EC 826380			PN 2597107
27MAY83			

ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0105	A	1	001
0113	A	1	001
0116	A	1	001
0199	A	1	001

EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
11	048	0101	A
12	055	0101	C
13	059	0101	C
4	012	0199	A
13	058	0300	A
3	007	0395	A
5	016	0395	A
6	020	0395	A
7	029	0395	A
8	032	0395	A
9	036	0395	A
9	039	0395	A
10	041	0395	A
11	045	0395	A
12	052	0395	A

001
(Entry Point A)

**** Notice ****

Radio Frequency Interference (RFI) may cause the disk
units to operate improperly when the covers are open
and the drives are in the open position.
If RFI be suspected, the disk units must be closed in.
All system covers must be in place and closed before
system check out.

MAP DESCRIPTION:
The MAP instructs the CE/CSR to run the MDI tests
for the 21ED disk drives.

START CONDITIONS:
Indications point to the disk as the failing area.
CSIPL from diskette has been successful.

FRUs PARTIALLY TESTED:
None

(Step 001 continues)

MAP 9500-2

(Step 001 continued)
It is assumed you have CSIPLed from diskette
successfully. When you IPLed did you run the
wrap tests (The wrap tests are run when mode E
is selected and 0000 is entered.)?
Y N

002
- CSIPL again however this time the wrap tests will
  be run to obtain more information about the failing
  condition.

- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter 0000.
- Insert DIAG21/41 or magazine M1.
- Press the Load key.
Is the DCP main menu displayed on the system
console?
Y N

003
Go to Page 12, Step 053, Entry Point J.

004
(Entry Point B)
Have you obtained error codes from the last
CSIPL or from previous operations?
Y N

005
(Entry Point G)
- Select MDI MAPs and press enter.
- Select disk and press enter.
- Follow the instructions of the MDI MAPs.
- When the MDI MAPs complete, or isolate the
  failure, return to this step.
Did the MDI MAPs identify a failure?
Y N

This CSIPL will take approximately 4 minutes to
complete.

When the CSIPL sequence completes, the system
available light should be on and the console displays
the DCP main menu.

Any drive you suspect to be failing should be selected
first. MDIs should be run for all drives in the system
or until a problem is found.

```
1  1
2  2  7  3
A  B  C  D
```

006
(Entry Point K)
We will now check for a possible media problem.
- Return to the DCP Main Menu (cmd 7).

- Select Utilities (95-465).
- Select Disk Utilities.
- Select Pack Analysis.
- Select disk drive to be analyzed.
- Select Analysis (not Fast Analysis).
- Select appropriate output device (printer) for error
and information messages.
**Did analysis complete 100% and display a screen
that says analysis is complete.**
Y N

  007
  Go To Map 0395, Entry Point A.

008
- Check the summary for the following:
  Uncorrectable ECC errors
  No record found errors
  Duplicate logical sectors
  Missing logical sectors
  Not correct sector ID's.
Do any of these have errors listed?
Y N

  009
  - If there are any inverted ECC errors listed, the
   customer should be informed that after the system
   is verified to be running properly, he should run
   BUILD to recover defective data.
  Have all disk drives been analyzed?
  Y N

    010
    - Run analysis on the next disk drive.
    Go to Step 006, Entry Point K.

Any drive you suspect to be failing should be analyzed
first. If a failing drive is not known, start with Drive A.

Analysis will take approximately 8 minutes to
complete, but will not be able to complete if an
unrecoverable error or a hardware error is encountered.

6 4
E F

011
Is the problem with the system a failure to CSIPL
from disk?
Y N

> **012**
> Disk MDIs run without error.
> There are no media errors.
> CSIPL from disk works ok.
> An intermittent problem is not suspected.
> It appears that the disk drives and their associated
> attachments are working properly.
> **Go To Map 0199, Entry Point A.**

013
CSIPL data on the disk may be defective.

- Use CUSTOMIZE to recreate the C/S library on the
  disk (01-840).

- After CUSTOMIZE is complete, perform the
  following:

- Select mode 1.
- Press the System Reset key.
- Select mode 0.
- Enter FF00.
- Press the Load key.
- Wait about 45 seconds for the CSIPL to complete.
Is the SSP sign-on screen displayed?
Y N

> **014**
> Correctable ECC errors in the control store CSIPL
> data can cause CSIPL from disk to fail.
>
> - Check disk drive A analysis results for correctable
>   ECC errors on cylinders 0000 to 0005.
> **Were there any correctable ECC errors in this
> range?**
> Y N

- Verify that CUSTOMIZE has corrected disk CSIPL
  problem by attempting a CSIPL from disk.

6 5 5
G H J

015
Customer may have to reload SSP.
---or---
Bad card:
1A-A1E2
---or---
1A-A2E2
---or---
1A-A1C2
---or---
1A-A2C2.
- Replace cards (one at a time) or instruct customer
  to reload SSP.
- Verify that the system is fixed by attempting a
  CSIPL from disk (see previous step).
**Did any of the above items correct the CSIPL
problem?**
Y N

> **016**
> **Go To Map 0395, Entry Point A.**

017
Go to Page 11, Step 047, Entry Point F.

018
- Use Sector Recover (recover data option) to force an
alternative sector for those sectors that had
correctable ECC errors.

CSIPL data on the disk may still be bad.

- Use CUSTOMIZE to recreate the C/S library on the
disk (01-840).

- After CUSTOMIZE is complete, perform the
following:

  - Select mode 1.
  - Press the System Reset key.
  - Select mode 0.
  - Enter FF00.
  - Press the Load key.
  - Wait about 45 seconds for the CSIPL to complete.
(Step 018 continues)

- Verify that CUSTOMIZE has corrected disk CSIPL
problem by attempting a CSIPL from disk.

(Step 018 continued)
Is the SSP sign-on screen displayed?
Y N

019
Customer may have to reload SSP.

---or---

Bad card:

1A-A1E2

---or---

1A-A2E2

---or---

1A-A1C2

---or---

1A-A2C2.

- Replace cards (one at a time) or instruct
customer to reload SSP.
- Verify that the system is fixed by attempting
a CSIPL from disk (see previous step).
Did any of the above items correct the
CSIPL problem?
Y N

020
Go To Map 0395, Entry Point A.

021
Go to Page 11, Step 047, Entry Point F.

022
Go to Page 11, Step 047, Entry Point F.

023
Go to Page 11, Step 047, Entry Point F.

024
Go to Page 8, Step 034, Entry Point D.

C
2

025
(Entry Point C)
- Correct the problem by replacing the defective FRU(s) or performing other corrective action as indicated by the MDI tests.

- Rerun the disk MDI tests on the repaired drive.
Did the Good Machine Path complete without error?
Y N

   026
   Was the same fix as before called out?
   Y N

      027
      Go to Step 025, Entry Point C.

   028
   - Return to the DCP Main Menu (cmd 7).

   - Select Utilities (95-465).
   - Select Disk Utilities.
   - Select Pack Analysis.
   - Select appropriate disk drive.
   - Select Analysis (not Fast Analysis).
   - Select appropriate output device (printer).
   Did Analysis complete 100% and display a screen that says Analysis is complete?
   Y N

      029
      Go To Map 0395, Entry Point A.

1
1 8
K L

- Perform fix and verify that the system is operating correctly.

- Check for media problems.

Analysis will take approximately 8 minutes to complete, but will not be able to complete if an unrecoverable error or a hardware error is encountered.

030
- Check the summary for the following:

Uncorrectable ECC errors
No record found errors
Duplicate logical sectors
Missing logical sectors
Not correct sector ID's.
Do any of these have errors listed?
Y N

    031
    Bad card:
    1A-A1E2
    ---or---
    1A-A2E2
    ---or---
    1A-A1C2
    ---or---
    1A-A2C2.
    - Replace cards (one at a time).
    - Verify that the system is fixed by attempting a
      CSIPL from disk (see step 11).
    Did any of the above items correct the CSIPL
    problem?
    Y N

        032
        Go To Map 0395, Entry Point A.

    033
    Go to Page 11, Step 047, Entry Point F.

034
(Entry Point D)
Either disk initialization or sector recover may be used
to correct the defective sectors.

- Use sector recover if only a few errors were
  detected, otherwise use disk initialization.
Were you directed to use sector recover?
Y N

9 9
M N

If there are any inverted ECC errors listed, the
customer should be informed that after the system is
verified to be running properly, he should run BUILD to
recover defective data.

035

CAUTION

The data which is now on the disk will be set to zero. Customer data may be destroyed.

- Return to DCP main menu (cmd 7).
- Select Utilities (95-465).
- Select Disk Utilities.
- Select Pack Initialization.
- Select appropriate disk drive.
- Enter INIT to start utility.
- Wait for initialization to complete.

Initialization will take approximately 8 minutes to complete, but will not be able to complete if a hardware error is encountered.

Did initialization complete 100% and display a screen that says initialization is complete?
Y N

     036

Initialization may not complete if the data on the Spare Cylinder (443) has been changed. This cylinder includes the defect map which is written when the disk is manufactured. The system prevents the disk drive from writing on the defect map. Head select or Write errors can change the defect map data. If Analysis shows errors on cylinder 443 and Initialization cannot correct them, the Disk Enclosure is bad.

     Go To Map 0395, Entry Point A.

037
Go to Page 10, Step 040, Entry Point E.

038
- Run sector recover.
Did it complete?
Y N

     039
     Go To Map 0395, Entry Point A.

1
0
P

040
(Entry Point E)
- Rerun disk analysis to verify media problems have been corrected.

- Select Pack Analysis.
- Select Analysis (not Fast Analysis).
- Select appropriate disk drive.
Did Analysis complete 100% and display a screen that says Analysis is complete?
Y N

> **041**
>
>
>
>
>
>
>
> **Go To Map 0395, Entry Point A.**

Initialization will not fix the media if the data on the Spare Cylinder (443) has been changed. This cylinder includes the defect map which is written when the disk is manufactured. The system prevents the disk drive from writing on the defect map. Head select or Write errors can change the defect map data. If Analysis shows errors on cylinder 443 and Initialization cannot correct them, the Disk Enclosure is bad.

042
- Check the summary for the following:

Uncorrectable ECC errors
No record found errors
Duplicate logical sectors
Missing logical sectors
Not correct sector ID's.
Did any of these have errors listed?
Y N

> **043**
> **Go to Page 11, Step 047, Entry Point F.**

044
- Check to see if the errors from the Analysis of the disk media are on cylinder 443 (the Spare Cylinder). Initialization cannot correct these errors.
Are the errors on cylinder 443 only?
Y N

1 1
1 1
Q R

K Q R   21ED Disk Entry MAP   MAP 9500-11
7 1 1
0 0   5360 Systems Unit

PAGE 11 OF 13

045
Go To Map 0395, Entry Point A.

046
Bad Disk Enclosure (95-355, 95-360).

The bad Disk Enclosure will be the one associated
with the drive that was being analyized.
Go to Page 10, Step 040, Entry Point E.

047
(Entry Point F)
- Select mode 1.
- Press the System Reset key.
- Select mode 0.
- Enter 0000.
- Press the Load key.
- Wait for the CSIPL to complete.

- Perform CSIPL as a customer would.

Does the SSP sign-on screen appear?
Y N

    048
    You have fixed one problem but the machine still
    does not operate correctly.
    - Use the first entry point of the MAPs and use the
      symptoms and/or error indications that exist on
      the machine now to help you isolate another
      problem.
    Go To Map 0101, Entry Point A.

049
- Return the system to the system operator.

050
- Use the SRC(s) to direct you to the failing area.

Error codes of 19xx or C9xx indicate that the disk may be the failing subsystem.
Error codes of 1Dxx or CDxx indicate that the Data Storage Adapter may be the failing FRU.
- Look at the error code tables in MAP 113 and MAP 116 to see if Drive A, Drive B or the DSA is indicated as the failing area.
- Run MDIs for the area(s) shown in the table.
Do you have 19xx SRCs only?
Y N

> **051**
> **Go to Page 2, Step 005, Entry Point G.**

052
Go To Map 0395, Entry Point A.

053
(Entry Point J)
- Select mode 1.
- Press the System Reset key.
- Select mode E.
- Enter FF00.
- Insert DIAG21/41 or magazine M1.
- Press the Load key.
- Wait about 45 seconds for the CSIPL to complete.
Is the DCP main menu displayed on the system console? (see note 1)
Y N

> **054**
> CSIPL must be able to complete successfully in order to use this MAP.
> **Did CSIPL from diskette complete successfully prior to this attempt.**
> **Y N**
>
> > **055**
> > **Go To Map 0101, Entry Point C.**

Where xx is 00 - 99, AA - FF

If the DSA and both drives are indicated, the DSA is probably the failing FRU because it communicates with both disk drives.

1 1
3 3
S T

056
(Entry Point H)
The symptoms are changing. This may indicate an
intermittent problem or else something has changed
in the hardware.
- Repeat the sequence in step 053 several times, or
  until CSIPL completes properly, to determine if
  there is an intermittent problem.
Did the CSIPL complete properly in all cases?
Y N

     057
     Did the CSIPL fail in all cases?
     Y N

         058
         The problem appears to be intermittent. Go
         to the intermittent MAP.
         Go To Map 0300, Entry Point A.

     059
     Go To Map 0101, Entry Point C.

060
Go to Page 2, Step 004, Entry Point B.

061
Go to Page 2, Step 004, Entry Point B.