

5280



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IBM 5280 Distributed Data System

Machine Verification Manual



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Preface

This manual contains information that is used by customer supervisory personnel to determine if a service call should be placed to a service representative.

This manual is intended to be used with the machine verification diskette kept in one of the IBM binders. The supervisor uses this manual and the verification diskette to:

- Start the system and load the verification programs.
- Test each device attached to the system.

- Determine if the system has minor problems that can be corrected and take the necessary corrective action.
- Determine if a service call should be placed to the service representative.

Related Publications

The following manuals should be used in conjunction with this *Verification Manual*:

- *IBM 5280 Operator's Guide*, GA21-9364
- *IBM 5280 Message Manual*, GA21-9354

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HOW TO USE THIS MANUAL

This manual is divided into seven sections.

Section 1 contains general information about the verification programs, including their purpose and use. It also discusses how to choose which tests you need to run and how to run only those tests.

Section 2 explains how to run the verification procedure for controller internal checks. If you use this procedure, your system is dedicated to verification while you run the procedures in Section 2.

The following four sections contain the instructions for running the other tests as follows:

Section 3	Keyboard tests
Section 4	Diskette drive tests
Section 5	Printer tests
Section 6	Communications tests

Section 7 contains the procedures for obtaining the error logs. It includes the instructions for taking the following dumps:

TSYSLOG
TCOMLOG
SYSDUMP
Absolute Dump

In addition, the information describing SYSDUMP contains the instructions for creating the absolute dump diskette that is used to take the absolute dump. IBM recommends that you create an absolute dump diskette at the earliest possible convenience so that you have it available before you need it.

The section for each verification program begins with the word **START** to show you where to begin reading the procedure. As you go through each procedure, read down the left-hand column of the page. When you encounter an error (for example, if the expected display does not appear), the procedure shows a branch to the right-hand column. The information in this column directs you through further checks to help you isolate the problem or determine that you need to call your service representative. If the information in the right-hand column continues to another next page, you are directed to the next page by the word **CONTINUE**. Continue to follow the procedure, starting in the right-hand column of the next page.

If, after taking a branch to the right-hand column, you decide to return to the original procedure, go back to the original branch point and continue to follow the original procedure.

Section 1. Introduction

The verification procedures explained in this manual allow you to check out the functions on the IBM 5280 System. The verification diskette, used in the procedures, contains a number of programs used for testing internal parts of the controller, keyboard, display, magnetic stripe reader, diskette drives, printers, and communications.

While running these tests, you are required to make selections from prompts, load programs, and insert diskettes. If you do not know how to operate the system to perform these actions, refer to the *Operator's Guide* for instructions.

The following list identifies the programs on the verification diskette used to verify that the devices attached to the system are operational. These programs are loaded either by an IPL operation or by entering the program name in response to a prompt. The programs are:

- Verification IPL Program
- Partition Load Program
- Keyboard Verification (TKBD)
- Diskette Verification (TDSK)
- Printer Verification (TPRNT)
- Communications Verification (TCOM)

Verification IPL Program: This program checks the control area, the storage allocation, and the internal code necessary to load other programs. The 5280 System is dedicated only to verification testing when this IPL program is loaded (that is, the system can do no other processing at that time).

Partition Load Program: After the verification IPL program has completed its internal checks, the partition load program is automatically loaded into all foreground partitions. This program completes the verification IPL and provides the prompt for the program name.

Keyboard Verification: This program allows you to enter data characters from the keyboard and to visually verify that the characters you entered are correctly displayed. This program also reads and checks the magnetic stripe reader as you pass the test card through the reader.

Diskette Verification: This program confirms the ability of the system to select a specific diskette drive, to read and write to a diskette inserted in that drive, and to display the results.

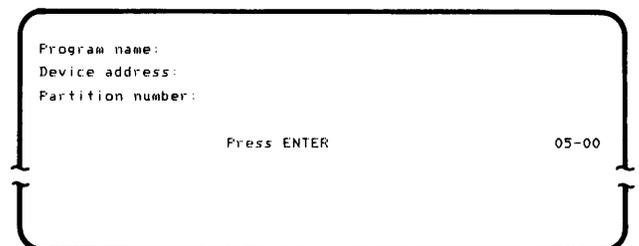
Printer Verification: This program prints a test pattern to verify the operation of the printer.

Communications Verification: This program checks the internal logic and line connections required for communications.

Running the Verification Programs

If your 5280 System is running, and you want to verify the operation of a specific keyboard, a diskette drive, the printer, or the communication facilities without disrupting the operation of other programs that are running on your system, do the following:

1. Insert the verification diskette into one of the diskette drives.
2. Make certain that the Load prompt is displayed as follows: (If you do not have the Load prompt on any screen, you may have to end a foreground job.)



```
Program name:
Device address:
Partition number:

Press ENTER                                05-00
```

3. Go to the appropriate sections of this manual for the tests you choose to run as follows:

- Keyboard (TKBD)—Section 3
- Diskette drive (TDSK)—Section 4
- Printer (TPRNT)—Section 5
- Communications (TCOM)—Section 6

If your 5280 System is not on, or if you cannot get the Load prompt display on the screen, you must power down your system and perform an IPL using the verification diskette. Go to Section 2 of this manual for instructions for the verification procedure. If you run the verification procedures after doing the IPL from the verification diskette, the system is dedicated to running verification procedures only (that is, no other types of programs can run on the system).

Section 2. Verification Procedure for Controller Internal Checks

START

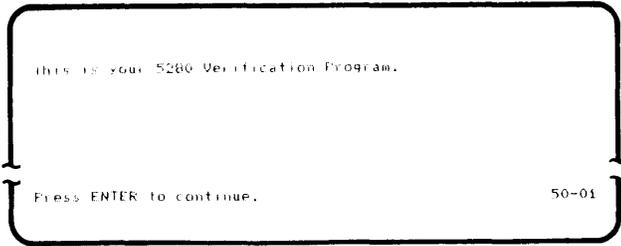
Before you begin the verification procedure, ensure that:

- The control unit Power switch is off.
- The Power switches are on for all other devices.
- All diskettes have been removed from all other drives.
- If you have the Keylock feature, the key is not in the locked position.

IPL on the 5280 System Using the Verification Diskette

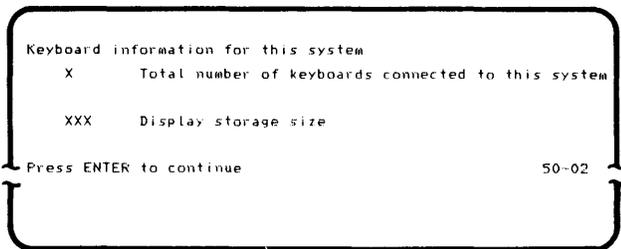
1. Obtain the verification diskette (labeled Verification Diskette, Part 7364590) from one of the IBM binders that were shipped with the control unit (5285, 5286, or 5288).
2. Locate keyboard 0 (the indicators are displayed at this station during IPL).
3. Open the diskette locking lever of a diskette drive and insert the verification diskette into the diskette drive. Be certain that the diskette is pushed all the way to the back of the drive.
4. Close the diskette locking lever.
5. Turn the Power switch for the control unit to the | (On) position. This starts the internal checks for the system. When these checks have been satisfactorily completed, the system automatically loads the verification IPL program.

6. If the IPL program loads satisfactorily, the following prompt is displayed on the keyboard O display screen only:



If this prompt does not appear, go to BRANCH A.

7. Press the Enter key to continue. The next prompt tells you how much I/O storage (display storage) is available and working on the system and how many keyboards can be connected to the system. If this prompt does not appear, go through the checklist in BRANCH A, step A1.



8. Press the Enter key. The system initializes all the keyboards with a screen size of 480 and loads the partition load program.

Go to step 9, page 6.

BRANCH A

- A1. When you turned on the Power switch, did the display screens show a number of test patterns, and did the keyboards buzz?

Y N

Check the following:

- The Power switches on all devices are set to the | (On) position.
- All power cord plugs are plugged into receptacles.
- Power is available at each outlet. If you have power at the controller, the drive in use indicators come on when the controller power switch is first turned on.
- Display, diskette drive, and keyboard cables are connected properly.
- If you have the Keylock feature, the key is not turned to the locked position.
- Screen intensity knob is turned to the right as far as possible.

If all these checks appear OK, turn the control unit power off and leave it off for at least 10 seconds. Go back to the beginning of this procedure (Start) and try again, using another diskette drive. If this is the second time through this branch and all the checks appear to be all right, call your service representative.

- A2. Does your display screen have any indicators on? (The indicators are the boxes and dashes that appear on the upper right-hand side of your display screen. A rectangular box shows that the indicator is on; a dash shows that the indicator is off.)

Y N

Go to step A3.

Continue

Branch A (Continued)

Does your display screen have either six or two indicators on?

Y N

Call your service representative and report a power on checkout failure.

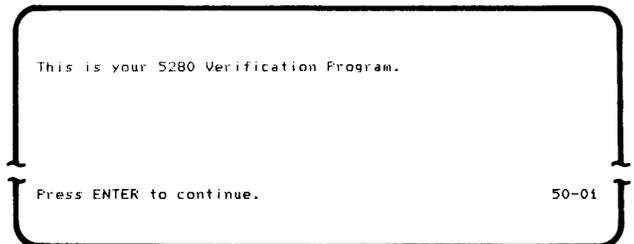
If you have six indicators on, ensure that:

- The diskette is inserted properly.
- The verification diskette is being used.
- The diskette locking lever is closed.

Turn the control unit power off and leave it off for at least 10 seconds. Go back to the beginning of this procedure (Start) and do the procedure again. If six indicators turn on again, try the procedure using a different diskette drive. If a different drive gives the same results, call your service representative and report a power on checkout failure.

If you have two indicators on, something is wrong with the verification diskette. If you have another verification diskette, try this procedure again with the new verification diskette. If you do not have another verification diskette, call your service representative.

A3. Does the following prompt appear on your screen?



Y N

Are any messages or error codes displayed (error codes are displayed on the top line of the display)?

Y N

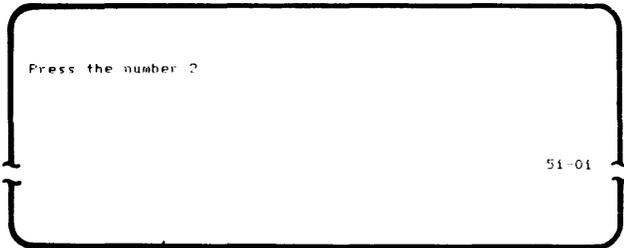
Call your service representative and report a power on checkout failure.

Check the *Message Manual*. If the message action tells you to run the verification program, call your service representative and report the error code displayed.

Return to the procedure for starting these programs, step 7.

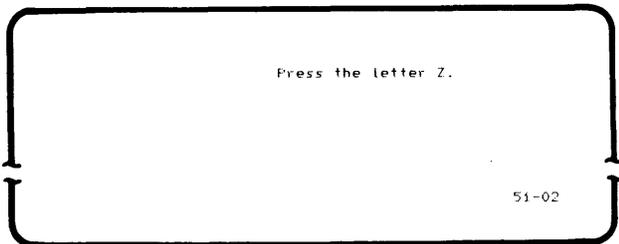
END

9. After a short time, the partition load program is loaded. The next two displays and your responses tell the system what kind of keyboards are connected to your system.
- a. The first prompt to appear is:



Press the number 2; do not press the Enter key.
If your keyboard has two keys with the number 2 on the keytop, you may use either key.

- b. The prompt should change to:



Press the letter Z; do not press the Enter key.

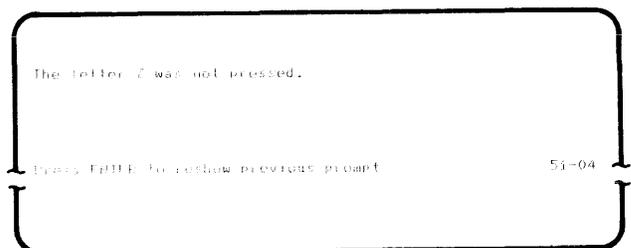
If you have trouble with your responses to either of these prompts, or if the display does not change as it should, go to **BRANCH B**.

- c. After you have correctly responded to both these prompts at keyboard 0 (that is, the keyboard you are presently using), go to the next keyboard and repeat steps a and b. Continue doing this until you have responded from each keyboard that is attached to the system.

BRANCH B

If you had trouble entering either the 2 or the Z on the previous two screens, check the following:

- If you entered something other than the character requested, one of the following displays appear:



OR

Continue

10. When the program finishes, the Load prompt appears.

This line appears only when using the verification IPL.

```
Verification test in operation.  
Program name:  
Device address:  
Partition number:  
  
Press ENTER 50-00
```

11. When this prompt appears, you can enter the program name of the verification program you want to run. If you want to run all the verification programs, go to the next section of this manual. If you want to run only selected verification programs, go to the sections of this manual that deal with the programs you want to run.

Branch B (Continued)

```
The number 2 was not pressed.  
  
Press ENTER to reshow previous prompt. 51-03
```

- If you have trouble entering the Z, you might have to press the Alpha Shift key to enter a Z.

If this problem occurs only on one keyboard, you might have a faulty keyboard, or the keyboard might be unplugged. Check the keyboard plug. If the plug appears to be all right, turn the power off and exchange keyboards (that is, replace the failing unit with another one). If this action corrects the problem, the first keyboard is faulty. Call your service representative.

If you cannot do these steps at any keyboard, start this procedure again, using another verification diskette.

END

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Section 3. Keyboard Verification Procedure (TKBD)

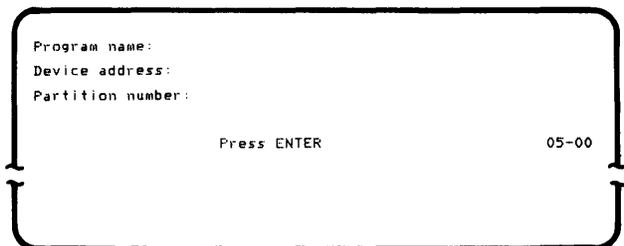
Use the keyboard verification procedure whenever you are:

- Having a problem with one or more keyboards or magnetic stripe readers
- Running the total verification package

Test all keyboards and magnetic stripe readers before going to Section 4. *Diskette Drive Verification Procedure.*

START

1. If you do not already have a verification diskette in the drive you are going to use, do the following:
 - a. Open the diskette locking lever.
 - b. Insert the verification diskette into the drive. Be sure to push the diskette all the way to the back of the drive.
 - c. Close the diskette locking lever.
2. The following prompt must be on your display: (If you do not have the Load prompt on the screen, you must end the job.)



The image shows a terminal window with a black border. Inside, the text is as follows:

```
Program name:  
Device address:  
Partition number:  
  
Press ENTER                                05-00
```

3. Enter the program name TKBD and press the Field+ or the Field Exit key. If you cannot enter the program name, go to BRANCH C, step C2.
4. Enter the address of the diskette drive containing the verification diskette. The address is the four-digit number on the sticker below the diskette slot. (The other two characters indicate the drive type.)

5. Press the Enter key. The following display appears if you have a magnetic stripe reader. If you do not have a magnetic stripe reader, go to *Part 1 (Keyboard)*.

```
Workstation test.
Options are
  1. Keyboard
  2. Magnetic stripe reader
Select option:  _ Press ENTER                               52-01
```

6. Select the option for the test you want, and press the Enter key. If you choose option 1, keyboard, continue in *Part 1 (Keyboard)* of this procedure. If you want to test only the magnetic stripe reader, option 2, go to *Part 2 (Magnetic Stripe Reader)* of this procedure.

Note: If you have a magnetic stripe reader attached to one of your keyboards, the display that lets you select keyboards or the magnetic stripe reader appears at each display. If you attempt to test the magnetic stripe reader from a keyboard that does not have a magnetic stripe reader attached, the system tells you to pass your test card through the reader. The test, however, can only be run from the keyboard that has the reader attached. If you inadvertently use the wrong keyboard, you have to end the job (use the Cmd key and the End of Job key) to end the test. You may then restart the test by entering the program name and continuing as before.

Part 1 (Keyboard)

1. The keyboard test program is loaded into the system. The keyboard and display test determines if data from the keyboard is being received by the system.
2. After the program is loaded, the following message is displayed:

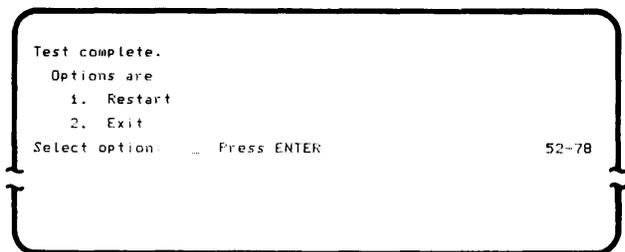
```
Enter keyboard characters and observe display. If these do
not correspond refer to manual.

Press ENTER to terminate.                                   52-03
```

3. This display enables you to enter characters from the keyboard and to verify that each character you enter is correctly received and displayed by the system. If you are running this program using the verification IPL, only the alphabetic A through Z, numerics 0 through 9, and the blank (spacebar) should be tested. Some of the special characters might not function correctly now.
4. Enter each character you intend to verify, and observe the display. Try to enter each character that is available, for example:

ABCDEFGHIJKLMNOPQRSTUVWXYZ 0123456789

5. If all the characters entered correctly, press the Enter key. If some of the characters did not enter as you expected, go to BRANCH C.
6. The following display appears:



7. You may test other keyboards and any magnetic stripe readers by selecting option 2 which takes you back to the prompt for program name. At the next keyboard, repeat *Part 1 (Keyboard)*. Continue repeating this part until you have completed testing keyboards.

If you select option 1 (Restart):

- If you have the magnetic stripe reader, the program returns to the Workstation Test display. You can then choose to test other keyboards or magnetic stripe readers.
- If you do not have the magnetic stripe reader, the program returns to the Load prompt. To continue testing keyboards, enter the program name TKBD, and continue through the keyboard verification procedure.

BRANCH C

If some of the characters you entered from the keyboard were not correctly displayed, check the following:

- C1. Press the  (Field Backspace key) to move the cursor back to the beginning of the field. Try entering the characters again. If the information is correctly received this time, return to the branch point (step 5) and continue the procedure.
- C2. If the information is still incorrectly received, do the following:

Do you have another keyboard like the one you are running the TKBD test from?

```

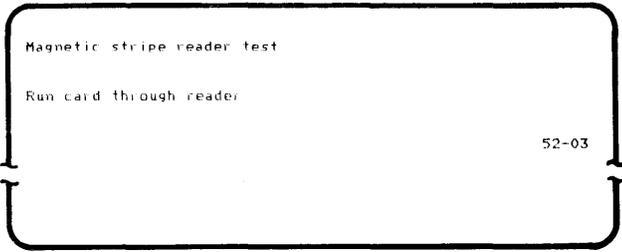
Y N
|
| Did you run the verification IPL program as
| described in Section 2 of this manual?
|
Y N
|
| Go to Section 2 of this manual and run the
| verification IPL program; then run TKBD.
|
| Call your service representative.
  
```

End all jobs that are running on the system. Turn power off. Check the keyboard cables. If the cables are properly connected, disconnect the keyboard you are using, and replace it with another one. When you have the new keyboard plugged in, go to Section 2 and perform the verification IPL.

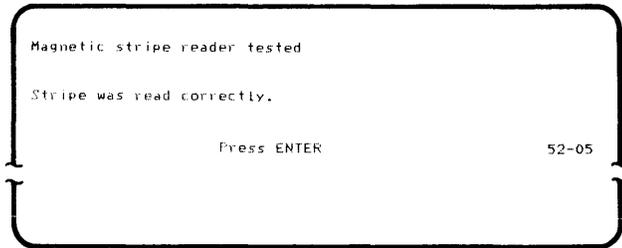
Continue

Part 2 (Magnetic Stripe Reader)

1. After you select option 2 of the work station test and press the Enter key, the magnetic stripe reader test program is loaded into the system. This test determines if the magnetic stripe reader is correctly reading data and sending the data to the system. This test must be run from the keyboard that is associated with the magnetic stripe reader being tested.
2. The following display appears:



3. Obtain the magnetic stripe test card from the IBM binder.
4. Position the magnetic stripe reader so that the wide end of the slot is to your right.
5. Place the test card to be read so that the magnetic stripe is at the bottom of the card and facing you.
6. Pass the card through the reader from right to left.
7. If the system successfully reads the card, the following is displayed:



Branch C (Continued)

- C3. Try again to enter characters from the keyboard, and observe them on the display.

Are the characters you entered correctly displayed?

Y N

Did you run the verification IPL program as described in Section 2 of this manual?

Y N

Go to Section 2 of this manual and run the verification IPL program; then run TKBD.

Call your service representative.

The first keyboard you were using is faulty. Notify your service representative of the faulty keyboard, and continue with the keyboard verification test. Return to the branch point, step 5.

END

If the system does not successfully read the card, go to BRANCH D.

8. Press the Enter key. The following display appears:

```
Test complete.  
Options are  
  1. Restart  
  2. Exit  
Select option:  _ Press ENTER                    52-78
```

9. If you select option 1, you may run the same test again. You may test any keyboard and any other magnetic stripe readers by selecting option 2, which takes you back to the prompt for program name. You may then repeat the procedure until you have completed testing all keyboards and magnetic stripe readers.

BRANCH D

- D1. If the magnetic stripe reader did not successfully read the card, one of the following displays appears:

```
Magnetic stripe reader tested  
Stripe reader error  
  
Retry badge or press ENTER to terminate.                    52-06
```

```
Magnetic stripe reader tested  
Badge data mismatch  
  
Press ENTER                                                  52-07
```

- D2. Retry the card. If the same error occurs, try another test card if you have one. If neither card works, call your service representative.
- D3. Press the Enter key. Return to the procedure for testing the magnetic stripe reader, step 8.
- D4. If neither of the above screens appears, the magnetic stripe reader is failing. Call your service representative.

END

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Section 4. Diskette Drive Verification Procedure (TDSK)

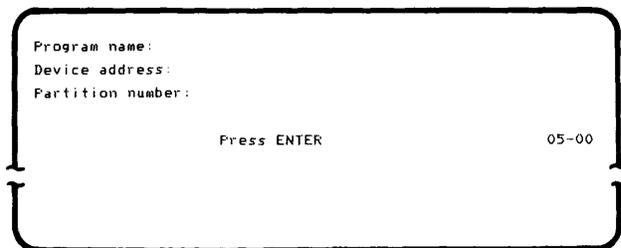
Use the diskette drive verification procedure whenever you are:

- Having a problem with one or more diskette drives
- Running the total verification package

START

The diskette verification program can be loaded either from the diskette drive you want to test, or from another diskette drive. If you are experiencing problems with one diskette drive, you may want to load the verification program from another drive, and then run the verification tests on the drive that is experiencing problems.

1. If you do not already have a verification diskette in the drive you want to use to load the verification program, do the following:
 - a. Open the diskette locking lever.
 - b. Insert the verification diskette into the drive. Be sure to push the diskette all the way to the back of the drive.
 - c. Close the diskette locking lever.
2. The following prompt must be on your display: (If you do not have the Load prompt on the screen, you must end the job.)



The screenshot shows a terminal window with a rounded rectangular border. Inside, the text is as follows:

```
Program name:  
Device address:  
Partition number:  
  
Press ENTER                                05-00
```

3. Enter the program name TDSK, and press the Field+ or the Field Exit key.
4. Enter the address of the diskette drive containing the verification diskette. The address is the four-digit number on the sticker below the diskette slot. (The other two characters indicate the drive type.)

5. Press the Enter key. The diskette program is loaded into the system. The following display appears: (If this display does not appear, go to BRANCH E.)

```
What type of drive do you want to test?
Options are
  1. 1 -- Single density
  2. 2D -- Double density
Select option:  _  Press ENTER                    53-01
```

6. Select the option for the type of diskette drive you want to test. (The two characters on the sticker with the device address indicate the drive type.)
7. Press the Enter key.
8. The following prompt appears:

```
Insert verification diskette in drive being tested and
enter device address:

Press ENTER                    53-02
```

9. Move the verification diskette to the drive to be tested if necessary, and enter the device address of the diskette drive to be tested. Press the Enter key.
10. If you selected option 1, single density, when asked for the drive type, continue in this procedure by doing *Part 1 (Single Density)*. If you selected option 2, double density, go to *Part 2 (Double Density)* of this procedure.

BRANCH E

If any of the diskette tests do not run successfully, the screen shows either a four-digit error code or an error message. Try rerunning the test using another diskette. If the problem does not recur, the first diskette is bad. If the same problem appears, the diskette drive is failing. If an error code appears, look up the code in the *Message Manual*. If the description of the message directs you to run the verification procedure, call your service representative. Run TSYSLOG or TCOMLOG, as appropriate.

If an error message appears on the screen, record the message and call your service representative. Relay this message to the service representative. For example, if the error occurred while reading track 73, the error message reads:

Miscompare on track 73

END

Part 1 (Single Density)

1. The program tests the drive by reading from and writing to the diskette. While the program is running, the following display is on the screen:

```
Diskette 1 read/write test in process.

53-03
```

2. If the test runs successfully, the following display appears:

```
Type 1 test complete.

Press ENTER

53-04
```

If the test does not run successfully, go to
BRANCH E.

3. Press the Enter key. The following display appears:

```
Test complete.
Options are
  1. Restart
  2. Exit
Select option:  _ Press ENTER

53-78
```

BRANCH E

If any of the diskette tests do not run successfully, the screen shows either a four-digit error code or an error message. Try rerunning the test using another diskette. If the problem does not recur, the first diskette is bad. If the same problem appears, the diskette drive is failing. If an error code appears, look up the code in the *Message Manual*. If the description of the message directs you to run the verification procedure, call your service representative. Run TSYSLLOG or TCOMLOG, as appropriate.

If an error message appears on the screen, record the message and call your service representative. Relay this message to the service representative. For example, if the error occurred while reading track 73, the error message reads:

Miscompare on track 73

END

4. You may test any other diskette drives by selecting option 1 which takes you back to the following display:

```
What type of drive do you want to test?
Options are
  1. 1 -- Single density
  2. 2D -- Double density
Select option:  _ Press ENTER                    53-01
```

Part 2 (Double Density)

1. The program tests a 2D drive by first testing its ability to read from and write to a diskette 1. The verification diskette is used for the type 1 test. If you select option 2 and actually have a type 1 drive, the program does the test for the type 1 diskette. If you try to continue with a type 2 diskette, the system detects an error. While this part of the test is running, the following display is on the screen:

```
Diskette 1 read/write test in process.
                                                                    53-03
```

2. If this test runs successfully, the following display appears:

```
Type 1 test complete
Remove the verification diskette.
Insert a blank diskette 2D in the drive being tested.

          Press ENTER                    53-05
```

If this test does not run successfully, go to
BRANCH E.

3. Remove the verification diskette from the drive being tested and replace it with a blank 2D diskette. This blank diskette can be either a diskette that has no data written on it, or one that has data which you no longer wish to keep.
4. Press the Enter key. The program then tests the ability of the drive to read from and write to a diskette 2D. While the test is running, the following display appears:

```
Diskette 2D read/write test in process.

                                          53-06
```

BRANCH E

If any of the diskette tests do not run successfully, the screen shows either a four-digit error code or an error message. Try rerunning the test using another diskette. If the problem does not recur, the first diskette is bad. If the same problem appears, the diskette drive is failing. If an error code appears, look up the code in the *Message Manual*. If the description of the message directs you to run the verification procedure, call your service representative. Run TSYLOG or TCOMLOG, as appropriate.

If an error message appears on the screen, record the message and call your service representative. Relay this message to the service representative. For example, if the error occurred while reading track 73, the error message reads:

Miscompare on track 73

END

5. If the test runs successfully, the following display appears:

```
Type 2D test complete.  
  
Press ENTER 53-07
```

If the test does not run successfully, go to **BRANCH E**.

6. Press the Enter key. The following display appears:

```
Test complete.  
Options are  
1. Restart  
2. Exit  
Select option: _ Press ENTER 53-78
```

7. You may test any other diskette drives by selecting option 1, which takes you back to the following display:

```
What type of drive do you want to test?  
Options are  
1. 1 -- Single density  
2. 2D - Double density  
Select option: _ Press ENTER 53-01
```

When you have finished testing diskette drives, select option 2 on the Test Complete prompt which returns you to the prompt for program name.

BRANCH E

If any of the diskette tests do not run successfully, the screen shows either a four-digit error code or an error message. Try rerunning the test using another diskette. If the problem does not recur, the first diskette is bad. If the same problem appears, the diskette drive is failing. If an error code appears, look up the code in the *Message Manual*. If the description of the message directs you to run the verification procedure, call your service representative. Run TSYSLOG or TCOMLOG, as appropriate.

If an error message appears on the screen, record the message and call your service representative. Relay this message to the service representative. For example, if the error occurred while reading track 73, the error message reads:

Miscompare on track 73

END

Section 5. Printer Verification Procedure (TPRNT)

Use the printer verification procedure whenever you are:

- Having a problem with one or more printers
- Running the total verification package

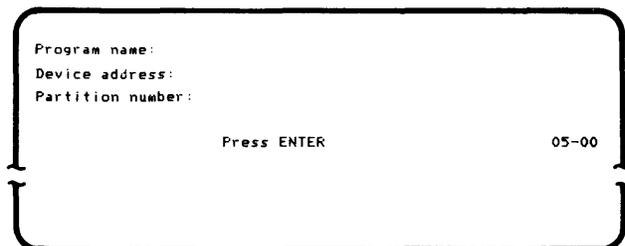
START

The printer verification program verifies the operation of your printer. Any printer can be tested from any keyboard. It is usually most convenient to test the printer from the closest work station.

1. If you do not already have a verification diskette in the drive you are going to use, do the following:
 - a. Open the diskette locking lever.
 - b. Insert the verification diskette into the drive. Be sure to push the diskette all the way to the back of the drive.
 - c. Close the diskette locking lever.
2. Check the printer to make certain that:
 - a. The power is on.
 - b. Forms are inserted (must be 132-column wide paper).
 - c. The Ready light is on.

If the Ready light is not on, you may need to press Start, or press Stop and then Start, to get the Ready light to come on.

3. The following prompt must be on your display: (If you do not have the Load prompt on the screen, you must end the job.)



The screenshot shows a terminal window with a black border. Inside, the text is as follows:

```
Program name:  
Device address:  
Partition number:  
  
Press ENTER                                05-00
```

4. Enter the program name TPRNT, and press the Field+ or the Field Exit key.
5. Enter the device address of the drive containing the verification diskette. The device address is the four-digit number on the sticker below the diskette slot. (The other two characters indicate the drive type.)
6. Press the Enter key. The printer verification program is loaded into the system.
7. The following display appears:

```
Printer test
Specify the following.
Model number:
Printer address:

                Press ENTER                54-01
```

8. Enter the model number of the printer. This information can be found on the front panel of the printer. Press the Field+ or the Field Exit key.
9. Enter the address of the printer. This address is the number found on the sticker on the front of the machine.
10. Press the Enter key. The following display appears:

```
Do you want continuous operation?
1. Yes
2. No
Select option: 2 Press ENTER                54-02
```

11. This display automatically selects option 2 unless you override it and enter a 1. Option 1 causes the printer to print continuously. This option is useful if you are having problems with paper feeding and want to cause the printer to run until the problem recurs. The printer can be stopped by pressing the Cancel key on the printer or by pressing the Cmd key and the End of Job key on the keyboard. This causes the completion prompt to appear; you can then choose either to restart the test or to exit the test.

12. Option 2 causes the printer test to run once and then stop. While the printer test is running, the following display appears:

```
TPRNT in process.  
  
54-03
```

13. When the test is complete, the following prompt appears:

```
Test complete.  
Options are  
1. Restart  
2. Exit  
Select option: _ Press ENTER  
  
54-78
```

If this prompt does not appear, go to BRANCH F.

14. Go to the printer and visually check that the pattern shown in Figure 1 was printed. If the pattern is not correct, call your service representative.
15. You may test any other printers by selecting option 1 of the Test Complete prompt, which takes you back to the following display:

```
Printer Test  
Specify the following.  
Model number:  
Printer address:  
  
Press ENTER  
  
54-01
```

When you have finished testing the printers, select option 2 on the Test Complete prompt, which returns you to the prompt for program name.

BRANCH F

If the Test Complete prompt does not appear, the test was unsuccessful. In this case, the screen blinks, and an error code is displayed. Look up this code in the *Message Manual*. If the explanation directs you to run the verification procedures, record the error code, run TSYSLLOG or TCOMLOG as appropriate, and call your service representative.

END

Section 6. Communications Verification Procedure (TCOM)

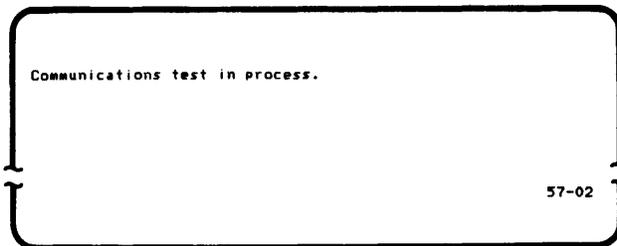
Use the communications verification procedure whenever you are:

- Having a problem with the communications adapter
- Running the total verification package

START

The communications verification program verifies the operation of your communications adapter. The adapter can be tested from any keyboard.

While the communications verification program is running, the following appears on the screen:



This display may stay on the screen for as long as 30 seconds. If the display does not change after that time, an error has occurred from which the system cannot recover. Call your service representative.

If, while the communications verification program is running, an error code appears on the screen, refer to the *Message Manual* for further information.

If the communications test runs successfully and you are still having problems with communications, make sure that your communications configuration record is correct before calling your service representative.

1. If you do not already have a verification diskette in the drive you are going to use, do the following:
 - a. Open the diskette locking lever.
 - b. Insert the verification diskette into the drive. Be sure to push the diskette all the way to the back of the drive.
 - c. Close the diskette locking lever.
2. If you have the Keylock feature, the key must be turned to the left.
3. The following prompt must be on your display:

```
Program name:
Device address:
Partition number:

                Press ENTER                05-00
```

4. Enter the program name TCOM, and press the Field+ or the Field Exit key.
5. Enter the device address of the drive containing the verification diskette. The device address is the four-digit number on the sticker below the diskette slot. (The other two characters indicate the drive type.)
6. Press the Enter key. The communications verification program is loaded into the system.
7. The following prompt appears:

```
Select feature type
Options are
  1. EIA          3. Integrated modem
  2. DDSA
Select option:   _ Press ENTER                57-01
```

8. Select the appropriate option for the type of communications modem you have. Press the Enter key. Then go to the part of this procedure for the option you selected:

Option 1—Part 1 (EIA)
Option 2—Part 2 (DDSA)
Option 3—Part 3 (Integrated Modem)

Part 1 (EIA)

1. The following appears on the screen:

```
Is the communications cable attached to
an IBM modem?
Options are
  1. Yes      2. No
Select option: 2 Press ENTER          57-06
```

2. Select the correct option and press the Enter key. Option 2 is selected unless you select option 1.
3. If option 1 (IBM modem) is chosen, the test is run using the IBM modem.

Be sure the modem is set up as follows:

- Leased line selected
- Test/Operate switch set to Operate
- Power switch set to On
- Talk/Data switch turned to Data
- Power light on
- Ready light on (3872/3874) or Operate light on (3863/3864)

While the test is running, the following appears on the screen:

```
Communications test in process.
                                         57-02
```

4. If the test runs successfully using the IBM modem, the Test Complete prompt appears. You may choose to restart or exit the test.

5. If option 2 (non-IBM modem) is chosen, the communications test in process display appears briefly and then the following display appears:

```
Does the communications cable have
a TEST/OPERATE switch?
Options are
1. Yes          2. No
Select option:  2 Press ENTER                    57-03
```

6. Option 2 is selected unless you select option 1. If option 1 (Yes) is chosen, the following display is presented:

```
Turn the communications cable switch to
the TEST position.

Press ENTER to continue.                        57-04
```

7. Turn the communications cable switch to the TEST position and press the Enter key.
8. The following display appears:

```
Communications test in process.

                                                                    57-02
```

9. If the test does not run successfully, an error code appears on the screen. See the *Message Manual* for further information.

10. After the test has completed, the following prompt is displayed:

```
Turn the communication cable switch to  
the OPERATE position.  
  
Press ENTER to continue. 57-05
```

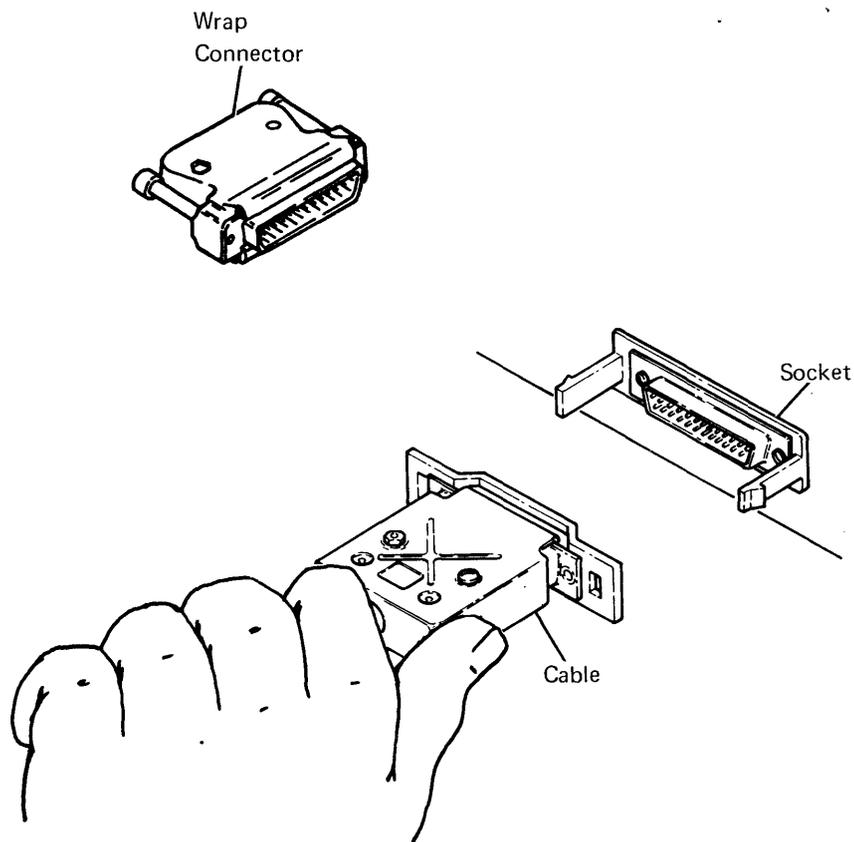
11. After returning the switch to the OPERATE position, press the Enter key.
12. If the test completes successfully, the following display appears:

```
Test complete.  
Options are  
  1. Restart  
  2. Exit  
Select option: 2 Press ENTER 57-78
```

13. If option 2 (no TEST/OPERATE switch) is chosen, the following display appears:

```
Prepare the wrap connector. (See manual.)  
  
Press ENTER to continue. 57-09
```

14. Obtain the wrap connector from the *Verification* binder. Disconnect the communications cable from the modem. Put the wrap connector on the end of the cable. Press the Enter key.
15. If you encounter an error while running this test, remove the connector from the end of the cable. Remove the cable from the communications socket on the back of the controller and replace the cable with the wrap connector as shown. Press the Enter key and restart the rest.



16. If the test runs successfully with the connector on the back of the controller, call your service representative and relay this information.

17. If the test completes successfully, the following display appears:

```
Test complete.  
Options are  
  1. Restart  
  2. Exit  
  
Select option: 2 Press ENTER                    57-78
```

18. Remove the wrap connector from the back of the machine and replace the cable. You can then choose either to end the test or to run the test again.

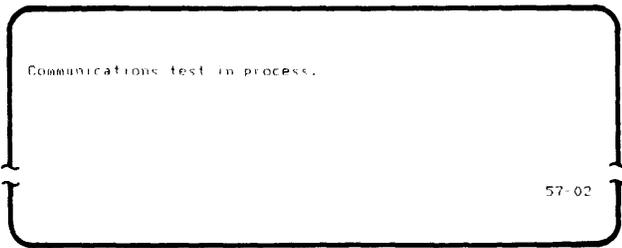
Part 2 (DDSA)

1. If option 2 (DDSA) is chosen, the following screen appears:

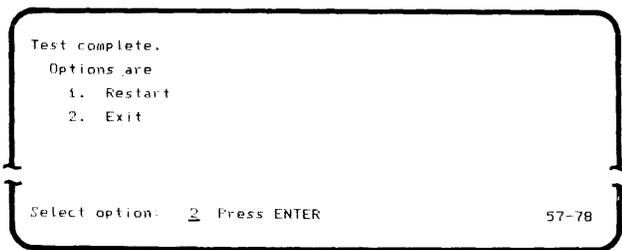
```
Prepare the wrap connector. (See manual.)  
  
Press ENTER to continue.                            57-09
```

2. Obtain the wrap connector from the *Verification* binder. The binder contains two connectors. Use the 15-pin connector for this portion of the test. Disconnect the cable from the channel service unit (CSU). Put the wrap connector on the end of the cable. Press the Enter key.

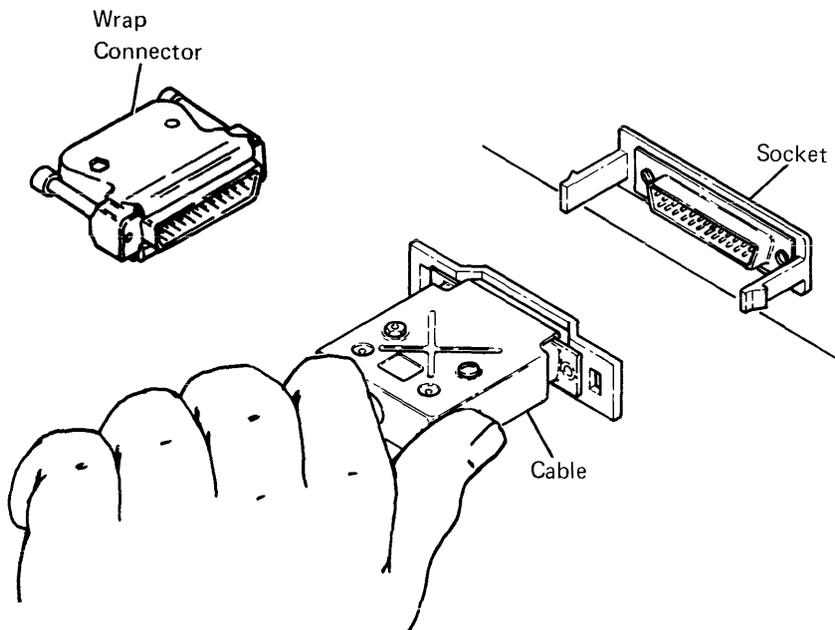
3. The communications test runs and the following screen appears:



4. If the test is successful, the following screen appears:



5. If you encounter an error while running this test, disconnect the cable from the back of the controller as shown and replace the cable with the 25-pin connector from the *Verification* binder. Press the Enter key and restart the test.



6. If the test runs successfully with the connector on the back of the controller, call your service representative and relay this information.
7. Remove the wrap connector from the back of the machine and replace the cable. You can then choose either to end the test or to run the test again.

Part 3 (Integrated Modem)

1. If option 3 (integrated modem) is chosen, the communications test runs. The following information is displayed:

```
Communications test in process. .
57-02
```

2. After this portion of the test completes, the following appears on the screen:

```
Does your communications have
switched network backup?
Options are
  1. Yes      2. No
Select option: 2 Press ENTER
57-07
```

3. Select the appropriate option and press the Enter key.

4. If option 2 (No) is chosen, the test complete display appears. If option 1 (Yes) is chosen, the test is run with switched network backup on. The communications test in process display appears while the test is running.
5. If the test completes successfully, the following appears on the screen:

```
Test complete.  
Options are  
  1. Restart  
  2. Exit  
  
Select option: 2 Press ENTER                    57-78
```

6. You can then choose either to end the test or to run the test again.

Section 7. How to Dump the Error Log

This section contains the following four procedures for saving the error log information:

- How to dump the system error log
- How to dump the communications error log
- How to use SYSDUMP
- How to take an absolute dump

HOW TO DUMP THE SYSTEM ERROR LOG

The system error log contains all the hardware-related errors that occur from the time you start the system to the time you stop the system, except for the keyboard errors. Because the error log is lost when the system is powered off, or whenever you perform an IPL, it is necessary that you dump the error log every day before stopping the system.

The error log is important to service personnel; they need it to service your system.

The machine verification diskette contains the program and the data set space required to take the dump.

To take the error log dump, do the following:

1. Insert the machine verification diskette and close the diskette locking lever.
2. Enter TSYSLOG, and press the Field+ or the Field Exit key.
3. Enter the device address, and press the Enter key. The program is loaded into the system.

4. If the date is not already entered into the system, the following display appears:

```
Enter date.  
Day:  
Month:  
Year:  
  
Press ENTER 55-01
```

5. After the date is entered, press the Enter key. The Time of Day prompt appears:

```
Enter time.  
Hour:  
Minute:  
  
Press ENTER 55-02
```

6. Enter the time and press the Enter key. The TSYSLOG program begins running. While it is running, the following appears on the screen:

```
TSYSLOG--System error logs are being written to TLOGFILE.  
Record #.....  
  
55-03
```

The record number on the display changes as the logs are dumped.

7. If the program runs successfully, the following prompt is displayed:

```
TSYSLOG complete.  
Options are  
  1. Restart  
  2. Exit  
Select option:   Press ENTER
```

55-04

8. If an error is detected or if the SYSREQ key was pressed before the program finished, the following prompt appears:

```
TSYSLOG terminated.  
Options are  
  1. Restart  
  2. Exit  
Select option:   Press ENTER
```

55-05

9. Remove the verification diskette.

HOW TO DUMP THE COMMUNICATIONS ERROR LOG

The communications error log contains all the communications errors that occur from the time you start communications to the time you stop communications. The error log information is important to service personnel; they need it to service your system.

Note: The communications error log is lost when you power down the system or perform IPL.

If you are instructed by the *Message Manual* to dump the error log, do the following:

1. Insert the machine verification diskette and close the diskette locking lever.
2. Enter TCOMLOG, and press the Field+ or the Field Exit key.
3. Enter the device address of the drive containing the verification diskette, and press the Enter key. The program is now being loaded into the system.

When the program is loaded, the following display appears:

```
TCOMLOG in process.
```

56-01

After the error log has been written on diskette, TSYSLOG is automatically loaded to save the system errors in the communication log area. See *How to Dump the System Error Log* for the displays and instructions.

HOW TO USE SYSDUMP

The system dump procedure allows you to obtain a:

- Memory dump
- Partition dump
- Formatted diskette

The memory dump and partition dump are used to print data from a diskette that was used for an absolute dump. The formatted diskette is used for taking an absolute dump. This diskette should be prepared before an absolute dump is needed and stored with your other system diskettes.

1. If you do not have a verification diskette in the drive you are going to use, do the following:
 - a. Open the diskette locking lever.
 - b. Insert the verification diskette into the drive. Be sure to push the diskette all the way to the back of the drive.
 - c. Close the diskette locking lever.
2. The following prompt must be on your display:

```
Program name:  
Device address:  
Partition number:  
  
Press ENTER 05-00
```

3. Enter the program name SYSDUMP, and press the Field+ or the Field Exit key.
4. Enter the device address of the drive containing the verification diskette. The device address is the four-digit number on the sticker below the diskette slot. (The other two characters indicate the drive type.)

5. Press the Enter key. The SYSDUMP program is loaded into the system.
6. The following prompt appears:

```
SYSDUMP utility options are:  
1. Memory dump  
2. Partition dump  
3. Format a diskette  
Select option _ Press ENTER 49-01
```

7. Select the appropriate option for the function you want to do. Press the Enter key. Then go to the part of this procedure for the option you selected:

- Option 1—Part 1 (Memory dump)
- Option 2—Part 2 (Partition dump)
- Option 3—Part 3 (Format a diskette)

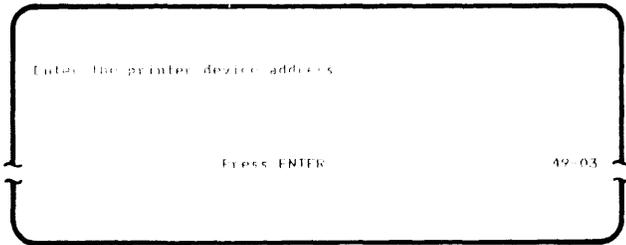
Part 1 (Memory Dump)

1. The following appears on the screen:

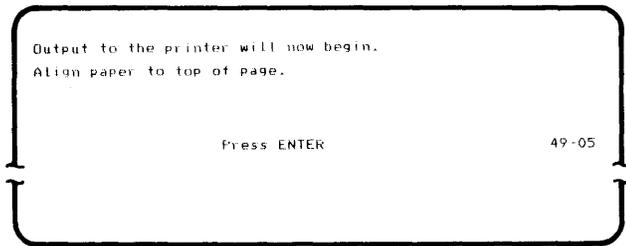
```
Insert a diskette and enter  
device address  
  
Press ENTER 49-02
```

2. Insert the absolute dump diskette into a drive, and enter the device address of the drive.

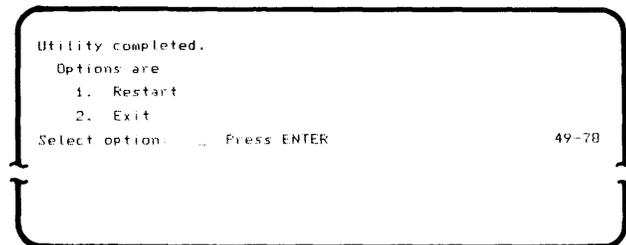
3. Press the Enter key. The following appears on the screen:



4. Enter the device address of the printer, and press the Enter key.
5. The following appears on the screen:



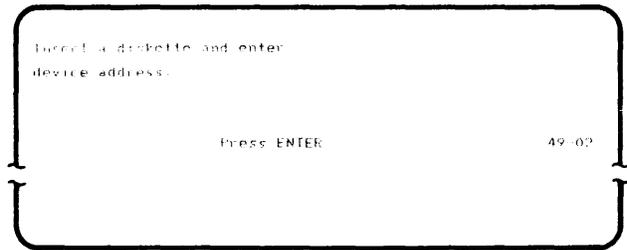
6. The memory dump is printed on the printer you specified. When it has completed, the following appears on the screen:



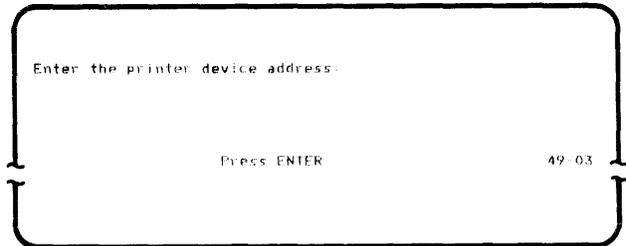
7. You may choose to restart the program by selecting option 1, or you may exit the program by choosing option 2 which returns you to the Load prompt.

Part 2 (Partition Dump)

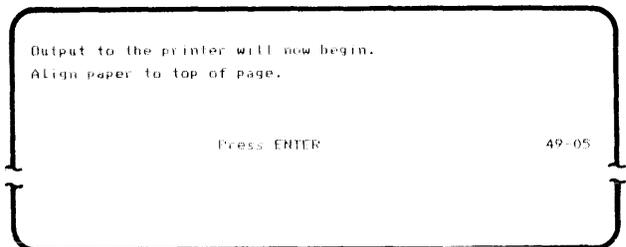
1. The following appears on the screen:



2. Insert the absolute dump diskette into a drive, and enter the device address of the drive.
3. Press the Enter key. The following appears on the screen:



4. Enter the device address of the printer, and press the Enter key.
5. The following appears on the screen:



- Align the paper, and press the Enter key. The following appears on the screen:

```
Enter partition number:  
  
Press ENTER 49-04
```

- Enter the number of the partition you want to print from the absolute dump diskette.
- Press the Enter key. The partition dump prints out on the printer. Save this printout for the service representative. The following appears on the screen:

```
Utility completed.  
Options are  
1. Restart  
2. Exit  
Select option: _ Press ENTER 49-78
```

- You may choose to rerun the program (using another partition number if you want), or you may exit the program.

Part 3 (Format a Diskette)

- The following appears on the screen:

```
Insert diskette and enter  
device address:  
  
Press ENTER 49-02
```

- Insert an initialized diskette, and enter the device address of the diskette drive being used.
- Press the Enter key. The following appears on the screen:

```
SYSDUMP in process.  
  
49-06
```

- This program sets up a data set on the diskette that you may need later for taking an absolute dump. When the program has completed, the following appears on the screen:

```
Utility completed.  
Options are  
1. Restart  
2. Exit  
Select option: _ Press ENTER 49-78
```

- You may choose either to rerun the test or to exit the test.
- Remove the diskette from the drive, label it an absolute dump diskette, and store it with the other system diskettes.

HOW TO TAKE AN ABSOLUTE DUMP

This procedure must be completed in a very short time. Read through the entire section before starting so that you are prepared to do all the steps quickly.

To take an absolute dump, do the following:

1. Obtain the absolute dump diskette that was created using SYSDUMP.
2. Find an active diskette drive (red indicator light on).
3. Open the diskette locking lever and remove the diskette.

Note: When you open the locking lever, the system begins to buzz. You have 5 seconds to remove the diskette, insert the absolute dump diskette, and close the locking lever.

4. The diskette drive starts writing on the diskette; you hear the drive click. Do not remove the diskette until the drive has finished writing.
5. When you are certain that the clicking has stopped, open the diskette locking lever, and remove the diskette.
6. Save the diskette and call your service representative.

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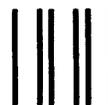
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