AND A2
EXCHANGE CARD A1-D2,A1-C2,A1-E2,A1-B2
MDI=$FIXT

087
INSPECT AND RESEAT CABLES BETWEEN BOARD
A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

088
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

089
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

090
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND
A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

091
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-F2,A1-E2,A1-D2,ACTUATOR
DRIVER CARD,A1-C2
MDI=$FIXT

092
TAG 6 BIT 1
IS LINE DOWN ?
MDI=$TUXX,T7A02,08,0000004000000040,OF
Y N

093
TAG 6 BIT 3
IS LINE PULSING ?
MDI=$TUXX,T7A02,08,0000001000000010,ON
Y N

094
INSPECT AND RESEAT CABLES BETWEEN BOARD
A1 AND A2
EXCHANGE CARD A1-F2,A1-E2,A1-D2,ACTUATOR
DRIVER CARD,A1-C2
MDI=$FIXT

095
PROBE VTL A1-C2U11
IS LINE DOWN ?
MDI=$QUES
Y N

096
INSPECT AND RESEAT CABLES BETWEEN BOARD
A1 AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

097
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-F2,A1-E2,A1-D2,ACTUATOR
DRIVER CARD,A1-C2
MDI=$FIXT

098
INSPECT AND RESEAT CABLES BETWEEN BOARD A1
AND A2
EXCHANGE CARD A1-C2,A1-B2,A1-D2,A1-E2
MDI=$FIXT

099
INSPECT AND RESEAT CABLES BETWEEN BOARD A1 AND
A2
EXCHANGE CARD A1-E2,A1-D2,A1-F2,A1-C2,A1-B2
MDI=$FIXT

001
(ENTRY POINT A)

THIS IS AN MDI 'MANUAL MODE' MAP. (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).
TO USE IT: LOAD AND EXECUTE THE MAP PROGRAM (BXXXX WHERE XXXX=MAP#).
WHEN CE ACTION IS NEEDED, DCP HALTS AND DISPLAYS MAP # AND STEP #. SEE THE HARD COPY MAP FOR THE CE ACTION.

READ DEVICE ID SCOPE LOOP
VERIFY SCOPE IMAGE SEE MAINTENANCE LOGIC DIAGRAMS X.X THEN ENTER '1' ON CONSOLE TO CONTINUE.
MDI=$QUXX,T7A20,REPT=TS03
Y N
|
| 002
| END OF SCOPE LOOP
| MDI=$STOP
|
003
CYCLE STEAL STATUS SCOPE LOOP
VERIFY SCOPE IMAGE SEE MAINTENANCE LOGIC DIAGRAMS X.X THEN ENTER '1' ON CONSOLE TO CONTINUE.
MDI=$QUXX,T7A27,REPT=TS19
Y N
|
| 004
| END OF SCOPE LOOP
| MDI=$STOP
|
005
RECALIBRATE SCOPE LOOP
VERIFY SCOPE IMAGE SEE MAINTENANCE LOGIC DIAGRAMS X.X THEN ENTER '1' ON CONSOLE TO CONTINUE.
MDI=$QUXX,T7A21,REPT=TS10
Y N
|
| 006
| END OF SCOPE LOOP
| MDI=$STOP
|
007
SEEK SCOPE LOOP
VERIFY SCOPE IMAGE SEE MAINTENANCE LOGIC DIAGRAMS X.X THEN ENTER '1' ON CONSOLE TO CONTINUE.
MDI=$QUXX,T7A22,REPT=TS11
Y N
|
| 008
| END OF SCOPE LOOP
| MDI=$STOP
|
009
READ SECTOR ID SCOPE LOOP
VERIFY SCOPE IMAGE SEE MAINTENANCE LOGIC DIAGRAMS X.X THEN ENTER '1' ON CONSOLE TO CONTINUE.
MDI=$QUXX,T7A23,REPT=TS15
Y N
|
| 010
| END OF SCOPE LOOP
| MDI=$STOP
|
011
WRITE SECTOR ID SCOPE LOOP
VERIFY SCOPE IMAGE SEE MAINTENANCE LOGIC DIAGRAMS X.X THEN ENTER '1' ON CONSOLE TO CONTINUE.
MDI=$QUXX,T7A24,REPT=TS16
Y N
|
| 012
| END OF SCOPE LOOP
| MDI=$STOP
|
|
|
|
|

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```
013
WRITE DATA SCOPE LOOP
VERIFY SCOPE IMAGE SEE MAINTENANCE LOGIC
DIAGRAMS X.X THEN ENTER '1' CN CONSOLE TO
CONTINUE.
MDI=$QUXX,T7A25,RFPT=TS18
Y N
| 014
| END OF SCOPE LOOP
| MDI=$STOP
|
015
READ DATA SCOPE LOOP
VERIFY SCOPE IMAGE SEE MAINTENANCE LOGIC
DIAGRAMS X.X THEN ENTER '1' ON CONSOLE TO
CONTINUE.
MDI=$QUXX,T7A26,REPT=TS17
Y N
| 016
| END OF SCOPE LOOP
| MDI=$STOP
|
017
END OF SCOPE LOOP
MDI=$STOP
```

```
001
(ENTRY POINT A)

THIS IS AN MDI 'MANUAL MODE' MAP. (SEE
DIAGNOSTIC SERVICE GUIDE 05.00.00).
TO USE IT: LOAD AND EXECUTE THE MAP PROGRAM
(C7A69 WHERE 7A69=MAP#).
WHEN CE ACTION IS NEEDED DCP HALTS AND
DISPLAYS MAP # AND STEP #. SEE THE HARD COPY
MAP FOR THE CE ACTION.
IS FILE ATTACHED OR NO HARDWARE PROBLEM?
MDI=$TUXX,T7A59,01,08,0F
Y N

  002
  FILE NOT ATTACHED OR IF ATTACHED A HARDWARE
  PROBLEM HAS BEEN SENSED
  MDI=$FIXT

003
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,80,0F
Y N

  004
  CHECK THE CONFIGURATION JUMPERS ON THE A2-C2
  CARD, FILE SIZE IS 23MB
  MDI=$FIXT

005
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,40,0F
Y N

  006
  CHECK THE CONFIGURATION JUMPERS ON THE A2-C2
  CARD, FILE SIZE IS 29MB
  MDI=$FIXT

007
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,20,0F
Y N

  008
  CHECK THE CONFIGURATION JUMPERS ON THE A2-C2
  CARD, FILE SIZE IS 58MB
  MDI=$FIXT

009
ARE THE CONFIGURATION JUMPERS OK?
MDI=$TUXX,T7A02,01,10,0F
Y N

  010
  CHECK THE CONFIGURATION JUMPERS ON THE A2-C2
  CARD, FILE SIZE IS 64MB
  MDI=$FIXT

011
*CE RESPONSE NECESSARY.*
DO YOU WANT TO VERIFY DISK?
MDI=$QUES
Y N

  012
  END OF TEST
  MDI=$STOP

2
A
```

```
013
VERIFY NOW BEING EXECUTED
*****************************************
* THIS STEP WILL READ EVERY SECTOR ID    *
* AND DATA FIELD ON THE 4963 DISK.       *
* BAD SECTORS (IDS OR DATA), BAD         *
*  ALTERNATE SECTORS, SECTORS THAT       *
* HAVE PROGRAMMABLE PROTECT BITS ON, OR  *
* NOT VALID FLAGS OR ID WILL BE DISPLAYED*
* IN THE FOLLOWING FORMAT:               *
*       (FIVE WORDS PLUS COMMENTS)       *
* NOTE: PRIMARY ALTERNATE WILL NOT BE    *
* LISTED.                                *
*                                        *
* WORD0 WORD1 WORD2 WORD3 WORD4 COMMENTS *
*                                        *
*                                        *
* WORD0 - (S/B FG/SEC) - EXPECTED FLAG   *
*  AND LOGICAL SECTOR NUMBER BEING       *
*  VERIFIED EXPECTED FLAG = 00.          *
*                                        *
* WORD1 - (HD/CYL) - EXPECTED HEAD AND   *
*  CYLINDER BEING VERIFIED:              *
*   FIRST BYTE (BITS 1-5)= HEAD NUMBER   *
*   SECOND BYTE (BITS 7-15)= CYLINDER #  *
*NOTE:(BITS 0 & 6 =0).                   *
*                                        *
* WORD2 - (HD/PHY#) - TESTED HEAD AND    *
*  PHYSICAL SECTOR #                     *
*   FIRST BYTE (BITS 0-7)= HEAD #        *
*   SECOND BYTE (BITS 8-15)= PHYSICAL    *
*                            SECTOR #    *
*NOTE:                                   *
*   MOVEABLE HDS = 00-0A(HDS 0 - 10)     *
*   FIXED HEADS  = 10-17(HDS 0 - 7)      *
*                                        *
* WORD3 - (IS FG/SEC ) - REAL FLAG AND   *
*  SECTOR AS READ                        *
*NOTE:                                   *
*   FIRST BYTE = FLAG BYTE AS READ.      *
* BIT                                    *
* 0 = DEFECTIVE DATA FIELD TWO (*)       *
* 1 = DEFECTIVE DATA FIELD ONE (*)       *
* 2 = USER ASSIGNED DEFECT               *
* 3 = USER PROGRAMMABLE PROTECT BIT      *
* 4 = SECTOR DISPLACED                   *
* 5 = SECTOR ASSIGNED TO ALTERNATE SECTOR*
* 6 = MANUFACTURING ASSIGNED DEFECT      *
* 7 = ASSIGNED ALTERNATE SECTOR          *
* (*) THESE BITS HAVE NO MEANING EXCEPT  *
* WHEN USED BY MANUFACTURING TO INDICATE *
* BAD DATA FIELDS. THE USER MAY          *
* USE THEM AS PROGRAMMABLE PROTECT BITS. *
*                                        *
* WORD4 - (HD/CYL) - HEAD AND CYLINDER   *
*  AS READ.                              *
*   FIRST BYTE (BITS 1-5)  = HEAD #      *
*   SECOND BYTE (BITS 7-15)= CYLINDER #  *
*NOTE:(BITS 0 & 6 = 0)                   *
*                                        *
* COMMENTS -                             *
*  DATA CRC RECORD#1                     *
*  DATA CRC RECORD#2                     *
*  DATA CRC RECORD#1 AND 2               *
*  NO RECORD FOUND -POSSIBLE ERRORS:     *
*  1.BAD SECTOR WITH NO ALTERNATE FOUND. *
*  2.SECTOR ID NOT READABLE.             *
*  3.NOT VALID FLAG/ID.                  *
*  4.PROTECT FLAGS ON.                   *
*  5.ID WRITTEN SKEWED.                  *
*  TO CORRECT 'NO RECORD FOUND',RESTORE  *
*  VALID ID OR ASSIGN AN ALTERNATE.      *
*NOTE: COMMENTS ARE FOR  THE PRIMARY     *
* CONDITION OF THE ID OR DATA FIELDS.    *
* INSPECT FLAGS FOR OTHER CONDITIONS.    *
*****************************************
```

```
*****************************************
*  A SECTOR ID CRC CHECK SENSED WHEN    *
*   READING A SECTOR ID WILL LEAVE FF(S) *
*   IN THOSE WORDS.(REAL ID COLUMNS)     *
*   USE THE FORMAT MODE (01) MAP 7AF9 TO *
*   WRITE SECTOR ID. IF A SECTOR IS      *
*   LOGGED AND THE SECTOR ID APPEARS TO  *
*   BE VALID (FLAG 00), THEN A FAILURE   *
*   OCCURRED DURING A READ VERIFY        *
*   OPERATION (DATA FIELD CRC CHECK),    *
*   USE TEST MODE (X0),MAP 7AF9 TO       *
*   WRITE THE DATA FIELD.                *
*   IF NO ALTERNATE CONSOLE ON SYSTEM,R3 *
*   WILL CONTAIN THE STORAGE ADDRESS OF  *
*   THE ERROR BUFFER.                    *
*   DISPLAY AND RECORD THE ENTRIES IN    *
*   THE BUFFER, 5 WORDS/LINE. ERROR SECTS*
*   ARE NOT BUFFERED BUT ARE LISTED AS   *
*   AS THEY ARE SENSED.                  *
*     USE TABLE BELOW TO RECORD ERRORS   *
*---------------------------------------*
*|< SHOULD BE >|        |<  REAL ID   >|*
*---------------------------------------*
*|FG/SEC|HD/CYL| HD/PHY# |FG/SEC |HD/CYL|*
*---------------------------------------*
*| XXXX | XXXX |  XXXX   | XXXX  | XXXX |*
*---------------------------------------*
*|      |      |         |       |      |*
*---------------------------------------*
*|      |      |         |       |      |*
*****************************************
```

```
*                                       *
*       SAMPLE PRINT OUT FOR A 23MB FILE*
*                  -*-                  *
* ERROR SECTORS -23MB, FIXED HEADS      *
* S/B-FG/SEC HD/CYL  HD/PHY#  IS-FG/SEC HD/CYL
*                                       *
*                                       *
*   0012     1167     0409     2440     0D67 NO RECORD FOUND
*                                       *
* CYL 167(CE), HD4(1167), LOGICAL SECTOR12, PHYSICAL SECTOR 09
* IS DEFECTIVE AND ASSIGNED TO AN ALTERNATE. THE ALTERNATE ID
* CAN NOT BE READ OR HAS BEEN REWRITTEN (RESTORED) TO NORMAL.
*                                       *
*   0034     45FF     111A     0034     45FF DATA CRC RECORD#1
*                                       *
*FIXED HD1,(45FF) LOGICAL SECTOR 34,PHYSICAL SECTOR 1A HAS A DATA
*FIELD (DATA RECORD ONE) THAT IS NOT READABLE (CRC CHECK).
*NOTE: CYLINDER NUMBER FOR FIXED HEADS IS ALL ONES (1FF).
*                                       *
* REFERENCE TABLE SHOWING  HEAD NUMBER AND
(STEP 013 CONTINUES)
```

(STEP 013 CONTINUED)

CYLINDER NUMBER AS THE APPEAR IN THE SECTOR ID. ALL NUMBERS ARE SHOWN IN HEXADECIMAL.

HEAD #	CYLINDER #S 000 - 0FF	CYLINDER #S 100-167
0	00XX	01XX
1	04XX	05XX
2	08XX	09XX
3	0CXX	0DXX
4	10XX	11XX
5	14XX	15XX
6	18XX	19XX
7	1CXX	1DXX
8	20XX	21XX
9	24XX	25XX
A	28XX	29XX

FIXED HEADS

HEAD #	
0	41FF
1	45FF
2	49FF
3	4DFF
4	51FF
5	55FF
6	59FF
7	5DFF

NUMBER OF HEADS FOR EACH MODEL AS FOLLOWS:

	- MOVEABLE HEADS -	FIXED HEADS
23 MEGABYTE	4 -(HEAD 1-HEAD 4)	8
29 MEGABYTE	5 -(HEAD 0-HEAD 4)	0
58 MEGABYTE	10-(HEAD 1-HEAD A)	8
64 MEGABYTE	11-(HEAD 0-HEAD A)	0

-*-

REFERENCE TABLE SHOWING PHYSICAL SECTOR NUMBERS, LOGICAL SECTOR NUMBERS AND DATA RECORD NUMBERS FOR ALL HEADS. NOTE: ALL NUMBERS ARE SHOWN IN (HEXADECIMAL). ALSO SHOWN IS SECTOR ID FORMAT AS WRITTEN ON DISK AND CYCLE STEAL STATUS.

PHYSICAL SECT# AS CODED IN DCB FOR WR/RD SECT ID	LOGICAL SECTOR AND RECORD NUMBERS (SEE NOTE 2 BELOW FOR MEANING OF COLUMNS)				
	MOVEABLE HEADS 0,4,8	MOVEABLE HEADS 1,5,9	MOVEABLE HEADS 2,6,A	MOVEABLE HEADS 3,7	FIXED HDS 0-7
20 INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX
00	00 00 20	30 18 38	20 10 30	10 08 28	00 00 20
01	02 01 21	32 19 39	22 11 31	12 09 29	02 01 21
02	04 02 22	34 1A 3A	24 12 32	14 0A 2A	04 02 22
03	06 03 23	36 1B 3B	26 13 33	16 0B 2B	06 03 23
04	08 04 24	38 1C 3C	28 14 34	18 0C 2C	08 04 24
05	0A 05 25	3A 1D 3D	2A 15 35	1A 0D 2D	0A 05 25
06	0C 06 26	3C 1E 3E	2C 16 36	1C 0E 2E	0C 06 26
07	0E 07 27	3E 1F 3F	2E 17 37	1E 0F 2F	0E 07 27
08	10 08 28	00 00 20	30 18 38	20 10 30	10 08 28
09	12 09 29	02 01 21	32 19 39	22 11 31	12 09 29
0A	14 0A 2A	04 02 22	34 1A 3A	24 12 32	14 0A 2A
0B	16 0B 2B	06 03 23	36 1B 3B	26 13 33	16 0B 2B
0C	18 0C 2C	08 04 24	38 1C 3C	28 14 34	18 0C 2C
0D	1A 0D 2D	0A 05 25	3A 1D 3D	2A 15 35	1A 0D 2D
0E	1C 0E 2E	0C 06 26	3C 1E 3E	2C 16 36	1C 0E 2E
0F	1E 0F 2F	0E 07 27	3E 1F 3F	2E 17 37	1E 0F 2F
10	20 10 30	10 08 28	00 00 20	30 18 38	20 10 30
11	22 11 31	12 09 29	02 01 21	32 19 39	22 11 31
12	24 12 32	14 0A 2A	04 02 22	34 1A 3A	24 12 32
13	26 13 33	16 0B 2B	06 03 23	36 1B 3B	26 13 33
14	28 14 34	18 0C 2C	08 04 24	38 1C 3C	28 14 34
15	2A 15 35	1A 0D 2D	0A 05 25	3A 1D 3D	2A 15 35
16	2C 16 36	1C 0E 2E	0C 06 26	3C 1E 3E	2C 16 36
17	2E 17 37	1E 0F 2F	0E 07 27	3E 1F 3F	2E 17 37
18	30 18 38	20 10 30	10 08 28	00 00 20	30 18 38
19	32 19 39	22 11 31	12 09 29	02 01 21	32 19 39
1A	34 1A 3A	24 12 32	14 0A 2A	04 02 22	34 1A 3A
1B	36 1B 3B	26 13 33	16 0B 2B	06 03 23	36 1B 3B
1C	38 1C 3C	28 14 34	18 0C 2C	08 04 24	38 1C 3C
1D	3A 1D 3D	2A 15 35	1A 0D 2D	0A 05 25	3A 1D 3D
1E	3C 1E 3E	2C 16 36	1C 0E 2E	0C 06 26	3C 1E 3E
1F	3E 1F 3F	2E 17 37	1E 0F 2F	0E 07 27	3E 1F 3F
20 INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX	40 (1) INDEX

NOTE 1 - SECTOR 32 (/40) IS RESERVED AS AN ALTERNATE SECTOR AND IS ALWAYS THE SECTOR BEFORE INDEX.

NOTE 2 - COLUMN 1 = LOGICAL SECTOR# OF SECTOR AS WRITTEN ON FILE
COLUMN 2 = RECORD# 1 AS CODED IN DCB FOR WRT/RD/SCAN OPS
COLUMN 3 = RECORD# 2 AS CODED IN DCB FOR WRT/RD/SCAN OPS

(STEP 013 CONTINUES)

```
(STEP 013 CONTINUED)
*                                                                     *
*                                                                     *
*        SECTOR ID FORMAT AS WRITTEN ON FILE (2 WORDS)                *
*     ----- WORD 0 ----------     ------- WORD 1 -----------          *
*      (FLAG)      (SECTOR#)      (HEAD#)      (CYLINDER#)           *
*     01234567  89101112131415   01234567     89101112131415         *
*     FFFFFFFF  0S S S S S S 0   0HHHHHHC     CC C C C C C C         *
*                                                                     *
*  NOTE: FIXED HEADS ARE INDICATED BY BIT ONE (1) OF HEAD#            *
*           BIT1 = 0 - NO FIXED HEADS                                 *
*           BIT1 = 1 - FIXED HEADS                                    *
*                                                                     *
*                                                                     *
*                                                                     *
*                                                                     *
*     **** CYCLE STEAL STATUS ****                                    *
*                                                                     *
* WORD 0: RESIDUAL ADDRESS                                            *
* WORD 1: RESIDUAL COUNT                                              *
* WORD 2: RETRY COUNTS WORD 1                                         *
* WORD 3: RETRY COUNTS WORD 2                                         *
* WORD 4: ERROR STATUS WORD 1                                         *
*      BIT 00 - HARD ERROR                                            *
*          01 - ATTACHMENT SENSED INTERFACE PARITY CHECK              *
*          02 - ATTACHMENT GLOBAL TIMEOUT                            *
*          03 - ALTERNATE SECTOR PROCESSED                           *
*          04 - SOFT ERROR RETRY                                     *
*          05 - *DISK UNIT                                           *
*          06 - *CONFIGURATION                                       *
*          07 - *BITS                                                *
*          08 - SCAN NOT HIT                                         *
*          09 - SCAN EQUAL HIT                                       *
*          10 - ATTACHMENT EQUIPMENT CHECK                           *
*          11 - WRITE ERROR                                          *
*          12 - CYCLE STEAL STATUS ERROR                             *
*          13 - END OF DISK                                          *
*          14 - ATTACHMENT LOCAL TIMEOUT                             *
*          15 - DISK INTERFACE ERRORS                                *
* WORD 5: ERROR STATUS WORD 2                                         *
*      BIT 00 - CRC CHECK                                             *
*          01 - DISK UNIT PARITY CHECK                               *
*          02 - DISK UNIT SENSED INTERFACE PARITY CHECK              *
*          03 - WRITE GATE CHECK                                     *
*          04 - NO RECORD FOUND                                      *
*          05 - NOT VALID COMMAND PARAMETER                          *
*          06 - MISSING SECTOR PULSE                                 *
*          07 - DISK UNIT TIME OUT                                   *
*          08 - FIXED HEAD NOT SELECTED                              *
*          09 - BRAKE APPLIED                                        *
*          10 - TRACK UNAVAILABLE                                    *
*          11 - DISK UNIT COMMAND ERROR                              *
*          12 - DATA UNSAFE                                          *
*          13 - SEEK NOT COMPLETE                                    *
*          14 - HOME                                                 *
*          15 - NOT READY                                            *
* WORD 6: LAST DCB ADDRESS                                            *
* WORD 7: CURRENT HEAD/CYLINDER                                       *
* WORD 8: PREVIOUS HEAD/CYLINDER                                      *
* WORD 9: FLAG SECTOR/RECORD#                                         *
* WORD10: HEAD/CYLINDER                                               *
* WORD11: DISK UNIT SENSE BYTES 1 AND 2                               *
* WORD12: DISK UNIT DIAGNOSTIC SENSE BYTE 3 AND WRAP BYTE             *
*                                                                     *
***********************************************************************
IF NO ALTERNATE CONSOLE R3 (LEVEL 3) HOLDS
STORAGE ADDRESS OF ERROR BUFFER.
RECORD ERRORS WHEN DISK VERIFY IS COMPLETE
(WAIT LAMP ON, DATA LAMPS = 7A6F).
THEN ENTER '6' TO CONTINUE (B),6,(I),(I).

IF THE TU CANNOT EXECUTE NORMALLY IT WILL
ABORT.    (SEE   DIAGNOSTIC   SERVICE    GUIDE
05.04.00.)
IF NO ALTERNATE CONSOLE ASSIGNED - R3 (LEVEL
3) WILL HOLD THE STORAGE ADDRESS OF THE ABORT
DATA.
VERIFY COMPLETED OK?
MDI=$TUXX,T7A97,02,0000,EQ
Y N
|
|  014
|  NO LEG NOT VALID GO TO NEXT STEP
|                                                                     IF THE TU CANNOT EXECUTE NORMALLY, IT WILL
|                                                                     ABORT.    (SEE   DIAGNOSTIC   SERVICE    GUIDE
|                                                                     05.04.00.)
|                                                                     IF NO ALTERNATE CONSOLE ASSIGNED - R3 (LEVEL
|                                                                     3) WILL HOLD THE STORAGE ADDRESS OF THE ABORT
|                                                                     DATA.
|  MDI=$NVLD
|
015
END OF TEST
MDI=$STOP
```

SINGLE REPLACEMENT

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	1	001
7A21	B	2	002
7A21	C	3	003
7A21	D	4	004
7A21	E	5	005
7A21	F	6	006
7A21	H	7	007
7A21	I	8	008
7A21	J	9	009
7A21	K	10	010

001
(ENTRY POINT A)

PROBABLE FAILURE IS THE A1-B2 CARD
EXCHANGE DATA CHANNEL CARD.

LOCATION:- A1-B2

MIM REFERENCE:- 3-20.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST ENTRY POINT A

FAILING FIELD REPLACEMENT UNITS MAY BE:
CARD A1-B2
CARD A1-C2
CARD A1-D2
DE
CARD A1-E2
ACTUATOR DRIVER CARD
CARD A1-F2
INSPECT AND RESEAT CABIES AT BOARD A1

002
(ENTRY POINT B)

PROBABLE FAILURE IS THE A1-C2 CARD
EXCHANGE LOGIC 1 CARD.

LOCATION:- A1-C2

MIM REFERENCE:- 3-20.

SPECIAL CHECKS:-
CHECK SEATING OF JUMPERS ON CARD.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST ENTRY POINT A

CC3
(ENTRY POINT C)

PROBABLE FAILURE IS THE A1-D2 CARD
EXCHANGE LOGIC 2 CARD.

LOCATION:- A1-D2

MIM REFERENCE:- 3-20.

SPECIAL CHECKS:-
CHECK SEATING OF JUMPERS ON CARD.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST ENTRY POINT A

004
(ENTRY POINT D)

PROBABLE FAILURE IS THE A1-E2 CARD
EXCHANGE SERVO 1 CARD.

LOCATION:- A1-E2

MIM REFERENCE:- 3-20.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST ENTRY POINT A

005
(ENTRY POINT E)

PROBABLE FAILURE IS THE A1-F2 CARD
EXCHANGE SERVO 2 CARD.

LOCATION:- A1-F2

MIM REFERENCE:- 3-20.

SPECIAL CHECKS:-
CHECK SEATING OF JUMPERS ON CARD.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST ENTRY POINT A

006
(ENTRY POINT F)

EXCHANGE ACTUATOR COIL DRIVER CARD.

LOCATION:- A1-GATE

MIM REFERENCE:- 3-20.

SPECIAL CHECKS:-
CHECK VOLTAGE CROSS-OVER CONTACTS
VC7, VC8 AND VC10
METER CONTINUITY ON BOARD A1
BETWEEN VC10-D AND VC5-C
AND VC10-C AND VC5-D
(FAILURE MAY HAVE CAUSED DAMAGE TO BOARD
CONDUCTORS.)

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST ENTRY POINT A

007
(ENTRY POINT H)

PROBABLE FAILURE IS THE DE OR CAELES TO THE A1 BOARD
EXCHANGE DISK ENCLOSURE UNIT.

MIM REFERENCE:- SECTION 3.5 AND 3.6

SPECIAL CHECKS:-

.VOLTAGE CHECKS -
+6V A2D03 AND T1B06
-4V A2D06 AND T1B04.
-8V A2B10, A2B12, A2D09 AND A2D13

.CHECK VOLTAGE CROSSOVER CONTACTS -
VC3, VC5, VC6, VC9 AND VC10.

.CHECK LOCKOUT LEVER IS FULLY DISENGAGED.

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST ENTRY POINT A

008
(ENTRY POINT I)

PROBABLE FAILURE IS THE A1-B2 CARD OR A2-C2 AND A2-D2 OR THE CABLES BETWEEN THE FILE AND THE CONTROLLER.
EXCHANGE DATA CHANNEL CARD.

LOCATION:- A1-B2

EXCHANGE A2-C2 AND A2-D2 CARDS.

SPECIAL CHECKS:-

MAINTENANCE LOGIC DIAGRAMS REFERENCE: SF537.

.CHECK SEATING OF SYSTEM CABLE
A1-A5
.CHECK CONTINUITY OF SYSTEM CABLES
(A1-A3, A1-A4, AND A1-A5) AND
.CHECK FOR SHORT CIRCUIT TO GROUND
A1-A5B08 (+ NRZ DATA TO SYSTEM)
A1-A5B10 (- WRITE DATA)
A1-A5D03 (+ WRITE GATE RETURN)
A1-A5D05 (- FAST SYNC)
A1-A5D10 (1F READ CLOCK TO SYSTEM)
A1-A5D12 (1F WRITE CLOCK TO SYSTEM)

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST ENTRY POINT A

009
(ENTRY POINT J)

PROBABLE FAILURE IS THE A1-C2 CARD OR A2-C2 AND A2-D2 OR THE CABLES BETWEEN THE FILE AND THE CONTROLLER.
EXCHANGE LOGIC 1 CARD.

LOCATION:- A1-C2

EXCHANGE A2-C2 AND A2-D2 CARDS.

SPECIAL CHECKS:-

MAINTENANCE LOGIC DIAGRAMS REFERENCE: SF537.

.CHECK SEATING OF SYSTEM CABLES
A1-A3, A1-A4 AND A1-A5
.CHECK CONTINUITY OF SYSTEM CABLES
(A1-A3, A1-A4 AND A1-A5) AND
.CHECK FOR SHORT CIRCUIT TO GROUND
A1-A5B03 (- CONTROL SAMPLE)
A1-A5B04 (- INTERUPT)
A1-A5B12 (+ DRIVER DEGATE)
A1-A5D04 (- DATA SELECT)
A1-A5D06 (- RESET ERROR)
A1-A5D09 (- READ)
A1-A5D11 (- WRITE)

A1-A3B02 AND A1-A4B02 (- TAG 2)
A1-A3B03 AND A1-A4B03 (- TAG 1)
A1-A3B04 AND A1-A4B04 (- TAG 0)
A1-A3B05 AND A1-A4B05 (- TAG PARITY)
A1-A3B12 AND A1-A4B12 (- CONTROL SAMPLE REC)
A1-A3D04 AND A1-A4D04 (- CONTROL BUS 0)
A1-A3D05 AND A1-A4D05 (- CONTROL BUS 1)
A1-A3D06 AND A1-A4D06 (- CONTROL BUS 2)
A1-A3D07 AND A1-A4D07 (- CONTROL BUS 3)
A1-A3D09 AND A1-A4D09 (- CONTROL BUS 4)
A1-A3D10 AND A1-A4D10 (- CONTROL BUS 5)
A1-A3D11 AND A1-A4D11 (- CONTROL BUS 6)
A1-A3D12 AND A1-A4D12 (- CONTROL BUS 7)
A1-A3D13 AND A1-A4D13 (- CONTROL BUS PARITY)

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST ENTRY POINT A

010
(ENTRY POINT K)

PROBABLE FAILURE IS THE A1-D2 CARD OR A2-C2 AND A2-D2 OR THE CABLES BETWEEN THE FILE AND THE CONTROLLER.
EXCHANGE LOGIC 2 CARD.

LOCATION:- A1-D2

MIM REFERENCE:- 3-20.

EXCHANGE A2-C2 AND A2-D2 CARDS.

SPECIAL CHECKS:-

MAINTENANCE LOGIC DIAGRAMS REFERENCE: SF537.

.CHECK SEATING OF SYSTEM CABLE
A1-A5
.CHECK CONTINUITY OF SYSTEM CABLES
(A1-A3, A1-A4 AND A1-A5) AND
.CHECK FOR SHORT CIRCUIT TO GROUND
A1-A5B04 (- SYSTEM SECTOR)
A1-A5B09 (- SECTOR PULSES MISSING)
A1-A5D07 (- SYSTEM INDEX)

IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST ENTRY POINT A

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A10	A	1	001

001
(ENTRY POINT A)
POWER OFF

REMOVE COVER FROM FILE 0 (SEE MIM 3.1.1)
REMOVE A2-C2 CARD

METER FOR CONTINUITY FROM
A2-B2D02 TO GND.
IS CONTINUITY OK?
Y N

002
EXCHANGE OR REPAIR BOARD A2

003
METER FOR CONTINUITY FROM A2-B2D02 TO B2B13.
IS CONTINUITY OF CHAIN CABLE OK?
Y N

004
METER FOR CONTINUITY FROM,
A2-B2D02 TO A1-A3D02.
A2-B2B13 TO A1-A3B13.
IS CONTINUITY TO BOARD A1 OF THE FILE OK?
Y N

005
INSPECT AND RESEAT CABLE A2-B2 TO A1-A3.

006
METER FOR CONTINUITY FROM,
A1-A3D02 TO A1-A4D02.
A1-A3B13 TO A1-A4B13.
IS CONTINUITY OF BOARD A1 OK?
Y N

007
EXCHANGE OR REPAIR BOARD A1

008
IS THIS THE LAST FILE IN THE SYSTEM?
Y N

009
REMOVE COVER FROM FILE 1 (SEE MIM 3.1.1)
METER FOR CONTINUITY FROM FILE 0 TO FILE 1
FILE0 A1-A4D02 TO FILE1 A1-A3D02.
FILE0 A1-A4B13 TO FILE1 A1-A3B13.
IS CONTINUITY OF CABLE FILE0 TO FILE1 OK?
Y N

010
INSPECT AND RESEAT CABLE FROM
FILE0 A1-A4 TO FILE1 A1-A3

011
METER FOR CONTINUITY ON BOARD A1 FILE 1.
A1-A4D02 TO A1-A3D02.
A1-A4B13 TO A1-A3B13.
IS CONTINUITY OF BOARD A1 OF FILE 1 OK
Y N

012
EXCHANGE OR REPAIR BOARD A1

013
IS THIS THE LAST FILE IN THE SYSTEM?
Y N

CHECK THE JUMPER(S) ON A2 BOARD
REFERENCE MIM SECTION 2.13
* NOTE FOR ALL CONTINUITY CHECKS USE THE RX1 SCALE AND CHECK THE READING FOR LESS THAN 2 OHMS

PAGE 2 OF 6

014
REMOVE COVER FROM FILE 2 (SEE MIM 3.1.1)
METER FOR CONTINUITY FROM FILE 1 TO FILE 2
FILE1 A1-A4D02 TO FILE2 A1-A3D02.
FILE1 A1-A4B13 TO FILE2 A1-A3B13.
IS CONTINUITY OF CABLE FILE1 TO FILE2 OK?
Y N

015
INSPECT AND RESEAT CABLE FROM
FILE1 A1-A4 TO FILE2 A1-A3

016
METER FOR CONTINUITY ON BOARD A1 FILE 2.
A1-A3D02 TO A1-A4D02.
A1-A3B13 TO A1-A4B13.
IS CONTINUITY OF BOARD A1 FILE -2 OK?
Y N

017
EXCHANGE OR REPAIR BOARD A1

018
IS THIS THE LAST FILE IN THE SYSTEM?
Y N

019
REMOVE COVER FROM FILE 3 (SEE MIM 3.1.1)
METER FOR CONTINUITY FROM FILE 2 TO FILE 3
FILE2 A1-A4D02 TO FILE3 A1-A3D02.
FILE2 A1-A4B13 TO FILE3 A1-A3B13.
IS CONTINUITY OF CABLE FILE2 TO FILE3 OK?
Y N

020
INSPECT AND RESEAT CABLE A1-A4 TO A1-A3.

021
METER FOR CONTINUITY ON BOARD A1 FILE 3.
A1-A3D02 TO A1-A4D02.
A1-A3B13 TO A1-A4B13.
IS CONTINUITY OF BOARD A1 OF FILE 3 OK?
Y N

022
EXCHANGE OR REPAIR BOARD A1

023
RESEAT TERMINATOR CARD A1-A1A4.
IF FAILS TO REPAIR
EXCHANGE TERMINATOR CARD A1-A4

024
RESEAT TERMINATOR CARD A1-A1A4.
IF FAILS TO REPAIR
EXCHANGE TERMINATOR CARD A1-A4

025
RESEAT TERMINATOR CARD A1-A1A4.
IF FAILS TO REPAIR
EXCHANGE TERMINATOR CARD A1-A4

026
RESEAT TERMINATOR CARD A1-A1A4.
IF FAILS TO REPAIR
EXCHANGE TERMINATOR CARD A1-A4

027
METER FOR CONTINUITY FROM,
A2-B2B13 TO A2-C2M07.
CK FOR CONTINUITY OF DEDICATED CABLE(S)
IS THE CONTINUITY OK?
Y N

028
METER FOR CONTINUITY FROM,
A2-B2B13 TO A2-B3D13.
CK CONTINUITY OF CABLE
IS THE CONTINUITY OK?
Y N

029
METER FOR CONTINUITY FROM,
A2-B2B13 TO A2-B3B02.
CK CONTINUITY OF BOARD A2
IS THE CONTINUITY OK?
Y N

030
EXCHANGE OR REPAIR BOARD A2

031
METER FOR CONTINUITY FROM,
A2-B3B02 TO A1-A5B02.
CK CONTINUITY TO BOARD A1 OF FILE 0
IS THE CONTINUITY OK?
Y N

032
INSPECT AND RESEAT CABLE A2-B3 TO A1-A5.

033
METER FOR CONTINUITY FROM,
A2-B3B02 TO A1-A5D13.
CK CONTINUITY OF BOARD A1 OF FILE 0
IS THE CONTINUITY OK?
Y N

034
EXCHANGE OR REPAIR BOARD A1

035
INSPECT AND RESEAT CABLE A2-B3 TO A1-A5.

036
IS THIS THE LAST FILE IN THE SYSTEM?
Y N

037
METER FOR CONTINUITY FROM,
A2-B3D13 TO A2-B4D13.
CK CONTINUITY OF CABLE TO FILE #1
IS THE CONTINUITY OK?
Y N

038
METER FOR CONTINUITY FROM,
A2-B3D13 TO A2-B4B02.
CK CONTINUITY OF BOARD A2
IS THE CONTINUITY OK?
Y N

039
EXCHANGE OR REPAIR BOARD A2

040
REMOVE COVER FROM FILE 1 (SEE MIM 3.1.1)
METER FOR CONTINUITY FROM DISK CONTROLLER
TO FILE 1
A2-B4B02 TO A1-A5B02.
CK CONTINUITY TO BOARD A1 OF FILE 1
IS THE CONTINUITY OK?
Y N

041
INSPECT AND RESEAT CABLE A2-B4 TO FILE 1
A1-A5.

042
METER FOR CONTINUITY FROM DISK CONTROLLER
TO FILE 1.
A2-B4B02 TO A1-A5D13.
CK CONTINUITY OF BOARD A1 OF FILE 1
IS THE CONTINUITY OK?
Y N

043
EXCHANGE OR REPAIR BOARD A1

PAGE 4 OF 6

044
INSPECT AND RESEAT CABLE A2-B4 TO FILE 1
A1-A5.

045
IS THIS THE LAST FILE IN THE SYSTEM?
Y N

046
METER FOR CONTINUITY FROM,
A2-B4D13 TO A2-A4B02.
CK CONTINUITY OF CABLE TO FILE #2
IS THE CONTINUITY OK?
Y N

047
METER FOR CONTINUITY FROM,
A2-B4D13 TO A2-A4D13.
CK CONTINUITY OF BOARD A2
IS THE CONTINUITY OK?
Y N

048
EXCHANGE OR REPAIR BOARD A2

049
REMOVE COVER FROM FILE 2 (SEE MIM 3.1.1)
METER FOR CONTINUITY FROM DISK CONTROLLER
TO FILE 2.
A2-A4D13 TO A1-A5D13.
CK CONTINUITY TO BOARD A1 OF FILE 2
IS THE CONTINUITY OK?
Y N

050
INSPECT AND RESEAT CABLE A2-A4 TO FILE 2
A1-A5.

051
METER FOR CONTINUITY FROM DISK CONTROLLER
TO FILE 2.
A2-A4D13 TO A1-A5B02.
CK CONTINUITY OF BOARD A1 OF FILE 2
IS THE CONTINUITY OK?
Y N

052
EXCHANGE OR REPAIR BOARD A1

053
INSPECT AND RESEAT CABLE A2-A4 TO FILE 2
A1-A5.

054
IS THIS THE LAST FILE IN THE SYSTEM?
Y N

055
METER FOR CONTINUITY FROM,
A2-A4B02 TO A2-A3B02.
CK CONTINUITY OF CABLE TO FILE #3
IS THE CONTINUITY OK?
Y N

056
METER FOR CONTINUITY FROM,
A2-A4B02 TO A2-A3D13.
CK CONTINUITY OF BOARD A2
IS THE CONTINUITY OK?
Y N

057
EXCHANGE OR REPAIR BOARD A2

058
REMOVE COVER FROM FILE 3 (SEE MIM 3.1.1)
METER FOR CONTINUITY FROM DISK
CONTROLLER TO FILE 3.
A2-A3D13 TO A1-A5D13.
CK CONTINUITY TO BOARD A1 OF FILE 3
IS THE CONTINUITY OK?
Y N

PAGE 5 OF 6

059
INSPECT AND RESEAT CABLE A2-A3 TO FILE 3 A1-A5.

060
METER FOR CONTINUITY FROM DISK CONTROLLER TO FILE 3.
A2-A3D13 TO A1-A5B02.
CK CONTINUITY OF BOARD A1 OF FILE 3
IS THE CONTINUITY OK?
Y N

061
EXCHANGE OR REPAIR BOARD A1

062
INSPECT AND RESEAT CABLE A2-A3 TO FILE 3 A1-A5.

063
EXCHANGE OR REPAIR BOARD A2

064
CHECK JUMPERS ON BOARD A2.
IF FAILS TO REPAIR
EXCHANGE BOARD A2

CONTROLLER CONTINUITY CONNECTIONS

WITH THE NUMBER OF FILES INSTALLED THE WIRING MUST BE INSTAILED AS FOLLOWS.

FILES	A2B02-A2D02	A2B03-A2D03	A2B04-A2D04
1	YES	NO	NO
2	NO	YES	NO
3	NO	NO	YES
4	NO	NO	NO

065
CHECK JUMPERS ON BOARD A2.
IF FAILS TO REPAIR
EXCHANGE BOARD A2

CONTROLLER CONTINUITY CONNECTIONS

WITH THE NUMBER OF FILES INSTALLED THE WIRING MUST BE INSTALLED AS FOLLOWS.

FILES	A2B02-A2D02	A2B03-A2D03	A2B04-A2D04
1	YES	NO	NO
2	NO	YES	NO
3	NO	NO	YES
4	NO	NO	NO

066
CHECK CONNECTIONS ON BOARD A2.
IF FAILS TO REPAIR
EXCHANGE BOARD A2

CONTROLLER CONTINUITY CONNECTIONS

WITH THE NUMBER OF FILES INSTALLED THE WIRING MUST BE INSTAILED AS FOLLOWS.

FILES	A2B02-A2D02	A2B03-A2D03	A2B04-A2D04
1	YES	NO	NO
2	NO	YES	NO
3	NO	NO	YES
4	NO	NO	NO

067
METER FOR CONTINUITY FROM,
A2-C2M07 TO GND.
CK CONTINUITY
IS THE CONTINUITY OK?
Y N

068
YOU HAVE FOUND NO REPAIR CHECK AGAIN
GO TO ENTRY POINT A

069
EXCHANGE A2-C2 OR A2-D2
OR BOARD A2

MAP 7A72

PAGE 1 OF 30

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	1	001
7A21	B	2	004
7A21	C	3	009
7A21	D	4	012
7A21	E	5	015
7A21	F	6	020
7A21	G	12	105
7A21	H	13	110
7A21	I	14	119
7A21	J	15	120
7A21	K	16	123
7A21	L	17	128
7A21	M	18	131
7A21	N	19	140
7A21	O	20	143
7A21	P	21	146
7A21	Q	22	151
7A21	R	23	154
7A21	S	24	161
7A21	T	25	164
7A21	U	26	169
7A21	V	27	178
7A21	X	28	181
7A21	Y	29	184
7A21	Z	30	189

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
6	022	7A73	A

001
(ENTRY POINT A)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	63
ACTUATOR DRIVER CARD	37

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

POWER OFF

METER RESISTANCE (1 OHM RANGE)
A1-F2S05 TO A1-F2U08
IS RESISTANCE LESS THAN 10 OHMS?
Y N

002
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2

003
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM. SEC 3.20

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
F2-23

004
(ENTRY POINT B)

THIS MAP ISOLATES SERVO PROBLEMS

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	65
SERVO 1 CARD (A1-E2)	24
ACTUATOR DRIVER CARD	10
LOGIC 2 CARD (A1-D2)	1

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MST1

PROBE MST1 A1-E2J05 (- CTR RUN)
ARE ANY PROBE LIGHTS ON?
Y N

005
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT B.

006
PROBE MST1 A1-E2J10 (+ ENABLE DATA)
IS LINE DOWN?
Y N

007
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

008
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT B.

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)

009
(ENTRY POINT C)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	49
LOGIC 1 CARD (A1-C2)	30
LOGIC 2 CARD (A1-D2)	21

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-F2S07 (- SEEK COMPLETE)
IS LINE UP?
Y N

| 010
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-C2

011
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT C.

012
(ENTRY POINT D)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 2 CARD (A1-D2)	58
LOGIC 1 CARD (A1-C2)	42

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2G10 (+ SERVO PROTECT)
IS LINE PULSING?
Y N

013
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

014
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
D2-44

015
(ENTRY POINT E)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	60
LOGIC 2 CARD (A1-D2)	40

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2J13 (- SEEK COMPLETE)
IS LINE DOWN?
Y N

016
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

017
ADD JUMPER BETWEEN A1-C2D07 AND A1-D2D08
PROBE VTL A1-D2J13 (- SEEK COMPLETE)
IS LINE DOWN?
Y N

018
EXCHANGE CARD A1-C2
REMOVE JUMPER
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

019
EXCHANGE CARD A1-D2
REMOVE JUMPER
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-05, D2-26

020
(ENTRY POINT F)
ENSURE ACTUATOR LOCKOUT IS DISENGAGED

OBSERVE DISK PULLEY
IS DISK PULLEY TURNING?
Y N

021
POWER OFF

POWER ON AND WAIT 30 SECONDS
IS DISK PULLEY TURNING AFTER 30 SECONDS?
Y N

022
GO TO MAP7A73A
GO TO MAP 7A73, ENTRY POINT A.

023
RUN DIAGNOSTICS MAP7A20

024
(ENTRY POINT W)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	54
LOGIC 2 CARD (A1-D2)	20
LOGIC 1 CARD (A1-C2)	16
ACTUATOR DRIVER CARD	8
SERVO 1 CARD (A1-E2)	1
DE UNIT	1

(NOTE: THERE IS LESS THAN A 1% PROBABLE THAT DAMAGE TO THE ACTUATOR IN THE DISK ENCLOSURE (DE) CAN CAUSE YOU TO ENTER THIS MAP. EXCHANGE DE ONLY AFTER ALL OTHER FIELD REPLACEMENT UNITS HAVE BEEN TRIED)
INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2J05 (+ OUT)
IS LINE DOWN?
Y N

025
PROBE VTL A1-C2U06 (- ABS TRACK ADDRESS 1)
IS LINE UP?
Y N

026
PROBE VTL A1-C2U06 (- ABS TRACK ADDRESS 1)
IS LINE PULSING?
Y N

027
PROBE VTL A1-D2G13 (+ NORMAL ERROR)
IS LINE PULSING?
Y N

028
PROBE VTL A1-D2B05 (- ABS TRACK ADDRESS 1)
IS LINE UP?
Y N

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-09, C2-11, D2-02, D2-21, D2-39, D2-47, F2-04, F2-05, F2-18, F2-21, F2-24, F2-28

029
METER VOLTAGE (6V RANGE)
A1-D2J07 (POS)
A1-D2D08 (NEG)
IS VOLTAGE IN RANGE -0.1 TO +0.6V?
Y N

030
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

031
PROBE VTL A1-C2D13 (+ BEHIND HOME)
IS LINE DOWN?
Y N

032
PROBE VTL A1-D2M08 (- CALIBRATE ADDRESS)
IS LINE UP?
Y N

033
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

034
ADD JUMPER A1-F2P11 TO A1-F2P08
METER VOLTAGES (60V RANGE)
A1-F2M04 (POS) TO A1-F2P08 (NEG)
A1-F2M05 (POS) TO A1-F2P08 (NEG)
ARE BOTH VOLTAGES MORE THAN 20V?
Y N

035
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

036
REMOVE JUMPER(S).
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

037
PROBE VTL A1-D2M08 (- CALIBRATE ADDRESS)
IS LINE UP?
Y N

038
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

039
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

040
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

041
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

042
PROBE VTL A1-D2M08 (- CALIBRATE ADDRESS)
IS LINE UP?
Y N

043
PROBE VTL A1-C2S05 (- COUNT DWN 2 TRACKS)
IS LINE PULSING?
Y N

044
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

045
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

046
PROBE VTL A1-D2G13 (+ NORMAL ERROR)
IS LINE PULSING?
Y N

047
PROBE VTL A1-C2D13 (+ BEHIND HOME)
IS LINE DOWN?
Y N

048
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

049
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

050
PROBE VTL A1-C2D13 (+ BEHIND HOME)
IS LINE DOWN?
Y N

051
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

052
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

053
PROBE VTL A1-D2G13 (+ NORMAL ERROR)
IS LINE DOWN?
Y N

054
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

055
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

056
PROBE VTL A1-C2U06 (- ABS TRACK ADDRESS 1)
IS LINE UP?
Y N

057
PROBE VTL A1-D2U11 (+ BEHIND HOME)
IS LINE DOWN?
Y N

058
PROBE VTL A1-C2D13 (+ BEHIND HOME)
IS LINE DOWN?
Y N

059
PROBE VTL A1-D2B05 (- ABS TRACK ADDRESS 1)
IS LINE UP?
Y N

060
METER VOLTAGE (6V RANGE)
A1-D2B09 (POS)
A1-D2D08 (NEG)
IS VOLTAGE IN RANGE +0.3V TO -0.3V?
Y N

061
METER VOLTAGE (6V RANGE)
A1-D2D08 (POS)
A1-D2B09 (NEG)
IS VOLTAGE MORE THAN 4.5V?
Y N

062
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

063
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

064
METER VOLTAGE (60V RANGE)
A1-F2U07 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 10V?
Y N

065
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

066
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

067
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

068
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

069
PROBE VTL A1-D2G13 (+ NORMAL ERROR)
IS LINE PULSING?
Y N

070
PROBE VTL A1-C2D13 (+ BEHIND HOME)
IS LINE DOWN?
Y N

071
METER VOLTAGE (6V RANGE)
A1-F2M08 (POS)
A1-F2P08 (NEG)
IS VOLTAGE IN RANGE -0.3V TO +0.3V?
Y N

072
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

073
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

074
PROBE VTL A1-C2U06 (- ABS TRACK ADDRESS 1)
IS LINE PULSING?
Y N

075
METER VOLTAGE (6V RANGE)
A1-D2B09 (POS)
A1-D2D08 (NEG)
IS VOLTAGE IN RANGE -0.3V TO +0.3V?
Y N

076
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

077
METER VOLTAGE (60V RANGE)
A1-F2U07 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 10V?
Y N

078
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM, SEC 3.20
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

079
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

080
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

081
PROBE VTL A1-C2U06 (- ABS TRACK ADDRESS 1)
IS LINE PULSING?
Y N

082
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

083
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

084
PROBE VTL A1-F2P11 (+ NOT IN DRIVE)
IS LINE UP?
Y N

085
PROBE VTL A1-D2G13 (+ NORMAL ERROR)
IS LINE PULSING?
Y N

086
PROBE VTL A1-F2P11 (+ NOT IN DRIVE)
IS LINE PULSING?
Y N

087
PROBE VTL A1-D2U11 (+ BEHIND HOME)
IS LINE DOWN?
Y N

088
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

089
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

090
METER VOLTAGE (6V RANGE)
A1-D2B09 (POS)
A1-D2D08 (NEG)
IS VOLTAGE IN RANGE -0.3V TO +0.3V?
Y N

091
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

092
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

093
METER VOLTAGE (6V RANGE)
A1-F2P08 (POS)
A1-F2P04 (NEG)
IS VOLTAGE MORE THAN 4.0V?
Y N

094
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

095
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

096
PROBE VTL A1-C2D13 (+ BEHIND HOME)
IS LINE DOWN?
Y N

097
PROBE VTL A1-D2U11 (+ BEHIND HOME)
IS LINE DOWN?
Y N

098
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

099
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

100
METER VOLTAGE (60V RANGE)
A1-F2U07 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 10V?
Y N

101
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM. SEC 3.20
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

102
METER VOLTAGE (6V RANGE)
A1-D2J07 (POS)
A1-D2J08 (NEG)
IS VOLTAGE IN RANGE 0V TO 0.5V?
Y N

103
EXCHANGE ACTUATOR DRIVER CARD ON A1 GATE
SEE MIM. SEC 3.20
AND
EXCHANGE CARD A1-F2

104
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT W.

105
(ENTRY POINT G)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
DE UNIT	79
LOGIC 1 CARD (A1-C2)	21

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

ENSURE ACTUATOR LOCK IS FULLY DISENGAGED.
WAS LOCK DISENGAGED?
Y N

- 106
  FULLY DISENGAGE LOCK
  RUN DIAGNOSTIC PROGRAMS MAP7A20
  DIAGNOSTICS RUN OK?
  Y N
  - 107
    EXCHANGE CARD A1-C2
    IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
    EXCHANGE DE UNIT
    IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT G.
  - 108
    RETURN SYSTEM TO CUSTOMER

109
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT G.

110
(ENTRY POINT H)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	43
DE UNIT	33
LOGIC 2 CARD (A1-D2)	24

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

POWER OFF

METER RESISTANCE BETWEEN A1-F2J08 AND A1-F2J05
IS RESISTANCE MORE THAN 150 OHMS?
Y N

111
DISCONNECT VC3
(REFERENCE SF570)
METER RESISTANCE OF DE RESISTORS (1X OHM RANGE)
VC3-C TO VC3-D
IS RESISTANCE MORE THAN 150 OHMS?
Y N

112
THE PROBLEM IS BAD DE TRIMMER RESISTORS.
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

113
THE PROBLEM IS A SHORT TO GROUND ON THE DE TRIMMER RESISTOR CABLE
REPAIR OR EXCHANGE AS REQUIRED.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

114
ADD JUMPER A1-D2P07 TO A1-D2P08
POWER ON

SWITCH PROBE TO MULTI

PROBE VTL A1-F2B04 (+ SERVO CLOCK SS)
IS LINE PULSING?
Y N

115
EXCHANGE CARD A1-F2
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

116
PROBE VTL A1-D2G05 (+ SERVO CLOCK SS)
IS LINE PULSING?
Y N

117
EXCHANGE BOARD A1.

118
CHECK SEATING OF JUMPERS ON CARD
EXCHANGE CARD A1-D2
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
F2-02

119
(ENTRY POINT I)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	70
LOGIC 2 CARD (A1-D2)	30

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

EXCHANGE CARD A1-F2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
D2-11

120
(ENTRY POINT J)

REF SF500 PAGES FOR PINS

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	59
LOGIC 2 CARD (A1-D2)	41

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

METER CONTINUITY OF CABLE A1-A5B04
IS CONTINUITY OK?
Y N

| N
| 121
| REPAIR OR EXCHANGE A1-A5 CABLE.

122
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

123
(ENTRY POINT K)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-B2)	42
LOGIC 1 CARD (A1-C2)	30
DE UNIT	24
ACTUATOR DRIVER CARD	04

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MST1

PROBE MST1 A1-B2B10 (- RD FIXED HDS)
IS LINE DOWN?
Y N

Y	124 EXCHANGE CARD A1-B2 IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD EXCHANGE DE UNIT IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT K.

125
TO FIND WHICH HEAD IS SELECTED PROBE THE PINS SHOWN IN TABLE 3.
IF THE CONDITIONS MATCH, THAT HEAD IS SELECTED.
TABLE 3

	PROBE VTL		PROBE MST1	
HEAD	B2M07	B2M08	B2P04	B2M04
0	U	D	U	U
1	U	D	U	D
2	U	D	D	U
3	U	D	D	D
4	D	U	U	U
5	D	U	U	D
6	D	U	D	U
7	D	U	D	D

NOTE: D=DOWN,U=UP
IS A VALID HEAD SELECTED?
Y N

Y	126 EXCHANGE CARD A1-C2 IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD EXCHANGE CARD A1-B2 IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD EXCHANGE DE UNIT IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT K.

127
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT K.

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
B2-08, B2-09

128
(ENTRY POINT L)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	59
LOGIC 2 CARD (A1-D2)	41

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2D05 (- RESET CALIBRATION)
IS LINE UP?
Y N

129
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

130
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-03

131
(ENTRY POINT M)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-B2)	78
LOGIC 1 CARD (A1-C2)	10
DE UNIT	9
DISK CNTRL A2-C2,A2-D2	1
CABLES TO THE DISK	1

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-B2D11 (MARS SAFETY)
IS LINE DOWN?
Y N

132
PROBE VTL A1-C2S11 (- SERVO UNSAFE)
IS LINE DOWN?
Y N

133
PROBE VTL A1-C2M11 (+ DATA UNSAFE)
(IF NO LIGHTS TEST FOR DOWN LEVEL ON MST2/1)
IS LINE DOWN?
Y N

134
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT M.

135
METER VOLTAGE (6VOLT RANGE)
A1-B2B12 (POS)
A1-B2D08 (NEG)
IS VOLTAGE IN RANGE 5V TO 6V?
Y N

136
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT M.

137
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT M.

138
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT M.

139
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT M.

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
B2-03, B2-05, C2-06, C2-29

140
(ENTRY POINT N)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	59
LOGIC 2 CARD (A1-D2)	41

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2S03 (+ BYTE CNT BIT 16)
IS LINE PULSING?
Y N

| 141
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-C2

142
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
D2-40

143
(ENTRY POINT 0)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	59
LOGIC 2 CARD (A1-D2)	41

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2S07 (- SET SEEK)
IS LINE UP?
Y N

| 144
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-D2

145
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-27

146
(ENTRY POINT P)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	50
LOGIC 2 CARD (A1-D2)	41
SERVO 2 CARD (A1-F2)	9

ENSURE ACTUATOR LOCKOUT IS DISENGAGED

(NOTE: THERE IS A LESS THAN 1% PROBABLE THAT DAMAGE TO THE ACTUATOR IN THE DISK ENCLOSURE CAN CAUSE YOU TO ENTER THIS MAP. EXCHANGE DE ONLY AFTER ALL OTHER FIELD REPLACEMENT UNITS HAVE BEEN TRIED)
INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2D07 (- TAG 001 CLOCK 2)
IS LINE UP?
Y N
| 147
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.
|
148
PROBE VTL A1-C2P11 (- SEEK COMPLETE)
IS LINE DOWN?
Y N
| 149
| CHECK SEATING OF JUMPERS ON CARD A1-D2
| IF FAILS TO REPAIR
| EXCHANGE CARD A1-D2
| IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.
|
150
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-05

151
(ENTRY POINT Q)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	59
LOGIC 2 CARD (A1-D2)	41

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2P07 (+ BRAKE APPLIED)
IS LINE UP?
Y N
| 152
| EXCHANGE CARD A1-C2
| IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-D2
|
153
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
D2-35

154
(ENTRY POINT R)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	65
LOGIC 2 CARD (A1-D2)	35

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2D05 (- COUNT UP 2 TRKS)
IS LINE PULSING?
Y N

155
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

156
PROBE VTL A1-D2D07 (- COUNT DOWN 2 TRKS)
IS LINE PULSING?
(NOTE: OBSERVE FOR 1 MINUTE)
Y N

157
IS LINE UP?
Y N

158
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

159
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

160
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-09, D2-06, D2-08

161
(ENTRY POINT S)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	74
LOGIC 2 CARD (A1-D2)	26

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2U02 (+ OUT)
IS LINE DOWN?
Y N

| 162
| EXCHANGE CAPD A1-C2
| IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-D2

163
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-11

164
(ENTRY POINT T)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	70
LOGIC 2 CARD (A1-D2)	30

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2G02 (- SEL DEMOD Q2)
IS LINE DOWN?
Y N

- Y:
  - 165
    PROBE VTL A1-D2J06 (- SEL DEMOD N2)
    IS LINE PULSING?
    Y N
    - Y:
      - 166
        EXCHANGE CARD A1-D2
        IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
        EXCHANGE CARD A1-F2
    - N:
      - 167
        EXCHANGE CARD A1-F2
        IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
        EXCHANGE CARD A1-D2
- N:
  - 168
    EXCHANGE CARD A1-D2
    IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
    EXCHANGE CARD A1-F2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
D2-13

169
(ENTRY POINT U)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	73
LOGIC 2 CARD (A1-D2)	16
DA CHAN CARD (A1-B2)	6
SERVO 2 CARD (A1-F2)	5

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE PINS FOR HEAD 1 SELECTED
AS SHOWN BELOW

	PROBE MST1		PROBE VTL		
MODELS	A2B03	A2B04	A2B06	A2B05	A2B02
23/29MB	D	U	D	U	*
58/64MB	D	U	D	U	U

* INDICATES PIN IS NOT USED.
D=DOWN,U=UP
ARE LEVELS CORRECT?
Y N

170
PROBE PINS FOR HEAD 1 SELECTED
AS SHOWN BELOW

	PROBE VTL			
	B2P07	B2P05	B2P10	B2P06
	D	U	U	U

ARE LEVELS CORRECT?
Y N

171
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

172
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

173
PROBE VTL A1-C2S05 (- CNT DOWN 2 TRKS)
PROBE VTL A1-C2S06 (- CNT UP 2 TRKS)
ARE BOTH LINES UP?
Y N

174
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

175
PROBE VTL A1-C2U06 (- ABS TRACK ADDRESS 1)
IS LINE UP?
Y N

176
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

177
CHECK SEATING OF JUMPERS ON CARD A1-D2
IF FAILS TO REPAIR
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
C2-01, C2-07, C2-12, C2-19, C2-25,
D2-02, D2-06, D2-08, D2-30, D2-46

178
(ENTRY POINT V)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 2 CARD (A1-D2)	44
LOGIC 1 CARD (A1-C2)	32
DA CHAN CARD (A1-B2)	25

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-C2J02 (- AGC FREEZE)
IS LINE UP?
Y N

179
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

180
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
D2-18

181
(ENTRY POINT X)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	88
LOGIC 2 CARD (A1-D2)	12

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

PROBE VTL A1-D2U12 (- N/2 ERROR)
IS LINE DOWN?
Y N

182
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2

183
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
F2-18

184
(ENTRY POINT Y)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
DE UNIT	65
LOGIC 2 CARD (A1-D2)	35

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

SWITCH PROBE TO MULTI

ENSURE ACTUATOR LOCK IS FULLY DISENGAGED
IS ACTUATOR LOCK DISENGAGED?
Y N

- 185
  FULLY DISENGAGE ACTUATOR LOCK
  LOAD (C) MAP 7A20 FOR THIS FILE
  DO DIAGNOSTICS RUN OK?
  Y N
  - 186
    EXCHANGE CARD A1-D2
    IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
    EXCHANGE DE UNIT
  - 187
    RETURN SYSTEM TO CUSTOMER

188
PROBABLE DE UNIT FAILURE
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE DE UNIT

189
(ENTRY POINT Z)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 1 CARD (A1-E2)	74
SERVO 2 CARD (A1-F2)	26

INSPECT AND RESEAT CABLES ON A1 BOARD OF THE FAILING FILE

EXCHANGE CARD A1-E2
IF FAILS TO REPAIR RE-INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2

BOARD A1 NETS FOR THIS MAP:
(SEE BOARD A1 NETLIST TABLES - MAP7A75)
F2-03

DISK DRIVE FAILURE MAP

PAGE 1 OF 5

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	1	001
7A21	B	5	052

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	015	7A70	H
5	066	7A74	B

001
(ENTRY POINT A)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT:

FIELD REPLACEMENT UNIT	PROBABLE
MECHANICAL DRIVE (BELT,MOTOR,BRAKE)	64
SERVO 2 CARD (A1-F2)	13
LOGIC 2 CARD (A1-D2)	8
DE UNIT	8
SERVO 1 CARD (A1-E2)	7

TO ISOLATE MORE:

NOTE. RESET THE THERMAL TRIP ON THE DRIVE MOTOR WHEN EXITING THIS MAP.

POWER OFF

CHECK THE FOLLOWING:
1. DRIVE BELT BROKEN OR OFF THE PULLEYS. (INSTALL WITH SMOOTH SIDE IN CONTACT WITH PULLEY)
2. LOOSE PARTS IN OR AROUND THE DRIVE BELT GUARD.
3. LOOSE CABLE CONNECTIONS FROM POWER SUPPLY TO DRIVE MOTOR, J2 CONNECTOR ON SUPPLY.
ALL CORRECT?
Y N

002
REPAIR OR EXCHANGE AS REQUIRED.

003
INSPECT THE DRIVE BELT FOR CORRECT TENSION AND GENERAL CONDITION. (SEE MIM 2.5).
IS THE DRIVE BELT IN GOOD CONDITION AND HAVE CORRECT TENSION.?
Y N

004
ALIGN THE DRIVE BELT AND CHECK THE TENSION.
EXCHANGE THE BELT IF IN POOR CONDITION.
(SEE MIM SECTION 3.35).

005
ADD A JUMPER FROM A1-D2G10 TO A1-D2D08.
ADD A JUMPER FROM A1-D2G11 TO A1-D2J08.

SWITCH MOTOR SW ON THE POWER SUPPLY OFF, TURN DRIVE POWER SW ON.
TURN THE DRIVE MOTOR PULLEY CLOCKWISE BY HAND, TO TEST FOR BINDS OR BRAKE APPLIED.
---------->
IS THE MOTOR FREE TO TURN?
Y N

006
REMOVE THE JUMPER FROM A1-D2G10 TO A1-D2D08.
INSPECT THE BRAKE ASSEMBLY (SEE MIM SECTION 2.5 FOR LOCATION).
IS THE BRAKE PAD CLEAR OF THE SPINDLE PULLEY?
Y N

007
MEASURE THE FOLLOWING VOLTAGES:
1. BRAKE COIL TERMINAL 1 TO GROUND.
2. BRAKE COIL TERMINAL 2 TO GROUND.
ARE THEY BOTH 24V ?
Y N

008
IS EITHER ONE OF THEM 24V ?
Y N

CAUTION
OBSERVE THE ROTATION ARROW SHOWN ON THE BELT GUARD COVER AND KEEP THE ROTATION OF THE SPINDLE TO A MINIMUM. FAILURE TO DO SO MAY RESULT IN DISK ENCLOSURE DAMAGE.

009
THE PROBLEM IS ONE OF THE FOLLOWING:
. AN OPEN CIRCUIT BETWEEN BRAKE COIL TERMINAL 2 AND VC3-B.
. AN OPEN CIRCUIT BETWEEN VC3-B AND VC5-B ON THE A1 BOARD.
. AN OPEN CIRCUIT 24V LINE FROM THE SYSTEM
REPAIR OR EXCHANGE AS REQUIRED.
REF MAP7A80-B

010
THE PROBLEM IS AN OPEN CIRCUIT BRAKE COIL.
REPAIR OR EXCHANGE AS REQUIRED.

011
MEASURE THE VOLTAGE BETWEEN A1-G2D10 AND GROUND.
IS IT 24V ?
Y N

012
THE PROBLEM IS ONE OF THE FOLLOWING:
. AN OPEN CIRCUIT BETWEEN BRAKE COIL TERMINAL 1 AND VC3-A.
. AN OPEN CIRCUIT BETWEEN VC3-A AND A1-D2G10 ON THE A1 BOARD.
REPAIR OR EXCHANGE AS REQUIRED.

013
EXCHANGE THE BRAKE MAGNET ASSEMBLY.

014
REMOVE THE DRIVE BELT BY PIVOTING THE DRIVE MOTOR UPWARD.
TURN THE DISK SPINDLE PULLEY CLOCKWISE, BY HAND, TO TEST FOR BINDS.
---------->
IS THE DISK SPINDLE FREE TO TURN?
Y N

015
EXCHANGE THE DE UNIT.
GO TO MAP 7A70, ENTRY POINT H.

016
EXCHANGE THE DRIVE MOTOR ASSEMBLY. (SEE MIM SECTION 3.30).

017
POWER OFF

RESET THE THERMAL CUT OUT ON THE DRIVE MOTOR

TURN THE MOTOR SW ON THE POWER SUPPLY ON
POWER-ON.
OBSERVE THE DRIVE MOTOR.
IS THE DRIVE MOTOR TURNING?
Y N

018
MEASURE THE 240 VAC BETWEEN TERMINALS TB1-1 AND TB1-2.
IS THE VOLTAGE 200 TO 240 VAC?
Y N

019
POWER OFF
REMOVE THE JUMPERS.

REMOVE CROSS OVER VC5
METER RX1 SCALE
A1-D2G11 TO A1-B5A14
IS RESISTANCE LESS THAN 2 OHMS?
Y N

020
REPAIR OR EXCHANGE BOARD A1

021
THE PROBLEM IS ONE OF THE FOLLOWING:
. AN OPEN CIRCUIT + BRAKE APPLIED LINE BETWEEN VC5-A AND THE SYSTEM
REF MAP7A80 G
. 240V MISSING FROM THE SYSTEM .
REPAIR OR EXCHANGE AS REQUIRED.

CAUTION
OBSERVE THE ROTATION ARROW SHOWN ON THE BELT GUARD COVER AND KEEP THE ROTATION OF THE SPINDLE TO A MINIMUM. FAILURE TO DO SO MAY RESULT IN DISK ENCLOSURE DAMAGE.

022
FAILING FIELD REPLACEMENT UNITS AT THIS POINT:

DRIVE MOTOR
START RELAY

TO ISOLATE MORE:
POWER OFF
METER CONTINUITY
ON START RELAY BETWEEN TERMINALS 3 AND 4
IS CONTINUITY OK?
Y N

023
EXCHANGE THE START RELAY

024
METER CONTINUITY
ON START RELAY BETWEEN TERMINALS 1 AND 3
IS CONTINUITY OK?
Y N

025
EXCHANGE DRIVE MOTOR ASSEMBLY

026
METER VOLTAGE (600VAC RANGE)
ON START RELAY BETWEEN TERMINALS 2 AND 4
POWER ON
IS READING 0 VOLTS IMMEDIATELY AFTER SWITCHED ON?
Y N

027
EXCHANGE THE START RELAY

028
EXCHANGE DRIVE MOTOR ASSEMBLY

029
SWITCH PROBE TO MULTI.
PROBE VTL A1-D2G07 (CNTR. 5 O.O.S.).
IS THE LINE UP?
Y N

030
PROBE VTL A1-D2B13 (OSC. EARLY).
IS THE LINE UP?
Y N

031
PROBE VTL A1-D2J02 (OSC. LATE).
IS THE LINE PULSING?
Y N

032
EXCHANGE CARD A1-E2.
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

033
REMOVE JUMPER(S).
EXCHANGE CARD A1-D2.
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

034
POWER OFF.
REMOVE CARD F2.
MEASURE THE RESISTANCE BETWEEN PINS A1-F2J05 AND A1-F2J08.
IS THE RESISTANCE LESS THAN 50 OHMS?
Y N

035
INSTALL CARD A1-F2
JUMPER A1-F2P02 TO A1-F2P08.
POWER ON
REMOVE JUMPER ON A1-F2P02
RUN DIAGNOSTIC MAP7A20 AGAIN
DIAGNOSTIC PROGRAM RUN OK?
Y N

036
EXCHANGE CARD A1-D2.
REMOVE THE JUMPER FROM A1-D2G10 TO A1-D2D08.
REMOVE THE JUMPER FROM A1-D2G11 TO A1-D2J08.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

037
EXCHANGE CARD A1-F2.
REMOVE THE JUMPER FROM A1-D2G10 TO A1-D2D08.
REMOVE THE JUMPER FROM A1-D2G11 TO A1-D2J08.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

038
EXCHANGE THE DE UNIT.
REMOVE THE JUMPER FROM A1-D2G10 TO A1-D2D08.
REMOVE THE JUMPER FROM A1-D2G11 TO A1-D2J08.

039
RUN DIAGNOSTIC PROGRAM MAP7A20 AGAIN
DIAGNOSTIC PROGRAM RUN OK?
Y N

040
HAS DRIVE MOTOR THERMAL TRIPPED AGAIN
Y N

041
POWER OFF
REMOVE THE JUMPER FROM A1-D2G10 TO A1-D2D08.
REMOVE THE JUMPER FROM A1-D2G11 TO A1-D2J08.
PROBE VTL A1-F2P02 (- PWR ON DELAY)
POWER ON
IS LINE DOWN FOR APPROXIMATELY 15 TO 20 SECONDS?
Y N

042
EXCHANGE CARD A1-F2.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

043
EXCHANGE CARD A1-D2.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

044
POWER OFF
METER CONTINUITY
ON START RELAY BETWEEN TERMINALS 2 AND 4
IS CONTINUITY OK?
Y N

045
EXCHANGE DRIVE MOTOR ASSEMBLY

046
EXCHANGE THE START RELAY

047
REMOVE JUMPER(S).
POWER OFF
ADD A JUMPER FROM A1-F2P02 TO A1-F2P08.
POWER-OFF MOTOR SW ON PWR SUPPLY, POWER ON.
INSPECT THE BRAKE ASSEMBLY (SEE MIM SECTION 2.5 FOR LOCATION).
IS THE BRAKE PAD CLEAR OF THE SPINDLE PULLEY?
Y N

048
EXCHANGE CARD A1-D2.
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

049
POWER OFF
METER CONTINUITY
ON START RELAY BETWEEN TERMINALS 2 AND 4
IS CONTINUITY OK?
Y N

050
EXCHANGE DRIVE MOTOR ASSEMBLY

051
EXCHANGE THE START RELAY

052
(ENTRY POINT B)
THIS MAP ISOLATES FAILURES CAUSED BY OUT OF TOLERANCE DISK SPEED.

FAILING FIELD REPLACEMENT UNITS AT THIS POINT:

FIELD REPLACEMENT UNIT	PROBABLE
MECHANICAL DRIVE (BELT,MOTOR,BRAKE)	64
LOGIC 2 CARD (A1-D2)	24
4963 CNTRL A2-C2,A2-D2	2
CABLES TO DISK	2
DE UNIT	2

TO ISOLATE MORE:

PROBE VTL A1-A5D07 (- SYSTEM INDEX)
IS LINE PULSING?
Y N

Y: 053
PROBE VTL A1-D2S13 (- SYSTEM SECTOR)
IS LINE PULSING?
Y N

Y: 054
EXCHANGE CARD A1-D2.

N: 055
REPAIR OR EXCHANGE BOARD A1

056
POWER OFF

CHECK CONTINUITY THROUGH CABLE A1-A5 CONDUCTOR D07 (METER RX1 SCALE)
(SEE MIM SECTION 3.3).
IS RESISTANCE LESS THAN 2 OHMS?
Y N

N: 057
EXCHANGE CABLE A1-A5

058
CHECK CONDITION AND TENSION OF DRIVE BELT
(SEE MIM SECTION 2.5).
IS THE BELT OK?
Y N

N: 059
REPAIR AS NECESSARY
(SEE MIM SECTION 3.35).

060
EXCHANGE CARDS A2-D2,A2-C2
POWER ON

RUN DIAGNOSTIC PROGRAM MAP7A20 AGAIN
DOES DIAGNOSTIC PROGRAM STILL FAIL?
Y N

N: 061
VERIFY THE REPAIR.

062
METER VOLTAGE (600V AC)
TB1-1 TO TB1-2
(RANGES 175 TO 259V OR 87.5 TO 128V)
IS VOLTAGE IN RANGE?
Y N

N: 063
GO TO SYSTEM POWER MAPS
7A80-B

064
IS AN OSCILLOSCOPE AVAILABLE?
Y N

N: 065
EXCHANGE CARD A1-D2

066
AN OSCILLOSCOPE IS REQUIRED TO ISOLATE FARTHER
GO TO MAP 7A74, ENTRY POINT B.

OSCILLOSCOPE MAP 7A74

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A73	B	4	028
7A76	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
1	002	7A70	F
3	026	7A70	F
3	027	7A70	F
4	031	7A73	A
4	036	7A73	A
5	041	7A73	A
5	044	7A73	A

001
(ENTRY POINT A)
(REF MLD SF599 FOR FIGURES)

(FROM MAP 7A76I)
TO ISOLATE FARTHER:

THIS MAP ISOLATES DATA UNSAFE PROBLEMS CAUSED BY FAILURE OF DATA SERVO.

POWER OFF.

METER THE RESISTANCE OF THE FOLLOWING
1. F2M12 (POS) TO F2G02 (NEG)
2. F2U07 (POS) TO F2G02 (NEG)
3. F2U08 (POS) TO F2U04 (NEG)
4. F2U08 (POS) TO F2U02 (NEG)
ARE ALL THE RESISTANCES IN THE RANGE 160 OHMS TO 260 OHMS?
Y N

002
EXCHANGE ACTUATOR COIL DRIVER CARD
GO TO MAP 7A70, ENTRY POINT F.

003
POWER ON
WAIT 20 SECONDS FOR POWER ON RESET

METER VOLTAGES (6V RANGE)
A1-E2D02 (POS) TO A1-E2D08 (NEG)
A1-E2B03 (POS) TO A1-E2D08 (NEG)
ARE BOTH VOLTAGES HIGHER THAN 3.0V?
Y N

004
EXCHANGE CARD A1-E2

005
USE 1X PROBES

PLACE OSCILLOSCOPE CHANNEL 1 PROBE ON A1-D2J09
PLACE OSCILLOSCOPE CHANNEL 2 PROBE ON A1-D2J10
PLACE OSCILLOSCOPE EXT. TRIG PROBE ON A1-D2S10
SET OSCILLOSCOPE CONTROLS AS IN TABLE

HORIZ DISPLAY	A
MAG	OFF
A SWEEP LENGTH	FULL
A TIME BASE	5US/DIV
MODE	ALT
TRIGGER SOURCE	EXT
CH 1 VOLTS/DIV	2V/DIV
CH 2 VOLTS/DIV	2V/DIV
A SWEEP MODE	NORMAL TRIG
A TRIG SLOPE	-
A TRIG COUPLING	AC
TRIG	NORMAL
A TRIG LEVEL	0
A TRIG HF STAB	0
INVERT	IN

SWITCH CHAN 1 INPUT TO GND AND ADJUST POSITION UNTIL THE CENTER LINE IS GROUND
SWITCH CHAN 1 INPUT TO DC

SWITCH CHAN 2 INPUT TO GND AND ADJUST POSITION UNTIL THE BOTTOM LINE IS GROUND
SWITCH CHAN 2 INPUT TO DC
ADJUST A TRIGGERING LEVEL TO DISPLAY TRACE
ADJUST POSITION CONTROL TO START TRACE AT LEFT HAND LINE.
DOES DISPLAY COMPARE WITH FIG 1 (REF SF599 FOR FIG 1)
Y N

006
EXCHANGE CARD A1-D2

007
MOVE CHAN 2 PROBE TO D2U13 (+ENABLE MARK DETECT).
SET MODE TO CHAN 2.
DOES DISPLAY COMPARE WITH FIG 2 (REF SF599 FOR FIG 2)
Y N

008
EXCHANGE CARD A1-D2

009
MOVE CHAN 1 PROBE TO E2B03 (DATA.A).
SET CHAN 1 V/DIV TO 50MV.
SWITCH CHAN 1 INPUT TO AC

SET MODE TO CHAN 1.

COMPARE SERVO GAIN FIELD IN FIG 4 WITH DISPLAY (REF SF599 FOR FIG 4).
IS SERVO GAIN FIELD CORRECT?
Y N

010
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT

011
MOVE CHAN 2 PROBE TO E2D02 (DATA.B).
SET CHAN 2 V/DIV TO 50MV.
SWITCH MODE TO CHAN 2.
SWITCH CHAN 2 INPUT TO GND AND ADJUST POSITION UNTIL THE CENTER LINE IS GROUND
SWITCH CHAN 2 INPUT TO AC

PULL INVERT SWITCH.
COMPARE SERVO GAIN FIELD IN FIG 4 WITH DISPLAY (REF SF599 FOR FIG 4).
IS SERVO GAIN FIELD CORRECT?
Y N

012
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT

013
MOVE CHAN 1 PROBE TO E2G03 (+VCO INHIBIT).
SET MODE TO CHAN 1.
SET CHAN 1 INPUT TO DC.
SET CHAN 1 V/DIV TO 1V.
DOES DISPLAY COMPARE WITH FIG 3 (REF SF599 FOR FIG 3)
Y N

014
DOES DISPLAY COMPARE WITH FIG 7 (REF SF599)
Y N

015
MOVE CHAN 1 PROBE TO E2J05 (CTR RUN).
DOES DISPLAY COMPARE WITH FIG 8 (REF SF599)
Y N

016
EXCHANGE CARD A1-E2

017
EXCHANGE CARD A1-B2

018
EXCHANGE CARD A1-E2

019
MOVE CHAN 1 PROBE TO E2G08 (2F BURST).
SET MODE TO CHAN 1.
SET CHAN 1 V/DIV TO 1V.
DOES DISPLAY COMPARE WITH FIG 5 (REF SF599)
Y N

020
IS DISPLAY A VALID MST1 LEVEL (-0.8V TO -1.8V)?
Y N

021
EXCHANGE CARD A1-E2

022
EXCHANGE CARD A1-B2

023
MOVE CHAN 1 PROBE TO E2B13 (DATA P.E.S.).
SET CHAN 1 V/DIV TO .2V.
SET A TIME BASE TO 2MS.
MOVE EXT TRIG PROBE TO D2S13 (SYSTEM INDEX.).
ADJUST A TRIGGERING LEVEL TO DISPLAY TRACE
DOES DISPLAY COMPARE WITH FIG 6 (REF SF599)
Y N

024
EXCHANGE CARD A1-E2

025
USE GENERAL LOGIC PROBE

SWITCH PROBE TO MULTI
PROBE A1-E2J13 (+DATA OFF TRACK)
IS LINE DOWN?
Y N

026
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE ACTUATOR COIL DRIVER CARD
(5%)
GO TO MAP 7A70, ENTRY POINT F.

027
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE ACTUATOR COIL DRIVER CARD
(5%)
GO TO MAP 7A70, ENTRY POINT F.

028
(ENTRY POINT B)

(FROM MAP 7A73B)

TO ISOLATE FARTHER:

THIS MAP CHECKS THE DISK SPEED BY MEASURING TIME BETWEEN - SYSTEM INDEX PULSES - SYSTEM INDEX PULSES SHOULD BE + OR - 0.6MS APART.

PLACE OSCILLOSCOPE PROBE ON A-A1D2S13 (-SYSTEM INDEX)
SET OSCILLOSCOPE CONTROLS AS IN TABLE

B SWEEP MODE	B STARTS AFTER TIME DELAY
HORIZ DISPLAY	A
MAG	OFF
A SWEEP LENGTH	FULL
A TIME BASE	2MS/DIV
MODE	CH 1
TRIGGER	CH 1 ONLY
CH 1 VOLTS/DIV	2 (X1 PROBE) 0.2 (X10 PROBE)
A SWEEP MODE	AUTO TRIG
A TRIG SLOPE	-
A TRIG COUPLING	AC
A TRIG SOURCE	INT
A TRIG LEVEL	0
A TRIG HF STAB	0

SWITCH CHAN 1 INPUT TO GND AND ADJUST POSITION UNTIL THE CENTER LINE IS GROUND
SWITCH CHAN 1 INPUT TO DC
ADJUST HORIZ POS UNTIL FIRST PULSE IS ON LEFT DIVISION
IS SECOND PULSE BETWEEN 18.6 AND 19.8MS AFTER FIRST PULSE?
Y N

029
IS THIS A NEW MACHINE?
Y N

030
IS PULSE EARLY?
Y N

031
DISK SPEED TOO SLOW
GO TO MAP 7A73, ENTRY POINT A.

032
EXCHANGE CARD A1-D2

033
CHECK FOR CORRECT MOTOR RATING
IS MOTOR RATING CORRECT?
Y N

034
EXCHANGE WRONG PART
VERIFY DISK SPEED

035
IS PULSE EARLY?
Y N

036
DISK SPEED TOO SLOW
GO TO MAP 7A73, ENTRY POINT A.

037
EXCHANGE CARD A1-D2

038
IS THE PULSE BETWEEN 0.6 AND 1.8MS FROM START OF TRACE?
SWITCH B TIME BASE TO 0.2MS
SWITCH HORIZ DISPLAY TO A INTEN DURING B
ADJUST DELAY TIME MULTIPLIER UNTIL THE RIGHT HAND DIVISION OF THE TRACE IS INTENSIFIED
SWITCH HORIZ DISPLAY TO DELAYED SWEEP (B)
Y N

039
IS THE PULSE AFTER 1.8MS FROM START OF TRACE
Y N

040
EXCHANGE CARD A1-D2

041
DISK SPEED TOO SLOW
GO TO MAP 7A73, ENTRY POINT A.

042
DOES PULSE TIMING CHANGE?
Y N

043
DISK SPEED OK

044
DISK SPEED IS CHANGING.
GO TO MAP 7A73, ENTRY POINT A.

WIRING CHECKS ON BOARD A A1

TABLE A2

ID	NET	NET NAME
01	A2B07 B2D11 T1D09	MARS SAFETY
02	A2B08 B2G03 T1B03	CENTER TAPS
03	A2D02 B2P12 T1D13	+ DATA SELECT GATED
04	A2D04 B2D06 T2D02	ACTUATOR I/O LINE B
05	A2D05 B2D05 T2B02	ACTUATOR I/O LINE A
06	A2D06	- 4 VOLTS
07	A2D10 F2D06	+ SERVO PREAMP O/P
08	A2D11 F2D05	- SERVO PREAMP O/P
09	A2D12	GROUND

TABLE A3

ID	NET	NET NAME
01	A3B02 A4B02 C2M09	- TAG 2
02	A3B03 A4B03 C2M07	- TAG 1
03	A3B04 A4B04 C2P07	- TAG 0
04	A3B05 A4B05 C2M08	- TAG PARITY
05	A3B07 A3B08 A3B09 A3D03 A4B07 A4B08 A4B09	+ 5V FOR TERMINATOR CARD
06	A3B13 A4B13	SYSTEM CONTINUITY CHECK
07	A3D02 A4D02	SYSTEM CONTINUITY CHECK
08	A3D04 A4D04 C2M04	- CONTROL BUS 0
09	A3D05 A4D05 C2P02	- CONTROL BUS 1
10	A3D06 A4D06 C2M03	- CONTROL BUS 2
11	A3D07 A4D07 C2M02	- CONTROL BUS 3
12	A3D08	GROUND
13	A3D09 A4D09 C2M05	- CONTROL BUS 4
14	A3D10 A4D10 C2P06	- CONTROL BUS 5
15	A3D11 A4D11 C2P05	- CONTROL BUS 6
16	A3D12 A4D12 C2M06	- CONTROL BUS 7
17	A3D13 A4D13 C2P04	- CONTROL BUS PARITY

TABLE A5

ID	NET	NET NAME
01	A5B02 A5D13	CONTINUITY CHECKS
02	A5B03 C2G09	- CONTROL SAMPLE
03	A5B07 A5B13 A5D02 A5D08	GROUND
04	A5B10 B2U02	- WRITE DATA
05	A5B12 C2B03	+ DRIVER DEGATE
06	A5B13 A5B07 A5D02 A5D08	GROUND
07	A5D04 C2J13	- DATA SELECT
08	A5D05 B2S02	- FAST SYNC
09	A5D06 C2S10 D2P13	- RESET ERROR
10	A5D09 C2J11	- READ
11	A5D11 C2G12	- WRITE

TABLE B2

ID	NET		NET NAME
01	B2B02 E2B03		BUFFERED ANALOG DATA A
02	B2B03 E2D02		BUFFERED ANALOG DATA B
03	B2B12 A2D03	T1B06	MARS POSITIVE SUPPLY
04	B2D07 A2D07	T1D04	WRITE CURRENT
05	B2G10 C2M11		+ DATA UNSAFE
06	B2J07 A5D03		+ WRITE GATE RETURN
07	B2M04 A2B03	T1B05	HEAD SELECT A
08	B2M07 T1D05		- CHIP SELECT 5
09	B2M08 T1D02		- CHIP SELECT 4
10	B2M09 A2B02		- CHIP SELECT 3
11	B2M11 A2B05		- CHIP SELECT 2
12	B2P04 A2B04	T1D03	HEAD SELECT B
13	B2P09 A2B06		- CHIP SELECT 1
14	B2P11 B2G08		DATA SERVO 2F BURST
15	B2S07 A5B08		+ NRZ DATA TO SYSTEM
16	B2U07 A5D10		1F READ CLOCK TO SYS
17	B2U11 A5D12		1F WRITE CLOCK TO SYS
18	B2U12 D2J05		1F WR CLK UNGTD TO PLO

TABLE C2

ID	NET		NET NAME
01	C2B13 D2S04		+ SHIFT
02	C2D02 D2B02		+ DESIRED VELOCITY
03	C2D05 D2P11		- RESET CALIBRATION
04	C2D06 A5B04		- INTERRUPT
05	C2D07 D2S09		- TAG 001.CLOCK 2
06	C2D09 B2M05	D2J04	- FIXED HEAD SELECT
07	C2G02 B2P06		- HEAD SELECT 8
08	C2G04 D2P12		- GO HOME BIT
09	C2G05 D2M08		- CALIBRATION ADDRESS
10	C2G11 B2J06		+ WRITE BLOCK
11	C2J05 D2U02		+ OUT
12	C2J06 B2P10		- HEAD SELECT 4
13	C2J12 B2J12		+ READ SELECT
14	C2M02 A3D07	A4D07	- CONTROL BUS BIT 3
15	C2M03 A3D06	A4D06	- CONTROL BUS BIT 2
16	C2M04 A3D04	A4D04	- CONTROL BUS BIT 0
17	C2M05 A3D09	A4D09	- CONTROL BUS BIT 4
18	C2M06 A3D12	A4D12	- CONTROL BUS BIT 7
19	C2M12 D2P09		+ HEAD 1 SELECTED
20	C2P02 A3D05	A4D05	- CONTROL BUS 1
21	C2P04 A3D13	A4D13	- CONTROL BUS PARITY
22	C2P05 A3D11	A4D11	- CONTROL BUS 6
23	C2P06 A3D10	A4D10	- CONTROL BUS 5
24	C2P09 A3B12	A4B12	- CONTROL SAMPLE RCVD
25	C2P10 B2P05		- HEAD SELECT 2
26	C2P12 B2P07		- HEAD SELECT 1
27	C2S07 D2M12		- SET SEEK
28	C2S09 E2J06	F2B03	- EVEN
29	C2S11 B2M02		- SERVO UNSAFE
30	C2S12 A2B13		+ DATA SELECT GATED
31	C2U09 B2M03		+ COMMON RESET
32	C2U12 B2G13		+ WRITE SELECT

TABLE D2

ID	NET		NET NAME
01	D2B03	C2D11	+ LIN REG N OF EVEN TRK
02	D2B05	C2U06	- ABS TRACK ADDRESS 1
03	D2B08	C2B02	PROFILE GAIN VOLTAGE
04	D2B10	C2D04	+ QUARTER TRACK (REL)
05	D2B13	E2G07	- OSC EARLY
06	D2D05	C2S06	- COUNT UP 2 TRACKS
07	D2D06	C2J07 F2S13	+ OUT DIRECTION
08	D2D07	C2S05	- COUNT DOWN 2 TRACKS
09	D2D09	C2U04	+ ROS D/A ERROR
0C	D2D10	C2B04	+ HALF TRACK (REL)
11	D2D11	F2S08	+ SEEK
12	D2D13	E2D11	+ HEAD CHANGE GATE
13	D2G02	F2B09	- SELECT DEMOD Q2
14	D2G03	F2B08	- SELECT DEMOD Q1
15	D2G04	F2D09	- SELECT DEMOD N1 (TP)
16	D2G07	C2U10	+ CTR 5 IN SYNC
17	D2G08	A5B09	- SECTOR PULSES MISSING
18	D2G09	B2B04 C2J02 T2B13	- AGC FREEZE
19	D2G10	B3A14 (VC3-A)	BRAKE COIL (1)
20	D2G11	B5A14 (VC5-A)	BRAKE APPLIED TO SYS
21	D2G13	F2B12	+ NORMAL ERROR
22	D2J02	E2J07	- OSC LATE
23	D2J06	F2B10	- SELECT DEMOD N2
24	D2J09	E2G10	+ SHIFT REG CLOCK
25	D2J10	E2J04	+ ENABLE SERVO SAMPLE
26	D2J13	C2P11 F2S07	- SEEK COMPLETE
27	D2M02	C2S02	+ MISSING SERVO SIG LTCH
28	D2M03	C2J09	- MISSING CLOCK ERR LTCH
29	D2M04	C2M10	PULSING AND O/P
30	D2M07	C2S08	+ NOT READY
31	D2M13		+ SEEK TIMEOUT (TP)
32	D2P02	C2B10	MISSING CLOCKS/2
33	D2P04	C2U05	+ ILLEGAL MOVE
34	D2P05	C2G08	- INDEX SECTOR PULSES
35	D2P07	C2B08 F2M02	+ BRAKE APPLIED (LOGIC)
36	D2P08	E5A01 (VC9-C)	GND (COMP COIL)
37	D2P10	C2U07	+ HOME
38	D2S05	F2P05	- SELECT INTERGRATOR
39	D2S07	C2M13 F2P11	+ NOT IN DRIVE
40	D2S08	C2S03	+ BYTE CTR BIT 16
41	D2S10	A5B05	- SYSTEM SECTOR
42	D2S13	A5D07 T2D11	- SYSTEM INDEX
43	D2U04	F2P07	+ SELECT INTERGRATOR
44	D2U06	C2G10 T2D10	+ SERVO PROTECT WRITE
45	D2U07	C2U02 F2M13	+ NOT OUT DRIVE
46	D2U10	C2B06	- GO HOME OR P.O.F.L.
47	D2U11	C2D13	+ BEHIND HOME
48	D2U13	E2G04	+ ENABLE MARK DETECT

TABLE E2

ID	NET	NET NAME
01	E2B12 E2G05	+ POS ZERO XING
02	E2B13 F2P06	DATA PES
03	E2D09 C2G03	- OUTSIDE AGC WINDOW
04	E2G03 B2U06	+ SERVO VCO INHIBIT
05	E2G05 E2B12	+ POS ZERO XING
06	E2G12 B2M10	2F WRITE CLOCK
07	E2J13 C2G13 T2D06	+ OFF DATA TRACK

TABLE F2

ID	NET	NET NAME
01	F2B04 D2G05	+ SERVO CLOCK SS
02	F2B07 E2B04	VPT I REF
03	F2D02 E2D13	DEDICATED SW PES
04	F2D11 D2B07	- Q/2 ERROR
05	F2D13 D2S12	+ N/2 ERROR
06	F2G03 C2G07	+ LOW COIL CURRENT
07	F2G05 T2B09	ON TRK THRESHOLD CNTL
08	F2G12 C2B12 E2G13 T2D06	+ ON TRACK
09	F2G13 D2P06	+ MISSING SERVO CLOCK
10	F2J04 C2U11	- BAD AGC LEVEL
11	F2J05 B3E14(VC3-C)	CLK THRESHOLD
12	F2J08 B4E01(VC3-D)	GROUND (DE ADJ RES)
13	F2J09 T2B10	HYBRID PES N
14	F2J10 E2D10 F2D10 F2P10 F2U10	- 7 VOLTS
15	F2J11 F2G09	HYBRID PES (OUT)
16	F2M04 E4E14(VC9-B) E5E14(VC10-B)	VCM FINISH
17	F2M05 E5A01(VC9-A) E6E01(VC10-A)	VCM START
18	F2M08 D2U12	- N/2 ERROR
19	F2M12 E3E01(VC7-A)	BASE PNP OUT
20	F2P02 C2S13 D2U09	- POWER ON DELAY
21	F2S02 D2J07	+ Q/2 ERROR
22	F2S04 A2B10 A2B12 A2D09 A2D13	SPA 8 VOLTS
23	F2S05 E3E14(VC8-B)	CSR OUT
24	F2S10 D2B09	COIL CURRENT SIGNAL
25	F2U02 E3A01(VC7-C)	BASE NPN OUT
26	F2U04 E2E14(VC7-B)	BASE NPN IN
27	F2U05 E4E01(VC8-A)	CSR IN
28	F2U07 E2A14(VC7-D)	BASE PNP IN

TABLE T1

ID	NET	NET NAME
01	T1B03 A2B08 B2G03	CENTER TAPS
02	T1B07 B2D10 T2B07	FXDHD I/O LINE A
03	T1B08 B2D09 T2D07	FXDHD I/O LINE B
04	T1D09 A2B07 B2D11	MARS SAFETY

TABLE T2

ID	NET	NET NAME
01	T2B12 B2G09	- SAT SQUEICH
02	T2D04 B2G12	+ WRITE DC
03	T2D05 B2J04	+ DISABLE TRANSITION ERR
04	T2D09 F2U13	- SERVO OFFSET INJECTION

TABLE VC (CROSSOVER CONNECTORS)

ID	NET	NET NAME
01	B2A01(VC1-B) F2G10	- POWER GOCD
02	B2A14(VC2-A) B4A14 B5E01	GROUND
03	B3E01(VC2-D)	GROUND
04	B4A01(VC3-B) B6A01	BRAKE COIL (2)
05	B6A01(VC5-B) B4A01	BRAKE COIL/24V BRAKE
06	B6E01(VC5-D) E6A01 F2S09	GND(+ 24 VOLTS)
07	E4A14(VC9-D) D2D04	COMPENSATION COIL

TABLE V - (VOLTAGE NETS)

ID	NET	NET NAME
01	B2E14(VC2-C) B4E14 F2D03 F2J03 F2P03 F3U03 E2D03 E2J03 D2D03 D2J03 D2P03 D3U03 C2D03 C2J03 C2P03 C3U03 B2D03 B2J03 B2P03 B3U03 D1C11 A3D03	+ 5 VOLTS
02	B3A01(VC2-B) B5A01 F2B06 F2G06 F2M06 F2S06 E2B06 E2G06 B2B06 B2G06 B2M06 B2S06 E1A13 A1D13 A2D06	- 4 VOLTS
03	B1E14(VC1-C) F2B11 F2M11 F2M11 F2S11 F2B05 E2B11 E2B11 D2B11 C2B11 B2B11 F1A13	+ 12 VOLTS
04	B2E01(VC1-D) F2D12 F2M12 F2M12 F2S12 E2D12 D2D12 C2D12 B2S12 B2D12 F1B11	- 12 VOLTS
05	B5E14(VC5-C) E5A14 D2S02 F2G02	+ 24 VOLTS

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP: ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	1	001
7A21	B	3	014
7A21	C	4	019
7A21	D	5	028
7A21	E	6	035
7A21	F	7	044
7A21	G	10	077
7A21	H	11	082
7A21	I	18	177
7A21	J	20	200
7A21	K	21	207
7A21	L	22	210
7A21	M	23	213
7A21	N	24	218
7A21	O	25	221
7A21	P	27	250
7A21	Q	28	257
7A21	R	31	292
7A21	S	40	413
7A21	T	43	434
7A21	U	45	453

EXIT POINTS

EXIT THIS MAP: PAGE NUMBER	STEP NUMBER	TO: MAP NUMBER	ENTRY POINT
7	050	7A70	H
12	095	7A70	H
13	118	7A70	H
14	119	7A70	H
15	148	7A70	H
17	170	7A70	H
18	190	7A70	H
19	192	7A70	H
19	198	7A70	H
19	199	7A74	A

001
(ENTRY POINT A)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 1 CARD (A1-E2)	42
DA CHAN CARD (A1-B2)	29
LOGIC 2 CARD (A1-D2)	19
SERVO 2 CARD (A1-F2)	6
DISK CNTL. A2-C2,A2-D2	2
DE	1

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

POWER OFF

RESEAT CABLE A1-A2.

POWER ON

CALL DIAGNOSTIC MAP7A20 FOR FAILING ADDRESS
DO DIAGNOSTIC ROUTINES STILL FAIL?
Y N

002
PROBE MST1 A1-F2P09 (POWER GOOD)
IS LINE DOWN?
Y N

003
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

004
VERIFY THE REPAIR

005
PROBE MST1 A1-E2G12 (2F WRITE CLOCK)
IS LINE PULSING?
Y N

006
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

007
SWITCH PROBE TO MULTI

PROBE VTL A1-D2J05 (1F WRITE CLOCK)
IS LINE PULSING?
Y N

008
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.
REMOVE JUMPER(S).

009
DO THE FOLLOWING IN ORDER:

1. POWER OFF
2. ADD JUMPER A1-F2P02 TO A1-F2P08
3. POWER ON
4. REMOVE JUMPER A1-F2P02 TO A1-F2P08
5. CALL DIAGNOSTIC MAP7A20 FOR FAILING ADDRESS

DO DIAGNOSTIC ROUTINES RUN ERROR FREE?
Y N

010
CHECK SEATING OF JUMPERS ON A1-D2 CARD
IF FAILS TO REPAIR
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.
REMOVE JUMPER(S).

011
POWER OFF.

TEST CONTINUITY OF 'BRAKE APPLIED' LINE FOR THIS FILE.
REFERENCE MAINTENANCE LOGIC DIAGRAMS VOL 1 (SF500 PAGES) FOR LOCATION OF OTHER END

IS CONTINUITY CORRECT?
Y N

012
REPAIR OR EXCHANGE AS REQUIRED.

013
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT A.

014
(ENTRY POINT B)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
DE UNIT	78
SERVO 2 CARD (A1-F2)	22

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

METER VOLTAGE (15V RANGE)
A1-F2D08 (POS)
A1-A2B10 (NEG)
IS VOLTAGE IN RANGE 7 TO 9 VOLTS?
Y N

Y:
015
POWER OFF
METER CONTINUITY OF A1- BOARD NET
A2B10 TO A2B12 TO A2D09 TO A2D13 TO F2S04
IS RESISTANCE LESS THAN 2 OHMS?
Y N

Y:
016
EXCHANGE BOARD A1

N:
017
EXCHANGE CARD A1-F2

018
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
RESEAT CABLE A1-A2.
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
A2-07, A2-08, F2-22

019
(ENTRY POINT C)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT
:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	86
PWR SUPPLY (-12V)	14

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

POWER OFF

RESEAT CABLE A1-A2. AND A1-T1 (IF PRESENT)
POWER ON

METER VOLTAGE (15V RANGE)
A1-F2U08 (POS)
A1-F2U10 (NEG)
IS VOLTAGE IN RANGE 6 TO 8V?
Y N

- 020
  METER VOLTAGE (15V RANGE)
  A1-F2U08 (POS)
  A1-F2U12 (NEG)
  IS VOLTAGE IN RANGE 10.5 TO 13.5V?
  Y N
  - 021
    METER VOLTAGE (15V RANGE)
    A1-F2U08 (POS)
    VC1-D (NEG)
    IS VOLTAGE IN RANGE 10.5 TO 13.5V?
    Y N
    - 022
      TRACE MISSING -12VOLT LINE
      REFERENCE SF500 PAGES
    - 023
      EXCHANGE BOARD A1
  - 024
    EXCHANGE CARD A1-F2

025
POWER OFF.
METER CONTINUITY OF BOARD A NET
F2U10 TO F2P10 TO F2J10 TO F2D10 TO E2D10
IS RESISTANCE LESS THAN 2 OHMS?
Y N

- 026
  EXCHANGE BOARD A1

027
EXCHANGE CARD A1-F2

028
(ENTRY POINT D)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	94
LOGIC 1 CARD (A1-C2)	3
SERVO 1 CARD (A1-E2)	3

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-C2B12 (+ ON TRACK)
IS LINE DOWN?
Y N

029
PROBE VTL A1-C2B12 (+ ON TRACK)
IS LINE PULSING?
Y N

030
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT D.

031
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT D.

032
PROBE VTL A1-E2G13 (+ ON TRACK)
IS LINE UP?
Y N

033
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2

034
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT D.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
F2-07, F2-08

035
(ENTRY POINT E)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-B2)	52
SERVO 1 CARD (A1-E2)	16
LOGIC 1 CARD (A1-C2)	16
DISK CNTL. A2-C2,A2-D2	8
CABLES TO THE FILE	8

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

CAUTION
ADDING THE FOLLOWING JUMPER MAY EFFECT OPERATION OF OTHER FILES.
ENSURE OTHER FILES ARE NOT USED UNTIL JUMPER IS REMOVED.

ADD JUMPER A1-A5D04 TO A1-B2U08
PROBE VTL A1-C2U12 (+ WRITE SELECT)
IS LINE UP?
Y N

036
ADD JUMPER A1-C2G12 TO A1-C2J08
PROBE VTL A1-C2U12 (+ WRITE SELECT)
IS LINE UP?
Y N

037
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT E.
REMOVE JUMPER(S).

038
PROBE MSTI A1-E2B13 (DATA PES)
IS LINE PULSING?
Y N

039
SWITCH PROBE TO MULTI
PROBE
A1-A5B10....DOWN...(WRITE DATA)
A1-A5D11....DOWN...(WRITE)
A1-A5D06....UP.....(RESET ERROR)
ARE ALL LINES CORRECT?
Y N

040
EXCHANGE CARD(S) A2-C2,A2-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CABLE ENTERING AT A1-A5.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT E.
REMOVE JUMPER(S).

041
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT E.
REMOVE JUMPER(S).

042
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT E.
REMOVE JUMPER(S).

043
EXCHANGE CARD A1-C2
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT E.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
A5-04, A5-09, A5-11, C2-32, E2-02

044
(ENTRY POINT F)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	24
LOGIC 1 CARD (A1-C2)	24
LOGIC 2 CARD (A1-D2)	17
DA CHAN CARD (A1-B2)	15
SERVO 1 CARD (A1-E2)	12
DISK CNTL. A2-C2,A2-D2	4
CABLES TO THE FILE	3
DE UNIT	1

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-C2B13 (- SHIFT)
(OBSERVE FOR 1 MINUTE)
IS LINE PULSING?
Y N

045
ARE ANY PROBE LIGHTS ON ?
Y N

046
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

047
CAUTION
ADDING THE FOLLOWING JUMPER MAY EFFECT OPERATION OF OTHER FILES.
ENSURE OTHER FILES ARE NOT USED UNTIL JUMPER IS REMOVED.

ADD JUMPER A1-A5D04 TO A1-A5D08

PROBE VTL A1-B2U11 (1F WRITE CLOCK)
IS LINE PULSING?
Y N

048
PROBE VTL A1-B2P12 (+ DATA SELECT GATED)
IS LINE UP?
Y N

049
POWER OFF

REMOVE JUMPER(S).

METER CONTINUITY (RX1 SCALE)
A1-A2D02 TO A1-A2B13
IS RESISTANCE LESS THAN 2 OHMS?
Y N

050
RESEAT CABLE A1-A2
IF THIS FAILS TO REPAIR
EXCHANGE DE UNIT
(NOTE: A TEMPORARY REPAIR IS TO ADD A JUMPER FROM A1-B2P12 TO C2S12)
GO TO MAP 7A70, ENTRY POINT H.

051
METER CONTINUITY (RX1 SCALE)
A1-C2S12 TO A1-A2B13
A1-A2D02 TO A1-B2P12
IS RESISTANCE LESS THAN 2 OHMS?
Y N

052
REPAIR OR EXCHANGE BOARD A1

053
REMOVE JUMPER A1-A5D04 TO A5D08

METER CONTINUITY (RX1 SCALE)
A1-A5D04 TO A1-C2J13
IS RESISTANCE LESS THAN 2 OHMS?
Y N

054
REPAIR OR EXCHANGE BOARD A1

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
A2-03, A5-07, B2-17, C2-01, C2-27, C2-30, D2-13, D2-39, D2-45, F2-02, F2-03, F2-05, VC-07

055
METER (RX1 SCALE) THROUGH CABLE A1-A5 PIN D04
REFERENCE MAINTENANCE LOGIC DIAGRAMS VOL 1 (SF500 PAGES) FOR LOCATION OF OTHER END
IS RESISTANCE LESS THAN 2 OHMS?
Y N

056
EXCHANGE CABLE ENTERING AT A1-A5.

057
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
(1% PROBABLE)

058
POWER OFF.

REMOVE JUMPER(S).

EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CABLE ENTERING AT A1-A5.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

059
REMOVE JUMPER(S).

SWITCH PROBE TO MST1

PROBE MST1
A1-B2S11 (- INCREASE)
AND A1-B2S12 (- DECREASE)
ARE BOTH LINES PULSING?
Y N

060
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

061
SWITCH PROBE TO MULTI

PROBE VTL A1-C2B13 (- SHIFT)
IS LINE UP?
Y N

062
METER VOLTAGE (6V RANGE)
A1-D2D04 (POS)
A1-D2D08 (NEG)
IS VOLTAGE IN RANGE 1.0 TO 1.6V?
Y N

063
POWER OFF

DISCONNECT CARD A1-D2

METER RESISTANCE (RX10 RANGE)
A1-D2D04 TO A1-D2D08
IS RESISTANCE MORE THAN 200 OHMS?
Y N

064
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

065
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

066
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

067
POWER OFF

TEST CABLE A1-A5 FOR SHORT TO GROUND ON THE FOLLOWING PINS
A5 PIN B05
A5 PIN D11
CHECK THE RESISTANCE (RX1) OF THE ABOVE LINES
REFERENCE MAINTENANCE LOGIC DIAGRAMS VOL 1 (SF500 PAGES) FOR LOCATION OF OTHER END
IS CABLE OK?
Y N

068
EXCHANGE CABLE ENTERING AT A1-A5.

069
CHECK SEATING OF JUMPERS ON CARD A1-D2
IF FAILS TO REPAIR
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

070
SWITCH PROBE TO MST1

PROBE MST1 A1-B2U10 (DATA S.S.)
IS LINE PULSING?
Y N

071
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

072
PROBE MST1 A1-B2S11 AND A1-B2S12
TEST BOTH PINS FOR A VALID MST-I LEVEL (BOTH LIGHTS OFF INDICATES A BAD LEVEL)
ARE BOTH PINS AT A VALID MST-I LEVEL?
Y N

073
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

074
SWITCH PROBE TO MULTI

PROBE VTL A1-C2B13 (- SHIFT)
IS LINE SLOW PULSING?
Y N

075
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

076
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT F.

077
(ENTRY POINT G)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	57
LOGIC 2 CARD (A1-D2)	39
DISK CNTL. A2-C2,A2-D2	2
CABLES TO THE FILE	2

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-D2P10 (+ HOME)
IS LINE DOWN?
Y N

078 POWER OFF. TEST CABLE CONTINUITY OF LINES: A1-A3D04 AND A1-A4D04 REFERENCE MAINTENANCE LOGIC DIAGRAMS VOL 1 (SF500 PAGES) FOR LOCATION OF OTHER END IS RESISTANCE LESS THAN 2 OHMS? Y N
079 EXCHANGE FAILING CABLE. IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT G.
080 EXCHANGE CARD A1-C2 IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT G.

081
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT G.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-37

082
(ENTRY POINT H)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT
:

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-B2)	49
LOGIC 1 CARD (A1-C2)	21
DE UNIT	11
SERVO 2 CARD (A1-F2)	6
SERVO 1 CARD (A1-E2)	4
DISK CNTL A2-C2,A2-D2	3
CABLES TO THE FILE	3
LOGIC 2 CARD (A1-D2)	3

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-A5D04 (- DATA SELECT)
IS LINE DOWN?
Y N

083
THE PROBLEM IS - DATA SELECT MISSING FROM THE DISK CNTL
INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE
EXCHANGE CARD(S) A2-C2,A2-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

084
PROBE VTL A1-A5B05 (- SYSTEM SECTOR)
IS LINE PULSING?
Y N

085
POWER OFF

DISCONNECT CABLE A1-A5
POWER ON
PROBE VTL A1-D2S10 (- SYSTEM SECTOR)
IS LINE PULSING?
Y N

086
EXCHANGE CARD A1-D2
INSTALL CABLE A1-A5
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

087
INSTALL CABLE A1-A5
EXCHANGE CARD(S) A2-C2,A2-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CABLE ENTERING AT A1-A5.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

088
PROBE VTL A1-A5D12 (IF WRITE CLOCK TO SYSTEM)
IS LINE PULSING?
Y N

089
PROBE VTL A1-C2S12 (+ DATA SELECT GATED)
IS LINE UP?
Y N

090
POWER OFF.
DISCONNECT CABLE A2.
POWER ON.
WAIT 30 SECONDS.
PROBE VTL A1-C2S12 (+ DATA SELECT GATED)
IS LINE DOWN?
Y N

091
THE PROBLEM IS A SHORT TO GROUND ON CABLE A2 PIN B13 OR A BAD B2 CARD.
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

092
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

093
PROBE VTL A1-B2P12 (+ DATA SELECT GATED)
IS LINE UP?
Y N

094
POWER OFF
METER CONTINUITY (RX1 SCALE)
A1-C2S12 TO A1-B2P12
IS RESISTANCE LESS THAN 2 OHMS?
Y N

095
EXCHANGE DE UNIT
NOTE A TEMPORARY REPAIR IS TO ADD A
JUMPER FROM A1-C2S12 TO A1-B2P12
GO TO MAP 7A70, ENTRY POINT H.

096
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

097
POWER OFF.
DISCONNECT CABLE A1-A5
POWER ON.
WAIT 30 SECONDS.
PROBE VTL A1-B2P12 (+ DATA SELECT GATED)
IS LINE PULSING?
Y N

098
POWER OFF
METER CONTINUITY (RX1 SCALE)
A1-A5D12 TO A1-B2U11
IS RESISTANCE LESS THAN 2 OHMS?
Y N

099
REPAIR OR EXCHANGE A1- BOARD

100
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

101
INSTALL CABLE A1-A5
EXCHANGE CARD(S) A2-C2,A2-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CABLE ENTERING AT A1-A5.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

102
PROBE VTL A1-B2P09 (CHIP SELECT 1)
IS LINE DOWN?
Y N

103
PROBE VTL A1-B2P06 (- HEAD SELECT 4), AND
A1-B2P10 (- HEAD SELECT 8)
ARE BOTH LINES UP?
Y N

104
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

105
PROBE VTL A1-B2M05 (- FIXED HEAD SELECT)
IS LINE DOWN?
Y N

106
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

107
INSPECT FOR LOOSE CABLES AT A1-T1 AND A1-A2.
ARE THE CABLES SEATED CORRECTLY?
Y N

108
RESEAT THE CABLES.

109
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

110
PROBE VTL A1-C2B06 (- GO HOME)
IS LINE UP?
Y N

111
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

112
SWITCH PROBE TO MST1

PROBE MST1 A1-B2P04 (HEAD SELECT B)
IS LINE UP?
Y N

113
TO FIND WHICH HEAD IS SELECTED PROBE THE PINS SHOWN IN TABLE 1.
IF THE CONDITIONS MATCH, THAT HEAD IS SELECTED.
NOTE:
MODELS 23 AND 29
PROBE ONLY THE PINS INSIDE THE ASTERISKS(***)
MODELS 58 AND 64
PROBE ALL THE PINS

TABLE 1 BOARD A1

	PROBE MST1		PROBE VTL		
HEAD	A2B03	A2B04	A2B06	A2B05	A2B02
0	U	U	D	U *	U
1	D	U	D	U *	U
2	U	D	D	U *	U
3	D	D	D	U *	U
4	U	U	D	D *	U
5	D	U	U	D *	U
**********					
6	U	D	U	D	U
7	D	D	U	D	U
8	U	U	U	U	D
9	D	U	U	U	D
A	U	D	U	U	D

NOTE: D=DOWN,U=UP.
IS A HEAD SELECTED?
Y N

114
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

115
NOTE HEAD SELECTED FROM TABLE 1

PROBE PINS FOR THE HEAD SELECTED AS SHOWN IN TABLE BELOW

PHYSICAL HEAD B IS NOT PRESENT BUT A HEAD POSITION B IS A SPARE INPUT ON THE DISK ACTUATOR. THE CODE FOR HEAD B IS FORCED WHEN AN UNSAFE CONDITION IS SENSED. HEAD B IS VALID FOR TABLE 2

TABLE 2 BOARD A1

	PROBE VTL			
HEAD	B2P07	B2P05	B2P10	B2P06
0	U	U	U	U
1	D	U	U	U
2	U	D	U	U
3	D	D	U	U
4	U	U	D	U
5	D	U	D	U
6	U	D	D	U
7	D	D	D	U
8	U	U	U	D
9	D	U	U	D
A	U	D	U	D
B	D	D	U	D

NOTE: D=DOWN,U=UP.
ARE THE LEVELS CORRECT?
Y N

116
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

117
IS HEAD 3 SELECTED?
Y N

118
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
GO TO MAP 7A70, ENTRY POINT H.

119
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
GO TO MAP 7A70, ENTRY POINT H.

120
METER VOLTAGE (6V RANGE)
A1-B2U13 (POS)
A1-B2P08 (NEG)
IS VOLTAGE LESS THAN 0.5V?
Y N

121
PROBE MST1 A1-B2U06 (+ SERVO INHIBIT VCO)
IS LINE PULSING?
Y N

122
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

123
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

124
SWITCH PROBE TO MULTI

PROBE VTL A1-A5D09 (- READ)
IS LINE UP?
Y N

125
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

126
PROBE VTL A1-C2G06 (- TAG 001 NO FXED HDS)
IS LINE UP?
Y N

127
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

128
SWITCH PROBE TO MST1

PROBE MST1 A1-B2P13 AND A1-B2S09
ARE BOTH LINES PULSING?
Y N

129
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

130
SWITCH PROBE TO MULTI

PROBE VTL A1-A5B08 (+ NRZ DATA TO SYSTEM)
IS LINE PULSING?
Y N

131
PROBE VTL A1-B2S07 (+ NRZ DATA TO SYSTEM)
IS LINE PULSING?
Y N

132
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CABLE ENTERING AT A1-A5.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

133
REPAIR OR EXCHANGE BOARD A1

134
PROBE VTL A1-A5D07 (- SYSTEM INDEX)
IS LINE PULSING?
Y N

135
PROBE VTL A1-D2S13 (- SYSTEM INDEX)
IS LINE PULSING?
Y N

136
EXCHANGE CARD A1-D2
EXCHANGE CABLE ENTERING AT A1-A5.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

137
REPAIR OR EXCHANGE BOARD A1

138
METER THE FOLLOWING VOLTAGES

POS	NEG	RANGE
A1-B2G02	A1-B2J08	1.2V TO 1.9V
A1-B2J02	A1-B2J08	1.2V TO 1.9V

ARE ALL VOLTAGES IN RANGE?
Y N

139
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

140
SWITCH PROBE TO MST1

PROBE MST1 A1-E2B13 (DATA PES)
ARE ANY OF THE PROBE LIGHTS ON?
Y N

141
SWITCH PROBE TO MULTI

PROBE VTL A1-B2U07 (1F CLOCK TO SYSTEM)
IS LINE PULSING?
Y N

142
EXCHANGE CARD A1-B2
EXCHANGE CABLE ENTERING AT A1-A5.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

143
IS LOOP ON DIAGNOSTIC SECTIONS AVAILABLE?
Y N

144
PROBE VTL
A1-A5D05 (- FAST SYNC)
A1-A5D09 (- READ)
ARE BOTH LINES UP?
Y N

145
EXCHANGE CARD A2-D2 IN BASE FILE

146
TEST CONTINUITY (RX1) THROUGH CABLE A1-A5
OF PINS
A1-A5D04 (DATA SELECT)
A1-A5D05 (FAST SYNC)
A1-A5D07 (SYSTEM INDEX)
A1-A5D09 (READ)
REFERENCE MAINTENANCE LOGIC DIAGRAMS VOL 1
(SF500 PAGES) FOR LOCATION OF OTHER END
IS RESISTANCE LESS THAN 2 OHMS?
Y N

147
EXCHANGE CABLE ENTERING AT A1-A5.

148
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
GO TO MAP 7A70, ENTRY POINT H.

149
LOOP DIAGNOSTIC PROGRAM (MAP7A20 OR MAP7A40)
(SEE NOTE TO THE RIGHT)

'NOTE' IF MAP7A20 WAS RUN IN MANUAL MODE BEFORE THIS MAP, LOOP 7A20 ON STEP 41. IF MAP7A30 WAS RUN LOOP 7A30 ON STEP 15. IF MAP7A40 WAS RUN LOOP 7A40 ON STEP 5.
REF MAP 0010 SECTION 04.02.01 STEP 9

PROBE VTL A1-B2S02 (- FAST SYNC)
IS LINE PULSING?
Y N

150
POWER OFF

METER RX1 SCALE A1-A5 CABLE FOR SHORT TO GROUND
A1-A5D04 TO A1-A5D08 (DATA SELECT)
A1-A5D05 TO A1-A5D08 (FAST SYNC)
A1-A5D07 TO A1-A5D08 (SYSTEM INDEX)
A1-A5D12 TO A1-A5D08 (IF WRITE TO SYSTEM)
CHECK THE CONTINUITY OF THE ABOVE LINES
REFERENCE MAINTENANCE LOGIC DIAGRAMS VOL 1 (SF500 PAGES) FOR LOCATION OF OTHER END
IS CABLE OK?
Y N

151
EXCHANGE CABLE ENTERING AT A1-A5.

152
METER RX1 SCALE A1-A5D05 TO A1-B2S02
IS RESISTANCE LESS THAN 2 OHMS?
Y N

153
REPAIR OR EXCHANGE BOARD A1

154
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

155
PROBE VTL A1-C2J11 (- READ)
IS LINE PULSING?
Y N

156
PROBE VTL A1-A5D09 (- READ)
IS LINE PULSING?
Y N

157
EXCHANGE CARD(S) A2-C2,A2-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CABLE ENTERING AT A1-A5.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

158
EXCHANGE BOARD A1

159
PROBE VTL A1-B2J12 (+ READ SELECT)
IS LINE PULSING?
Y N

160
PROBE VTL A1-C2J12 (+ READ SELECT)
IS LINE PULSING?
Y N

161
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

162
EXCHANGE BOARD A1

163
PROBE VTL A1-C2B05 (- TAG OIO CS)
IS LINE PULSING?
Y N

164
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

165
PROBE VTL A1-B2U07 (1F READ CLOCK TO SYSTEM)
IS LINE PULSING?
Y N

166
EXCHANGE CARD A1-B2
EXCHANGE CABLE ENTERING AT A1-A5.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT H.

167
SWITCH PROBE TO MST1

PROBE MST1 A1-A2B04 (HEAD SELECT B)
IS LINE PULSING?
Y N

168
SWITCH PROBE TO MULTI

PROBE VTL A1-B2P05 (- HEAD SELECT 2), AND
A1-B2P07 (- HEAD SELECT 1)
ARE BOTH LINES PULSING?
Y N

169
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

170
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
GO TO MAP 7A70, ENTRY POINT H.

171
PROBE VTL A1-A5D10 (IF READ CLOCK TO SYSTEM)
IS LINE PULSING?
Y N

172
EXCHANGE BOARD A1

173
EXCHANGE CABLE ENTERING AT A1-A5.
PROBABLE DE FAILURE
(95% PROBABLE)

EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
EXCHANGE DE UNIT

174
METER VOLTAGE (6V RANGE)
A1-B2S10 (POS)
A1-B2U08 (NEG)
IS VOLTAGE IN RANGE 1.5 TO 2.5V?
Y N

175
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT H.

176
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST - ENTRY POINT H.

177
(ENTRY POINT I)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 1 CARD (A1-E2)	72
DA CHAN CARD (A1-B2)	13
LOGIC 2 CARD (A1-D2)	5
DE UNIT	4
ACTUATOR DRIVER CARD	3
LOGIC 1 CARD (A1-C2)	2
SERVO 2 CARD (A1-F2)	1

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

METER VOLTAGE (15V RANGE)
A1-B2B12 (POS)
A1-B2D08 (NEG).
IS THE VOLTAGE IN THE RANGE 5V TO 7V?
Y N

178
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT I.

179
PROBE VTL A1-D2J09 (+ SR CLOCK)
IS LINE PULSING?
Y N

180
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT I.

181
PROBE VTL A1-D2J10 (+ ENABLE SERVO SAMPLE)
IS LINE PULSING?
Y N

182
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT I.

183
PROBE VTL A1-D2U13 (+ ENABLE MARK DETECT)
IS LINE PULSING?
Y N

184
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT I.

185
SWITCH PROBE TO MST1

PROBE MST1 A1-B2U06 (+ SERVO INHIBIT VCO)
IS LINE PULSING?
Y N

186
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT I.

187
PROBE MST1 A1-B2P11 (2F BURST)
IS LINE PULSING?
Y N

188
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT I.

189
METER VOLTAGE (6V RANGE)
A1-B2D08 (POS)
A1-B2D06 (NEG)
IS VOLTAGE IN RANGE 0.3V TO 0.8V?
Y N

190
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
GO TO MAP 7A70, ENTRY POINT H.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
A2-04, A2-05, B2-14, C2-08, D2-21, D2-24, D2-25, D2-48, E2-04, E2-05, F2-08

191
METER VOLTAGE (6V RANGE)
A1-B2D08 (POS)
A1-B2D05 (NEG)
IS VOLTAGE IN RANGE 0.3V TO 0.8V?
Y N

192
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
GO TO MAP 7A70, ENTRY POINT H.

193
METER VOLTAGE (6V RANGE)
A1-B2D08 (POS)
A1-B2B08 (NEG)
IS VOLTAGE IN RANGE 1.1V TO 1.5V?
Y N

194
POWER OFF

METER RX1 SCALE A1-B2D08 TO A1-C2D08
IS RESISTANCE LESS THAN 2 OHMS?
Y N

195
REPAIR OR EXCHANGE BOARD A1

196
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT I.

197
IS AN OSCILLOSCOPE AVAILABLE?
Y N

198
EXCHANGE CARD A1-E2
(73%)
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-B2
(14%)
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
(7%)
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
(2%)
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
(1%)
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
(1%)
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
(2%)
GO TO MAP 7A70, ENTRY POINT H.

199
GO TO SCOPE MAPS
GO TO MAP 7A74, ENTRY POINT A.

200
(ENTRY POINT J)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	56
LOGIC 2 CARD (A1-D2)	38
DISK CNTL. A2-C2,A2-D2	3
CABLES TO THE FILE	3

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-C2U07 (+ HOME)
IS LINE DOWN?
Y N

- 201
  PROBE VTL A1-C2M04 (- CONTROL BUS BIT 0)
  IS LINE DOWN?
  Y N
  - 202
    PROBE VTL A1-C2G04 (- GO HOME)
    IS LINE UP?
    Y N
    - 203
      EXCHANGE CARD A1-C2
      IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT J.
    - 204
      EXCHANGE CARD A1-D2
      IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT J.
  - 205
    EXCHANGE CARD A1-C2
    IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT J.

206
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT J.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-37

207
(ENTRY POINT K)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT
:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	49
LOGIC 1 CARD (A1-C2)	30
LOGIC 2 CARD (A1-D2)	21

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-C2U02 (- OUT DRIVE)
IS LINE DOWN?
Y N

208
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

209
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT K.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-45

210
(ENTRY POINT L)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	58
DA CHAN CARD (A1-B2)	22
LOGIC 2 CARD (A1-D2)	20

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-B2M05 (- REPAIRED HEAD SELECT)
IS LINE DOWN?
Y N

211 EXCHANGE CARD A1-B2 IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT L.

212
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
C2-06

213
(ENTRY POINT M)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	70
LOGIC 2 CARD (A1-D2)	30

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-F2B08 (- SEL DEMOD Q1), AND A1-F2D09 (- SEL DEMOD N1)
ARE BOTH LINES PULSING?
Y N

214
CHECK SEATING OF JUMPERS ON CARD A1-D2
IF FAILS TO REPAIR
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2

215
PROBE VTL A1-F2B10 (- SEL DEMOD N2), AND A1-F2B09 (- SEL DEMOD Q2)
ARE BOTH LINES PULSING?
Y N

216
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2

217
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-14, D2-15, D2-23

218
(ENTRY POINT N)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT
:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	63
SERVO 2 CARD (A1-F2)	25
SERVO 1 CARD (A1-E2)	12

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

PROBE VTL A1-C2S09 (- EVEN)
IS LINE DOWN?
Y N

| 219
| EXCHANGE CARD A1-F2
| IF FAILS TO REPAIR INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-E2
| IF FAILS TO REPAIR INSTALL ORIGINAL CARD
| EXCHANGE CARD A1-C2

220
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT N.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
C2-28

221
(ENTRY POINT 0)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 2 CARD (A1-D2)	39
LOGIC 1 CARD (A1-C2)	30
SERVO 2 CARD (A1-F2)	24
ACTUATOR DRIVER CARD	6
DE	1

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

ENSURE ACTUATOR LOCK IS DISENGAGED
WAS ACTUATOR LOCK DISENGAGED?
Y N

222
FULLY DISENGAGE ACTUATOR LOCK
RUN DIAGNOSTIC PROGRAMS (MAP7A20)

223
PROBE VTL A1-D2G03 (- SEL DEMOD Q1)
IS LINE DOWN?
Y N

224
PROBE VTL A1-D2M05 (+ QUAD ERROR)
IS LINE DOWN?
Y N

225
PROBE VTL A1-D2D06 (+ OUT DIRECTION)
IS LINE DOWN?
Y N

226
PROBE VTL A1-C2D11 (+ LIN REG N OF EVEN TRK)
IS LINE DOWN?
Y N

227
PROBE VTL A1-D2M05 (+ QUAD ERROR)
IS LINE PULSING?
Y N

228
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT 0.

229
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT 0.

230
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT 0.

231
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT 0.

232
PROBE VTL A1-F2B08 (- SEL DEMOD Q1)
IS LINE DOWN?
Y N

233
PROBE VTL A1-C2G04 (- GO HOME)
IS LINE DOWN?
Y N

234
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT 0.

235
PROBE VTL A1-D2J06 (- SEL DEMOD N2)
IS LINE DOWN?
Y N

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-01, D2-14, D2-23

2 2 2 2
6 6 6 6
V W X Y

236
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT 0.

237
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT 0.

238
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT 0.

239
PROBE VTL A1-C2G04 (- GO HOME)
IS LINE DOWN?
Y N

240
PROBE VTL A1-C2D11 (+ LIN REG N OF EVEN TRK)
IS LINE DOWN?
Y N

241
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT 0.

242
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT 0.

243
PROBE VTL A1-C2D10 (+ RELEASE TRACK ADDRESS)
IS LINE DOWN?
Y N

244
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT 0.

245
PROBE VTL A1-D2J06 (- SEL DEMOD Q1)
IS LINE DOWN?
Y N

246
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT 0.

247
ADD JUMPER A1-F2P11 TO A1-F2P08

METER VOLTAGE (6V RANGE)
A1-F2U04 (POS)
A1-F2U05 (NEG)
IS VOLTAGE MORE THAN 2V?
Y N

248
REMOVE JUMPER(S).
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT 0.

249
REMOVE JUMPER(S).
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST - ENTRY POINT 0.

250
(ENTRY POINT P)

THIS MAP ISOLATES SLOW SEEKING FAILURES.
REFERENCE MAINTENANCE LOGIC DIAGRAMS PAGE SF570A FOR VC CONNECTOR PINS
FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	67
LOGIC 2 CARD (A1-D2)	27
DE UNIT	6

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

METER VOLTAGE (6V RANGE)
A1-C2B02 (POS)
A1-C2D08 (NEG)
IS VOLTAGE MORE THAN 1.5 VOLTS?
Y N

- 251
  POWER OFF.
  METER RESISTANCE (RX1 SCALE)
  VC9-D TO VC9-C.

  IS RESISTANCE IN RANGE 300 TO 400 OHMS?
  Y N
  - 252
    EXCHANGE DE UNIT
    IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.
  - 253
    EXCHANGE CARD A1-D2
    IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.

254
DISCONNECT CONNECTOR VC-9
(DO NOT POWER OFF)
METER VOLTAGE (6V RANGE)
A1-C2D02 (POS)
A1-C2D08 (NEG)

IS VOLTAGE 0 VOLTS?
Y N

- 255
  EXCHANGE CARD A1-D2
  RECONNECT VC-9
  IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.

256
RECONNECT VC-9
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT P.

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
C2-02, D2-03

C A / D B	WIRE ENTRY SIDE

SEE MAINTENANCE LOGIC MANUAL PAGE SF570A

C A / D B	WIRE ENTRY SIDE

SEE MAINTENANCE LOGIC MANUAL PAGE SF570A

257
(ENTRY POINT Q)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT
:

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	68
SERVO 1 CARD (A1-E2)	13
LOGIC 2 CARD (A1-D2)	7
LOGIC 1 CARD (A1-C2)	7
ACTUATOR DRIVER CARD	3
DA CHAN CARD (A1-B2)	3

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

METER VOLTAGE (6V RANGE)
A1-E2B07 (NEG)
A1-E2D08 (POS)
IS VOLTAGE MORE THAN 1.8V?
Y N

258
CHECK SEATING OF JUMPERS ON CARD A1-E2
IF FAILS TO REPAIR
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Q.

259
PROBE VTL A1-F2G03 (+ COIL CURRENT LOW)
IS LINE PULSING?
Y N

260
PROBE VTL A1-C2J07 (+ OUT DIRECTION)
IS LINE UP?
Y N

261
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Q.

262
PROBE VTL A1-F2G03 (+ COIL CURRENT LOW)
IS LINE DOWN?
Y N

263
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Q.

264
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Q.

265
PROBE VTL A1-E2J13 (+ OFF DATA TRACK)
IS LINE DOWN?
Y N

266
PROBE VTL A1-C2J07 (+ OUT DIRECTION)
IS LINE UP?
Y N

267
PROBE VTL A1-C2J07 (+ OUT DIRECTION)
IS LINE PULSING?
Y N

268
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Q.

269
METER VOLTAGE (6 VOLT RANGE)
A1-F2U08 (POS)
A1-F2U11 (NEG)
IS VOLTAGE MORE THAN 0.6V?
Y N

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-07, E2-02, F2-04, F2-13, F2-15, F2-26

270
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT Q.

271
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT Q.

272
SWITCH PROBE TO MST1

PROBE MST1 A1-E2B10 (- RESET CAP)
IS LINE PULSING?
Y N

273
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT Q.

274
METER VOLTAGE (6V RANGE DC)
A1-D2D08 (POS)
A1-D2B07 (NEG)
IS VOLTAGE BETWEEN 0.4 AND 0.9V?
Y N

275
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT Q.

276
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT Q.

277
METER VOLTAGE (6V RANGE DC)
A1-F2U08 (NEG)
A1-F2U04 (POS)
IS VOLTAGE BETWEEN 0.5 AND 0.9V?
Y N

278
METER VOLTAGE (6V RANGE DC)
A1-D2D08 (POS)
A1-D2B07 (NEG)
IS VOLTAGE BETWEEN 0.4 AND 0.9V?
Y N

279
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT Q.

280
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT Q.

281
METER VOLTAGE (6V RANGE DC)
A1-D2D08 (POS)
A1-D2B07 (NEG)
IS VOLTAGE BETWEEN 0.4 AND 0.9V?
Y N

282
METER VOLTAGE (6V RANGE DC)
A1-D2D08 (POS)
A1-E2B07 (NEG)
IS VOLTAGE BETWEEN 1.7 AND 2.3V?
Y N

283
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT Q.

284
METER VOLTAGE (6V RANGE DC)
A1-D2D08 (NEG)
A1-E2B13 (POS)
IS VOLTAGE BETWEEN -0.2 AND +0.2V?
Y N

285
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT Q.

286
METER VOLTAGE (6V RANGE AC)
A1-D2D08 (NEG)
A1-E2B13 (POS)
IS VOLTAGE LESS THAN 0.2V?
Y N

287
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Q.

288
PROBE VTL A1-C2M05 (- CONTROL BUS BIT 4)
OBSERVE FOR 1 MINUTE.
IS LINE PULSING?
Y N

289
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Q.

290
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Q.

291
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT Q.

292
(ENTRY POINT R)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
SERVO 2 CARD (A1-F2)	47
ACTUATOR DRIVER CARD	25
DE UNIT	12
LOGIC 2 CARD (A1-D2)	11
SERVO 1 CARD (A1-E2)	4
LOGIC 1 CARD (A1-C2)	1

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

ENSURE ACTUATOR LOCK IS FULLY DISENGAGED
WAS ACTUATOR LOCK DISENGAGED?
Y N

293
FULLY DISENGAGE ACTUATOR LOCK.
RUN DIAGNOSTIC PROGRAMS (MAP7A20)

294
METER VOLTAGE (6V RANGE)
A1-E2B07 (NEG)
A1-E2D08 (POS)
IS VOLTAGE MORE THAN 1.8V?
Y N

295
CHECK SEATING OF JUMPERS ON CARD A1-E2
IF FAILS TO REPAIR
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

296
PROBE VTL A1-D2U07 (- OUT DRIVE)
IS LINE UP?
Y N

297
PROBE VTL A1-D2G08 (- SECTOR PULSES MISSING)
IS LINE UP?
Y N

298
PROBE VTL A1-D2G04 (- SEL DEMOD N1)
IS LINE PULSING?
Y N

299
PROBE VTL A1-F2P05 (- SEL INTEGRATOR)
IS LINE DOWN?
Y N

300
PROBE VTL A1-D2S07 (- IN DRIVE)
IS LINE UP?
Y N

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
D2-15, D2-16, D2-43, F2-19, F2-24, F2-25, F2-27, V-05

3 3 3 3 3 3
5 4 3 3 2 2
A A A A A A
F G H J K L

301
ADD JUMPER A1-D2M11 TO A1-D2P08
PROBE VTL A1-D2S07 (- IN DRIVE)
AND D2U07 (- OUT DRIVE)
ARE BOTH LINES DOWN
Y N

302
IS ONE LINE PULSING BUT NOT BOTH?
Y N

303
DO THE FOLLOWING IN ORDER:

1. REMOVE JUMPER A1-D2M11 TO A1-D2P08
2. ADD JUMPER A1-F2P02 TO A1-F2P08
3. ADD JUMPER A1-D2S06 TO A1-D2U08
4. REMOVE JUMPER A1-F2P02 TO A1-F2P08
5. REMOVE JUMPER A1-D2S06 TO A1-D2U08
6. CALL DIAGNOSTIC MAP7A20 .

DO DIAGNOSTIC ROUTINES RUN ERROR FREE?
Y N

304
POWER OFF

REMOVE CARD A1-F2

METER RESISTANCE (RX1 SCALE) BETWEEN A1-F2M04 AND A1-F2M05.
IS RESISTANCE LESS THAN 30 OHMS?
Y N

305
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

306
METER CONTINUITY (RX1 SCALE)
VC-5D TO A1-F2S09
IS RESISTANCE LESS THAN 2 OHMS?
Y N

307
REPAIR OR EXCHANGE BOARD A1

308
METER CONTINUITY (RX1 SCALE)
VC5-D TO POWER SUPPLY P4 PIN-28 (-24V RETURN)
REFERENCE MAINTENANCE LOGIC DIAGRAMS PAGE SF545
IS RESISTANCE LESS THAN 2 OHMS?
Y N

309
REPAIR AS NECESSARY
INSTALL A1-F2

310
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
AND
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

311
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

312
EXCHANGE CARD A1-D2
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

313
EXCHANGE CARD A1-D2
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

314
METER VOLTAGE
A1-F2M05 (POS)
A1-F2P08 (NEG)
IS VOLTAGE IN RANGE 1V TO 2V?
Y N

315
METER VOLTAGE
A1-F2U02 (POS)
A1-F2P08 (NEG)
IS VOLTAGE LESS THAN 0.7V?
Y N

316
POWER OFF

REMOVE CARD A1-F2

METER RESISTANCE (RX1 SCALE) BETWEEN
A1-F2M04 AND A1-F2M05.
IS RESISTANCE LESS THAN 30 OHMS?
Y N

317
EXCHANGE DE UNIT
INSTALL A1-F2

318
EXCHANGE ACTUATOR DRIVER CARD ON
A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
INSTALL A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY POINT R.

319
METER VOLTAGE (60V RANGE)
A1-F2M12 (NEG)
A1-F2P08 (POS)
IS VOLTAGE LESS THAN 18V?
Y N

320
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY POINT R.

321
POWER OFF

REMOVE CARD A1-F2

METER RESISTANCE (RX1 SCALE) BETWEEN
A1-F2M04 AND A1-F2M05.
IS RESISTANCE LESS THAN 30 OHMS?
Y N

322
EXCHANGE DE UNIT
INSTALL A1-F2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY POINT R.

323
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

324
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

325
EXCHANGE DE UNIT
INSTALL A1-F2

326
METER VOLTAGE (6V RANGE)
A1-F2M05 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 3 VOLTS?
Y N

327
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

328
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST - ENTRY POINT R.

329
PROBE VTL A1-F2B12 (+ NORMAL ERROR)
IS LINE PULSING?
Y N

330
PROBE VTL A1-F2B12 (+ NORMAL ERROR)
IS LINE UP?
Y N

331
PROBE VTL A1-F2G03 (+ COIL CURRENT LOW)
IS LINE PULSING?
Y N

332
PROBE VTL A1-D2S07 (- IN DRIVE)
IS LINE UP?
Y N

333
PROBE VTL A1-F2G12 (+ ON TRACK)
IS LINE UP?
Y N

334
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

335
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

336
METER VOLTAGE (15V RANGE)
A1-D2D02 (NEG)
A1-D2D08 (POS)
IS VOLTAGE MORE THAN 6.0V?
Y N

337
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

338
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

339
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

340
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

341
METER VOLTAGE (60V RANGE)
A1-F2M05 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 10V ?
Y N

342
METER VOLTAGE (6V RANGE)
A1-F2M04 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 2V ?
Y N

343
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

344
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

345
METER VOLTAGE (6V RANGE)
A1-F2M04 (POS)
A1-F2P08 (NEG)
IS VOLTAGE MORE THAN 5V ?
Y N

346
PROBE VTL A1-D2B03 (+ LIN REG N OF EVEN TRK)
IS LINE UP?
Y N

347
METER VOLTAGE (6V RANGE)
A1-D2D02 (NEG)
A1-D2D08 (POS)
IS VOLTAGE MORE THAN 2V ?
Y N

348
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

349
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

350
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

351
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

352
PROBE VTL A1-D2G08 (- SECTOR PULSES MISSING)
IS LINE UP?
Y N

353
PROBE VTL A1-F2B03 (- EVEN)
IS LINE DOWN?
Y N

354
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

355
PROBE VTL A1-F2J04 (- BAD AGC LEVEL)
IS LINE UP?
Y N

356
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT R.

357
SWITCH PROBE TO MST1

PROBE MST1 A1-E2B09 (- G)
IS LINE DOWN?
Y N

358
PROBE MST1 A1-E2B09 (- G)
OBSERVE FOR ONE MINUTE
IS LINE PULSING?
Y N

359
SWITCH PROBE TO MULTI

PROBE VTL A1-F2G03 (+ COIL CURRENT LOW)
IS LINE DOWN?
Y N

360
PROBE VTL A1-D2U04 (+ SEL INTEGRATOR)
IS LINE UP?
Y N

361
CHECK SEATING OF JUMPERS ON CARD A1-D2
IF FAILS TO REPAIR
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

362
PROBE VTL A1-D2U06 (+ SERVO PROTECT)
IS LINE PULSING?
Y N

363
METER VOLTAGE(60V RANGE)
A1-F2U07 (POS)
A1-F2U08 (NEG)
IS THE VOLTAGE MORE THAN 10.0V?
Y N

364
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

365
METER VOLTAGE (6V RANGE)
A1-D2S03 (POS)
A1-D2U08 (NEG)
IS THE VOLTAGE LESS THAN 0.8V?
Y N

366
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

367
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

368
SWITCH PROBE TO MST1

PROBE MST1 A1-E2J12 (2F WRITE CLOCK)
IS LINE PULSING?
Y N

369
CHECK SEATING OF JUMPERS ON CARD A1-E2
IF FAILS TO REPAIR
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

370
SWITCH PROBE TO MULTI

PROBE VTL A1-D2B03 (+ LIN REG N OF EVEN TRK)
IS LINE PULSING?
Y N

371
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

372
CHECK SEATING OF JUMPERS ON CARD A1-D2
IF FAILS TO REPAIR
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

373
METER VOLTAGE (6V RANGE)
A1-E2B13 (NEG)
A1-E2D08 (POS)
IS THE VOLTAGE MORE THAN 4.0V?
Y N

374
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

375
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

376
SWITCH PROBE TO MULTI

PROBE VTL A1-F2G03 (+ COIL CURRENT LOW)
IS LINE DOWN?
Y N

377
PROBE VTL A1-F2S12 (+ NSW)
IS LINE DOWN?
Y N

378
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY POINT R.

379
SWITCH PROBE TO MST1

PROBE MST1 A1-E2B09 (- G)
IS LINE PULSING?
Y N

380
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY POINT R.

381
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

382
PROBE VTL A1-F2B12 (+ NORMAL ERROR)
IS LINE PULSING?
Y N

383
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

384
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

385
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

386
PROBE VTL A1-D2G04 (- SEL DEMOD N1)
IS LINE PULSING?
Y N

387
PROBE VTL A1-D2S10 (- SYSTEM SECTOR)
IS LINE PULSING?
Y N

388
EXCHANGE CARD A1-D2
(952)
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

389
PROBE VTL A1-F2G12 (+ ON TRACK)
IS LINE UP?
Y N

390
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

391
PROBE VTL A1-D2U04 (+ SEL INTEGRATOR)
IS LINE UP?
Y N

392
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

393
PROBE VTL A1-F2S12 (+ NSW)
IS LINE DOWN?
Y N

394
METER VOLTAGE (6V RANGE)
A1-D2S03 (POS)
A1-D2U08 (NEG)
IS VOLTAGE MORE THAN 1.1V?
Y N

395
METER VOLTAGE (6V RANGE)
A1-F2U05 (POS)
A1-F2U08 (NEG)
IS VOLTAGE MORE THAN 1.0V?
Y N

396
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY POINT R.

397
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

398
PROBE VTL A1-D2G08 (- SECTOR PULSES
MISSING)
IS LINE UP?
Y N

399
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

400
ADD JUMPER A1-F2P11 TO A1-F2P08

METER VOLTAGE (60V RANGE)
A1-F2M05 (POS)
A1-F2P08 (NEG)
IS THE VOLTAGE MORE THAN 10V?
Y N

401
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

402
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

403
POWER OFF
METER RESISTANCE (RX1 SCALE)
A1-F2U05 TO F2U08)
A1-F2S05 TO F2U08)
ARE BOTH RESISTANCES LESS THAN 10 OHMS?
Y N

404
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

405
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

406
PROBE VTL A1-F2B03 (- EVEN)
IS LINE DOWN?
Y N

407
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT R.

408
SWITCH PROBE TO MST1

PROBE MST1 A1-B2U10 (DATA S.S.)
IS LINE PULSING?
Y N
| 409
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD REPLACEMENT
| UNIT LIST - ENTRY POINT R.

410
METER THE FOLLOWING VOLTAGES (6V RANGE)
A1-B2S11 (NEG) TO A1-B2U08 (POS)
A1-B2S12 (NEG) TO A1-B2U08 (POS)
ARE BOTH VOLTAGES MORE THAN 0.5V?
Y N
| 411
| EXCHANGE CARD A1-B2
| IF FAILS TO REPAIR SEE FIELD REPLACEMENT
| UNIT LIST - ENTRY POINT R.

412
EXCHANGE ACTUATOR DRIVER CARD ON A1-GATE
SEE SEC 2 OF MIM FOR LOCATION.
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST - ENTRY POINT R.

413
(ENTRY POINT S)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
DA CHAN CARD (A1-B2)	46
DE UNIT	46
LOGIC 1 CARD (A1-C2)	8

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

METER VOLTAGE (15V RANGE)
A1-B2D08 (POS)
A1-B2D04 (NEG)
IS VOLTAGE IN RANGE 10.5V TO 13.5V?
Y N

414
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT S.

415
METER VOLTAGE (6V RANGE)
A1-B2D08 (POS)
A1-B2D07 (NEG)
IS VOLTAGE IN RANGE 3.5V TO 4.5V?
Y N

416
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
(1% PROBABLE)
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT S.

417
INSPECT FOR LOOSE CABLES AT A1-T1 AND A1-A2.
ARE THE CABLES SEATED CORRECTLY?
Y N

418
RESEAT THE CABLES.

419
PROBE THE PINS SHOWN IN TABLE 4

TABLE 4

PROBE MSTI		PROBE VTL		
A2B03	A2B04	A2B06	A2B05	A2B02
D	D	U	U	D

NOTE: D=DOWN,U=UP.

ARE THE LEVELS CORRECT?
Y N

420
TO FIND WHICH HEAD IS SELECTED PROBE THE PINS SHOWN IN TABLE 1.
IF THE CONDITIONS MATCH, THAT HEAD IS SELECTED.
NOTE:
MODELS 23 AND 29
PROBE ONLY THE PINS INSIDE THE ASTERISKS(***)
MODELS 58 AND 64
PROBE ALL THE PINS

TABLE 1 BOARD A1

	PROBE MSTI		PROBE VTL		
HEAD	A2B03	A2B04	A2B06	A2B05	A2B02
0	U	U	D	U *	U
1	D	U	D	U *	U
2	U	D	D	U *	U
3	D	D	D	U *	U
4	U	U	U	D *	U
5	D	U	U	D *	U
**********					
6	U	D	U	D	U
7	D	D	U	D	U
8	U	U	U	U	D
9	D	U	U	U	D
A	U	D	U	U	D

NOTE: D=DOWN,U=UP.

IS A VALID HEAD SELECTED?
Y N

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
A2-02, B2-02, B2-04, B2-08, B2-10, B2-13, C2-10, T2-01, V-04

421
PROBE PINS AS SHOWN IN TABLE 2

TABLE 2 BOARD A1

	PROBE VTL			
HEAD	B2P07	B2P05	B2P10	B2P06
0	U	U	U	U
1	D	U	U	U
2	U	D	U	U
3	D	D	U	U
4	U	U	D	U
5	D	U	D	U
6	U	D	D	U
7	D	D	D	U
8	U	U	U	D
9	D	U	U	D
A	U	D	U	D
B	D	D	U	D

NOTE: D=DOWN,U=UP.

IS A VALID HEAD SELECTED?
Y N

422
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT S.

423

GO TO STEP 429,
ENTRY POINT ZZ.

424
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT S.

425
PROBE VTL A1-C2G12 (+ DATA UNSAFE)
IS LINE UP?
Y N

426
POWER OFF

CHECK FOR SHORT ON A1-A5D11
IS LINE SHORTED ?
Y N

427
EXCHANGE CARD(S) A2-C2,A2-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT S.

428
TRACE NET A1-C2G12 TO A1-A5D11 THRU CABLE

429
(ENTRY POINT ZZ)

POWER OFF

METER RESISTANCE (RX10 SCALE)
A1-A2D04 TO A1-A2D05
IS RESISTANCE LESS THAN 300 OHMS?
Y N

430
EXCHANGE DE UNIT
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT S.

431
POWER ON

ADD JUMPER A1-C2G11 TO A1-C2J08
LOOP DIAGNOSTIC PROGRAM (MAP7A40 STEP 7)
REF MAP 0010 SECTION 04.02.01 STEP 9

PROBE VTL A1-C2M11 (+ DATA UNSAFE)
IS LINE UP?
Y N

432
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT S.

PHYSICAL HEAD B IS NOT PRESENT BUT A HEAD POSITION B IS A SPARE INPUT ON THE DISK ACTUATOR. THE CODE FOR HEAD B IS FORCED WHEN AN UNSAFE CONDITION IS SENSED.
HEAD B IS VALID FOR TABLE 2

|
|
433
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL A1-B2
EXCHANGE DE UNIT
REMOVE JUMPER(S).
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST - ENTRY POINT S.

434
(ENTRY POINT T)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT :

FIELD REPLACEMENT UNIT	PROBABLE
DE UNIT	54
DA CHAN CARD (A1-B2)	34
LOGIC 1 CARD (A1-C2)	12

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

INSPECT FOR LOOSE CABLES AT A1-A2 AND A1-T1.
ARE THE CABLES SEATED CORRECTLY?.
Y N

435
RESEAT THE CABLES.

436
TO FIND WHICH HEAD IS SELECTED PROBE THE PINS SHOWN IN TABLE 1.
IF THE CONDITIONS MATCH, THAT HEAD IS SELECTED.
NOTE:
MODELS 23 AND 29
PROBE ONLY THE PINS INSIDE THE ASTERISKS(***)
MODELS 58 AND 64
PROBE ALL THE PINS

TABLE 1 BOARD A1

	PROBE MSTI		PROBE VTL		
HEAD	A2B03	A2B04	A2B06	A2B05	A2B02
0	U	U	D	U *	U
1	D	U	D	U *	U
2	U	D	D	U *	U
3	D	D	D	U *	U
4	U	U	U	D *	U
5	D	U	U	D *	U
**********					
6	U	D	U	D	U
7	D	D	U	D	U
8	U	U	U	U	D
9	D	U	U	U	D
A	U	D	U	U	D

NOTE: D=DOWN,U=UP.
IS A VALID HEAD SELECTED?
Y N

437
PROBE PINS AS SHOWN IN TABLE 2
TABLE 2 BOARD A1

	PROBE VTL			
HEAD	B2P07	B2P05	B2P10	B2P06
0	U	U	U	U
1	D	U	U	U
2	U	D	U	U
3	D	D	U	U
4	U	U	D	U
5	D	U	D	U
6	U	D	D	U
7	D	D	D	U
8	U	U	U	D
9	D	U	U	D
A	U	D	U	D
B	D	D	U	D

NOTE: D=DOWN,U=UP.
IS A VALID HEAD SELECTED?
Y N

438
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT T.

439
EXCHANGE CARD A1-B2
(95%)
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

440
IS LOOP ON DIAGNOSTIC SECTIONS AVAILABLE?
Y N

BOARD A NETS FOR THIS MAP:
(SEE BOARD NETLIST TABLES - MAP7A75)
B2-07, B2-10, B2-11, B2-12, B2-13, C2-06, V-03

PHYSICAL HEAD B IS NOT PRESENT BUT A HEAD POSITION B IS A SPARE INPUT ON THE DISK ACTUATOR. THE CODE FOR HEAD B IS FORCED WHEN AN UNSAFE CONDITION IS SENSED.
HEAD B IS VALID FOR TABLE 2

441
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL A1-B2
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL A1-C2
EXCHANGE DE UNIT

442
LOOP DIAGNOSTIC PROGRAM MAP7A20 OR MAP7A40
SEE NOTE AT RIGHT

'NOTE' IF MAP7A20 WAS RUN IN MANUAL MODE BEFORE THIS MAP, LOOP 7A20 ON STEP 41. IF MAP7A30 WAS RUN LOOP 7A30 ON STEP 15. IF MAP7A40 WAS RUN LOOP 7A40 ON STEP 5.
REF MAP 0010 SECTION 04.02.01 STEP 9

SWITCH PROBE TO MST1
PROBE MST1 A1-B2P04 (HEAD SELECT B)

(NOTE: DOWN LIGHT MAY REMAIN OFF BUT UP LIGHT WILL PULSE IF LINE IS PULSING)
IS LINE PULSING?
Y N

443
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT T.

444
DOES FILE HAVE FIXED HEADS?
Y N

445
PROBE VTL A1-C2G02 (- HEAD SELECT 8)
(OBSERVE FOR 1 MINUTE)
IS LINE PULSING?
Y N

446
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT T.

447
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT

448
LOOP DIAGNOSTIC PROGRAM (MAP7A40)
STEP 27

'NOTE' IF MAP7A40 IS RUN IN LOOP MODE HERE THE ROUTINE WRITES ON THE FIXED HEADS. CHECK WITH THE CUSTOMER FIRST.
REF MAP 0010 SECTION 04.02.01 STEP 9

PROBE VTL A1-B2M07 (CHIP SELECT 5)
AND A1-B2M08 (CHIP SELECT 4)
(OBSERVE FOR 1 MINUTE)
ARE BOTH LINES PULSING?
Y N

449
PROBE VTL A1-C2G02 (- HEAD SELECT 8)
(OBSERVE FOR 1 MINUTE)
IS LINE PULSING?
Y N

450
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT T.

451
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT T.

452
EXCHANGE CARD A1-B2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE DE UNIT
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2

453
(ENTRY POINT U)

FAILING FIELD REPLACEMENT UNITS AT THIS POINT
:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 2 CARD (A1-D2)	48
LOGIC 1 CARD (A1-C2)	23
SERVO 2 CARD (A1-F2)	22
SERVO 1 CARD (A1-E2)	7

INSPECT AND RESEAT CABLES ON THE A1 BOARD OF THE FAILING FILE

TO ISOLATE FARTHER:

METER VOLTAGE (6V RANGE)
A1-E2B07 (NEG)
A1-E2D08 (POS)
IS THE VOLTAGE MORE THAN 1.8V?
Y N

454
CHECK SEATING OF JUMPERS ON CARD A1-E2
IF FAILS TO REPAIR
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

455
PROBE VTL A1-F2G03 (+ COIL CURRENT LOW)
IS LINE PULSING?
Y N

456
PROBE VTL A1-D2B04 (VEL>PROFILE)
IS LINE DOWN?
Y N

457
PROBE VTL A1-C2D10 (+ RELEASE TRACK ADDRESS)
IS LINE DOWN?
Y N

458
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

459
METER VOLTAGE (6V RANGE)
A1-C2D02 (POS)
A1-C2D08 (NEG)
IS THE VOLTAGE LESS THAN 0.5V?
Y N

460
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

461
METER VOLTAGE (6V RANGE)
A1-D2S03 (POS)
A1-D2D08 (NEG)
IS THE VOLTAGE LESS THAN 0.8V?
Y N

462
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

463
PROBE VTL A1-D2U06 (+ SERVO PROTECT)
IS LINE PULSING?
Y N

464
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

465
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT LIST - ENTRY POINT U.

466
PROBE VTL A1-D2B03 (+ LIN REG N OF EVEN TRK)
IS LINE UP?
Y N

467
PROBE VTL A1-D2M10 (+ REL TRK ADR 128)
IS LINE DOWN?
Y N

468
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

469
PROBE VTL A1-D2U06 (+ SERVO PROTECT)
IS LINE PULSING?
Y N

470
PROBE VTL A1-C2D10 (+ RELEASE TRACK ADDRESS)
IS LINE DOWN?
Y N

471
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

472
SWITCH PROBE TO MST1
PROBE MST A1-E2B09 (- G)
IS LINE PULSING?
Y N

473
METER VOLTAGE (6V RANGE)
A1-C2D02 (POS)
A1-C2D08 (NEG)
IS THE VOLTAGE LESS THAN 0.5V?
Y N

474
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

475
METER VOLTAGE (6V RANGE)
A1-D2S03 (POS)
A1-D2U08 (NEG)
IS THE VOLTAGE MORE THAN 1.0V?
Y N

476
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR INSTALL ORIGINAL CARD
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

477
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

478
EXCHANGE CARD A1-C2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

479
PROBE VTL A1-F2P11 (- IN DRIVE)
IS LINE UP?
Y N

480
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

481
PROBE MST A1-E2B09 (- G)
IS LINE PULSING?
Y N

482
PROBE VTL A1-D2G08 (- SECTOR PULSES MISSING)
IS LINE UP?
Y N

483
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

484
METER VOLTAGE (6V RANGE)
A1-C2D02 (POS)
A1-C2D08 (NEG)
IS THE VOLTAGE LESS THAN 0.5V?
Y N

485
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY POINT U.

486
METER VOLTAGE (6V RANGE)
A1-D2S03 (POS)
A1-D2U08 (NEG)
IS THE VOLTAGE MORE THAN 0.8V?
Y N

487
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD
REPLACEMENT UNIT LIST - ENTRY POINT U.

488
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

489
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

490
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

491
PROBE VTL A1-F2B12 (+ NORMAL ERROR)
OBSERVE FOR 1 MINUTE.)
IS LINE PULSING?
Y N

492
PROBE VTL A1-D2J13 (- SEEK COMPLETE)
IS LINE DOWN?
Y N

493
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

494
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT LIST - ENTRY POINT U.

495
EXCHANGE CARD A1-D2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
LIST - ENTRY POINT U.

MAP 7A77

PAGE 1 OF 2

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	1	001

001
(ENTRY POINT A)

THIS MAP ISOLATES FAILURES THAT CAUSE NO COMMUNICATION BETWEEN FILE AND SYSTEM ADAPTER

FAILING FIELD REPLACEMENT UNITS AT THIS POINT ARE:

FIELD REPLACEMENT UNIT	PROBABLE
LOGIC 1 CARD (A1-C2)	53
DISK CNTL A2-C2,A2-D2	20
LOGIC 2 CARD (A1-D2)	10
SERVO 2 CARD (A1-F2)	3
DA CHAN CARD (A1-B2)	2
CABLES FROM DISK CNTL	12

TO FARTHER ISOLATE :
ARE ALL FILES TURNED ON?
Y N
| 002
| TURN ALL FILES ON, THEN RUN DIAGNOSTICS.

003
ARE ALL FILES POWERED UP (IS LED ON)?
Y N
| 004
| GO TO MAP 7A80 FOR POWERED OFF FILE

005
CHECK FOR +5 VOLTS TO FILE
METER VOLTAGE BETWEEN A1-B2D03 (POS) AND A1-B2D08 (NEG)
IS VOLTAGE BETWEEN +4.5 TO +5.5 ?
Y N
| 006
| GO TO MAP 7A80 FOR FAILING FILE

007
PROBE VTL A1-C2B03 (+ DEGATE BUS)
IS LINE DOWN?
Y N
| 008
| POWER OFF
| CHECK CONTINUITY THROUGH CABLE A1-A5
| A1-A5B12 (INTERFACE DEGATE)
| REFERENCE SF503-SF508 FOR PIN LOCATIONS
| IS CONTINUITY CORRECT?
| Y N
| | 009
| | REPAIR OR EXCHANGE CABLE A1-A5
| | IF FAILS TO REPAIR SEE FIELD REPLACEMENT
| | UNIT PROBABLE TABLE AT ENTRY POINT A.
| 010
| EXCHANGE CARDS A2-D2,A2-C2
| IF FAILS TO REPAIR SEE FIELD REPLACEMENT
| UNIT PROBABLE TABLE AT ENTRY POINT A.

011
POWER OFF
CHECK CONTINUITY OF CABLE LINES
CHECKING CONTROL SAMPLE LINE
A2-B2B12 TO A1-A3B12 (FILE 0)
TO A1-A3B12 (FILE 1)
TO A1-A3B12 (FILE 2)
TO A1-A3B12 (FILE 3)

A2-B3B03 TO A1-A5B03 (FILE 0)
A2-B4B03 TO A1-A5B03 (FILE 1)
A2-A4B03 TO A1-A5B03 (FILE 2)
A2-A3B03 TO A1-A5B03 (FILE 3)
IS CONTINUITY CORRECT?
Y N
| |

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012
EXCHANGE FAILING CABLE
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT PROBABLE TABLE AT ENTRY POINT A.

013
POWER ON

PROBE VTL A1-D2U09 (PWR ON DELAYED)
IS LINE UP?
Y N

014
EXCHANGE CARD A1-F2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT PROBABLE TABLE AT ENTRY POINT A.

015
PROBE VTL A1-B2M10 (2F WRITE CLOCK)
PROBE VTL A1-B2U07 (1F READ CLOCK)
PROBE VTL A1-B2U11 (1F WRITE CLOCK)
PROBE VTL A1-B2U12 (1F WRITE CLOCK)
ARE LINES PULSING?
Y N

THESE CLOCK LINES ARE USED BY THE A2-C2 AND A2-D2 CARDS. WHEN THEY ARE NOT PULSING THE CONTROLLER DOES NOT RUN WHICH CAUSES TIME OUT CONDITIONS

016
EXCHANGE CARD A1-B2
EXCHANGE CARD A1-E2
IF FAILS TO REPAIR SEE FIELD REPLACEMENT
UNIT PROBABLE TABLE AT ENTRY POINT A.

017
CHECK SEATING OF JUMPERS ON CARD A1-C2
IF FAILS TO REPAIR
EXCHANGE CARD A1-C2
95% PROBABLE
IF FAILS TO REPAIR SEE FIELD REPLACEMENT UNIT
PROBABLE TABLE AT ENTRY POINT A.

PARITY FAILURE MAPS

PAGE 1 OF 1

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A20	A	1	001

001
(ENTRY POINT A)
THIS MAP ISOLATES PARITY/INTERUPT FAILURES CAUSED BY THE DSF.

NOTE* CABLE PROBLEMS MAY DIRECT YOU INTO THIS MAP. CHECK ALL FILE(S) INSTALLED. IF NOT ABLE TO ISOLATE WITH THIS MAP GOTO MAP 7A91.

PROBE VTL A1-C2U13 (+ PARITY ERROR TP)
IS LINE UP?
Y N

002
PROBE VTL A1-C2B08 (+ BRAKE APPLIED)
IS LINE DOWN?
Y N

003
EXCHANGE A1-D2 CARD
IF IT FAILS TO REPAIR THE PROBLEM
EXCHANGE A1-C2 CARD

004
EXCHANGE A1-C2 CARD
IF IT FAILS TO REPAIR THE PROBLEM
EXCHANGE A1-D2 CARD

005
POWER OFF

CHECK CONTINUITY OF A1 BOARD CONDUCTORS:

A3B02	TO	A4B02	TO	C2M09
A3B03	TO	A4B03	TO	C2M07
A3B04	TO	A4B04	TO	C2P07
A3B05	TO	A4B05	TO	C2M08
A3D04	TO	A4D04	TO	C2M04
A3D05	TO	A4D05	TO	C2P02
A3D06	TO	A4D06	TO	C2M03
A3D07	TO	A4D07	TO	C2M02
A3D09	TO	A4D09	TO	C2M05
A3D10	TO	A4D10	TO	C2P06
A3D11	TO	A4D11	TO	C2P05
A3D12	TO	A4D12	TO	C2M06
A3D13	TO	A4D13	TO	C2P04

IS CONTINUITY OK?
Y N

006
EXCHANGE OR REPAIR BOARD A1

007
EXCHANGE A1-C2 CARD.
IF IT FAILS TO REPAIR THE PROBLEM
INSTALL THE C2 CARD AND
EXCHANGE FAILING CABLE ENTERING
AT THE A1-A3 POSITION

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
7A21	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
1	004	7A70	F

001
(ENTRY POINT A)
POWER OFF

ADD JUMPERS
A1-D2G10 TO A1-D2J08
A1-D2G11 TO A1-C2J08

REMOVE THE CARDS
A1-B2, A1-C2, A1-D2, A1-E2 AND A1-F2

POWER ON
DID FILE POWER DOWN?
Y N
|
| 002
| INSTALL CARDS ONE AT A TIME TO FIND FAILING
| CARD
| REPAIR AS NECESSARY
|
| REMOVE JUMPERS
|
003
POWER OFF

REMOVE ACTUATOR DRIVER CARD CROSSOVER
CONNECTORS GATE A1

POWER ON
DID FILE POWER DOWN?
Y N
|
| 004
| EXCHANGE ACTUATOR DRIVER CARD GATE A1
|
| REMOVE JUMPERS
| GO TO MAP 7A70, ENTRY POINT F.
|
005
POWER OFF

REMOVE ALL REMAINING BOARD A1 CROSSOVER
CONNECTORS

CHECK FOR SHORT TO GROUND AT FOLLOWING PINS:

+5 VOLTS F2D03

-4 VOLTS F2B06

+12 VOLTS F2B11

-12 VOLTS F2D12

+24 VOLTS F3B02
ARE ANY PINS SHORT TO GROUND?
Y N
|
| 006
| SUSPECT DISK UNIT POWER SUPPLY CABLES.
|
| REMOVE JUMPERS
|
| GO TO POWER SUPPLY MAP .
| MAP7A80-B
|
007
EXCHANGE BOARD A1

REMOVE JUMPERS

PAGE 1 OF 30

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
XXXX	A	1	001
XXXX	B	15	121
XXXX	C	11	094
XXXX	D	21	149
XXXX	E	22	156
XXXX	F	23	161
XXXX	G	24	162
XXXX	H	25	163
XXXX	J	26	164
XXXX	L	27	167
XXXX	M	28	179
XXXX	N	27	173
XXXX	P	27	165
XXXX	BB	30	190
XXXX	CC	18	134
XXXX	DD	3	021

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
2	010	1471	A
9	077	7A73	A
8	067	7A73	A
30	196	7A73	A
9	078	7A76	A
10	081	7A76	A
18	136	7A79	A
19	141	7A79	A
8	070	7A81	A
7	053	7A81	B
7	061	7A81	B
14	120	7A81	B
17	130	7A81	B
27	169	7A81	B
28	175	7A81	B
30	192	7A81	B

001
(ENTRY POINT A)
POWER ON ALL SERIES/1 UNITS
OBSERVE ALL SAFETY RULES.
ENSURE THAT THE 4963 AC POWER CABLE IS CONNECTED TO THE CUSTOMER'S AC POWER OUTLET OR OR TO THE 4997 POWER OUTLET. ENSURE THAT THE CUSTOMER'S AC POWER OUTLET OR 4997 CIRCUIT BREAKER IS SWITCHED ON.
TIME THE POWER GOOD LED TO DETERMINE THE CORRECT ENTRY POINT. SWITCH ON THE FAILING 4963 AC POWER SWITCH.
IS THE POWER GOOD LED INDICATOR LIGHTED CONTINUOUSLY FOR MORE THAN 30 SECONDS?
Y N

002
DOES THE POWER GOOD LED COME ON IN FIVE SECONDS OR LESS AND THEN GO OFF IN TWENTY OR THIRTY SECONDS?
Y N

003
DOES THE POWER GOOD LED COME ON FOR ONE TO THREE SECONDS AND THEN GO OFF?
Y N

004
DOES THE POWER GOOD LED FLASH STEADILY AT A ONE HERTZ RATE?
Y N

005
THEN THE POWER GOOD LED IS OFF.
OBSERVE ALL SAFETY RULES.
SWITCH OFF THE 4963 AC POWER SWITCH.
REMOVE THE 4963 COVER. (SEE MIM 3.1.1).
ENSURE THAT THE 4963 AC POWER CABLE IS CONNECTED TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET.
ENSURE THAT THE CUSTOMER'S AC POWER OUTLET SWITCH OR THE 4997 CIRCUIT BREAKER IS SWITCHED ON. SWITCH ON THE 4963 AC POWER SWITCH.
ARE ONE OR MORE OF THE FAN MOTORS RUNNING FOR EVEN A SHORT TIME (TWO SECONDS)?
Y N

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1 1
0 0 8 8 7 2
A B C D E F

006

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER PROBES.

SWITCH OFF THE 4963 AC POWER SWITCH.
DISCONNECT THE 4963 AC POWER CABLE FROM THE CUSTOMER'S AC POWER OUTLET OR FROM THE 4997 POWER OUTLET.
SET THE MULTIMETER SCALE TO AT LEAST 250 VOLTS AC.
CONNECT THE TEST LEADS OF THE MULTIMETER TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET.
IS THE VOLTAGE APPROXIMATELY THE RATED 4963 INPUT VOLTAGE?
Y N

007
CHECK TO ENSURE THAT THE 4997 CIRCUIT BREAKER IS IN THE POWER ON POSITION OR REQUEST THE CUSTOMER TO CHECK IF HIS CIRCUIT BREAKER IS IN THE POWER ON POSITION. IF THE CUSTOMER HAS AC FUSES REQUEST THAT HE CHECK TO SEE IF THE FUSES ARE GOOD.
NOW IS THE VOLTAGE AT THE CUSTOMER'S AC POWER OUTLET OR THE 4997 POWER SOCKET APPROXIMATELY THE RATED 4963 INPUT VOLTAGE?
Y N

008
WAS THE 4963 AC POWER CABLE IN A 4997 AC POWER SOCKET?
Y N

009
INFORM THE CUSTOMER THAT HE HAS AN AC POWER OUTLET FAILURE. VERIFY THE REPAIR.

010
GO TO MAP 1471, ENTRY POINT A.

011
REMOVE THE TEST LEADS OF THE MULTIMETER FROM THE AC OUTLET. CONNECT THE 4963 AC POWER CABLE TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET. SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE 4963 TRIP THE 4997 CIRCUIT BREAKER OR THE CUSTOMER'S CIRCUIT BREAKER OR BLOW THE CUSTOMER'S AC FUSES?
Y N

012
DOES THE POWER GOOD LED NOW LIGHT STEADILY FOR MORE THAN 30 SECONDS?
Y N

013
GO TO PAGE 11, STEP 094,
ENTRY POINT C.

014
VERIFY THE REPAIR.

015
SHORT CIRCUIT IN THE 4963 POWER DISTRIBUTION SYSTEM OR POWER SUPPLY.
ENSURE THAT THE 4963 AC POWER CABLE IS DISCONNECTED FROM THE CUSTOMER'S AC POWER OUTLET OR FROM THE 4997 POWER SOCKET.
ENSURE THAT THE 4963 AC POWER SWITCH IS SWITCHED ON AND THAT THE AC INPUT CONNECTOR P7 IS DISCONNECTED AT CONNECTOR J7 ON THE POWER SUPPLY.
REMOVE THE AC FUSES FROM THE POWER SUPPLY.
SET THE MULTIMETER SCALE TO APPROXIMATELY ONE OHM. CONNECT ONE TEST LEAD TO ONE END OF THE FUSE AND THE OTHER TEST LEAD TO THE OTHER END OF THE FUSE.
MEASURE THE RESISTANCE OF BOTH FUSES.
ARE BOTH RESISTANCES LESS THAN ONE OHM?
Y N

016
SET THE MULTIMETER SCALE TO APPROXIMATELY 10K OHMS. CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 1 OF THE AC POWER SUPPLY, JACK J7, AND THE OTHER LEAD TO PIN 3 OF J7. ALSO MEASURE THE RESISTANCE BETWEEN PIN 1 AND PIN 2 AND THEN THE RESISTANCE BETWEEN PIN 2 AND PIN 3.

JACK J7

0	PIN 1
0	PIN 2
0	PIN 3

PIN SIDE VIEW

ARE ANY OF THESE RESISTANCES LESS THAN 200K OHMS?
Y N

017
EXCHANGE THE AC FUSES IN THE POWER SUPPLY. INSPECT THE 4963 FOR AN INDICATION OF A SHORT CIRCUIT SUCH AS BURNED WIRES OR A SMELL OF BURNED MATERIAL. SWITCH OFF THE 4963 AC ON/OFF SWITCH. RECONNECT PLUG P7 TO J7 ON THE POWER SUPPLY. RECONNECT THE 4963 AC POWER CABLE TO THE CUSTOMER'S POWER OUTLET OR THE 4997 POWER SOCKET. SWITCH ON THE 4963 AC ON/OFF SWITCH.
DOES THE 4963 OPERATE CORRECTLY?
Y N

018
GO TO STEP 021,
ENTRY POINT DD.

019
INSTALL ALL COVERS. VERIFY THE REPAIR.

020
THERE IS A SHORT CIRCUIT IN THE POWER SUPPLY. EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

021
(ENTRY POINT DD)
CHECK FOR A SHORT CIRCUIT IN THE POWER INPUT CABLE.
SET THE MULTIMETER SCALE TO APPROXIMATELY 10K OHMS.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 1 OF THE AC CABLE CONNECTOR P7 AND THE OTHER TEST LEAD OF THE MULTIMETER TO PIN 3 OF THE AC CABLE CONNECTOR P7.
THE FIGURE OF THE CONNECTOR SHOWN BELOW IDENTIFIES THE CONNECTOR PINS.
DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

CONNECTOR P7

0	PIN 1
0	PIN 2
0	PIN 3

022
THERE IS A SHORT CIRCUIT IN THE AC DISTRIBUTION SYSTEM. REMOVE THE AC POWER ON/OFF SWITCH FROM THE PROTECTIVE COVER AND EXTEND IT FORWARD.
DISCONNECT TERMINAL 3 AND TERMINAL 6 OF THE 4963 AC POWER SWITCH.
CONNECT ONE MULTIMETER TEST LEAD TO PIN 3 OF THE CABLE CONNECTOR AND THE OTHER TEST LEAD OF THE MULTIMETER TO PIN 6 OF THE CABLE CONNECTOR.

AC POWER ON/OFF SWITCH

2	5
3	6

WIRING SIDE

IS THE INDICATED RESISTANCE MORE THAN 200K OHMS?
Y N

023
REMOVE THE "4963 AC POWER SWITCH TO POWER SUPPLY" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
VERIFY THE REPAIR.

024
DISCONNECT THE CABLE FROM TERMINAL 2 AND TERMINAL 5 OF THE 4963 AC POWER SWITCH.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO TERMINAL 2 OF THE SWITCH AND THE OTHER TEST LEAD OF THE MULTIMETER TO TERMINAL 5 OF THE SWITCH.
NOTE THE RESISTANCE INDICATED BY THE MULTIMETER.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO TERMINAL 3 OF SWITCH AND THE OTHER TEST LEAD OF THE MULTIMETER TO TERMINAL 6 OF THE SWITCH.
NOTE THE RESISTANCE INDICATED BY THE MULTIMETER.
ARE THE RESISTANCES MORE THAN 200K OHMS?
Y N

025
REMOVE THE 4963 AC POWER SWITCH AND INSTALL A NEW SWITCH. (SEE MIM 3.2).
VERIFY THE REPAIR.

026
REMOVE THE AC FILTER BOX COVER.
DISCONNECT THE "4963 AC FILTER TO AC POWER SWITCH" CABLE. CONNECT ONE TEST LEAD OF THE MULTIMETER TO ONE OF THE DISCONNECTED CABLE CONDUCTORS AND THE OTHER TEST LEAD OF THE MULTIMETER TO THE OTHER DISCONNECTED CABLE CONDUCTOR OF THE "4963 AC POWER FILTER TO AC POWER SWITCH" CABLE.
IS THE RESISTANCE MORE THAN 200K OHMS?
Y N

027
REMOVE THE "4963 AC POWER FILTER TO 4963 AC POWER SWITCH" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2). VERIFY THE REPAIR.

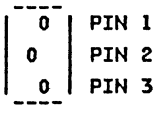
028
REMOVE THE 4963 AC POWER FILTERS FROM THE 4963. (SEE MIM 3.2).
DISCONNECT THE "4963 AC POWER OUTLET TO AC POWER FILTER" CABLE FROM THE TERMINAL OF EACH FILTER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO ONE TERMINAL OF THE FILTER AND THE OTHER TEST LEAD OF THE MULTIMETER TO THE BODY (CASE) OF THE FILTER. DO THIS FOR EACH FILTER.
IS THE RESISTANCE OF THE FILTERS MORE THAN 200K OHMS?
Y N

029
INSTALL A NEW FILTER IN PLACE OF THE ONE THAT HAS A LOW RESISTANCE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING.
VERIFY THE REPAIR.

030
REMOVE THE "AC POWER OUTLET TO AC POWER FILTER" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING.
VERIFY THE REPAIR.

031
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 2 OF THE AC CABLE CONNECTOR P7 AND THE OTHER TEST LEAD TO PIN 1 OF THE AC CABLE CONNECTOR P7.

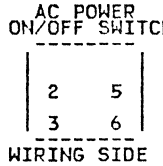
CONNECTOR P7



DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

032
THERE IS A SHORT CIRCUIT IN THE AC DISTPIBUTION SYSTEM. REMOVE THE AC POWER ON/OFF SWITCH FROM THE PROTECTIVE COVER AND EXTEND IT FORWARD.
DISCONNECT TERMINAL 3 OF THE 4963 AC POWER SWITCH.
CONNECT ONE MULTIMETER TEST LEAD TO PIN 3 OF THE CABLE CONNECTOR AND THE OTHER TEST LEAD OF THE MULTIMETER TO GROUND.

AC POWER ON/OFF SWITCH



WIRING SIDE

IS THE INDICATED RESISTANCE MORE THAN 200K OHMS?
Y N

033
REMOVE THE "4963 AC POWER SWITCH TO POWER SUPPLY" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
VERIFY THE REPAIR.

034
REMOVE THE AC FILTER BOX COVER.
DISCONNECT THE "4963 AC FILTER TO AC POWER SWITCH" CABLE. THIS IS A BLACK OR BROWN WIRE. CONNECT ONE TEST LEAD OF THE MULTIMETER TO THE DISCONNECTED CABLE CONDUCTORS AND THE OTHER TEST LEAD OF THE MULTIMETER TO GROUND.
IS THE RESISTANCE MORE THAN 200K OHMS?
Y N

035
REMOVE THE "4963 AC POWER FILTER TO 4963 AC POWER SWITCH" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2). VERIFY THE REPAIR.

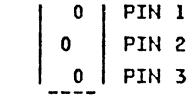
036
REMOVE THE 4963 AC POWER FILTER FROM THE 4963. (SEE MIM 3.2).
DISCONNECT THE "4963 AC POWER OUTLET TO AC POWER FILTER" CABLE FROM THE TERMINAL OF EACH FILTER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO ONE TERMINAL OF THE FILTER AND THE OTHER TEST LEAD OF THE MULTIMETER TO THE BODY (CASE) OF THE FILTER.
IS THE RESISTANCE OF THE FILTER MORE THAN 200K OHMS?
Y N

037
INSTALL A NEW FILTER IN PLACE OF THE ONE THAT HAS A LOW RESISTANCE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING.
VERIFY THE REPAIR.

038
REMOVE THE "AC POWER OUTLET TO AC POWER FILTER" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING.
VERIFY THE REPAIR.

039
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 2 OF THE AC CABLE CONNECTOR P7 AND THE OTHER TEST LEAD TO PIN 3 OF THE AC CABLE CONNECTOR J7.

CONNECTOR P7



DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

040
THERE IS A SHORT CIRCUIT IN THE AC DISTRIBUTION SYSTEM. REMOVE THE AC POWER ON/OFF SWITCH FROM THE PROTECTIVE COVER AND EXTEND IT FORWARD.
DISCONNECT TERMINAL 6 OF THE 4963 AC POWER SWITCH.
CONNECT ONE MULTIMETER TEST LEAD TO PIN 6 OF THE CABLE CONNECTOR AND THE OTHER TEST LEAD OF THE MULTIMETER TO GROUND.

IS THE INDICATED RESISTANCE MORE THAN 200K OHMS?
Y N

041
REMOVE THE "4963 AC POWER SWITCH TO POWER SUPPLY" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
VERIFY THE REPAIR.

042
REMOVE THE AC FILTER BOX COVER.
DISCONNECT THE "4963 AC FILTER TO AC POWER SWITCH" CABLE. THIS IS A WHITE OR BLUE WIRE. CONNECT ONE TEST LEAD OF THE MULTIMETER TO THE DISCONNECTED CABLE CONDUCTOR AND THE OTHER TEST LEAD OF THE MULTIMETER TO GROUND.
IS THE RESISTANCE MORE THAN 200K OHMS?
Y N

043
REMOVE THE "4963 AC POWER FILTER TO 4963 AC POWER SWITCH" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2). VERIFY THE REPAIR.

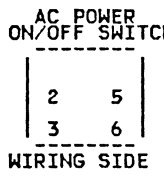
044
REMOVE THE 4963 AC POWER FILTER FROM THE 4963. (SEE MIM 3.2)
DISCONNECT THE "4963 AC POWER OUTLET TO AC POWER FILTER" CABLE FROM THE TERMINAL OF EACH FILTER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO ONE TERMINAL OF THE FILTER AND THE OTHER TEST LEAD OF THE MULTIMETER TO THE BODY (CASE) OF THE FILTER.
IS THE RESISTANCE OF THE FILTER MORE THAN 200K OHMS?
Y N

045
INSTALL A NEW FILTER IN PLACE OF THE ONE THAT HAS A LOW RESISTANCE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING.
VERIFY THE REPAIR.

046
REMOVE THE "AC POWER OUTLET TO AC POWER FILTER" CABLE AND INSTALL A NEW CABLE. (SEE MIM 3.2).
INSTALL THE 4963 AC POWER FILTERS AND CORRECTLY CONNECT ALL CABLE CONNECTIONS.
INSTALL THE 4963 AC POWER SWITCH HOUSING.
VERIFY THE REPAIR.

047
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 1 OF THE AC POWER SUPPLY JACK P7 AND THE OTHER TEST LEAD TO PIN 3 OF THE AC POWER SUPPLY JACK J7.
DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

048
THERE IS A SHORT CIRCUIT IN THE POWER SUPPLY. EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.



049
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 2 OF THE AC POWER SUPPLY JACK J7 AND THE OTHER TEST LEAD TO PIN 1 OF THE AC POWER SUPPLY JACK J7.

DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

050
THERE IS A SHORT CIRCUIT IN THE POWER SUPPLY. EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

051
CONNECT ONE TEST LEAD OF THE MULTIMETER TO PIN 2 OF THE AC POWER SUPPLY JACK P7 AND THE OTHER TEST LEAD TO PIN 3 OF THE AC POWER SUPPLY JACK J7.
DID THE MULTIMETER INDICATE A RESISTANCE OF MORE THAN 200K OHMS?
Y N

052
THERE IS A SHORT CIRCUIT BETWEEN PHASE AND NEUTRAL IN THE POWER SUPPLY. EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

053
GO TO MAP 7A81, ENTRY POINT B.

JACK J7

0	PIN 1
0	PIN 2
0	PIN 3

PIN SIDE VIEW

054
SWITCH OFF THE 4963 AC POWER SWITCH.
DISCONNECT THE 4963 AC POWER CABLE TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET.
REMOVE THE AC FUSES FROM THE 4963 POWER SUPPLY. SET THE MULTIMETER SCALE TO APPROXIMATELY ONE OHM SCALE. CONNECT ONE TEST LEAD TO ONE END OF THE FUSE AND THE OTHER TEST LEAD TO THE OTHER END OF THE FUSE. MEASURE THE RESISTANCE OF BOTH FUSES.
ARE BOTH RESISTANCES LESS THAN ONE OHM?
Y N

055
EXCHANGE THE AC FUSES IN THE POWER SUPPLY.
INSPECT THE 4963 FOR ANY INDICATION OF A SHORT CIRCUIT SUCH AS BURNED WIRES OR A SMELL OF BURNED MATERIAL.
IS THERE AN INDICATION OF A SHORT CIRCUIT?
Y N

056
VERIFY THE REPAIR.

057
REPAIR THE SHORT CIRCUIT. VERIFY THE REPAIR.

058
GO TO PAGE 11, STEP 094, ENTRY POINT C.

059
SWITCH OFF THE 4963 AC POWER SWITCH.
DISCONNECT THE DC DISTRIBUTION CABLE P4 FROM J4 ON THE POWER SUPPLY.

CAUTION

SWITCH OFF THE 4963 DISC MOTOR SWITCH.
SWITCH ON THE 4963 AC POWER SWITCH.
IS THE POWER GOOD LED LIGHTED THAT IS LOCATED NEXT TO THE AC ON/OFF SWITCH?
Y N

060
DISCONNECT CONNECTOR P8 FROM J8 ON THE POWER SUPPLY.
IS THE POWER GOOD LED LIGHTED ON THE POWER SUPPLY?
Y N

061
GO TO MAP 7A81, ENTRY POINT B.

062
GO TO PAGE 22, STEP 156, ENTRY POINT E.

063
SWITCH OFF THE 4963 AC POWER SWITCH.
CONNECT THE DC DISTRIBUTION CABLE P4 TO J4 ON THE POWER SUPPLY.

CAUTION

SWITCH OFF THE 4963 DISC MOTOR SWITCH (S1).
CONNECT JUMPER, PN 8326945, FROM D2G10 TO D08, AND D2G11 TO D08 OF THE A1 (DE) BOARD.
SWITCH ON THE 4963 AC POWER SWITCH.
IS THE POWER GOOD LED LIGHTED THAT IS LOCATED NEXT TO THE AC ON/OFF SWITCH?
Y N

064
GO TO PAGE 15, STEP 121, ENTRY POINT B.

065
SWITCH ON THE MOTOR SERVICE SWITCH(S1)
DOES THE DISC MOTOR COME ON AND TURN THE DISC?
Y N

066
RESET THE MOTOR THERMAL SWITCH LOCATED ON THE DRIVE MOTOR CASE.
DOES THE DISC COME ON AND TURN THE DISC?
Y N

067
GO TO MAP 7A73, ENTRY POINT A.

068
RUN DIAGNOSTIC PROGRAM MAP7A20

069
RUN DIAGNOSTIC PROGRAM MAP7A20

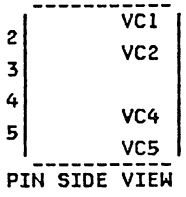
070
GO TO MAP 7A81, ENTRY POINT A.

071
OBSERVE ALL SAFETY RULES.
SWITCH OFF THE 4963 AC POWER SWITCH. ENSURE THAT THE 4963 AC POWER CABLE IS DISCONNECTED FROM THE CUSTOMER'S AC POWER OUTLET OR THE 4997 POWER OUTLET. DISCONNECT, FROM THE DE (DISC ELECTRONICS) A1 BOARD, CONNECTORS VC1, VC2, VC4, AND VC5. IF WORKING WITH A BASE FILE 4963, DISCONNECT FROM THE (DISK CONTROLLER) A2 BOARD, CONNECTORS VC1, VC2, VC3, VC4, VC5, AND VC6. DISCONNECT CONNECTOR P4 FROM THE POWER SUPPLY. SET THE MULTIMETER TO THE RX1 OHMS SCALE. CONNECT THE MULTIMETER TEST LEADS TO THE CONNECTOR PINS INDICATED BY THE CHART BELOW.

SIGNAL NAME	INDICATED RESISTANCE BY THE METER	POSITIVE METER TEST LEAD TO	NEGATIVE METER TEST LEAD TO	ENTRY POINT AND PAGE
THERMAL SWITCH	LESS THAN 0.25 OHMS	CONNECTOR P4, PIN 26	CONNECTOR P4, PIN 27	D 21
POWER GOOD	LESS THAN 0.25 OHMS	CONNECTOR P4, PIN 14	CONNECTOR DE-VC1-B	F 23
BRAKE APPLIED	LESS THAN 0.25 OHMS	CONNECTOR P4, PIN 35	CONNECTOR DE-VC5-A	G 24

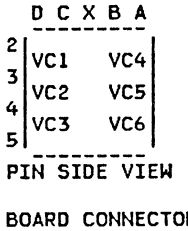
(STEP 071 CONTINUES)

DE BOARD (A1)



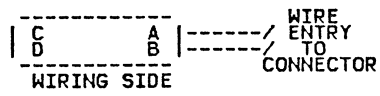
PIN SIDE VIEW

DC BOARD (A2)

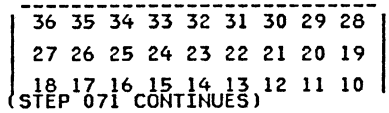


PIN SIDE VIEW

BOARD CONNECTOR



CONNECTOR P4



(STEP 071 CONTINUES)

(STEP 071 CONTINUED)

ARE THE RESISTANCES AS INDICATED ON THE CHART?
Y N

072
GO TO THE CORRECT ENTRY POINT AND PAGE AS LISTED IN THE CHART.

073

CAUTION

SWITCH OFF THE C.E. MOTOR SERVICE SWITCH (S1) ON THE POWER SUPPLY.
CONNECT THE 4963 A.C. POWER CABLE TO THE CUSTOMER A.C. OUTLET OR THE 4997 A.C. OUTLET. SWITCH ON THE 4963 A.C. POWER SWITCH (CONNECTOR P4 IS STILL DISCONNECTED FROM THE POWER SUPPLY)
DOES THE 4963 POWER GOOD LED NEXT TO THE A.C. ON/OFF SWITCH NOW LIGHT STEADILY?
Y N

074
GO TO MAP 7A81, ENTRY POINT B.

075
SWITCH OFF THE 4963 AC POWER SWITCH. PLUG CONNECTOR P4 INTO J4 ON THE POWER SUPPLY. CONNECT ALL DISK CONTROLLER (DC) AND DISC ELECTRONIC (DE) BOARD CONNECTORS. CONNECT JUMPER P/N 8326945 FROM D2G10 TO D08, AND D2G11 TO D08 OF THE DE BOARD (A1). SWITCH ON THE MOTOR SERVICE SWITCH (S1). SWITCH ON THE 4963 A.C. POWER SWITCH.
DOES THE DISC MOTOR COME ON AND TURN THE DISC?
Y N

076
RESET THE MOTOR THERMAL SWITCH LOCATED ON THE DRIVE MOTOR CASE.
DOES THE DISC MOTOR COME ON AND TURN THE DISC?
Y N

077
GO TO MAP 7A73, ENTRY POINT A.

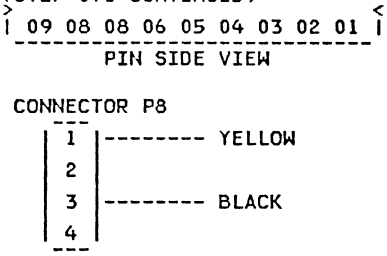
078
GO TO MAP 7A76, ENTRY POINT A.

079
MEASURE THE VOLTAGE FROM DE VC1 PIN B TO A1-D2D08

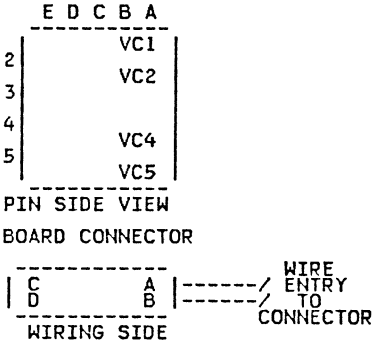
DOES VOLTAGE MEASURE +0.0 TO 0.4 VOLTS?
Y N

1 1
0 0
T U

(STEP 071 CONTINUED)



DE BOARD (A1)



080
CHECK FOR LOOSE OR BROKEN WIRES OR CONNECTORS,
EXCHANGE THE POWER SUPPLY
VERIFY THE REPAIR

081
GO TO MAP 7A76, ENTRY POINT A.

082
IS THE CE MOTOR SERVICE SWITCH (S1) ON THE POWER SUPPLY IN THE ON POSITION?
Y N

083
SWITCH OFF THE 4963 AC POWER SWITCH.
SWITCH ON THE CE MOTOR SERVICE SWITCH (S1) ON THE POWER SUPPLY. SWITCH ON THE 4963 AC POWER SWITCH. VERIFY THE REPAIR.

084
SWITCH OFF THE 4963 AC POWER SWITCH.
VISUALLY CHECK TO ENSURE THAT THE AC CONNECTOR P2 IS MATED ON THE POWER SUPPLY AND THE MOTOR TERMINAL BLOCK TB3 AND THE CONNECTORS VC1 AND VC3 ARE MATED ON THE DE BOARD.
ARE THE CONNECTORS MATED?
Y N

085
PLUG IN THE UNMATED CONNECTORS IN THE CORRECT POSITION. SWITCH ON THE 4963 AC POWER SWITCH. VERIFY THE REPAIR.

086
ENSURE THE 4963 AC ON/OFF SWITCH IS SWITCHED OFF. DISCONNECT CONNECTOR P4 FROM J4 ON THE POWER SUPPLY.

CAUTION

SWITCH OFF THE CE MOTOR SERVICE SWITCH (S1) ON THE POWER SUPPLY.
SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE POWER GOOD LED LOCATED NEXT TO THE AC ON/OFF SWITCH NOW LIGHT STEADILY?
Y N

087
RESEAT ALL CONNECTORS AND RETURN THE CE MOTOR SERVICE SWITCH (S1) TO THE ON POSITION.
GO TO PAGE 15, STEP 121,
ENTRY POINT B.

088
SWITCH OFF THE 4963 A.C. POWER SWITCH, AND RESEAT ALL CONNECTORS AND RETURN THE CE MOTOR SWITCH (S1) TO THE ON POSITION.
GO TO PAGE 30, STEP 190, ENTRY POINT BB.

089
SWITCH OFF THE 4963 AC POWER SWITCH.
DOES THE 4963 SWITCH OFF?
Y N

090
THE AC ON/OFF SWITCH HAS FAILED. REMOVE THE 4963 AC POWER CABLE FROM THE 4997 POWER SOCKET OR FROM THE CUSTOMER'S AC POWER OUTLET. REMOVE AND EXCHANGE THE 4963 AC ON/OFF SWITCH. (SEE MIM 3.2). VERIFY THE REPAIR.

091
VISUALLY CHECK TO ENSURE THAT THE DC CONNECTOR IS MATED ON THE POWER SUPPLY (P4) AND THE DC CONNECTORS ARE MATED ON THE DE BOARD (VC2, VC4, VC7, VC8, VC9, VC10).
ARE THE CONNECTORS MATED?
Y N

092
PLUG IN THE UNMATED CONNECTORS IN THE CORRECT POSITION. SWITCH ON THE 4963 AC POWER SWITCH. VERIFY THE REPAIR.

093
GO TO PAGE 15, STEP 121, ENTRY POINT B.

094
(ENTRY POINT C)

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.

ENSURE THAT THE 4963 AC POWER SWITCH IS OFF AND THE AC POWER CABLE IS DISCONNECTED FROM THE 4997 POWER SOCKET OR THE CUSTOMER'S AC POWER OUTLET.
SET THE MULTIMETER SCALE TO AT LEAST 250 VOLTS AC.
USE THE RELAY EXTENSION TOOL PN 450458 TO CONVERT THE ALLIGATOR CLIP TEST LEADS OF THE MULTIMETER TO PROBES, OR USE A 50 MILLIMETRE (2 INCH) LENGTH OF WIRE FROM WHICH THE INSULATION HAS BEEN REMOVED AT BOTH ENDS.
ENSURE THE AC FUSES F1 AND F2 ARE REMOVED FROM THE POWER SUPPLY FUSE HOLDERS. (SEE MIM 3.2).
INSERT THE PROBES TO THE BOTTOM OF THE EMPTY AC FUSE HOLDERS ON THE POWER SUPPLY.

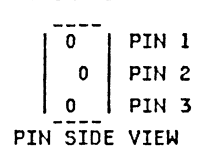
CAUTION

BE CAREFUL NOT TO MAKE A SHORT TO THE 4963 FRAME OR TO ANY OTHER CONDUCTOR.
CONNECT THE 4963 AC POWER CABLE TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET. SWITCH ON THE 4963 AC POWER SWITCH.
IS THE VOLTAGE APPROXIMATELY THE RATED 4963 INPUT VOLTAGE?
Y N

095
OPEN CIRCUIT IN THE POWER INPUT CABLE. THERE IS AN OPEN CIRCUIT OR TOO MUCH RESISTANCE IN THE AC DISTRIBUTION SYSTEM.
SWITCH OFF THE 4963 POWER SWITCH.
DISCONNECT THE AC POWER CABLE FROM THE CUSTOMER'S AC POWER OUTLET OR THE 4997 POWER SOCKET. REMOVE THE PROBES FROM THE BOTTOM OF THE AC FUSE HOLDERS.
SET THE MULTIMETER TO APPROXIMATELY A ONE OHM SCALE. CONNECT ONE TEST LEAD OF THE MULTIMETER WITH AN ALLIGATOR CLIP TO THE PRONG OF THE 4963 AC POWER CABLE PLUG.
CONNECT THE OTHER TEST LEAD OF THE MULTIMETER TO A RELAY EXTENSION TOOL PN 450458 AND INSERT IT TO THE BOTTOM OF THE EMPTY AC FUSE HOLDER F1 ON THE POWER SUPPLY.
ENSURE THE AC POWER SWITCH IS IN THE ON POSITION.
NOW ATTACH THE TEST LEAD OF THE MULTIMETER WITH AN ALLIGATOR CLIP TO THE OTHER PRONG OF THE 4963 A.C. POWER CABLE PLUG.
DOES THE MULTIMETER INDICATE THAT ONE OF THE RESISTANCES IS LESS THAN ONE OHM?
Y N

096
THE AC CONDUCTOR PATH HAS TOO MUCH RESISTANCE OR IS OPEN. DISCONNECT THE AC INPUT CONNECTOR P7 FROM J7 ON THE POWER SUPPLY. (SEE MIM 3.2). CONNECT ONE TEST LEAD OF THE MULTIMETER TO J7, PIN 1 AND THE OTHER TEST LEAD INSERTED IN THE BOTTOM OF FUSE HOLDER F1 ON THE POWER SUPPLY.

JACK J7



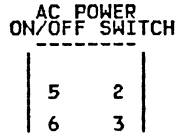
PIN SIDE VIEW

DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N

097
REPAIR THE OPEN FROM THE FUSE HOLDER TO J7, OR
EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

098
REMOVE THE AC ON/OFF SWITCH FROM THE FRONT OF THE PROTECTIVE COVER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 3 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO CONNECTOR P7, PIN 1.

AC POWER ON/OFF SWITCH



WIRING SIDE

DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N

099
EXCHANGE THE AC POWER CABLE BETWEEN THE ON/OFF SWITCH AND THE POWER SUPPLY. VERIFY THE REPAIR.

100
CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 3 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO CONNECTOR 2 OF THE ON/OFF SWITCH. SWITCH THE AC SWITCH OFF AND ON.
WHEN THE AC SWITCH IS IN THE ON POSITION DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N

101
EXCHANGE THE 4963 AC ON/OFF SWITCH. VERIFY THE REPAIR.

102
REMOVE THE AC FILTER BOX COVER.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 2 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO THE TOP TERMINAL OF THE A.C. FILTER CAPACITORS.
DOES THE MULTIMETER INDICATE ONE OF THE RESISTANCES IS LESS THAN ONE OHM?
Y N

103
EXCHANGE THE AC POWER CABLE BETWEEN THE AC ON/OFF SWITCH AND THE FILTER CAPACITOR BOX. VERIFY THE REPAIR.

104
REMOVE THE AC POWER CABLE FILTER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO A TERMINAL OF THE FILTER CAPACITOR AND THE OTHER TEST LEAD TO THE OTHER TERMINAL OF THE FILTER CAPACITOR.
DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N

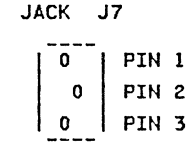
105
EXCHANGE THE AC FILTER CAPACITOR. VERIFY THE REPAIR.

106
EXCHANGE THE AC POWER CABLE BETWEEN THE AC FILTER BOX AND THE AC POWER CABLE PLUG. VERIFY THE REPAIR.

107
CONNECT ONE TEST LEAD OF THE MULTIMETER WITH AN ALLIGATOR CLIP TO THE PRONG OF THE 4963 AC POWER CABLE PLUG. INSERT THE OTHER TEST LEAD WITH THE RELAY EXTENSION TOOL TO THE BOTTOM OF FUSE HOLDER F2 ON THE POWER SUPPLY. ENSURE THAT THE AC POWER SWITCH IS IN THE ON POSITION.
NOW ATTACH THE TEST LEAD OF THE MULTIMETER WITH AN ALLIGATOR CLIP TO THE OTHER PRONG OF THE 4963 A.C. POWER CABLE PLUG.
DOES THE MULTIMETER INDICATE THAT ONE OF THE RESISTANCES IS LESS THAN ONE OHM?
Y N

108
THE AC CONDUCTOR PATH HAS TOO MUCH RESISTANCE OR IS OPEN. DISCONNECT THE AC INPUT CONNECTOR P7 FROM J7 ON THE POWER SUPPLY. CONNECT ONE TEST LEAD OF THE MULTIMETER TO J7, PIN 3 AND THE OTHER TEST LEAD INSERTED IN THE BOTTOM OF FUSE HOLDER F2 ON THE POWER SUPPLY.

JACK J7



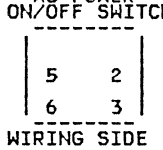
PIN SIDE VIEW

DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N

109
REPAIR THE OPEN FROM THE FUSE HOLDER TO J7, OR
EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

110
REMOVE THE AC ON/OFF SWITCH FROM THE FRONT OF THE PROTECTIVE COVER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 6 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO CONNECTOR P7, PIN 3.

AC POWER ON/OFF SWITCH



WIRING SIDE

DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N

111
EXCHANGE THE AC POWER CABLE BETWEEN THE ON/OFF SWITCH AND THE POWER SUPPLY. VERIFY THE REPAIR.

112
CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 5 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO CONNECTOR 6 OF THE ON/OFF SWITCH. SWITCH THE AC SWITCH OFF AND ON. WHEN THE AC SWITCH IS IN THE ON POSITION DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N

113
EXCHANGE THE 4963 AC ON/OFF SWITCH. VERIFY THE REPAIR.

114
REMOVE THE AC FILTER BOX COVER.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO CONNECTOR 5 OF THE ON/OFF SWITCH AND THE OTHER TEST LEAD TO THE TOP TERMINAL OF THE A.C. FILTER CAPACITORS.
DOES THE MULTIMETER INDICATE ONE OF THE RESISTANCES IS LESS THAN ONE OHM?
Y N

115
EXCHANGE THE AC POWER CABLE BETWEEN THE AC ON/OFF SWITCH AND THE FILTER CAPACITOR BOX. VERIFY THE REPAIR.

116
REMOVE THE AC POWER CABLE FILTER. CONNECT ONE TEST LEAD OF THE MULTIMETER TO A TERMINAL OF THE FILTER CAPACITOR AND THE OTHER TEST LEAD TO THE OTHER TERMINAL OF THE FILTER CAPACITOR.
DOES THE MULTIMETER INDICATE A RESISTANCE LESS THAN ONE OHM?
Y N

117
EXCHANGE THE AC FILTER CAPACITOR. VERIFY THE REPAIR.

118
EXCHANGE THE AC POWER CABLE BETWEEN THE AC FILTER BOX AND THE AC POWER CABLE PLUG. VERIFY THE REPAIR.

119
VERIFY THE REPAIR.

120
SWITCH OFF THE 4963 POWER SWITCH. DISCONNECT THE AC POWER CABLE FROM THE CUSTOMER'S AC POWER OUTLET OR THE 4997 POWER SOCKET. REMOVE THE PROBES FROM THE BOTTOM OF THE AC FUSE HOLDERS.
GO TO MAP 7A81, ENTRY POINT B.

121
(ENTRY POINT B)

POWER OFF THE FILE AND PUT THE A2 GATE IN THE SERVICE POSITION (REFER TO MIM 3.7.1). PROBE D5B03 OR D5B13 (-POR). POWER ON THE FILE.
PROBE POINT SHOULD GO FROM THE DOWN LEVEL TO THE UP LEVEL IN 9 TO 15 SECONDS.
DID THE PROBE POINT GO FROM THE DOWN LEVEL TO THE UP LEVEL IN 9 TO 15 SECONDS?
Y N

122
POWER OFF THE FILE AND UNPLUG THE THREE WIRES CONNECTING THE POR DELAY CIRCUIT TO THE A2 BOARD (LOGIC PAGES SF509 AND SF544).
NOTE THE LOCATION OF EACH WIRE.
PROBE D5B03 OR D5B13(-POR). POWER ON THE FILE. PROBE POINT SHOULD GO FROM THE DOWN LEVEL TO THE UP LEVEL IN 1 TO 5 SECONDS.
DID THE PROBE POINT GO FROM THE DOWN LEVEL TO THE UP LEVEL IN 1 TO 5 SECONDS?
Y N

123
RECONNECT THE THREE LEADS FROM THE POR DELAY CIRCUIT TO THE A2 BOARD (LOGIC PAGES SF509 AND SF544).
GO TO PAGE 16, STEP 126,
ENTRY POINT B1.

124
REPLACE THE POR DELAY CIRCUIT .
VERIFY THE REPAIR.

125
GO TO PAGE 16, STEP 126, ENTRY POINT B1.

126
(ENTRY POINT B1)

OBSERVE ALL SAFETY RULES.
SWITCH OFF THE 4963 AC POWER SWITCH. ENSURE THAT THE 4963 AC POWER CABLE IS DISCONNECTED FROM THE CUSTOMER'S AC POWER OUTLET OR THE 4997 POWER SOCKET.
DISCONNECT, FROM THE DE (DISK ELECTRONICS) BOARD, CONNECTORS VC1, VC2, VC4, VC5.
DISCONNECT, FROM THE DISK CONTROLLER (A2) BOARD, CONNECTORS VC1, VC2, VC3, VC4, VC5, VC6.
DISCONNECT THE "POWER ON RESET" CONNECTOR FROM C4B02 ON THE DC BOARD. SOME 4963 MODELS CONTAIN 'POWER ON RESET' IN CONNECTOR DC-VC1-D. DISCONNECT CONNECTOR P4 AND P8 FROM THE POWER SUPPLY.
SET THE MULTIMETER TO THE RX1 OHMS SCALE.
CONNECT THE MULTIMETER TEST LEADS TO CONNECTOR PINS INDICATED BY THE CHART BELOW.

SIGNAL NAME	INDICATED RESISTANCE BY THE METER	POSITIVE METER TEST LEAD TO	NEGATIVE METER TEST LEAD TO	ENTRY POINT AND PAGE
POWER ON RESET (BASE FILE ONLY)	LESS THAN 0.25 OHMS	CONNECTOR P4, PIN 6	SLIP ON CONNECTOR AT DC PIN POSITION C4B02 OR DC-VC1-D	F 23
THERMAL SWITCH	LESS THAN 0.25 OHMS	CONNECTOR P4, PIN 27	CONNECTOR P4, PIN 26	D 21
JUMPER	LESS THAN 0.25 OHMS	CONNECTOR P4, PIN 36	CONNECTOR P4, PIN 29	J 26
POWER GOOD	LESS THAN 0.25 OHMS	CONNECTOR P4, PIN 14	CONNECTOR DE-VC1-B	F 23
BRAKE APPLIED	LESS THAN 0.25 OHMS	CONNECTOR P4, PIN 35	CONNECTOR DE-VC5-A	G 24
GROUND (GREEN YELLOW WIRE)	LESS THAN 0.25 OHMS	FAN DC GATE	POWER SUPPLY FRAME	H 25
	LESS THAN 0.25 OHMS	DRIVE MOTOR CASE	POWER SUPPLY FRAME	H 25
	LESS THAN 0.25 OHMS	FAN DE GATE	POWER SUPPLY FRAME	H 25
	LESS THAN 0.50 OHMS	DE ELEC-TRONICS GATE	POWER SUPPLY FRAME	H 25
	LESS THAN 0.25 OHMS	DE ELEC-TRONICS FRAME	POWER SUPPLY FRAME	H 25

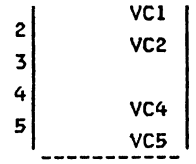
SET THE MULTIMETER TO THE RX100K OHMS SCALE.
CONNECT THE MULTIMETER TEST LEADS TO CONNECTOR P8 PINS INDICATED BY CHART BELOW.
NOTE! THAT THE RESISTANCE OF THE LED IS DEPENDANT ON THE TYPE OF MULTIMETER BEING USED.

LED	MORE THAN 5K OHMS BUT LESS THAN 40K	CONNECTOR P8, PIN 1	CONNECTOR P8, PIN 3	E 22
	MORE THAN 40K OHMS.	CONNECTOR P8, PIN 3	CONNECTOR P8, PIN 1	E 22

ARE THE RESISTANCES AS INDICATED ON THE CHART?
Y N
| |

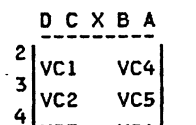
1 1
7 7
A A
A B

DE BOARD (A1)



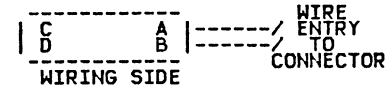
PIN SIDE VIEW

DC BOARD (A2)

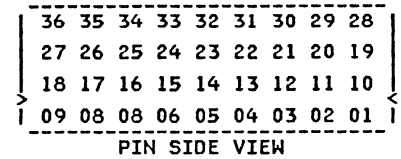


PIN SIDE VIEW

BOARD CONNECTOR

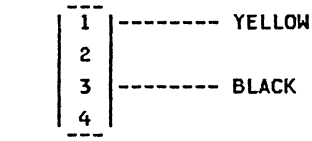


CONNECTOR P4



PIN SIDE VIEW

CONNECTOR P8



127
GO TO THE CORRECT ENTRY POINT AND PAGE AS INDICATED AT THE RIGHT SIDE OF THE ABOVE CHART.

128
SWITCH OFF THE 4963 AC POWER SWITCH. ENSURE THAT THE 4963 AC POWER CABLE IS CONNECTED TO THE CUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET AND THAT THE CUSTOMER'S AC POWER OUTLET SWITCH OR THE 4997 CIRCUIT BREAKER IS SWITCHED ON. PLUG(S) P4 AND P8 SHOULD BE PLUGGED IN AT THIS TIME.

CAUTION

SWITCH OFF THE 4963 DISC MOTOR SWITCH WHICH IS LOCATED ON THE POWER SUPPLY. CONNECT JUMPER PART NUMBER 8326945 FROM D2G10 TO D08 AND D2G11 TO D08 OF THE DE BOARD (A1).
DISCONNECT FROM THE DE BOARD (A1), CONNECTORS VC1, VC2, VC4, AND VC5. IF WORKING WITH A BASE FILE DISCONNECT FROM FROM THE DC BOARD (A2), CONNECTORS VC1, VC2, VC3, VC4, VC5, AND VC6.
(USE A LENGTH OF NUMBER 22 SOLID WIRE, APPROXIMATELY ONE INCH LONG, INSERTED INTO THE PIN OF THE CONNECTOR. CONNECT THE ALLIGATOR CLIP TO THIS WIRE.)
ON CONNECTOR DE VC5 PLACE A LENGTH OF NUMBER 22 SOLID WIRE BETWEEN CONNECTOR POSITIONS A AND D.
SET THE MULTIMETER DC VOLTS SCALE TO APPROXIMATELY 25 PERCENT MORE THAN THE NOMINAL VOLTAGE INDICATED ON THE CHART.
SWITCH ON THE 4963 AC POWER SWITCH.
CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO THE CONNECTOR PIN INDICATED ON THE CHART AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE CONNECTOR PIN INDICATED ON THE CHART. NOTE A BASE FILE WILL HAVE BOTH DE AND DC (BOARD A1 A2) CONNECTOR POSITIONS. AN EXPANSION FILE HAS ONLY DE (BOARD A1) CONNECTOR POSITIONS.
NOTE* FOR MINUS VOLTAGES (-4,-12,-5) THE PROBE LEADS ARE REVERSED TO PERMIT A POSITIVE READING ON THE METER.

NOMINAL VOLTAGE	MINIMUM VOLTAGE	NEGATIVE TEST LEAD	POSITIVE TEST LEAD
+ 5.0	+ 4.60	DE VC2-A DE VC4-A DC VC3-A DC VC3-D DC VC2-A DC VC1-A DC VC4-C DC VC5-C DC VC6-C	DE VC2-C DE VC4-C DC VC3-C DC VC3-B DC VC2-B DC VC1-B DC VC4-D DC VC5-D DC VC6-D
+12.0	+11.04	DE VC2-D	DE VC1-C
+24.0	+22.08	DE VC5-D	DE VC5-C
- 4.0	- 3.68	DE VC2-B DE VC2-B DE VC4-B DE VC4-B	DE VC2-D DE VC2-A DE VC4-A DE VC4-D
-12.0	-11.04	DE VC1-D DE VC1-D	DE VC4-A DE VC2-A
- 5.0	- 4.55	DC VC2-C	DC VC2-A
+ 8.5	+ 7.82	DC VC1-A	DC VC2-D

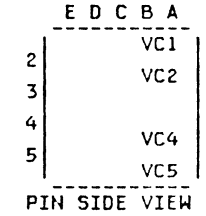
ARE THE VOLTAGES AS INDICATED ON THE CHART?
Y N

129
HAVE YOU TESTED THE POWER SUPPLY IN MAP 7A81 AND DETERMINED THAT IT IS OPERATING CORRECTLY?
Y N

130
GO TO MAP 7A81, ENTRY POINT B.

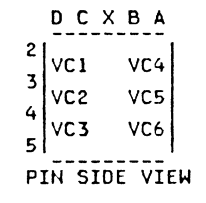
131
REPAIR OR EXCHANGE THE CABLE AND CONNECTOR THAT DOES NOT HAVE THE VOLTAGE INDICATED ON THE CHART. VERIFY THE REPAIR.

DE BOARD (A1)



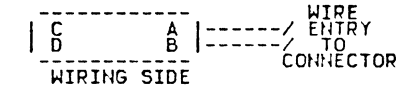
PIN SIDE VIEW

DC BOARD (A2)



PIN SIDE VIEW

BOARD CONNECTOR



132
CONNECT ALL CABLES IN THE 4963.
ENSURE THAT EACH CABLE OF THE 4963 IS CORRECTLY CONNECTED TO ITS CORRECT CONNECTOR.
ENSURE THE 4963 AC POWER CABLE IS CONNECTED TO THECUSTOMER'S AC POWER OUTLET OR TO THE 4997 POWER SOCKET. ENSURE THAT THE CUSTOMER'S AC POWER OUTLET OR THE 4997 CIRCUIT BREAKER IS SWITCHED ON.

CAUTION

ENSURE THE THE 4963 DISC MOTOR SWITCH WHICH IS LOCATED ON THE POWER SUPPLY IS SWITCHED OFF, AND JUMPER, PART NUMBER 8326945 IS CONNECTED FROM D2G10 TO D2D08 AND D2G11 TO E2D08 OF THE A1 (DE) BOARD.
SET THE MULTIMETER DC VOLTS SCALE TO APPROXIMATELY 25 PERCENT MORE THAN THE MAXIMUM VOLTAGE INDICATED ON THE CHART.
SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE 4963 POWER ON?
Y N

133
GO TO MAP7A81 ENTRY POINT C

134
(ENTRY POINT CC)

CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO THE CONNECTOR PIN INDICATED ON THE CHART AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE CONNECTOR PIN INDICATED ON THE CHART. NOTE A BASE FILE WILL HAVE BOTH DE AND DC (BOARD A1 A2) CONNECTOR POSITIONS. AN EXPANSION FILE HAS ONLY DE (BOARD A1) CONNECTOR POSITIONS.
NOTE* FOR MINUS VOLTAGES (-4,-12,-5) THE PROBE LEADS ARE REVERSED TO PERMIT A POSITIVE READING ON THE METER.

NOMINAL VOLTAGE	MINIMUM VOLTAGE	MAXIMUM VOLTAGE	NEGATIVE TEST LEAD	POSITIVE TEST LEAD
+ 5.0	+ 4.60	+ 5.50	DE F2 D08 DC D2 D08	DE F2 P03 DC D2 D03
+12.0	+11.04	+12.96	DE F2 D08 DE B2 D08	DE F2 S11 DE B2 B11
+24.0	+22.08	+25.92	DE F2 S09	DE F2 G02
- 4.0	- 3.68	- 4.32	DE F2 M06	DE F2 D08
-12.0	-11.04	-12.96	DE F2 U12	DE F2 D08
- 5.0	- 4.55	- 5.45	DC D2 B06	DC D2 D08
+ 8.5	+ 7.82	+ 9.18	DC D2 D08	DC D2 B11
POWER ON RESET	+ 3.00	+ 5.50	DC D2 D08	SLIP ON CONNECTOR AT DC PIN DC C4-B02 OR VC1-D

ARE THE VOLTAGES AS INDICATED ON THE CHART?
Y N

135
IS THE 4963 YOU ARE REPAIRING A BASE UNIT?
Y N

136
THE 4963 IS AN EXPANSION UNIT.
GO TO MAP 7A79, ENTRY POINT A.

137
SWITCH OFF THE 4963 AC POWER SWITCH.
CONNECT THE DC BOARD (A2) CONNECTORS VC1, VC2, VC3, VC4, VC5, AND VC6. SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE 4963 POWER UP NOW?
Y N

138
THERE IS A SHORT CIRCUIT IN THE DC BOARD, DC CARDS, OR FLAT CABLES. SWITCH OFF THE 4963 AC POWER SWITCH. REMOVE THE DC CARDS AND THE FLAT CABLES FROM THE DC BOARD (A2). SWITCH ON THE 4963 AC POWER SWITCH. DOES THE 4963 POWER UP NOW?
Y N

139
THERE IS A SHORT CIRCUIT IN THE DC BOARD. REPAIR THE SHORT CIRCUIT OR EXCHANGE THE DC BOARD. VERIFY THE REPAIR.

140
THERE IS A SHORT CIRCUIT ON ONE OF THE DC CARDS, FLAT CABLES OR CHAIN CABLE TERMINATOR CARD. SWITCH OFF THE 4963 AC POWER. RECONNECT EACH CARD AND FLAT CABLE ONE AT A TIME. SWITCH ON THE 4963 AC POWER SWITCH AFTER EACH EVENT.

CAUTION

ALWAYS REMOVE AC POWER BEFORE CONNECTING ANY CARD OR FLAT CABLE.
EXCHANGE THE CARD OR PART THAT CAUSES THE 4963 POWER SUPPLY TO SWITCH OFF. IF THE CHAIN CABLE CAUSES THIS PROBLEM THE SHORT CIRCUIT MAY BE IN AN EXPANSION UNIT OR THE TERMINATOR CARD. VERIFY THE REPAIR.

141
THERE IS A POSSIBLE SHORT CIRCUIT ON THE DISK ELECTRONICS (DE) BOARD, DE FLAT CABLES, OR DE CARDS.
GO TO MAP 7A79, ENTRY POINT A.

142
ARE ALL OF THE FAN MOTORS RUNNING?
Y N

143
GO TO PAGE 27, STEP 165, ENTRY POINT P.

144
CHECK FOR TOO MUCH AC RIPPLE ON THE DC VOLTAGES. CONNECT THE POSITIVE TEST LEAD OF THE OSCILLOSCOPE TO THE CONNECTOR PIN INDICATED ON THE CHART AND THE NEGATIVE TEST LEAD TO THE CONNECTOR PIN INDICATED.
NOTE A BASE FILE WILL HAVE BOTH DE AND DC (BOARD A1 A2) CONNECTOR POSITIONS. AN EXPANSION FILE HAS ONLY DE (BOARD A1) CONNECTOR POSITIONS.

NOMINAL VOLTAGE	MAXIMUM RIPPLE PEAK TO PEAK	NEGATIVE TEST LEAD	POSITIVE TEST LEAD
+ 5.0	0.3V	DE F2 D08 DC D2 D08	DE F2 P03 DC D2 D03
+12.0	0.7V	DE F2 D08 DE B2 D08	DE F2 S11 DE B2 B11
+24.0	1.0V	DE F2 S09	DE F2 G02
- 4.0	0.3V	DE F2 D08	DE F2 M06
-12.0	0.7V	DE F2 D08	DE F2 U12
- 5.0	0.3V	DC D2 D08	DC D2 B06
+ 8.5	0.5V	DC D2 D08	DC D2 B11

IS THE PEAK TO PEAK RIPPLE VOLTAGE LESS THAN THE VALUE INDICATED ON THE CHART?
Y N

145
TIGHTEN ALL CAPACITOR SCREWS ON THE POWER SUPPLY PRINTED CIRCUIT BOARD (REFERENCE SF530). MEASURE THE PEAK TO PEAK VOLTAGES IN THE CHART ABOVE.
IS THE PEAK TO PEAK RIPPLE VOLTAGE LESS THAN THE VALUE INDICATED ON THE CHART?
Y N

146
EXCHANGE THE POWER SUPPLY. (SEE MIM 3.2)
VERIFY THE REPAIR.

147
VERIFY THE REPAIR.

148
IF ALL OF THE VOLTAGES AND RESISTANCES ARE PRESENT AND AS INDICATED ON THE CHART, AND RIPPLE VOLTAGES ARE NOT MORE THAN VALUES LISTED ON THE CHART THERE IS NO PROBLEM IN THE POWER SUPPLY OR IN THE VOLTAGE DISTRIBUTION SYSTEM.
THERE IS A FAILURE IN THE 4963 DISC ENCLOSURE OR COMMON ADAPTER.
SWITCH OFF THE 4963 AC POWER MOTOR SWITCH
CONNECT ALL POWER SUPPLY CONNECTORS.
INSTALL ANY POWER SUPPLY OR SWITCH COVERS
SWITCH ON THE 4963 DISC MOTOR SWITCH.
SWITCH ON THE 4963 AC POWER SWITCH.
RUN MAP7A20 FOR THE FAILING DRIVE.

149

(ENTRY POINT D)

IF YOU ARE WORKING ON A BASE 4963.
REMOVE THE A2 GATE FAN TO REACH THE THERMAL SWITCH. (SEE MIM 3.7).
CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO CONNECTOR P4, PIN 26 AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO ONE TERMINAL OF THE THERMAL SWITCH. NOTE THE RESISTANCE THAT IS INDICATED ON THE MULTIMETER, THEN MOVE THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE OTHER TERMINAL OF THE THERMAL SWITCH.
IS ONE OR BOTH OF THE INDICATED RESISTANCES LESS THAN 0.25 OHMS?
Y N

| 150
| REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE.
| RESEAT ALL CABLE CONNECTORS.
| INSTALL THE A2 GATE FAN. VERIFY THE REPAIR.

151
CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO CONNECTOR P4, PIN 27 AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO ONE TERMINAL OF THE THERMAL SWITCH. NOTE THE RESISTANCE THAT IS INDICATED ON THE MULTIMETER, THEN MOVE THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE OTHER TERMINAL OF THE THERMAL SWITCH.
IS ONE OF THE INDICATED RESISTANCES LESS THAN 0.25 OHMS?
Y N

| 152
| REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE.
| RESEAT ALL CABLE CONNECTORS.
| INSTALL THE A2 GATE FAN. VERIFY THE REPAIR.

153
CONNECT THE MULTIMETER TEST LEAD TO ONE TERMINAL OF THE THERMAL SWITCH AND THE OTHER MULTIMETER TEST LEAD TO THE OTHER TERMINAL OF THE THERMAL SWITCH. MEASURE THE RESISTANCE.
IS IT LESS THAN 0.25 OHMS?
Y N

| 154
| REMOVE THERMAL SWITCH AND INSTALL A NEW SWITCH. (SEE MIM 3.7.1.2). INSTALL A2 GATE FAN. (SEE MIM 3.7).
| RESEAT ALL CABLE CONNECTORS.
| VERIFY THE REPAIR.

155
THERMAL SWITCH MUST HAVE ACTIVATED BECAUSE OF THERMAL PROBLEM AND RETURNED TO 0.25 OHM RESISTANCE AFTER COOLING.
RESEAT ALL CABLE CONNECTORS.
GO TO PAGE 27, STEP 165, ENTRY POINT P.

156

(ENTRY POINT E)

REMOVE THE "POWER GOOD" LED FROM ITS SOCKET. (SEE MIM 3.2).
SET THE MULTIMETER TO THE RX1 OHMS SCALE.
CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO CONNECTOR P8, PIN 1 AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO ONE PIN OF THE "POWER GOOD" LED SOCKET. NOTE THE RESISTANCE THAT IS INDICATED ON THE MULTIMETER, THEN MOVE THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE OTHER PIN OF THE "POWER GOOD" LED SOCKET.
IS ONE OF THE INDICATED RESISTANCES LESS THAN 0.25 OHMS?
Y N

| 157
| REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE.
| INSTALL THE "POWER GOOD" LED IN ITS SOCKET.
| VERIFY THE REPAIR.

158
SET THE MULTIMETER TO THE RX1 OHMS SCALE.
CONNECT THE POSITIVE TEST LEAD OF THE MULTIMETER TO CONNECTOR P8, PIN 3 AND THE NEGATIVE TEST LEAD OF THE MULTIMETER TO ONE PIN OF THE "POWER GOOD" LED SOCKET. NOTE THE RESISTANCE THAT IS INDICATED ON THE MULTIMETER, THEN MOVE THE NEGATIVE TEST LEAD OF THE MULTIMETER TO THE OTHER PIN OF THE "POWER GOOD" LED SOCKET.
IS ONE OF THE INDICATED RESISTANCES LESS THAN 0.25 OHMS?
Y N

| 159
| REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE.
| INSTALL THE "POWER GOOD" LED IN ITS SOCKET.
| VERIFY THE REPAIR.

160
REMOVE THE LED AND INSTALL A NEW ONE. VERIFY THE REPAIR.

161
(ENTRY POINT F)
REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR.

162
(ENTRY POINT G)
REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR

163
(ENTRY POINT H)
REPAIR THE 4963 GROUND WIRES OR REMOVE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR

164
(ENTRY POINT J)
REPAIR THE 4963 DC POWER CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR

165
(ENTRY POINT P)
ENSURE THAT THE 4963 DISC MOTOR SWITCH IS SWITCHED OFF.
CONNECT THE 4963 AC POWER CABLE INTO THE CUSTOMER'S AC POWER OUTLET OR INTO THE 4997 POWER SOCKET.
ENSURE THAT THE CUSTOMER'S AC POWER OUTLET OR THE 4997 CIRCUIT BREAKER IS SWITCHED ON.
SWITCH ON THE 4963 AC POWER SWITCH.
ARE BOTH OF THE FAN MOTORS RUNNING?
Y N

166
CHECK THE DE GATE FAN.
IS THE FAN RUNNING?
Y N

167
(ENTRY POINT L)

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.

CONNECT ONE TEST LEAD OF THE MULTIMETER TO TERMINAL TB4-1 AND THE OTHER TEST LEAD OF THE MULTIMETER TO TERMINAL TB4-2.
IS THE VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N

168

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.

SWITCH OFF THE 4963 AC POWER SWITCH.
DISCONNECT THE "POWER SUPPLY TO FAN" AC POWER CABLE FROM THE POWER SUPPLY.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 5 AND THE OTHER TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 6. SWITCH ON THE 4963 AC POWER SWITCH.
IS THE INDICATED VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N

169
GO TO MAP 7A81, ENTRY POINT B.

170
SWITCH OFF THE 4963 AC POWER SWITCH.
REPAIR THE "POWER SUPPLY TO FAN" POWER CABLE OR REMOVE THE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR.

171
SWITCH OFF THE 4963 AC POWER SWITCH.
REMOVE THE DE GATE FAN AND REPAIR IT OR INSTALL A NEW FAN. VERIFY THE REPAIR.

172
CHECK THE A2 GATE FAN.
IS THE FAN RUNNING?
Y N

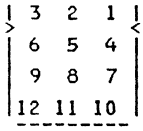
173
(ENTRY POINT N)

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.

CONNECT ONE TEST LEAD OF THE MULTIMETER TO TERMINAL TB2-1 AND THE OTHER TEST LEAD OF THE MULTIMETER TO TERMINAL TB2-4.
IS THE VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N

JACK J2



174

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.

SWITCH OFF THE 4963 AC POWER SWITCH.
DISCONNECT THE "POWER SUPPLY TO FAN" AC POWER CABLE FROM THE POWER SUPPLY.
SWITCH ON THE 4963 AC POWER SWITCH.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 2 AND THE OTHER TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 3.
IS THE VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N

JACK J2

3	2	1
6	5	4
9	8	7
12	11	10

175
GO TO MAP 7A81, ENTRY POINT B.

176
SWITCH OFF THE 4962 AC POWER SWITCH.
REPAIR THE "POWER SUPPLY TO FAN" POWER CABLE OR REMOVE THE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR.

177
SWITCH OFF THE 4963 AC POWER SWITCH.
REMOVE THE A2 GATE FAN AND REPAIR IT OR INSTALL A NEW FAN. VERIFY THE REPAIR.

178
GO TO STEP 179, ENTRY POINT M.

179
(ENTRY POINT M)
IS EITHER THE DE OR CONTROLLER (A2) FAN AIR EXHAUST OR AIR ENTRY STOPPED?
Y N

180
IS THE DE FAN RUNNING SLOWER THAN NORMAL?
Y N

181
IS THE CONTROLLER FAN RUNNING SLOWER THAN NORMAL?
Y N

182
CHECK FOR TOO MUCH HEAT IN THE 4963.
IS THE AIR TEMPERATURE ENTERING THE 4963 HIGHER THAN 40.6 DEGREES C (105 DEGREES F)?
Y N

183
CHECK THE REAR FAN EXHAUST OUTLET BEHIND THE 4963.
IS THE FAN EXHAUST OUTLET IN THE EMC COVER STOPPED WHEN THE 4963 IS IN THE OPERATING POSITION?
Y N

184
CHECK THE PARTS IN THE 4963 TO DETERMINE IF THEY ARE GENERATING TOO MUCH HEAT. CHECK THE POWER SUPPLY, DRIVE MOTOR, FANS, CIRCUIT CARDS, AND DISK ENCLOSURE. EXCHANGE THE FAILING PART. VERIFY THE REPAIR,

185
REMOVE WHATEVER IS STOPPING THE FAN EXHAUST AT THE REAR OF THE EMC COVER. VERIFY THE REPAIR.

186
THIS TEMPERATURE IS MORE THAN THE FUNCTIONAL SPECIFICATION LIMIT FOR THE 4963. TAKE CORRECTIVE ACTION TO DECREASE THIS TEMPERATURE. VERIFY THE REPAIR.

187
GO TO PAGE 27, STEP 173,
ENTRY POINT N.

188
GO TO PAGE 27, STEP 167, ENTRY POINT L.

189
CLEAR THE OBSTRUCTION FROM THE AIR PATH.
VERIFY THE REPAIR.

190
(ENTRY POINT BB)

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS.BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.
SWITCH OFF THE 4963 AC POWER SWITCH.
SWITCH ON THE 4963 DISC MOTOR SWITCH WHICH IS LOCATED ON THE POWER SUPPLY,

CAUTION

BE CAREFUL NOT TO MAKE A SHORT CIRCUIT TO THE FRAME OR TO ANY OTHER CONDUCTOR.

SET THE MULTIMETER TO AT LEAST 250 VOLTS ON THE AC VOLTS SCALE. CONNECT ONE TEST LEAD OF THE MULTIMETER TO TB3-1 AND THE OTHER TEST LEAD OF THE MULTIMETER TO TB3-2.
SWITCH ON THE 4963 AC POWER SWITCH.
RESET THE MULTIMETER TO A LOWER AC VOLTS SCALE, IF NECESSARY.
NOTE THE VOLTAGE INDICATED ON THE MULTIMETER.
SWITCH OFF THE 4963 AC POWER SWITCH.
WAS THE VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N

191

DANGER

THE VOLTAGE TO BE MEASURED IS DANGEROUS. BE CAREFUL TO ENSURE YOUR SAFETY. DO NOT TOUCH THE NOT INSULATED PARTS OF THE MULTIMETER TEST PROBES.
SWITCH OFF THE 4963 AC POWER SWITCH.
DISCONNECT THE AC CABLE FROM THE POWER SUPPLY AT CONNECTOR J2. SWITCH ON THE 4963 AC POWER SWITCH.
SWITCH ON THE 4963 DISC MOTOR SWITCH.
CONNECT ONE TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 10 AND THE OTHER TEST LEAD OF THE MULTIMETER TO JACK J2, PIN 4.

CAUTION

BE CAREFUL NOT TO MAKE A SHORT CIRCUIT TO THE 4963 FRAME OR TO ANY OTHER CONDUCTOR.
IS THE VOLTAGE APPROXIMATELY THE 4963 INPUT VOLTAGE RATING?
Y N

192
GO TO MAP 7A81, ENTRY POINT B.

193
SWITCH OFF THE 4963 AC POWER SWITCH.
REPAIR THE "POWER SUPPLY TO FAN AND 4963 DISC MOTOR" CABLE OR REMOVE THE CABLE AND INSTALL A NEW CABLE. VERIFY THE REPAIR.

JACK J2

3	2	1
6	5	4
9	8	7
12	11	10

194
ENSURE CONNECTOR P4 IS CONNECTED TO JACK J4 ON THE POWER SUPPLY AND ALL CONNECTORS ARE CONNECTED TO BOARD A1 AND BOARD A2. CONNECT JUMPER, PN 8326945, FROM D2G10 TO D08 AND D2G11 TO D08 OF THE A1 (DE) BOARD.
SWITCH ON THE MOTOR SERVICE SWITCH (S1).
SWITCH ON THE 4963 AC POWER SWITCH.
DOES THE DISC MOTOR COME ON AND TURN THE DISC?
Y N

195
RESET THE MOTOR THERMAL SWITCH LOCATED ON THE DRIVE MOTOR CASE.
DOES THE DISC MOTOR COME ON AND TURN THE DISC?
Y N

196
GO TO MAP 7A73, ENTRY POINT A.

197
RUN DIAGNOSTIC PROGRAM MAP7A20
REMOVE JUMPERS AFTER RUNNING MAPS, AND VERIFYING REPAIRS.

198
RUN DIAGNOSTIC PROGRAM MAP7A20
REMOVE JUMPERS AFTER RUNNING MAPS, AND VERIFYING REPAIRS.

PAGE 1 OF 9

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
XXXX	A	1	001
XXXX	B	2	008
XXXX	C	9	043

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
5	024	7A80	B

001

(ENTRY POINT A)

THIS IS A PAPER ONLY MAP. THERE IS NO COMMON MAP PROGRAM. (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).

1) BEFORE TROUBLESHOOTING THE POWER SUPPLY, THE 4963 COVER MUST BE REMOVED. (SEE MIM 3.1.1).

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

REMOVE THE FRONT SCREEN. RELAY K1 MAY NOT BE CORRECTLY SEATED DISCONNECT RELAY K1 AND SEAT TIGHTLY. INSTALL THE FRONT SCREEN. (SEE SF546). SWITCH ON THE 4963 AC POWER SWITCH. WAIT 5 SECONDS.
IS THE LED ON THE POWER SUPPLY SWITCHING ON AND OFF AT APPROXIMATELY A ONE HERTZ RATE?
Y N

| 002
| VERIFY THE REPAIR.

003

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. REMOVE TIME DELAY RELAY K1 AND INSTALL A NEW RELAY. (SEE MIM 3.2.9, SF546). INSTALL THE FRONT SCREEN.
IS THE LED ON THE POWER SUPPLY SWITCHING ON AND OFF AT APPROXIMATELY A ONE HERTZ RATE?
Y N

| 004
| IS THE LED ON THE POWER SUPPLY ON CONSTANT?
| Y N
| | 005
| | GO TO PAGE 2, STEP 008, ENTRY POINT B.
| 006
| VERIFY THE REPAIR.

007
REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

008

(ENTRY POINT B)

THIS IS A PAPER ONLY MAP. THERE IS NO COMMON MAP PROGRAM. (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).

1) BEFORE TROUBLESHOOTING THE POWER SUPPLY, THE 4963 COVER MUST BE REMOVED. (SEE MIM 3.1.1)

2) WHEN IT IS NECESSARY TO REMOVE OR INSTALL THE POWER SUPPLY IN THE 4963, SEE MIM 3.2.1 FOR THE PROCEDURE.

3) USE THE RELAY EXTENSION TOOL, PN 450458, TO CONVERT THE ALLIGATOR CLIP TEST LEADS OF THE MULTIMETER TO PROBES, OR USE A 50 MILLIMETRE (2 INCH) LENGTH OF WIRE FROM WHICH THE INSULATION HAS BEEN REMOVED AT BOTH ENDS.

4) FOR ALL DC VOLTAGE MEASUREMENTS, ONE MULTIMETER LEAD SHOULD BE CONNECTED TO THE FRAME WHICH IS GROUND.

CAUTION

SWITCH OFF THE 4963 AC POWER SWITCH.

DISCONNECT THE DC POWER OUTPUT CONNECTOR P4 FROM J4. DISCONNECT THE LED CONNECTOR P8 FROM J8. DISCONNECT THE AC POWER OUTPUT CONNECTOR P2 FROM J2 ON THE POWER SUPPLY. (SEE SF546). CONNECT THE AC INPUT POWER CONNECTOR P7 TO J7 ON THE POWER SUPPLY.
SWITCH ON THE 4963 AC POWER SWITCH.
WAIT 5 SECONDS.
IS THE LED ON THE POWER SUPPLY LIGHTED (SEE SF546)?
Y N

009

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

SET THE MULTIMETER TO THE RX1 OHMS SCALE. REMOVE EACH FUSE FROM THE POWER SUPPLY AND MEASURE ITS RESISTANCE. (SEE MIM 3.2.2, SF546).
IS THE RESISTANCE OF EITHER FUSE MORE THAN ONE OHM?
Y N

010

INSTALL BOTH FUSES. CONNECT TEST POINT TP1 TO TEST POINT TP2 (GROUND) USING ONE WIRE OF BRAKE APPLIED JUMPER PN 8326945. (SEE SF546). ENSURE THAT NEITHER END OF THE OTHER WIRE IS TOUCHING ANY OTHER PART OF THE POWER SUPPLY. SWITCH ON THE 4963 AC POWER SWITCH. WAIT 5 SECONDS.

IS AT LEAST +22V DC PRESENT AT CONNECTOR J4, TERMINAL 23?
Y N

J4

28	29	30	31	32	33	34	35	36
19	20	21	22	23	24	25	26	27
10	11	12	13	14	15	16	17	18
01	02	03	04	05	06	07	08	09

CONNECT RED LEAD TO LISTED TERMINAL.
CONNECT BLACK LEAD TO FRAME(GROUND).
SWITCH POLARITY SWITCH TO + OR - AS NEEDED.

PAGE 3 OF 9

011
SWITCH OFF THE 4963 AC POWER SWITCH FOR AT LEAST ONE SECOND. SWITCH ON THE 4963 AC POWER SWITCH WHILE CHECKING CONNECTOR J4, TERMINAL 23.
WAS AT LEAST +22V DC PRESENT FOR APPROXIMATELY TWO OR THREE SECONDS?
Y N

012
REMOVE JUMPER FROM TP1 AND TP2. REPEATEDLY SWITCH OFF THE 4963 AC POWER SWITCH FOR AT LEAST ONE SECOND, AND THEN SWITCH ON THE 4963 AC POWER SWITCH WHILE MEASURING THE OTHER VOLTAGES IN TABLE ONE.

TABLE ONE
DC OUTPUT VOLTAGES

NOMINAL VOLTAGE	MINIMUM VOLTAGE	J4 TERMINALS
+ 5.0	+ 4.67	7,8,9,15,16, 17,18,24,25
+ 8.5	+ 7.82	30
+12.0	+11.04	32
+24.0	+22.08	23, 31
- 4.0	- 3.68	4, 5
- 5.0	- 4.55	34
-12.0	-11.04	33

IS ANY VOLTAGE HIGHER THAN ITS MINIMUM VALUE FOR EVEN A SHORT TIME?
Y N

013

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. INSPECT THE TERMINALS OF CONNECTORS P1 AND P3. INSPECT JUMPERS J5 AND J6. TIGHTEN ANY LOOSE TERMINALS OR CONNECT ANY DISCONNECTED TERMINALS. (SEE SF546, SF547). INSTALL THE SCREEN.
INSTALL BOTH FUSES.
REMOVE THE TRANSFORMER SHIELD BY LOOSENING TWO SCREWS. INSPECT THE TERMINALS OF TB1 AND RESONANT CAPACITOR C1 AND RECONNECT OR TIGHTEN ANY LOOSE TERMINALS. INSTALL THE TRANSFORMER SHIELD.
SWITCH ON THE 4963 AC POWER SWITCH. WAIT FIVE SECONDS.
IS THE LED ON THE POWER SUPPLY LIGHTED?
Y N

014

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. REMOVE TIME DELAY RELAY K1 AND INSTALL A NEW RELAY. (SEE MIM 3.2.9, SF546). INSTALL THE FRONT SCREEN.
SWITCH ON THE 4963 AC POWER SWITCH.
IS THE LED ON THE POWER SUPPLY LIGHTED?
Y N

PAGE 4 OF 9

015
A FAILURE EXISTS IN THE PRIMARY SECTION. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

016
VERIFY THE REPAIR.

017
A LOOSE CONNECTION CAUSED THE FAILURE. VERIFY THE REPAIR.

018
ONE OR MORE VOLTAGES, INCLUDING +24V DC, ARE FAILING. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

019

DANGER

SWITCH OFF THE 4963 AC POWER SWITCH.

REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. REMOVE HOLD RELAY K2, AND INSTALL A NEW RELAY. INSTALL THE FRONT SCREEN. (SEE MIM 3.2.9, SF546).
REMOVE JUMPER FROM TP1 AND TP2. VERIFY THE REPAIR.

020
A VOLTAGE OTHER THAN +24V DC IS FAILING OR THE VOLTAGE SENSING CIRCUIT IS FAILING.
REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

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021
REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. REMOVE THE TRANSFORMER SHIELD BY LOOSENING TWO SCREWS. (SEE SF546).
IS THERE ANY BURNING OR OTHER DAMAGE IN THE PRIMARY AREA OR AROUND THE TRANSFORMER?
Y N

022
INSTALL THE FRONT SCREEN. INSTALL TRANSFORMER SHIELD. REMOVE EACH FUSE THAT HAS A RESISTANCE OF MORE THAN ONE OHM AND INSTALL A GOOD FUSE. (SEE MIM 3.2.2, SF546). ENSURE THAT THE DISK MOTOR SWITCH IS ON. SWITCH ON THE 4963 AC POWER SWITCH.
IS THE LED ON THE POWER SUPPLY (SEE SF546) LIGHTED?
Y N

023
SHORT CIRCUIT IN THE POWER SUPPLY. REMOVE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

024
POSSIBLE SHORT CIRCUIT IN AC OR DC DISTRIBUTION CABLES OR LOADS.
GO TO MAP 7A80, ENTRY POINT B.

025
POWER SUPPLY HAS BEEN DAMAGED. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

026
ENSURE THAT THE VOLTAGE SENSING CIRCUIT CORRECTLY RESPONDS TO A SIMULATED FAILURE: CONNECT THE -5V PRESENT AT CONNECTOR J4, TERMINAL 34, TO THE POWER SUPPLY FRAME FOR A SHORT TIME USING ONE MULTIMETER TEST LEAD THAT HAS BEEN CHANGED TO A PROBE WITH THE RELAY EXTENSION TOOL. (SEE SF546).

J4

28	29	30	31	32	33	34	35	36
19	20	21	22	23	24	25	26	27
10	11	12	13	14	15	16	17	18
01	02	03	04	05	06	07	08	09

CONNECT RED LEAD TO LISTED TERMINAL.
CONNECT BLACK LEAD TO FRAME(GROUND).
SWITCH POLARITY SWITCH TO + OR - AS NEEDED.

DID THE LED ON THE POWER SUPPLY SWITCH OFF?
Y N

027
BAD VOLTAGE SENSING CIRCUIT. REMOVE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

028
REMOVE THE FRAME CONNECTION. SWITCH THE 4963 AC POWER OFF, THEN ON. WAIT 5 SECONDS. SIMULATE AN APPLIED BRAKE OR TOO MUCH HEAT BY CONNECTING THE JUMPER TERMINAL AT CONNECTOR J4, TERMINAL 36, TO THE POWER SUPPLY FRAME FOR FIVE SECONDS.
DID THE LED ON THE POWER SUPPLY SWITCH OFF?
Y N

029
BAD VOLTAGE SENSING CIRCUIT. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

PAGE 6 OF 9

030
REMOVE THE FRAME CONNECTION. SWITCH THE 4963 AC POWER SWITCH OFF, THEN ON.
MEASURE ALL OF THE DC OUTPUT VOLTAGES AT J4 (SEE SF546, SF547).
USE TABLE 1 FOR INFORMATION ON CORRECT VOLTAGE AND CONNECTOR PIN IDENTIFICATION.
(SEE CONNECTOR FIGURE AT RIGHT FOR PIN IDENTIFICATION). (SEE SF546).
NOTE: FOR THIS STEP ALL VOLTAGES ARE PERMITTED TO BE HIGH SINCE THE LOAD CONNECTOR P4 IS DISCONNECTED, IN MAP 7A80 THESE VOLTAGES WILL BE MEASURED WITH P4 CONNECTED.

J4

28	29	30	31	32	33	34	35	36
19	20	21	22	23	24	25	26	27
10	11	12	13	14	15	16	17	18
01	02	03	04	05	06	07	08	09

CONNECT RED LEAD TO LISTED TERMINAL.
CONNECT BLACK LEAD TO FRAME(GROUND).
SWITCH POLARITY SWITCH TO + OR - AS NEEDED.

TABLE ONE
DC OUTPUT VOLTAGES

NOMINAL VOLTAGE	MINIMUM VOLTAGE	J4 TERMINALS
+ 5.0	+ 4.67	7,8,9,15,16, 17,18,24,25
+ 8.5	+ 7.82	30
+12.0	+11.04	32
+24.0	+22.08	23, 31
- 4.0	- 3.68	4, 5
- 5.0	- 4.55	34
-12.0	-11.04	33

ARE ALL VOLTAGES ABOVE THE MINIMUM VALUES AS INDICATED IN TABLE ONE?
Y N

031
REMOVE BAD POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

032
MEASURE THE LOGIC SIGNALS. THE MULTIMETER SHOULD INDICATE VOLTAGES AS SHOWN IN TABLE TWO. (SEE SF546).

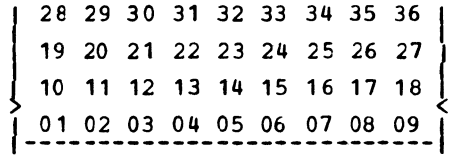
TABLE TWO
LOGIC SIGNALS

SIGNAL NAME	MAXIMUM VOLTAGE	MINIMUM VOLTAGE	TERMINALS	CONNECTOR
LED ANODE	+ 3.0	+ 2.0	1 OR 4	J8
LED CATHODE	+ 0.4	+ 0.0	2 OR 3	
POWER GOOD	+ 0.4	+ 0.0	14	J4
POWER ON RESET	+ 5.5	+ 4.5	6	
THERMO-STAT	+ 0.4	+ 0.0	27	
JUMPER	+ 0.8	+ 0.4	36	

J4

(STEP 032 CONTINUES)

(STEP 032 CONTINUED)



CONNECT RED LEAD TO LISTED TERMINAL.
CONNECT BLACK LEAD TO FRAME(GROUND).
SWITCH POLARITY SWITCH TO + OR - AS NEEDED.

ARE ALL OF THE LOGIC SIGNALS GOOD?
Y N

033
REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

034

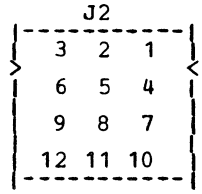
DANGER

USE CAUTION WHEN MEASURING.

SWITCH OFF THE 4963 DISK MOTOR SWITCH WHICH IS LOCATED ON THE POWER SUPPLY. MEASURE THE FAN VOLTAGES BETWEEN THE POINTS INDICATED ON TABLE THREE. THE VOLTAGES SHOULD APPROXIMATELY EQUAL THE 4963 AC INPUT VOLTAGE. (SEE SF546, SF547).

TABLE THREE
AC VOLTAGES

CA GATE FAN	CONNECTOR TERMINAL J2, PINS 2, 3
DE GATE FAN	CONNECTOR TERMINAL J2, PINS 5, 6
DISK MOTOR	CONNECTOR TERMINAL J2, PINS 10, 4



ARE THE FAN VOLTAGES PRESENT?
Y N

035
REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

036
IS THE DISK MOTOR AC VOLTAGE APPROXIMATELY ZERO VOLTS?
Y N

037
REMOVE THE DISK MOTOR SWITCH AND EXCHANGE WITH A NEW SWITCH (SEE MIM 3.2.11,SF546, SF547)
VERIFY THE REPAIR.

038
SWITCH ON THE 4963 DISK MOTOR SWITCH.
IS THE 4963 DISK MOTOR AC VOLTAGE APPROXIMATELY EQUAL TO THE AC LINE VOLTAGE?
Y N

8 8
L M

PAGE 8 OF 9

039

DANGER

SWITCH OFF THE 4963 DISK AC POWER SWITCH.

REMOVE THE FRONT SCREEN BY REMOVING TWO SCREWS. INSPECT THE WIRES CONNECTING P3 TO THE DISK MOTOR SWITCH S1. RESEAT OR CONNECT ANY LOOSE OR DISCONNECTED TERMINALS. (SEE SF546, SF547).
INSTALL THE SCREEN. SWITCH ON THE 4963 DISK AC POWER SWITCH.
IS THE 4963 DISK MOTOR AC VOLTAGE NOW PRESENT?
Y N

040
REMOVE THE DISK MOTOR SWITCH AND EXCHANGE WITH A NEW SWITCH (SEE MIM 3.2.11,SF546, SF547)
RECONNECT ALL DISCONNECTED CABLES (SF546)
VERIFY THE REPAIR.

041
VERIFY THE REPAIR.

042
NO FAILURE FOUND IN THE POWER SUPPLY.

CAUTION

SWITCH OFF THE 4963 DISK AC POWER SWITCH.

CONNECT ALL DISCONNECTED CABLES (SF546)
GO TO MAP7A80 ENTRY POINT B.

043

(ENTRY POINT C)

DANGER

SWITCH OFF THE 4963 DISK AC POWER SWITCH.

REMOVE THE TRANSFORMER SHIELD BY LOOSENING TWO SCREWS CHECK BOTH TERMINALS OF THE RESONANT CAPACITOR (C1). (SEE SF546) AND RECONNECT ANY LOOSE OR DISCONNECTED WIRES.
WAS EITHER WIRE LOOSE OR DISCONNECTED?
Y N

044
(SEE SF546). LOOSEN THE RESONANT CAPACITOR (C1) TERMINAL COVERS AND MOVE AWAY FROM THE TERMINALS ON TO THE RED LEADS. DISCONNECT THE RED LEADS FROM THE CAPACITOR. SET THE MULTIMETER TO THE RX100 SCALE. MEASURE THE RESISTANCE FROM ONE RED LEAD TO THE OTHER.
IS THE RESISTANCE LESS THAN 1000 OHMS?
Y N

045
THE RESONANT WINDING OF THE TRANSFORMER IS OPEN. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

046
SET THE MULTIMETER TO THE LARGEST OHMS SCALE. WHILE OBSERVING THE MULTIMETER NEEDLE TOUCH THE BLACK LEAD TO ONE RESONANT CAPACITOR (C1) TERMINAL AND TOUCH THE RED LEAD TO THE OTHER TERMINAL. THEN SWAP THE MULTIMETER LEADS TO THE CAPACITOR TERMINALS.
WAS THERE ANY MULTIMETER NEEDLE MOVEMENT?
Y N

047
THE RESONANT CAPACITOR IS NOT GOOD. REMOVE THE POWER SUPPLY AND INSTALL A NEW POWER SUPPLY. (SEE MIM 3.2.1). VERIFY THE REPAIR.

048
NO FAILURE FOUND IN THE RESONANT CIRCUIT OF THE POWER SUPPLY.
GO TO MAP7A80 ENTRY POINT CC

049
ENSURE THAT BOTH TERMINAL COVERS HAVE BEEN REMOVED ON THE RESONANT CAPACITOR. ATTACH THE TRANSFORMER SHIELD, TIGHTENING TWO SCREWS. REMOVE THE BRAKE APPLIED JUMPER FROM THE DISK (A1-D2G10, D2D11) ELECTRONICS BACK PANEL. VERIFY THE REPAIR.

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
0020	A	1	001

EXIT POINTS

EXIT THIS MAP PAGE NUMBER	STEP NUMBER	TO MAP NUMBER	ENTRY POINT
1	002	2570	A
1	004	2570	A

001
(ENTRY POINT A)

THIS IS A PAPER ONLY MAP. THERE IS NO ASSOCIATED MAP PROGRAM. (SEE DIAGNOSTIC SERVICE GUIDE 05.00.00).

POWER ON 4963. WAIT 16 SECONDS FOR READY.
PUSH LOAD KEY ON THE PROGRAMMER CONSOLE.
DO THE LAMPS CONTAIN OTHER THAN X'0E00' ?
Y N

002
MICRO DIAGNOSTIC PROBLEM
GO TO MAP 2570, ENTRY POINT A.

003
DO THE LAMPS CONTAIN OTHER THAN X'0E05' ?
Y N

004
MICRO DIAGNOSTIC PROBLEM
GO TO MAP 2570, ENTRY POINT A.

005
(ENTRY POINT F)
WHEN X'00E0' IS DISPLAYED , THE IPL SEQUENCE SENT HAS NOT RECEIVED A RESPONSE FROM THE LOAD SOURCE.
ARE THE LAMPS OTHER THAN X'00E0' ?
Y N

006
PROBE IPL LINE(S04) AT THE IPL 4963 ATTACHMENT CARD INTERFACE.
IS IT UP (NOT ACTIVE)?
Y N

007
EXCHANGE THE ROS CARD
VERIFY THE REPAIR.
IPL LINE WAS GENERATED BUT THE PROCESSING UNIT DID NOT RECOGNIZE IT.

(IF 4953 PROCESSING UNIT EXCHANGE THE PROCESSING UNIT CARD.)
VERIFY THE REPAIR.

008
PROBE IIPL LINE(P07) AT THE 4963 IPL ATTACHMENT CARD INTERFACE.
IS IT DOWN (ACTIVE)?
Y N

009
PROBE IIPL(P07) AT THE PROCESSING UNIT CARD INTERFACE.
SEE THE PROCESSING UNIT ALD, MAINTENANCE LOGIC DIAGRAMS VOLUME 01.
IS IT DOWN (ACTIVE)?
Y N

010
EXCHANGE THE ROS CARD
VERIFY THE REPAIR.
IIPL NOT AT PROCESSING UNIT OUTPUT.

(IF 4953 PROCESSING UNIT EXCHANGE THE PROCESSING UNIT CARD.)
VERIFY THE REPAIR.

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011
CARD FILE PROBLEM OR IF 4963 LOAD DEVICE ATTACH CARD IS IN AN EXPANSION CARD FILE ENCLOSURE , IT COULD BE A CABLE PROBLEM.

012
VERIFY THAT THE PRIMARY/ALTERNATE SWITCH IS GOOD.
GO TO MAP 1071, ENTRY POINT E.

WHEN YOU RETURN , PROBE THE CORRECT STATUS BUS BIT(0 OR 1) AT THE IPL 4963 INTERFACE.
PRIMARY=BIT 0(J13) AND ALTERNATE=BIT 1(G13).
IS IT DOWN (ACTIVE)?
Y N

013
VERIFY THAT THE IPL JUMPERS ON THE 4963 ATTACHMENT CARD COMPARE WITH CONSOLE IPL SOURCE SELECTION.
SEE 4963 MIM , PARAGRAPH 2.4.
DO THEY COMPARE ?
Y N

014
CORRECT IT AND RETRY IPL SEQUENCE.

015
PROBE THE CORRECT STATUS BUS BIT AT THE PROCESSING UNIT CARD INTERFACE.

PRIMARY=BIT 0(J13) AND ALTERNATE=BIT 1(G13).

SEE THE PROCESSING UNIT ALD, MAINTENANCE LOGIC DIAGRAMS VOLUME 01.
IS IT DOWN (ACTIVE) THERE?
Y N

016
EXCHANGE THE ROS CARD
VERIFY THE REPAIR.
STATUS BITS 0/1 NOT CORRECT FROM PROCESSING UNIT.

(IF 4953 PROCESSING UNIT EXCHANGE THE PROCESSING UNIT CARD.)
VERIFY THE REPAIR.

017
CABLE OR CARD FILE PROBLEM

018
PROBE SYSTEM RESET AT 4963 ATTACHMENT CARD INTERFACE (M05) WHILE PRESSING IPL KEY ON THE PROGRAMMER CONSOLE.
DID SYSTEM RESET PULSE ?
Y N

USE GENERAL LOGIC PROBE IN 'LATCH DOWN' MODE.
SET OTHER SWITCH FOR 'MULTI' LEVEL.

019
CHECK FOR SAME CONDITION AT THE PROCESSING UNIT CARD INTERFACE.
SEE THE PROCESSING UNIT ALD, MAINTENANCE LOGIC DIAGRAMS VOLUME 01.
CHECK CABLES AND CARD FILE FOR CAUSE OF PROBLEM.

020
EXCHANGE 4963 ATTACH CARD.
VERIFY THE REPAIR.

021
RUN 4963 MAPS.
SEE PROLOG 7A00 PARAGRAPH 0.0.
ANY ERROR?
Y N

PAGE 3 OF 3

022
A VARIABLE NUMBER OF RECORDS CAN BE READ ON IPL DEPENDING ON THE CONTENTS OF THE LAST WORD OF THE 1ST 256-BYTE RECORD READ. IF THE RECORD COUNT IN THIS WORD IS NOT ZERO ENSURE TO VERIFY THAT THE EXTRA RECORDS TO BE READ ON IPL CAN BE READ. REFER TO THE 4963 MIM, PARAGRAPH 2.4 FOR MORE INSTRUCTION OF THE 4963 VARIABLE IPL FUNCTION.
EXECUTE MAP7A69 (MANUAL MODE MAP) TO VERIFY THAT ALL IPL RECORDS CAN BE READ. IF A SECTOR IS FOUND TO BE BAD ASSIGN IT TO AN ALTERNATE SECTOR. AFTER ALL THE IPL RECORDS HAVE BEEN VERIFIED RETRY IPL SEQUENCE. IF IPL STILL FAILS, EXCHANGE THE 4963 ATTACHMENT CARD.

023
REPAIR THE 4963 THEN RETRY TO IPL FROM THE 4963.

MINI-MAP 7A91

ENTRY POINTS

FROM MAP NUMBER	ENTER THIS MAP ENTRY POINT	PAGE NUMBER	STEP NUMBER
XXXX	A	1	001
XXXX	B	3	024

001
(ENTRY POINT A).

NOTE: THE TERMINATOR CARD IS LOCATED IN THE LAST FILE POSITION A1-A4 OR A1-A3.

THIS MAP ISOLATES FAILURES THAT CAUSE MANY CALL OUT(S) BY THE MAPS RUN

DO THE FOLLOWING ITEM(S)

1-PUT FILE 0 INTO THE SERVICE POSITION.
2-REMOVE THE EMC COVER
3-REFER TO PAGE SF537 OF THE MAINTENANCE LOGIC MANUAL FOR CABLE NETS AFFECTED

POWER OFF
TO MAKE A SINGLE FILE CONFIGURATION, REMOVE CABLES A2-A3,A2-A4,A2-B4 FROM BOARD A2. REMOVE CABLE A1-A4 AND INSERT TERMINATOR CARD PN 5861353 INTO A1-A4 OF THE BASE FILE.

POWER ON
LOAD (C) MAP7A20 FOR FILE 0
DOES THE MAP RUN WITHOUT ERROR?
Y N

002
POWER OFF
RECORD THE FAILING STEP FROM MAP7A20.
REMOVE CABLES A2-B2,A2-B3 FROM BOARD A2.
INSERT CABLE FROM A1-A4 INTO A2-B2.
(CABLE D ON SF537, FROM FILE 1)
INSERT CABLE FROM A2-B4 INTO A2-B3.
(CABLE C ON SF537, FROM FILE 1)
REMOVE CABLE A1-A4 OF FILE 1 AND INSERT TERMINATOR CARD PN 5861353 INTO A1-A4 OF FILE 1.

NOTE: THIS PUTS FILE 1 AS FILE 0. CHECK THE CONFIGURATION JUMPER(S) ON CARD A2-C2 TO VERIFY THAT FILE 0 NOW EQUALS FILE 1 FOR THIS STEP.

POWER ON
LOAD (C) MAP7A20 FOR FILE 0
DOES THE MAP RUN WITHOUT ERROR?
Y N

003
EXCHANGE A2-C2,A2-D2 CARDS

RUN MAP7A20 FOR FILE 0
DOES THE MAP RUN WITHOUT ERROR?
Y N

004
EXCHANGE BOARD A2
RETURN SUBSYSTEM TO ORIGINAL CONFIGURATION

005
RETURN SUBSYSTEM TO ORIGINAL CONFIGURATION

006
FILE 0 IS BAD
RECONNECT FILE 0 AND CONFIGURE A2-C2 CARD
RUN MAP7A20 AND FOLLOW THE MAPS

007
POWER OFF
CONFIGURE A2-C2 CARD SO ALL FILE CONFIGURATION JUMPER(S) ARE EQUAL TO THE FILE 0 JUMPER(S)
MOVE CABLE A2-B3 TO A2-B4
POWER ON
LOAD (C) MAP7A20 FOR FILE 1
DOES THE MAP RUN WITHOUT ERROR?
Y N

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008
EXCHANGE A2-C2,A2-D2 CARDS

RUN MAP7A20 FOR FILE 1
DOES THE MAP RUN WITHOUT ERROR?
Y N

009
EXCHANGE BOARD A2
RETURN SUBSYSTEM TO ORIGINAL CONFIGURATION

010
VERIFY REPAIR
RETURN SUBSYSTEM TO ORIGINAL CONFIGURATION

011
IS THIS THE LAST FILE ADDRESS?
Y N

012
POWER OFF

MOVE CABLE A2-B4 TO A2-A4
POWER ON
LOAD (C) MAP7A20 FOR FILE 2
DOES THE MAP RUN WITHOUT ERROR?
Y N

013
EXCHANGE A2-C2,A2-D2 CARDS

RUN MAP7A20 FOR FILE 2
DOES THE MAP RUN WITHOUT ERROR?
Y N

014
EXCHANGE BOARD A2
RETURN SUBSYSTEM TO ORIGINAL
CONFIGURATION

015
VERIFY REPAIR
RETURN SUBSYSTEM TO ORIGINAL CONFIGURATION

016
IS THIS THE LAST FILE ADDRESS?
Y N

017
POWER OFF

MOVE CABLE A2-A4 TO A2-A3
POWER ON
LOAD (C) MAP7A20 FOR FILE 3
DOES THE MAP RUN WITHOUT ERROR?
Y N

018
EXCHANGE A2-C2,A2-D2 CARDS

RUN MAP7A20 FOR FILE 3
DOES THE MAP RUN WITHOUT ERROR?
Y N

019
EXCHANGE BOARD A2
RETURN SUBSYSTEM TO ORIGINAL
CONFIGURATION

020
VERIFY REPAIR
RETURN SUBSYSTEM TO ORIGINAL
CONFIGURATION

021
GO TO ENTRY POINT B

022
GO TO ENTRY POINT B

023
GO TO ENTRY POINT B

024
(ENTRY POINT B)
POWER OFF

CONFIGURE A2-C2 CARD TO ORIGINAL CONFIGURATION
MOVE CABLE A2-A3 TO A2-B3
INSERT CABLE A2-B4 FROM FILE 1.
REMOVE TERMINATOR CARD FROM A1-A4 OF FILE 0
AND INSERT CABLE REMOVED BEFORE.
REMOVE CABLE A1-A4 OF FILE 1 AND INSERT
TERMINATOR CARD PN 5861353 INTO A1-A4 OF FILE
1.

POWER ON
LOAD (C) MAP7A20 FOR FILE 1
DOES THE MAP RUN WITHOUT ERROR?
Y N
|
| 025
| PROBLEM IS WITH FILE 1, FOLLOW THE MAPS
|
026
IS THIS THE LAST FILE ADDRESS?
Y N
|
| 027
| POWER OFF
| REMOVE TERMINATOR CARD FROM A1-A4 OF FILE 1
| AND INSERT CABLE REMOVED BEFORE.
| REMOVE CABLE A1-A4 OF FILE 2 AND INSERT
| TERMINATOR CARD PN 5861353 INTO A1-A4 OF
| FILE 2.
|
| POWER ON
| LOAD (C) MAP7A20 FOR FILE 2
| DOES THE MAP RUN WITHOUT ERROR?
| Y N
| |
| | 028
| | PROBLEM IS WITH FILE 2, FOLLOW THE MAPS
| |
| 029
| IS THIS THE LAST FILE ADDRESS?
| Y N
| |
| | 030
| | POWER OFF
| | REMOVE TERMINATOR CARD FROM A1-A4 OF FILE
| | 2 AND INSERT CABLE REMOVED BEFORE.
| | INSERT TERMINATOR CARD PN 5861353 INTO
| | A1-A4 OF FILE 3.
| |
| | POWER ON
| | LOAD (C) MAP7A20 FOR FILE 3
| | DOES THE MAP RUN WITHOUT ERROR?
| | Y N
| | |
| | | 031
| | | PROBLEM IS WITH FILE 3, FOLIOW THE MAPS
| | |
| | 032
| | PROBLEM WAS A LOOSE CABLE
| | RUN MAPS TO VERIFY
| |
| 033
| PROBLEM WAS A LOOSE CABLE
| RUN MAPS TO VERIFY
|
034
PROBLEM WAS A LOOSE CABLE
RUN MAPS TO VERIFY