GA21-9357-1
File No. S5280-01

IBM 5280 Distributed Data System

Machine Verification Manual

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Second Edition (January 1981)

This is a major revision of and obsoletes, GA21-9357-0. The following summarizes the major changes and additions.

- Section 7. A procedure to test the optional second application program microprocessor has been added.
- Section 9. A procedure to print a formatted SNA communications trace table has been added.
- Section 10. A diskette data recovery procedure has been added.

This edition applies to release 2, modification 0 of the IBM 5280 Distributed Data System and to all subsequent releases and modifications until otherwise indicated in new editions or technical newsletters.

Changes are periodically made to the information herein; these changes will be reported in technical newsletters or in new editions of this publication.

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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 ten 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	Second application program microprocessor tests

Section 8 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.

Section 9 contains the procedure to print the formatted communications trace table.

Section 10 contains the procedure to recover data from a defective diskette.

Appendix A contains the SNA terms and Bind error messages used in the formatted communications trace table.

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.

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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 initial program load (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)
Second Application Program Microprocessor
  Verification (TPROC)

Verification IPL Program: This program checks the control area, the storage allocation, and the internal code necessary to load other programs. The IBM 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.

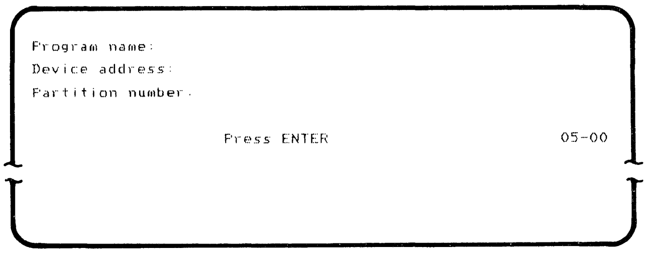
Communications Verification: This program checks the internal logic and line connections required for communications.

Second Application Program Microprocessor Verification: This program checks the internal logic of the second application program microprocessor.

Running the Verification Programs

If your IBM 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
   - Second application program microprocessor (TPROC)—Section 7

If your IBM 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

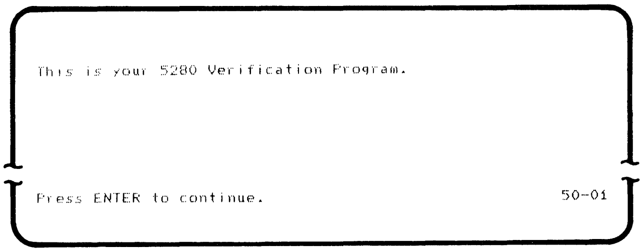
Before you begin the verification procedure, ensure that:

- 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 (IBM 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 0 display screen only:



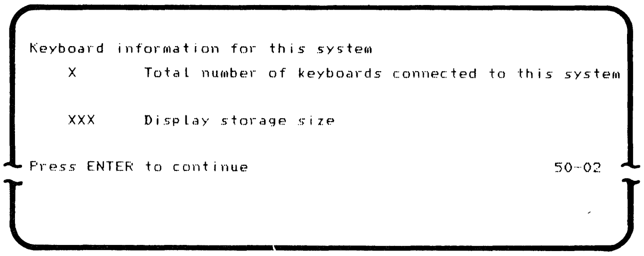
```
This is your 5280 Verification Program.



Press ENTER to continue.                          50-01
```

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.



```
Keyboard information for this system
    X       Total number of keyboards connected to this system

    XXX     Display storage size

Press ENTER to continue                                50-02
```

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.

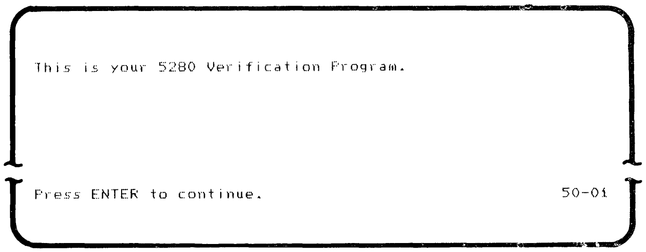
If you have six indicators on, ensure that:

- 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?



```
This is your 5280 Verification Program.

Press ENTER to continue.                                50-01
```

Y N

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

Y N

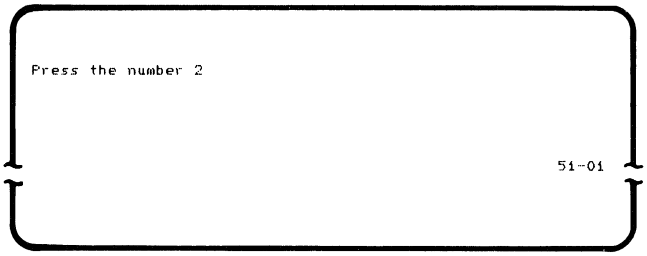
Call your service representative and report a power on checkout failure.

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:

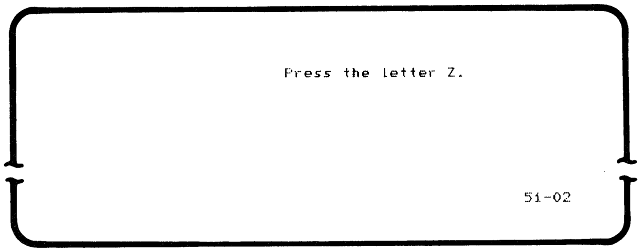


```
Press the number 2

                                                    51-01
```

   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.



                                                51-02
```

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

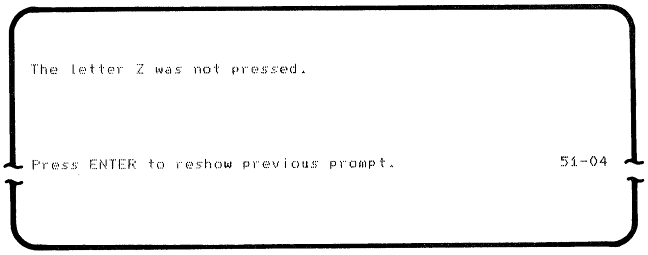
   If you have trouble with your responses to either of these prompts, or if the display does not change as it should, go to BRANCH B.

   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:

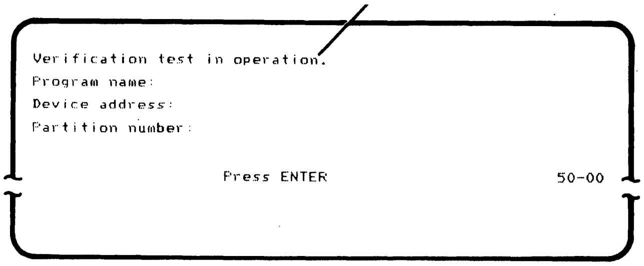


```
The letter Z was not pressed.



Press ENTER to reshow previous prompt.                  51-04
```

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



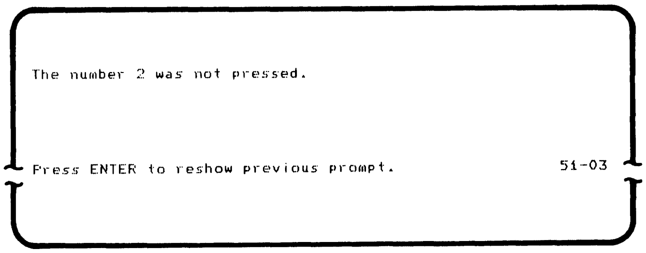
This line appears only when using the verification IPL.

```
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:

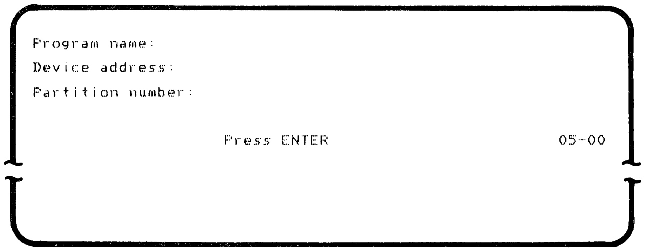
- Having a problem with one or more keyboards or magnetic stripe readers
- Running the total verification package

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.)



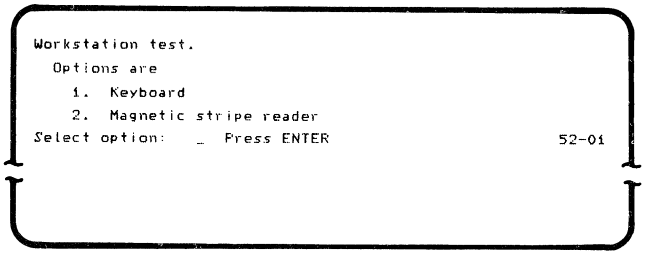
```
Program name:
Device address:
Partition number:

                     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)* of this procedure.

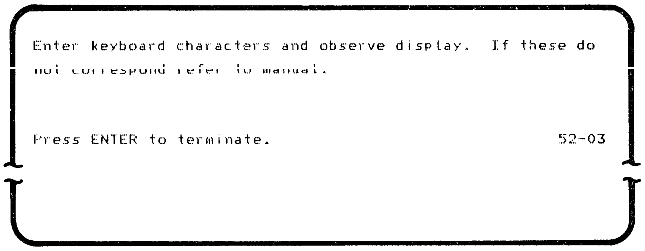


```
Workstation test.
  Options are
    1.  Keyboard
    2.  Magnetic stripe reader
Select option:  _  Press ENTER                          52-01
```

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.

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
```

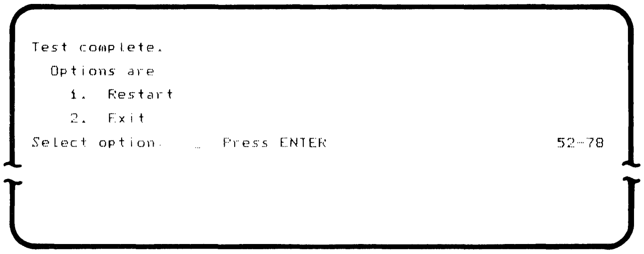
3. This display enables you to enter characters from the keyboard and to verify that each character you enter is correctly received and displayed by the system. If you are running this program using the verification IPL, only the alphabetics A through Z, numerics 0 through 9, and the blank (spacebar) 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:



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

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:

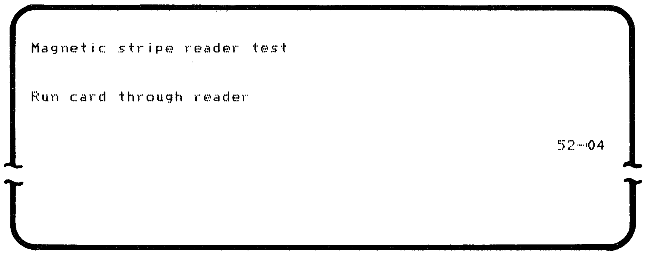
Do you have another keyboard like the one you are running the TKBD test from?
Y N
| Did you run the verification IPL program as described in Section 2 of this manual?
| Y N
| | Go to Section 2 of this manual and run the verification IPL program; then run TKBD.
|
| Call your service representative.

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.

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:



```
Magnetic stripe reader test

Run card through reader

                                                52-04
```

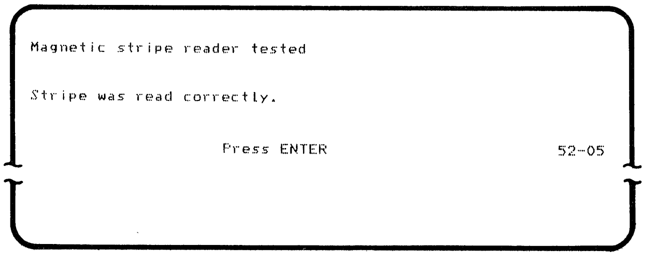
3. Obtain the magnetic stripe test card from the IBM binder.

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:



```
Magnetic stripe reader tested

Stripe was read correctly.

                    Press ENTER                 52-05
```

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.

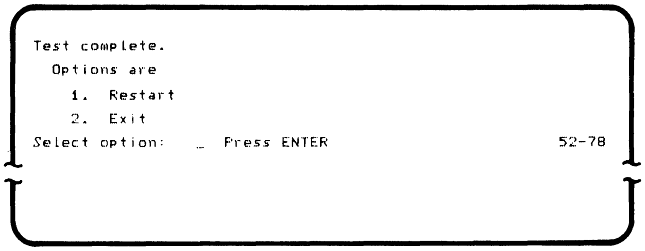
Call your service representative.

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:

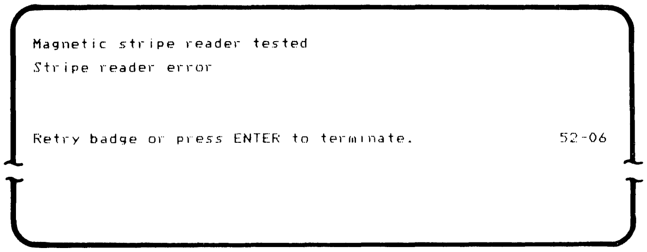


```
Test complete.
  Options are
    1.  Restart
    2.  Exit
Select option:  _  Press ENTER                           52-78
```

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.

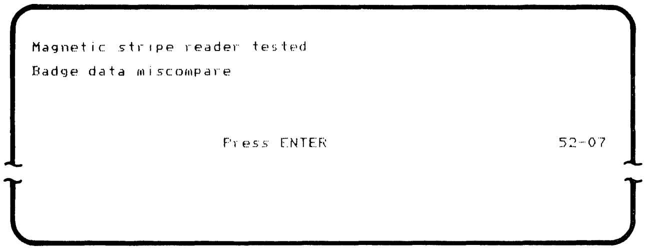
BRANCH D

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 miscompare


                  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:

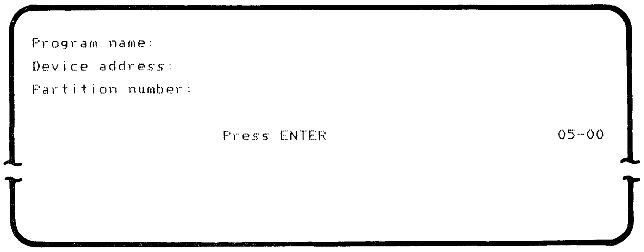
- Having a problem with one or more diskette drives
- Running the total verification package

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 verfication 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.)

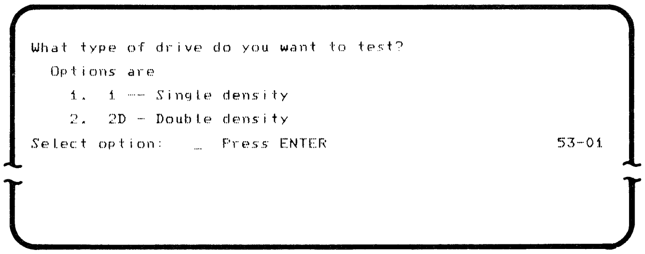


```
Program name:
Device address:
Partition number:

                      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.)

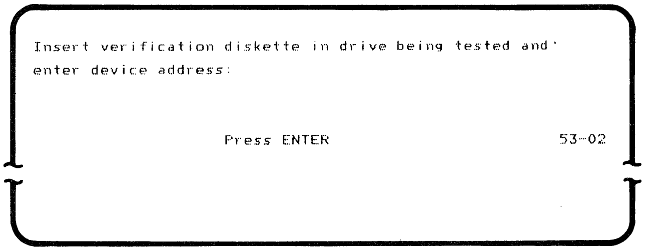


```
What type of drive do you want to test?
  Options are
    1.  1 -- Single density
    2.  2D - Double density
Select option:   _  Press ENTER                            53-01
```

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.

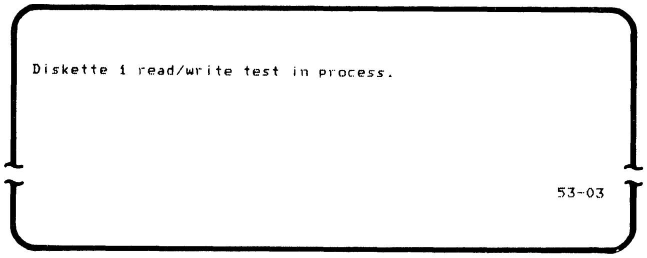
If an error message appears on the screen, record the message and call your service representative. Relay this message to the service representative. For example, if the error occurred while reading track 73, the error message reads:

> Miscompare on track 73

END

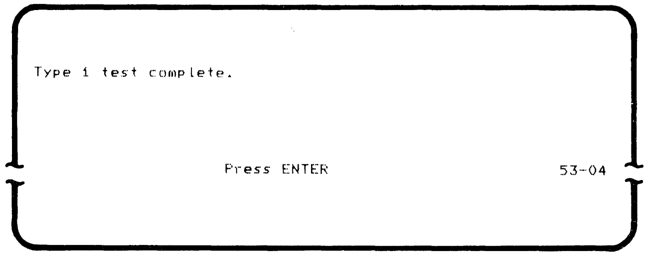
Part 1 (Single Density)

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
```

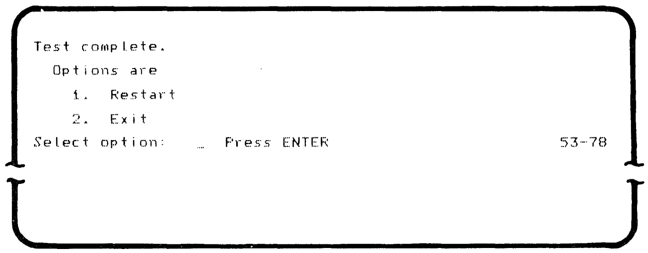
2. If the test runs successfully, the following display appears:



```
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

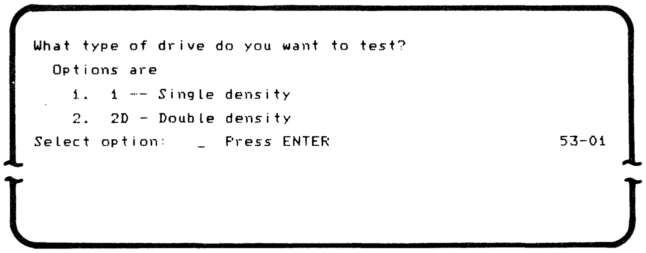
If any of the diskette tests do not run successfully, the screen shows either a four-digit error code or an error message. Try rerunning the test using another diskette. If the problem does not recur, the first diskette is bad. If the same problem appears, the diskette drive is failing. If an error code 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 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

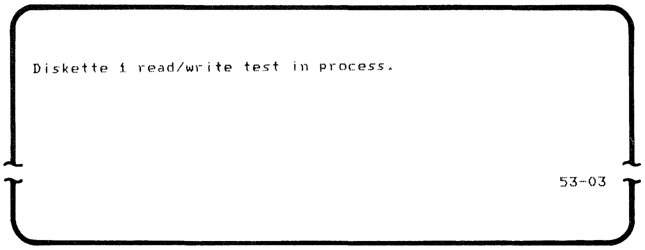
4. You may test any other diskette drives by selecting option 1 which takes you back to the following display:



```
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
```

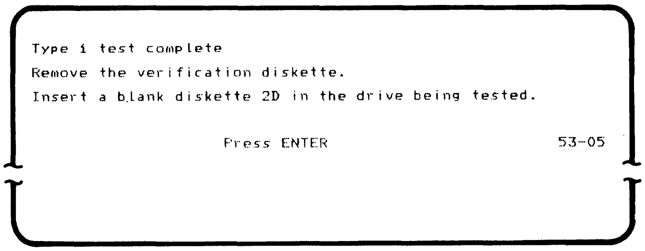
Part 2 (Double Density)

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:

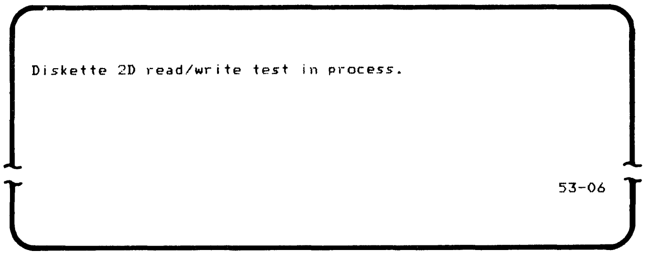


```
Type 1 test complete
Remove the verification diskette.
Insert a blank diskette 2D in the drive being tested.

              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

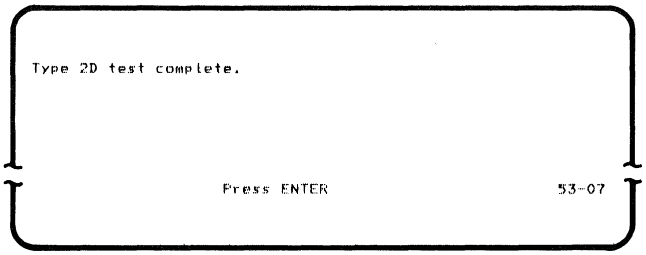
If any of the diskette tests do not run successfully, the screen shows either a four-digit error code or an error message. Try rerunning the test using another diskette. If the problem does not recur, the first diskette is bad. If the same problem appears, the diskette drive is failing. If an error code 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 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

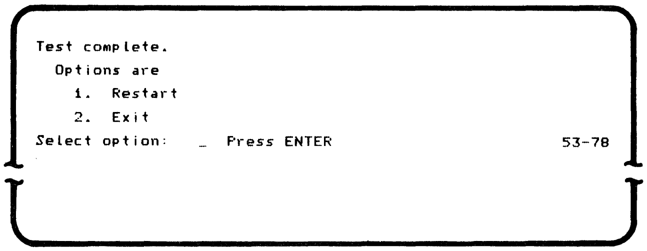
5. If the test runs successfully, the following display appears:



```
Type 2D test complete.



                     Press ENTER                       53-07
```

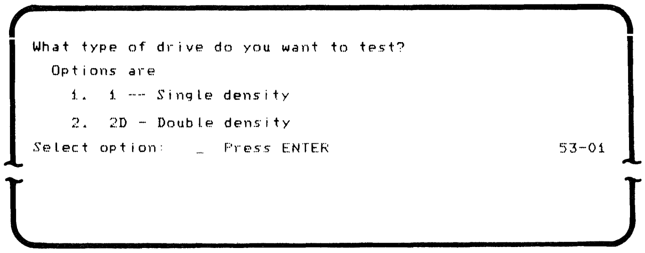
If the test does not run successfully, go to BRANCH E.

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 fininshed 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

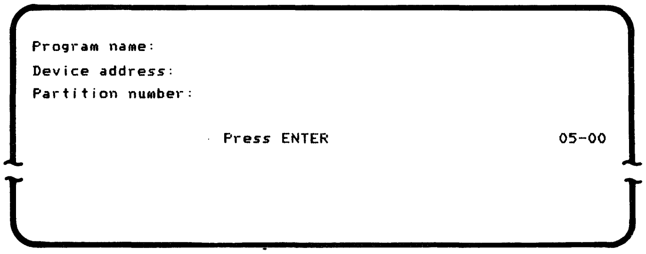
The printer verification program verifies the operation of your printer. Any printer can be tested from any keyboard. It is usually most convenient to test the printer from the closest work station.

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. (Ready light is not present on all machine types.)

   If the Ready light is present and 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.)



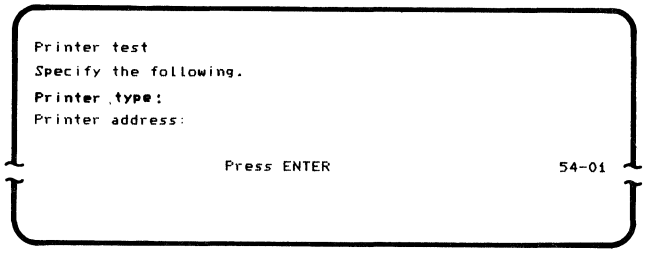
```
Program name:
Device address:
Partition number:

                    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:

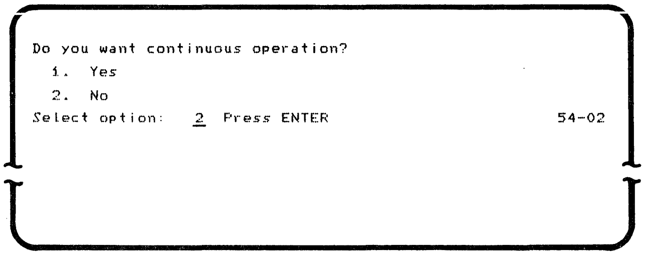


```
Printer test
Specify the following.
Printer type:
Printer address:

                 Press ENTER                  54-01
```

8. Enter the printer type. 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.

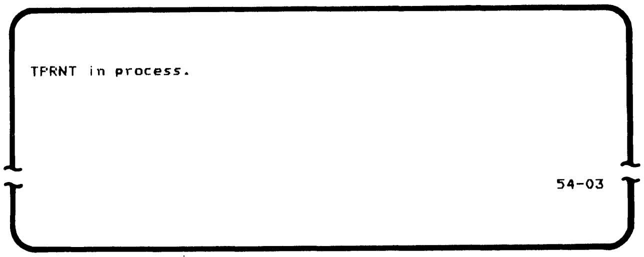
10. Press the Enter key. The following display appears:



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

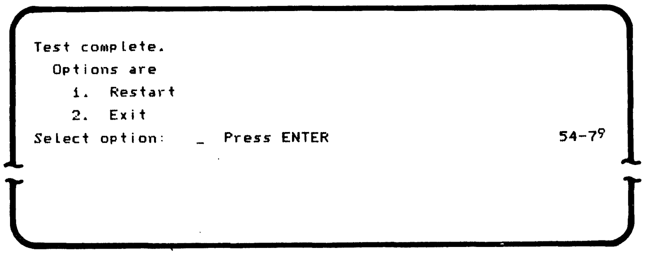
11. This display automatically selects option 2 unless you override it and enter a 1. Option 1 causes the printer to print continuously. This option is useful if you are having problems with paper feeding and want to cause the printer to run until the problem recurs. The printer can be stopped by pressing 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:

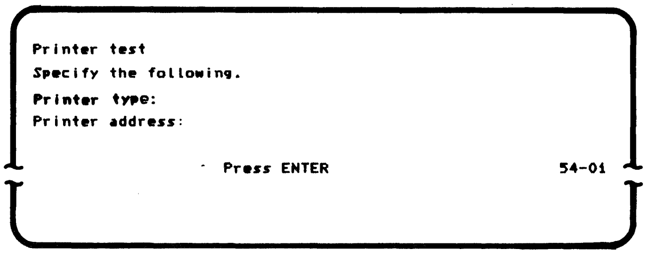


```
Test complete.
  Options are
    1. Restart
    2. Exit
Select option:  _  Press ENTER                    54-79
```

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

14. Go to the printer and visually check that the correct test pattern was printed. The correct test patterns for the printers are shown on the following pages, Figures 1-5. 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:



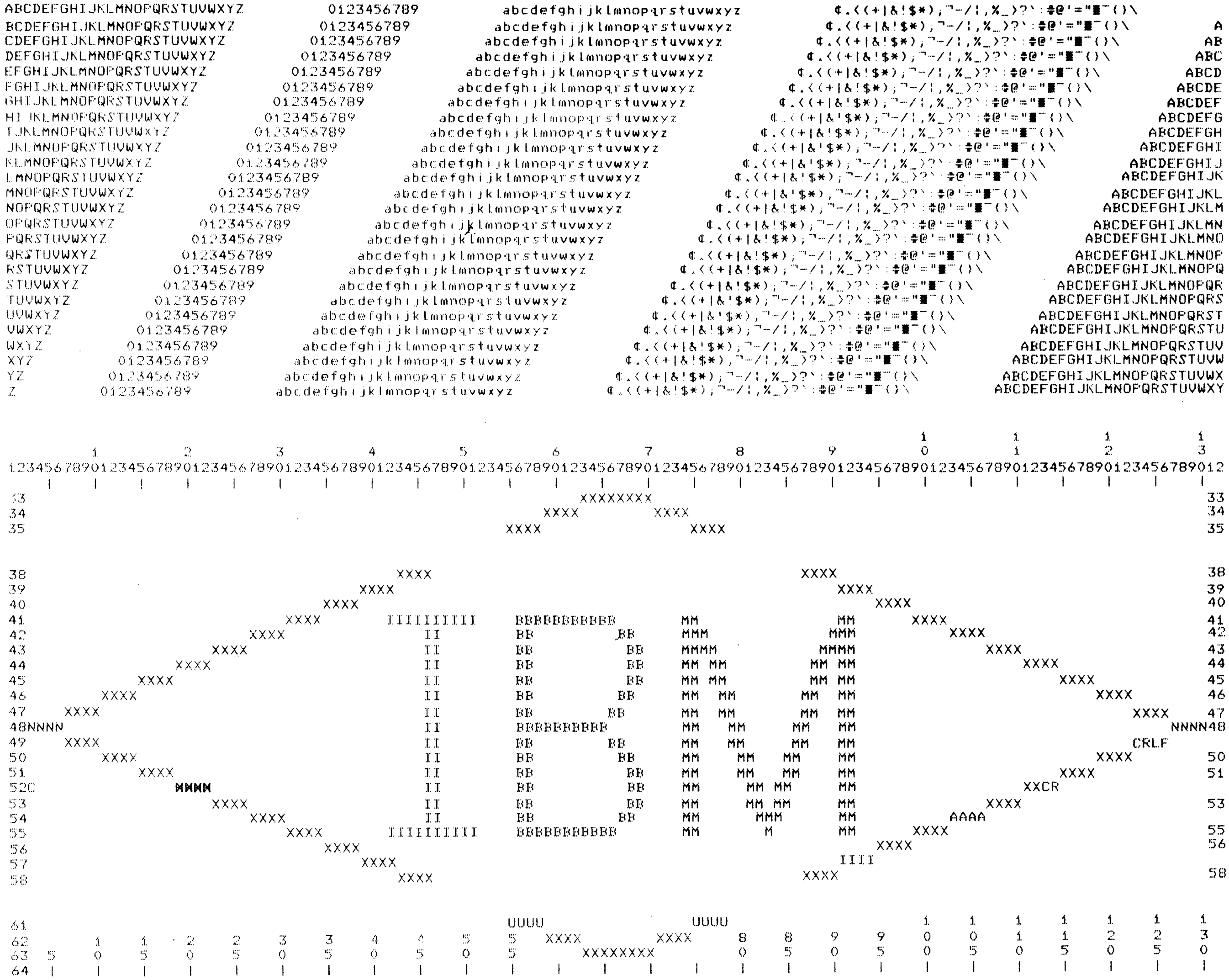
```
Printer test
Specify the following.
Printer type:
Printer address:

                    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 TSYSLOG or TCOMLOG as appropriate, and call your service representative.

END



```
ABCDEFGHIJKLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\
BCDEFGHIJKLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         A
CDEFGHIJKLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         AB
DEFGHIJKLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABC
EFGHIJKLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCD
FGHIJKLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDE
GHIJKLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEF
HIJKLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFG
IJKLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGH
JKLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHI
KLMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJ
LMNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJK
MNOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKL
NOPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLM
OPQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMN
PQRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNO
QRSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNOP
RSTUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNOPQ
STUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNOPQR
TUVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNOPQRS
UVWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNOPQRST
VWXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNOPQRSTU
WXYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNOPQRSTUV
XYZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNOPQRSTUVW
YZ         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNOPQRSTUVWX
Z         0123456789        abcdefghijklmnopqrstuvwxyz           ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="■¯{}\         ABCDEFGHIJKLMNOPQRSTUVWXY

                                                                                                   1         1         1         1
         1         2         3         4         5         6         7         8         9         0         1         2         3
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
33                                                            XXXXXXXX                                                            33
34                                                        XXXX        XXXX                                                        34
35                                                    XXXX                XXXX                                                    35


38                                        XXXX                                        XXXX                                        38
39                                    XXXX                                                XXXX                                    39
40                                XXXX                                                        XXXX                                40
41                            XXXX       IIIIIIIIII    BBBBBBBBBBB       MM               MM      XXXX                            41
42                        XXXX               II        BB         BB     MMM             MMM          XXXX                        42
43                    XXXX                   II        BB          BB    MMMM           MMMM              XXXX                    43
44                XXXX                       II        BB          BB    MM MM         MM MM                  XXXX                44
45            XXXX                           II        BB          BB    MM MM         MM MM                      XXXX            45
46        XXXX                               II        BB         BB     MM  MM       MM  MM                          XXXX        46
47    XXXX                                   II        BB        BB      MM  MM       MM  MM                              XXXX    47
48NNNN                                       II        BBBBBBBBBB        MM   MM     MM   MM                                  NNNN48
49    XXXX                                   II        BB        BB      MM   MM     MM   MM                              CRLF
50        XXXX                               II        BB         BB     MM    MM   MM    MM                          XXXX        50
51            XXXX                           II        BB          BB    MM    MM   MM    MM                      XXXX            51
52C               MMMM                       II        BB          BB    MM     MM MM     MM                  XXCR
53                    XXXX                   II        BB          BB    MM     MM MM     MM              XXXX                    53
54                        XXXX               II        BB         BB     MM      MMM      MM          AAAA
55                            XXXX       IIIIIIIIII    BBBBBBBBBBB       MM       M       MM      XXXX                            55
56                                XXXX                                                        XXXX                                56
57                                    XXXX                                                IIII
58                                        XXXX                                        XXXX                                        58


61                                                    UUUU                UUUU                     1    1    1    1    1    1    1
62       1    1    2    2    3    3    4    4    5    5   XXXX        XXXX     8    8    9    9    0    0    1    1    2    2    3
63  5    0    5    0    5    0    5    0    5    0    5       XXXXXXXX         0    5    0    5    0    5    0    5    0    5    0
64  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
```

Figure 1. IBM 5222 Printer test pattern (10 characters per inch, 6 lines per inch)

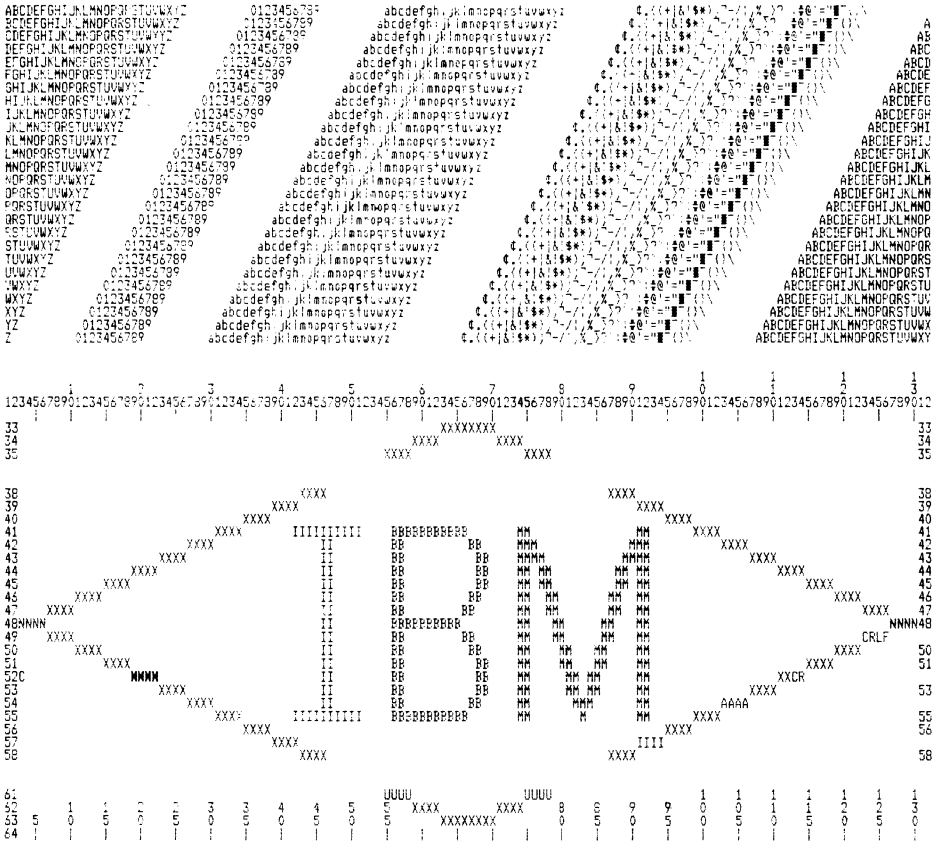


Figure 2. IBM 5222 Printer test pattern (15 characters per inch, 8 lines per inch)

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\
BCDEFGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         A
CDEFGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         AB
DEFGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABC
EFGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCD
FGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDE
GHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEF
HIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFG
IJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGH
JKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHI
KLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJ
LMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJK
MNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKL
NOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLM
OPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMN
PQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNO
QRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNOP
RSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNOPQ
STUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNOPQR
TUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNOPQRS
UVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNOPQRST
VWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNOPQRSTU
WXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNOPQRSTUV
XYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNOPQRSTUVW
YZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNOPQRSTUVWX
Z         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="▮¯{}\         ABCDEFGHIJKLMNOPQRSTUVWXY

                                                                                                   1         1         1         1
         1         2         3         4         5         6         7         8         9         0         1         2         3
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
33                                                            XXXXXXXX                                                            33
34                                                        XXXX        XXXX                                                        34
35                                                    XXXX                XXXX                                                    35


38                                        XXXX                                        XXXX                                        38
39                                    XXXX                                                XXXX                                    39
40                                XXXX                                                        XXXX                                40
41                            XXXX       IIIIIIIIII    BBBBBBBBBBB       MM               MM      XXXX                            41
42                        XXXX               II        BB         BB     MMM             MMM          XXXX                        42
43                    XXXX                   II        BB          BB    MMMM           MMMM              XXXX                    43
44                XXXX                       II        BB          BB    MM MM         MM MM                  XXXX                44
45            XXXX                           II        BB          BB    MM MM         MM MM                      XXXX            45
46        XXXX                               II        BB         BB     MM  MM       MM  MM                          XXXX        46
47    XXXX                                   II        BB        BB      MM  MM       MM  MM                              XXXX    47
48NNNN                                       II        BBBBBBBBBB        MM   MM     MM   MM                                  NNNN48
49    XXXX                                   II        BB        BB      MM   MM     MM   MM                              CRLF
50        XXXX                               II        BB         BB     MM    MM   MM    MM                          XXXX        50
51            XXXX                           II        BB          BB    MM    MM   MM    MM                      XXXX            51
52C               XXXX                       II        BB          BB    MM     MM MM     MM                  XXCR
53                    XXXX                   II        BB          BB    MM     MM MM     MM              XXXX                    53
54                        XXXX               II        BB         BB     MM      MMM      MM          AAAA
55                            XXXX       IIIIIIIIII    BBBBBBBBBBB       MM       M       MM      XXXX                            55
56                                XXXX                                                        XXXX                                56
57                                    XXXX                                                IIII
58                                        XXXX                                        XXXX                                        58


61                                                    UUUU                UUUU                     1    1    1    1    1    1    1
62       1    1    2    2    3    3    4    4    5    5   XXXX        XXXX     8    8    9    9    0    0    1    1    2    2    3
63  5    0    5    0    5    0    5    0    5    0    5       XXXXXXXX         0    5    0    5    0    5    0    5    0    5    0
64  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
```

Figure 3. IBM 5224 and IBM 5225 Printer test pattern (10 characters per inch, 6 lines per inch)

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\
BCDEFGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         A
CDEFGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         AB
DEFGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABC
EFGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCD
FGHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDE
GHIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEF
HIJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFG
IJKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGH
JKLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHI
KLMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJ
LMNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJK
MNOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKL
NOPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLM
OPQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMN
PQRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNO
QRSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNOP
RSTUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNOPQ
STUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNOPQR
TUVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNOPQRS
UVWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNOPQRST
VWXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNOPQRSTU
WXYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNOPQRSTUV
XYZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNOPQRSTUVW
YZ         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNOPQRSTUVWX
Z         0123456789         abcdefghijklmnopqrstuvwxyz          ¢.((+|&!$*);¬-/¦,%_>?`:#@'="■¯()\         ABCDEFGHIJKLMNOPQRSTUVWXY

                                                                                                   1         1         1         1
         1         2         3         4         5         6         7         8         9         0         1         2         3
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
33                                                            XXXXXXXX                                                            33
34                                                        XXXX        XXXX                                                        34
35                                                    XXXX                XXXX                                                    35


38                                        XXXX                                        XXXX                                        38
39                                    XXXX                                                XXXX                                    39
40                                XXXX                                                        XXXX                                40
41                            XXXX       IIIIIIIIII    BBBBBBBBBBB       MM               MM      XXXX                            41
42                        XXXX               II        BB         BB     MMM             MMM          XXXX                        42
43                    XXXX                   II        BB          BB    MMMM           MMMM              XXXX                    43
44                XXXX                       II        BB          BB    MM MM         MM MM                  XXXX                44
45            XXXX                           II        BB          BB    MM MM         MM MM                      XXXX            45
46        XXXX                               II        BB         BB     MM  MM       MM  MM                          XXXX        46
47    XXXX                                   II        BB        BB      MM  MM       MM  MM                              XXXX    47
48NNNN                                       II        BBBBBBBBBB        MM   MM     MM   MM                                  NNNN48
49    XXXX                                   II        BB        BB      MM   MM     MM   MM                              CRLF
50        XXXX                               II        BB         BB     MM    MM   MM    MM                          XXXX        50
51            XXXX                           II        BB          BB    MM    MM   MM    MM                      XXXX            51
52C               MMMM                       II        BB          BB    MM     MM MM     MM                  XXCR
53                    XXXX                   II        BB          BB    MM     MM MM     MM              XXXX                    53
54                        XXXX               II        BB         BB     MM      MMM      MM          AAAA
55                            XXXX       IIIIIIIIII    BBBBBBBBBBB       MM       M       MM      XXXX                            55
56                                XXXX                                                        XXXX                                56
57                                    XXXX                                                IIII
58                                        XXXX                                        XXXX                                        58


61                                                    UUUU                UUUU                     1    1    1    1    1    1    1
62       1    1    2    2    3    3    4    4    5    5   XXXX        XXXX     8    8    9    9    0    0    1    1    2    2    3
63  5    0    5    0    5    0    5    0    5    0    5       XXXXXXXX         0    5    0    5    0    5    0    5    0    5    0
64  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
```

Figure 4 (part 1 of 2). IBM 5224 and IBM 5225 Printer test pattern (15 characters per inch, 8 lines per inch)

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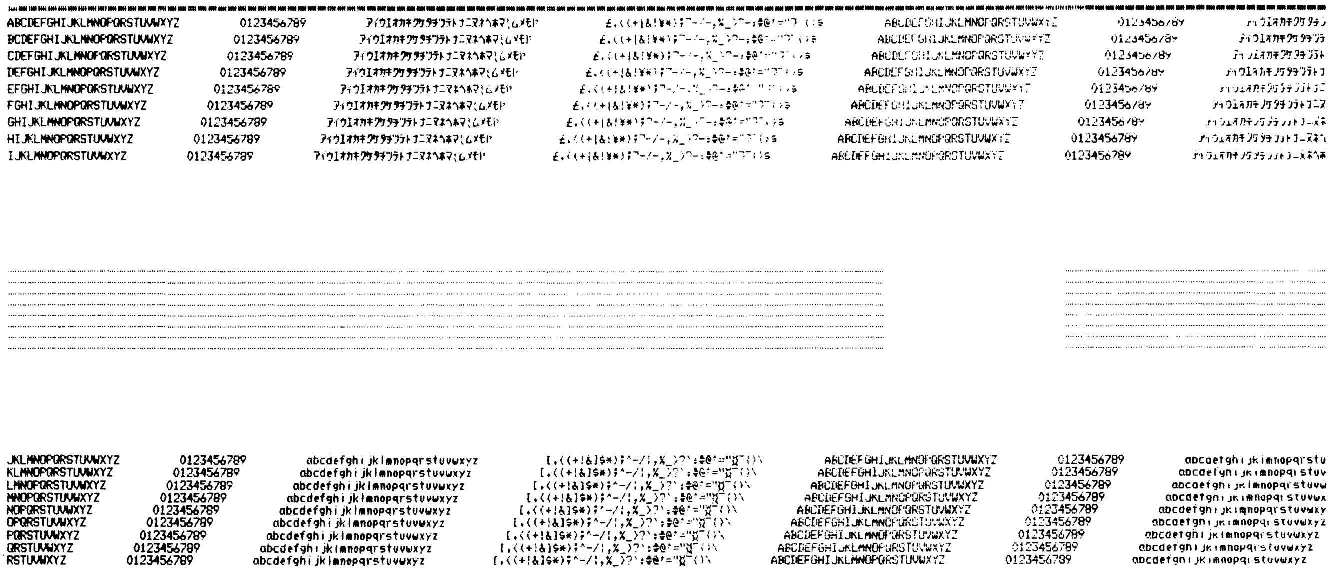


Figure 4 (part 2 of 2). IBM 5224 and IBM 5225 Printer test pattern

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\
BCDEFGHIJKLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          A
CDEFGHIJKLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          AB
DEFGHIJKLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABC
EFGHIJKLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCD
FGHIJKLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDE
GHIJKLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEF
HIJKLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFG
IJKLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGH
JKLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHI
KLMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJ
LMNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJK
MNOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKL
NOPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLM
OPQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMN
PQRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNO
QRSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNOP
RSTUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNOPQ
STUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNOPQR
TUVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNOPQRS
UVWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNOPQRST
VWXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNOPQRSTU
WXYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNOPQRSTUV
XYZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNOPQRSTUVW
YZ        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNOPQRSTUVWX
Z        0123456789          abcdefghijklmnopqrstuvwxyz         ¢.<(+|&!$*);¬-/¦,%_>?`:#@'="█¯()\          ABCDEFGHIJKLMNOPQRSTUVWXY

                                                                                                   1         1         1         1
         1         2         3         4         5         6         7         8         9         0         1         2         3
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
33                                                            XXXXXXXX                                                            33
34                                                        XXXX        XXXX                                                        34
35                                                    XXXX                XXXX                                                    35


38                                        XXXX                                        XXXX                                        38
39                                    XXXX                                                XXXX                                    39
40                                XXXX                                                        XXXX                                40
41                            XXXX       IIIIIIIIII    BBBBBBBBBBB       MM               MM      XXXX                            41
42                        XXXX               II        BB         BB     MMM             MMM          XXXX                        42
43                    XXXX                   II        BB          BB    MMMM           MMMM              XXXX                    43
44                XXXX                       II        BB          BB    MM MM         MM MM                  XXXX                44
45            XXXX                           II        BB          BB    MM MM         MM MM                      XXXX            45
46        XXXX                               II        BB         BB     MM  MM       MM  MM                          XXXX        46
47    XXXX                                   II        BB        BB      MM  MM       MM  MM                              XXXX    47
48NNNN                                       II        BBBBBBBBBB        MM   MM     MM   MM                                  NNNN48
49    XXXX                                   II        BB        BB      MM   MM     MM   MM                              CRLF
50        XXXX                               II        BB         BB     MM    MM   MM    MM                          XXXX        50
51            XXXX                           II        BB          BB    MM    MM   MM    MM                      XXXX            51
52C               MMMM                       II        BB          BB    MM     MM MM     MM                  XXCR
53                    XXXX                   II        BB          BB    MM     MM MM     MM              XXXX                    53
54                        XXXX               II        BB         BB     MM      MMM      MM          AAAA
55                            XXXX       IIIIIIIIII    BBBBBBBBBBB       MM       M       MM      XXXX                            55
56                                XXXX                                                        XXXX                                56
57                                    XXXX                                                IIII
58                                        XXXX                                        XXXX                                        58


61                                                    UUUU                UUUU                     1    1    1    1    1    1    1
62       1    1    2    2    3    3    4    4    5    5   XXXX        XXXX     8    8    9    9    0    0    1    1    2    2    3
63  5    0    5    0    5    0    5    0    5    0    5       XXXXXXXX         0    5    0    5    0    5    0    5    0    5    0
64  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
```

Figure 5. IBM 5256 Printer test pattern

Section 6. Communications Verification Procedure (TCOM)

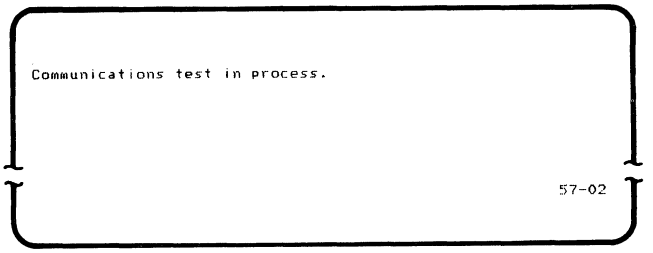
Use the communications verification procedure whenever you are:

- 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:



```
Communications test in process.


                                                  57-02
```

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.

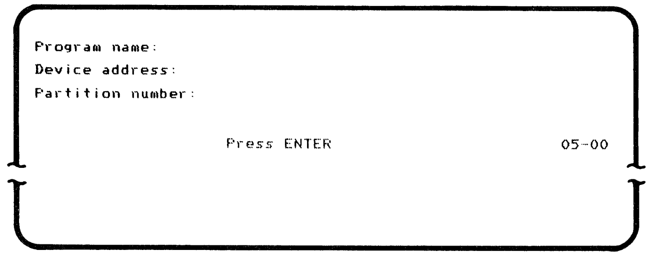
If, while the communications verification program is running, an error code appears on the screen, refer to the *Message Manual* for further information.

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:



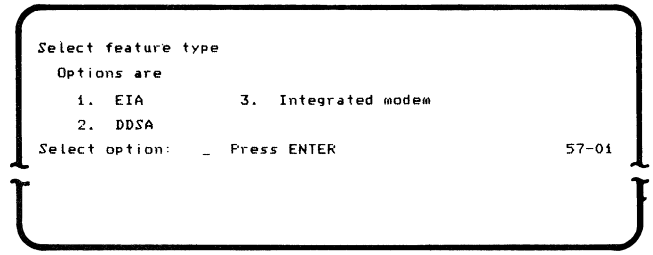
```
Program name:
Device address:
Partition number:

                    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:



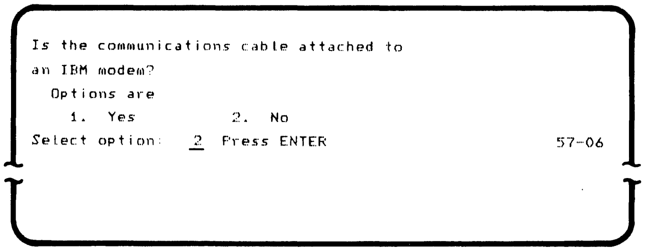
```
Select feature type
  Options are
    1.  EIA          3.  Integrated modem
    2.  DDSA
Select option:  _  Press ENTER                      57-01
```

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
```

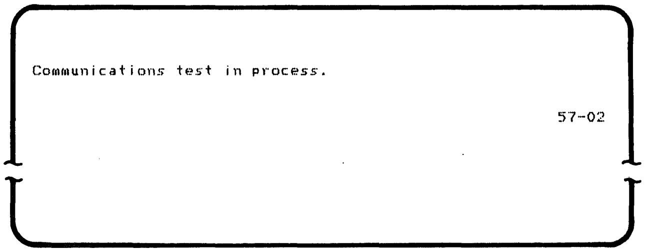
2. Select the correct option and press the Enter key. Option 2 is selected unless you select option 1. If option 2 is selected, go to step 5. If option 1 is selected, continue with step 3.

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)

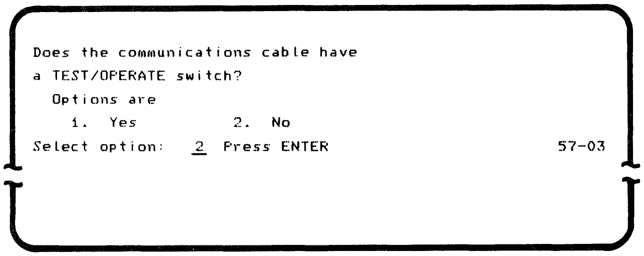
   While the test is running, the following appears on the screen:



```
Communications test in process.

                                                     57-02
```

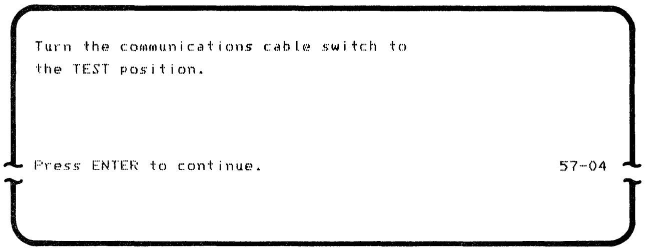
4. If the test runs successfully using the IBM modem, the Test Complete prompt appears. You may choose to restart or exit the test.

5. If option 2 (non-IBM modem) is chosen in step 2, 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
```

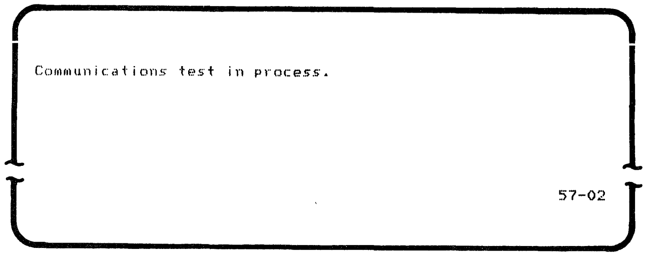
6. Option 2 is selected unless you select option 1. If option 2 is selected, go to step 14. If option 1 (Yes) is chosen, the following display is presented:



```
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.

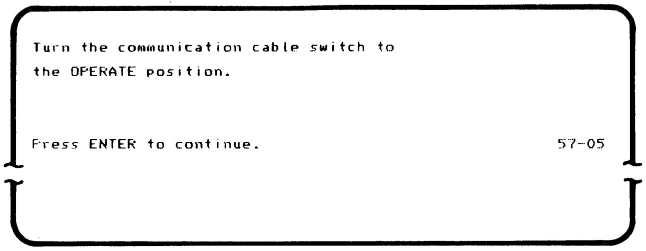
8. The following display appears:



```
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.

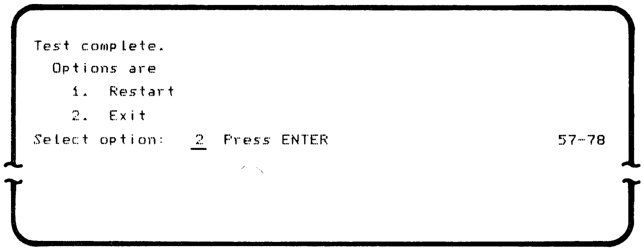
10. After the test has completed, the following prompt is displayed:



```
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.

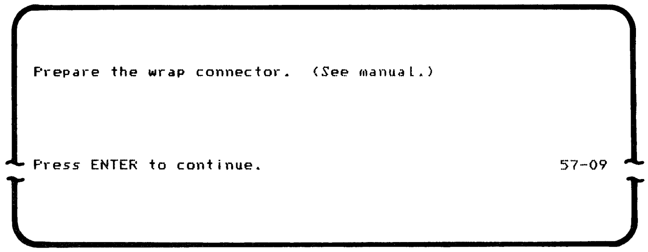
12. If the test does not run successfully, an error code appears on the display screen. See the Message Manual for more information. If the test completes successfully, the following display appears:



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

13. You can choose to end the test by selecting option 2 or you can choose to run the test again by selecting option 1.

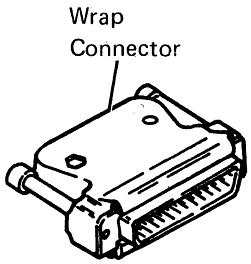
14. If option 2 (no TEST/OPERATE switch) is chosen, the following display appears:

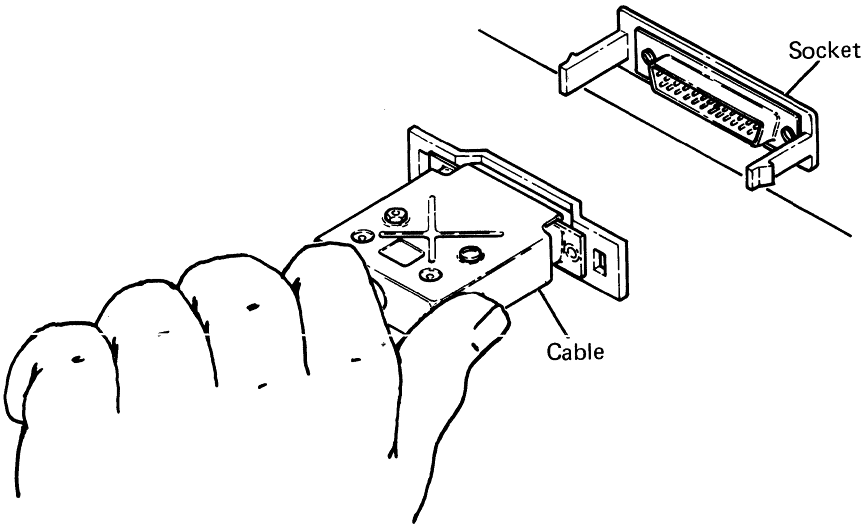


```
Prepare the wrap connector.  (See manual.)



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.

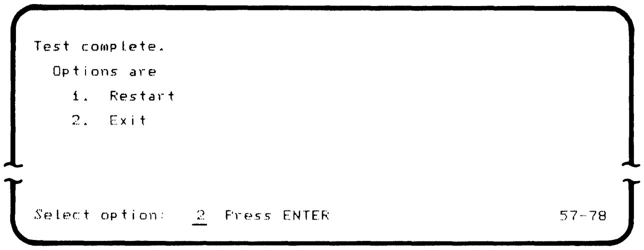
15. If you encounter an error while running this test, remove the connector from the end of the cable. Remove the cable from the communications socket on the back of the controller and replace the cable with the wrap connector as shown. Press the Enter key and restart the rest.





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:

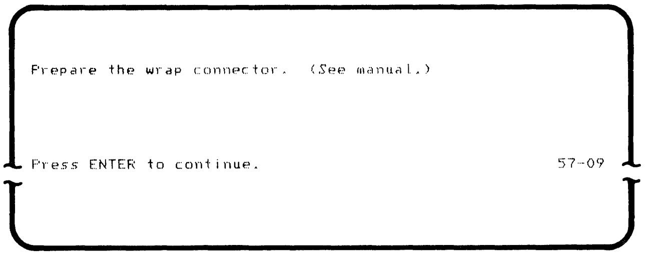


```
Test complete.
  Options are
    1.  Restart
    2.  Exit

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)

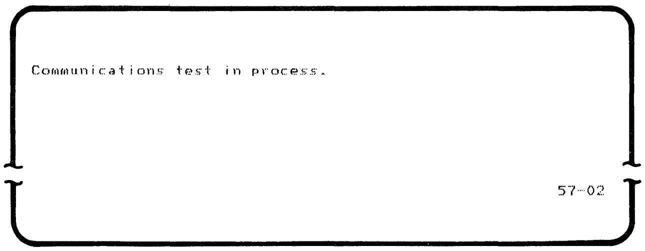
1. If option 2 (DDSA) is chosen, the following screen appears:



```
Prepare the wrap connector.  (See manual.)

Press ENTER to continue.                          57-09
```

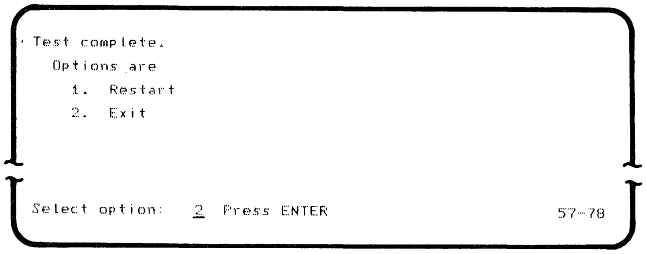
2. Obtain the wrap connector from the *Verification* binder. The binder contains two connectors. Use the 15-pin connector for this portion of the test. Disconnect the cable from the channel service unit (CSU). Put the wrap connector on the end of the cable. Press the Enter key.

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



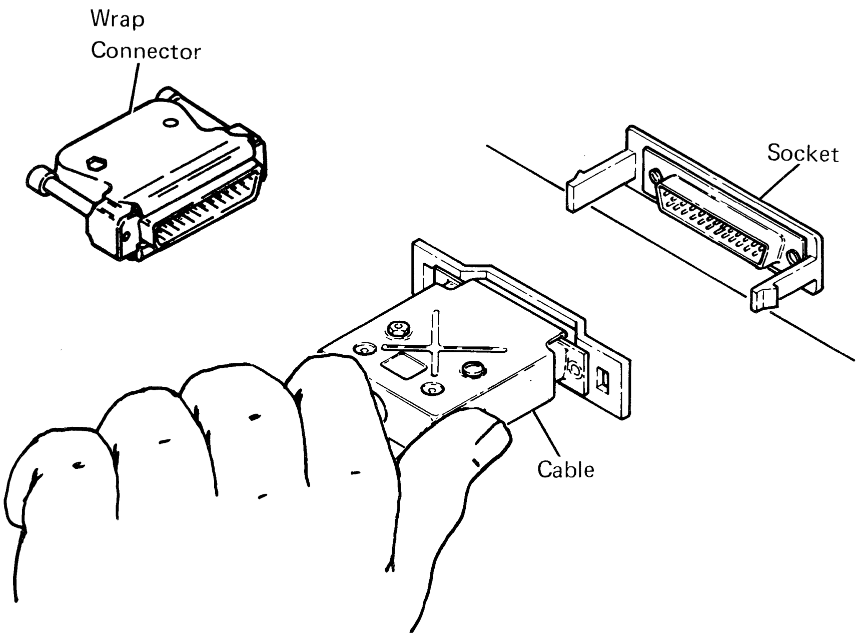
```
Communications test in process.


                                                   57-02
```

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



```
Test complete.
  Options are
    1.  Restart
    2.  Exit


Select option:  2  Press ENTER                     57-78
```

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.

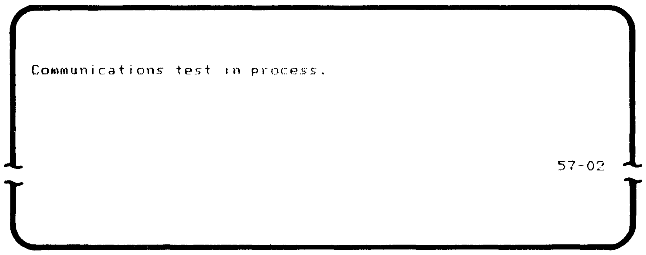


6. If the test runs successfully with the connector on the back of the controller, call your service representative and relay this information.

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.

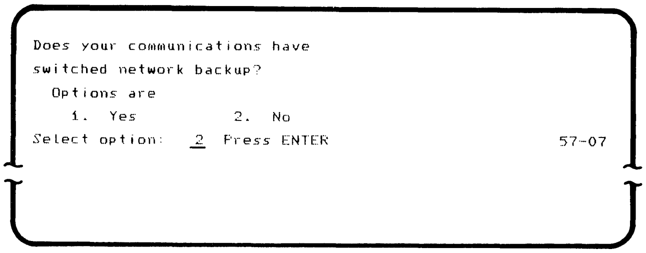
Part 3 (Integrated Modem)

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:

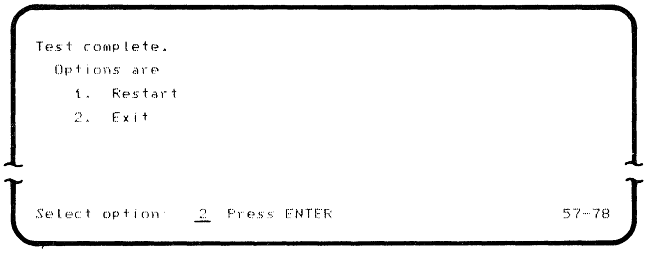


```
Does your communications have
switched network backup?
  Options are
    1. Yes          2. No
Select option:  2  Press ENTER                 57-07
```

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: Second Application Program Microprocessor (TPROC)

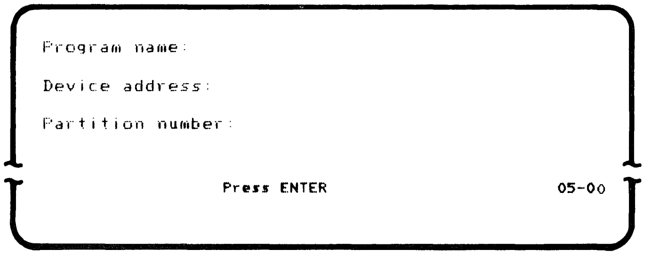
Use the second application program microprocessor verification procedure if you have this feature installed and you are:

- Having a problem with one or more programs not running to completion
- Having a problem with the system being slow to respond
- Running the total verification package

START

The second application program microprocessor verification procedure verifies the operation of that feature.

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.)



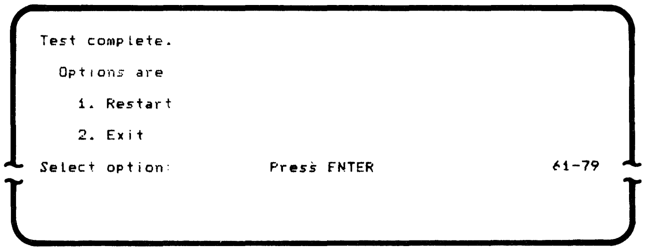
```
Program name:

Device address:

Partition number:

                       Press ENTER              05-00
```

3. Enter the program name TPROC 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 verification program is loaded into the system and begins execution.

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



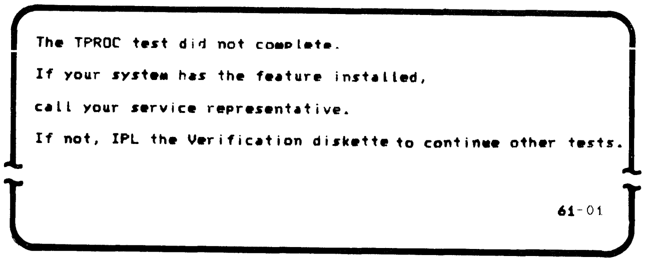
```
Test complete.
  Options are
    1. Restart
    2. Exit
Select option:           Press ENTER                  61-79
```

If this prompt does not appear, go to BRANCH G

7. You may execute the program again by selecting option 1 of the Test complete prompt or you may select option 2 on the Test complete prompt, which returns you to the Load prompt.

BRANCH G

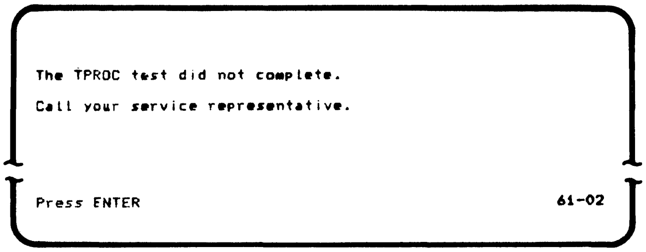
If the second application program microprocessor cannot function at all, the following prompt appears:



```
The TPROC test did not complete.
If your system has the feature installed,
call your service representative.
If not, IPL the Verification diskette to continue other tests.

                                                       61-01
```

Call your service representative. If you wish to test other features, you must IPL the verification diskette.

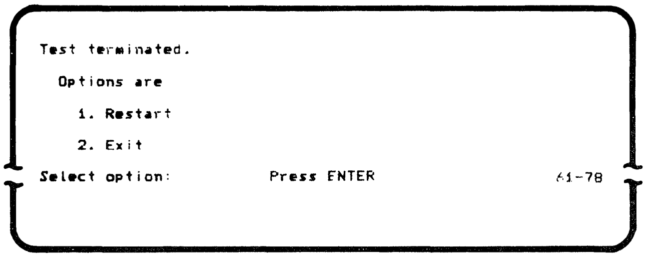
If the second application program microprocessor fails in any other way, the following prompt appears:



```
The TPROC test did not complete.
Call your service representative.


Press ENTER                                                  61-02
```

Call your service representative.
Press the Enter key.

After you press the Enter key, the following prompt will be on your display:



```
Test terminated.
  Options are
    1. Restart
    2. Exit
Select option:          Press ENTER                          61-78
```

You may restart the test by selecting option 1, or you may select option 2, which returns you to the Load prompt.

END

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Section 8. 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.

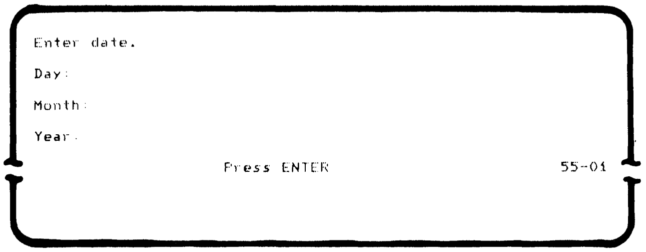
The error log is important to service personnel; they need it to service your system.

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

Note: The programs in this section will not run on a IBM 5280 that has been IPLed with the machine verification diskette IPL. The system IPL must have been used in order for these programs to run correctly.

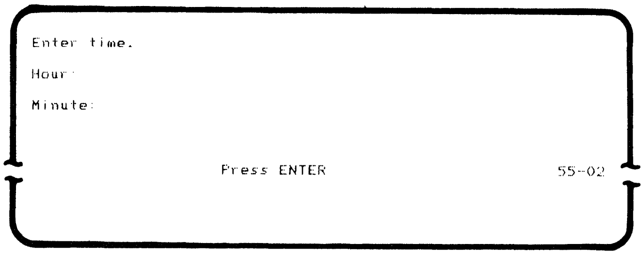
To take the error log dump, do the following:

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:



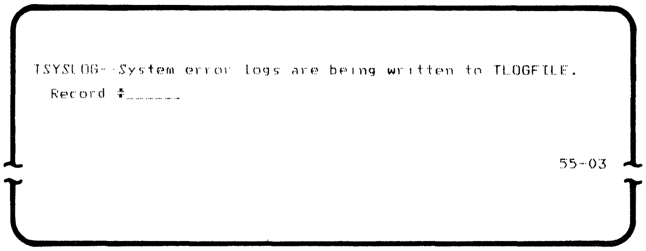
```
Enter date.
Day:
Month:
Year:
                    Press ENTER                    55-01
```

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



```
Enter time.
Hour:
Minute:

                    Press ENTER                    55-02
```

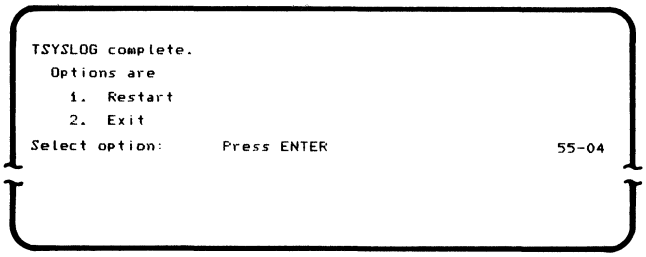
6. Enter the time and press the Enter key. The TSYSLOG program begins running. While it is running, the following appears on the screen:



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

                                                   55-03
```

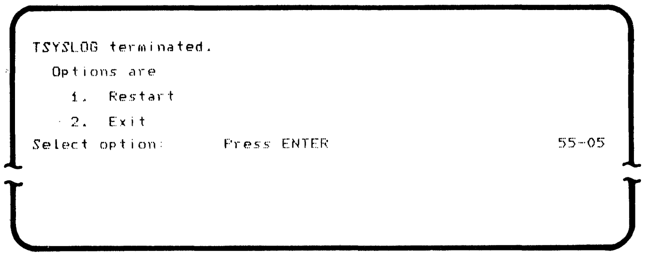
The record number on the display changes as the logs are dumped.

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

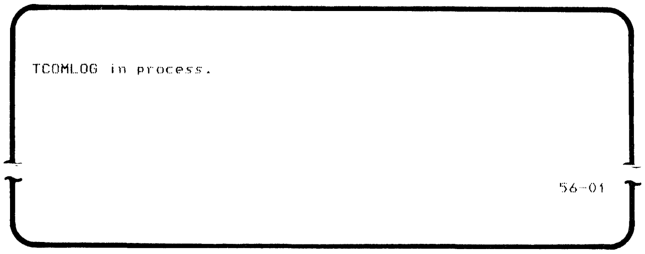
The communications error log contains all the communications errors that occur from the time you start communications to the time you stop communications. The error log information is important to service personnel; they need it to service your system.

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

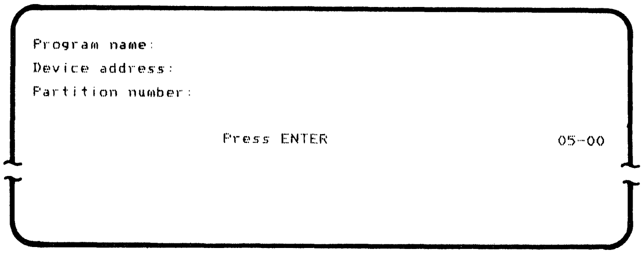
The system dump procedure allows you to obtain a:

- 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:



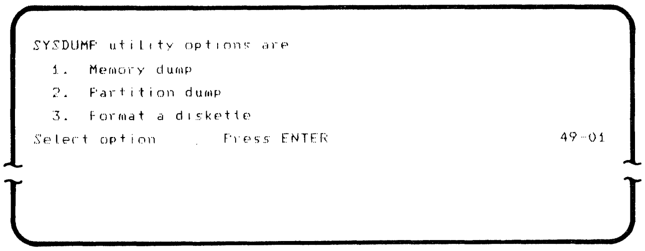
```
Program name:
Device address:
Partition number:

                    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:



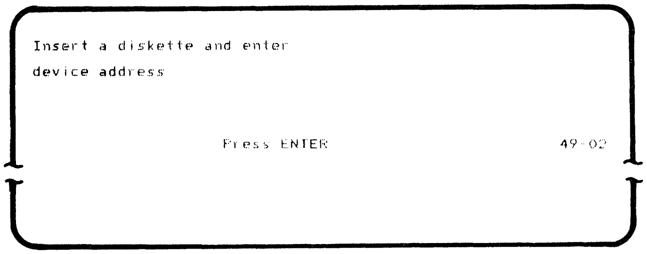
```
SYSDUMP utility options are
  1. Memory dump
  2. Partition dump
  3. Format a diskette
Select option  _   Press ENTER                      49-01
```

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)

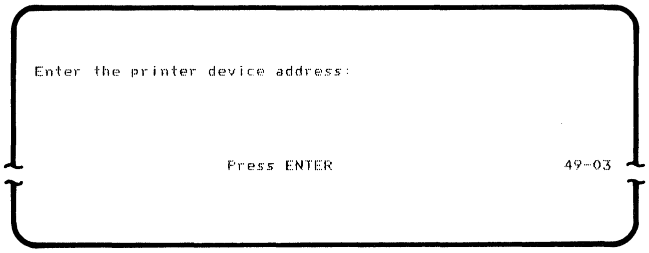
1. The following appears on the screen:



```
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.

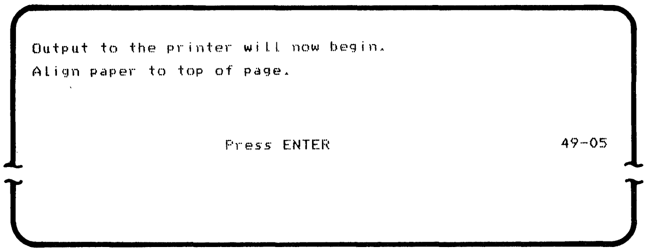
3. Press the Enter key. The following appears on the screen:



```
Enter the printer device address:

                    Press ENTER                  49-03
```

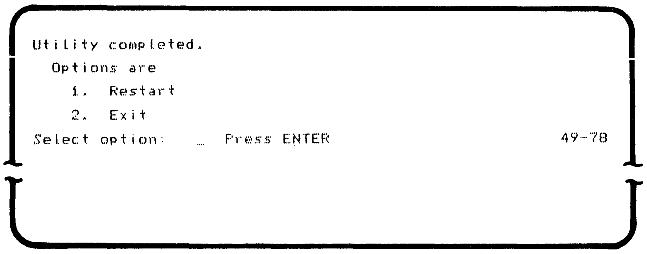
4. Enter the device address of the printer, and press the Enter key.

5. The following appears on the screen:



```
Output to the printer will now begin.
Align paper to top of page.

                    Press ENTER                  49-05
```

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

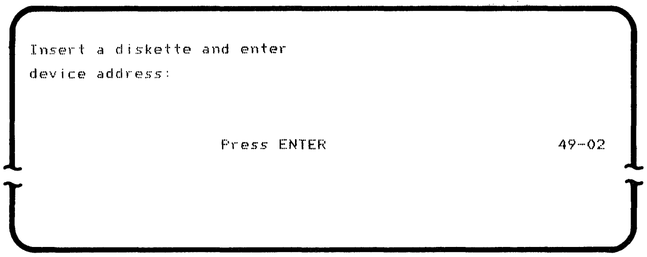


```
Utility completed.
  Options are
    1.  Restart
    2.  Exit
Select option:  _  Press ENTER                   49-78
```

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)

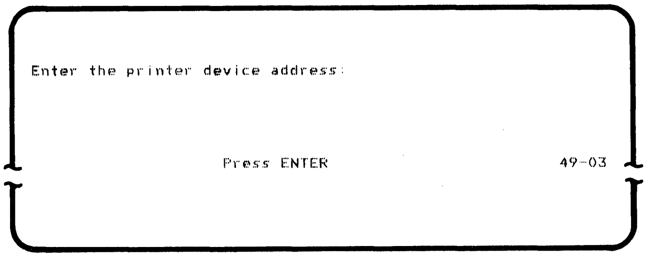
1. The following appears on the screen:



```
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.

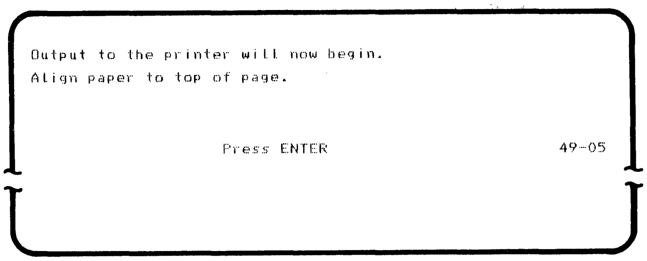
3. Press the Enter key. The following appears on the screen:



```
Enter the printer device address:

                    Press ENTER                  49-03
```

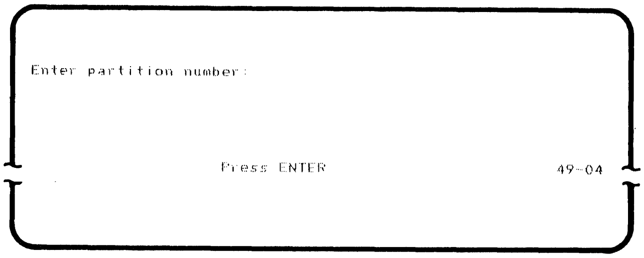
4. Enter the device address of the printer, and press the Enter key.

5. The following appears on the screen:



```
Output to the printer will now begin.
Align paper to top of page.

                    Press ENTER                  49-05
```

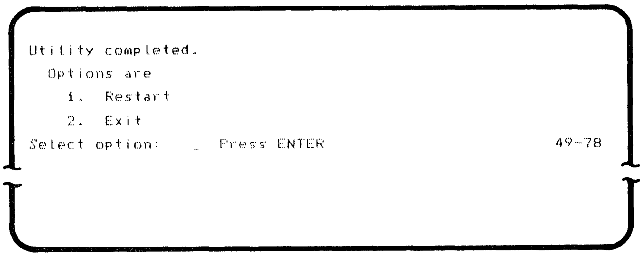
6. Align the paper, and press the Enter key. The following appears on the screen:



```
Enter partition number:


                    Press ENTER                 49-04
```

7. Enter the number of the partition you want to print from the absolute dump diskette.

8. 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:

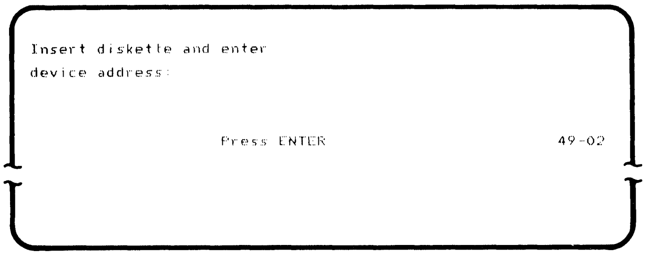


```
Utility completed.
  Options are
    1.  Restart
    2.  Exit
Select option:  _  Press ENTER                  49-78
```

9. 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)

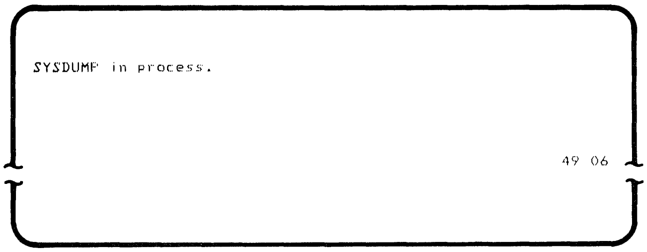
1. The following appears on the screen:



```
Insert diskette and enter
device address:


                    Press ENTER                 49-02
```

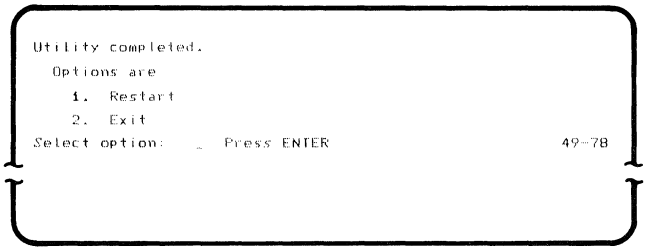
2. Insert an initialized diskette, and enter the device address of the diskette drive being used.

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



```
SYSDUMP in process.



                                                49 06
```

4. 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
```

5. You may choose either to rerun the test or to exit the test.

6. 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.

Section 9. The Formatted SNA Communications Trace Table

This section contains the following information on the communications trace table:

- How to allocate the trace table
- How to print the formatted SNA trace table

HOW TO ALLOCATE THE TRACE TABLE

You can allocate the communications trace table when using any of the IBM 5280 SNA Communications Access Methods (CAM), SYSSNAR, SYSSNAD, or SYSSNAU. Use the communications configuration utility (SYSCCU) to allocate a trace table in your CAM partition and to specify the number of entries in the table. The maximum number of entries in the table can be calculated using the formula defined in the *IBM 5280 Communications Reference Manual,* SC34-0247.

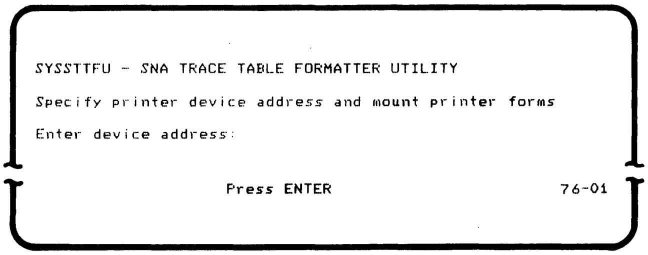
HOW TO PRINT THE FORMATTED SNA TRACE TABLE

The machine verification diskette contains the program to print the formatted SNA trace table. A partition size of at least 13K bytes and a printer are required.

Note: This program will not run on an IBM 5280 that has been IPLed with the machine verification diskette IPL. The system IPL must be used.

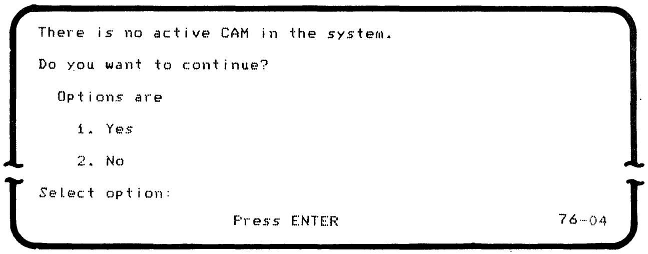
To print the formatted trace table, do the following:

1. Insert the machine verification diskette and close the diskette locking lever.
2. Enter SYSSTTFU, 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. The following display appears:



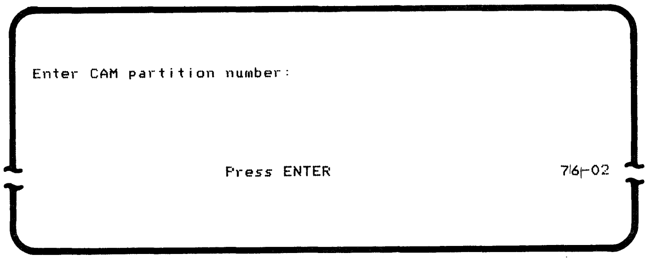
```
SYSSTTFU - SNA TRACE TABLE FORMATTER UTILITY

Specify printer device address and mount printer forms

Enter device address:

                    Press ENTER                    76-01
```

5. Go to the printer and load the printer forms.
6. At your keyboard, enter the device address of the printer and press the Enter key.
7. If a CAM is no longer active, the trace table remains available until the partition is used again. The following prompt is displayed:



```
There is no active CAM in the system.

Do you want to continue?

  Options are

    1. Yes

    2. No

Select option:
                    Press ENTER                    76-04
```

8. You can select option 1 and print the trace table or select option 2 and end the program.
9. If you select option 1 or if the CAM is still active in the partition, the following prompt appears:



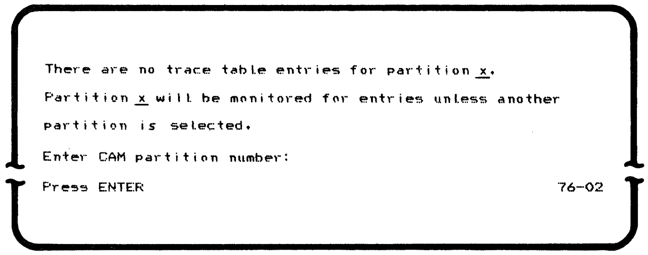
```
Enter CAM partition number:



                    Press ENTER                    76-02
```

10. Enter the number of the partition in which the CAM is loaded and press the Enter key.

    Note: Contact your supervisor for the number of the CAM partition.

11. The trace table is printed on the printer you specified.

12. If there are no entries in the trace table then the following prompt is displayed.



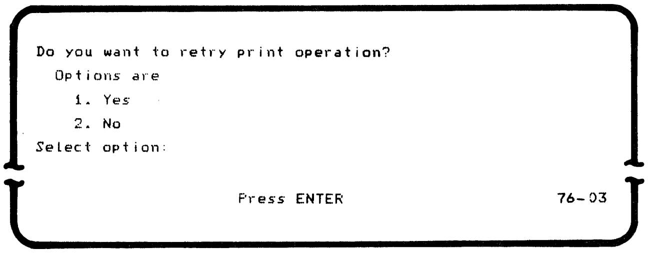
```
There are no trace table entries for partition x.
Partition x will be monitored for entries unless another
partition is selected.
Enter CAM partition number:
Press ENTER                                          76-02
```

13. If the same partition number is selected a second time then the screen is cleared. If SYSSTTFU is loaded in a background partition, the keyboard will be detached.

14. If there are no entries, the trace table will be monitored for entries. The entries will be printed on the printer you specified as they are placed in the table.

15. If the printer stops, SYSSTTFU has printed all current trace table entries and is monitoring the trace table for new entries. While SYSSTTFU is in the monitor mode the printer will be released. As new entries are placed in the trace table the printer will be reacquired and the new entries printed. This mode of unattended printing allows sharing of the printer.

16. If a printer error occurs while printing the trace table, the following prompt is displayed:



```
Do you want to retry print operation?
  Options are
    1. Yes
    2. No
Select option:

                       Press ENTER                 76-03
```

17. You can select option 1 and return to the prompt to enter the printer device address (76-01), or select option 2 and end the program.

18. To exit the program, press the Cmd key, then press the End-of-job key. The program will also be exited whenever the CAM partition selected has been reloaded.

19. To print the trace table again, reload SYSSTTFU and execute the previous steps.

For definitions of the terms used in the trace table, see Appendix A.

Section 10. Diskette Data Recovery Procedure

Use the diskette data recovery procedure to:

- Read and display a data set (or volume) label from a defective diskette
- Modify the label if necessary
- Copy the data set from the defective diskette to another diskette
- Display the records of the data set being copied
- Modify the records if necessary

WHEN TO USE THE DISKETTE DATA RECOVERY PROCEDURE

The diskette data recovery program provides a means of recovering the maximum amount of data from a defective diskette. This procedure can only be used to recover data from a diskette created on a IBM 5280 System.

If the volume label is defective, this procedure cannot be used. If a data set label is defective, you can rewrite it to another label space on the same diskette. If records of the data set are defective, you can copy the data set to another diskette and enter the defective records.

CAUTION: This program should be used only by someone who is familiar with the format and contents of the labels on the index cylinder of a diskette.

Do not use this procedure for routine copying; use the copy (SYSCOPY) utility. Do not use this procedure for routine label maintenance; use the label maintenance (SYSLABEL) utility.

LOAD THE DATA RECOVERY PROCEDURE

Make sure you have a printed listing of the labels on the diskette before you begin modifying the labels. You can use the list (SYSLIST) utility to print the existing labels, if the labels are not defective.

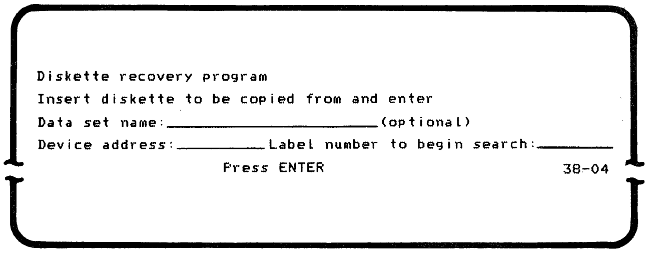
The machine verification diskette contains the data recovery program. Two diskette drives are required to recover the data from the defective diskette.

Note: The program in this section will not run on an IBM 5280 that has been IPLed with the machine verification diskette IPL. The system IPL must be used in order for this program to run correctly.

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

Insert Defective Diskette

1. The following prompt is displayed:



```
Diskette recovery program
Insert diskette to be copied from and enter
Data set name:_______________________(optional)
Device address:_________Label number to begin search:________
                    Press ENTER                        38-04
```

2. Insert the defective diskette into a diskette drive.

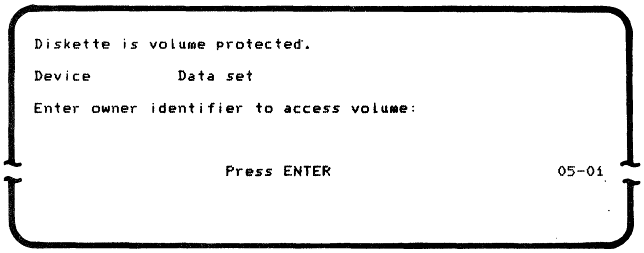
3. Enter the data set name of the data set label you want displayed. If you do not enter a data set name, the first data set label on the diskette will be displayed.

   Note: You should omit the data set name if the data set label is defective, if any defective data set labels precede the label you want to display, or if you want to display the volume label.

4. Enter the device address of the drive containing the defective diskette.

5. Enter the label number where you wish the search to begin. If you entered a data set name, the search for the data set will begin at this label number. If no data set name is entered then the specified label will be displayed.

6. Press the Enter key. If the data set is volume-protected, the following prompt is displayed:

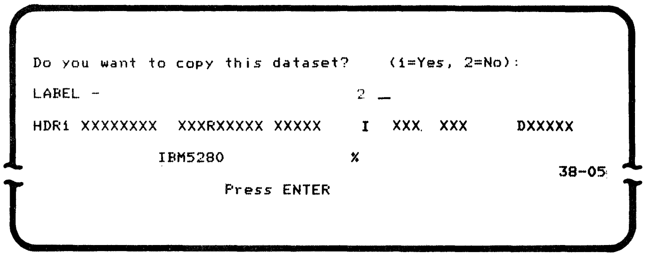


```
Diskette is volume protected.

Device          Data set

Enter owner identifier to access volume:


                    Press ENTER                    05-01
```

7. Enter the owner identifier and press the Enter key.

Display Data Set Label

1. The label for the specified (or first) data set is read from the defective diskette and the following prompt appears:



```
Do you want to copy this dataset?    (1=Yes, 2=No):

LABEL -                              2 _

HDR1 XXXXXXXX  XXXRXXXXX XXXXX    I  XXX  XXX     DXXXXX

          IBM5280                 %
                                                   38-05
                    Press ENTER
```

   Note: If you press the Home key when the first data set label is being displayed, the volume label will be displayed. If you press the Home key when any other data set label is being displayed, the preceding data set label is displayed.

2. Lines 4 and 5 of this display contain the label exactly as it was read from the diskette. You can modify or delete the label that is displayed; see *Modifying the Data Set Label, Deleting Labels,* or *Modifying the Volume Label* in this section.

3. If an error occurs while the label is being read from the diskette, the label prompt is displayed with an appropriate error code on line 3. See the *Message Manual* for further information.

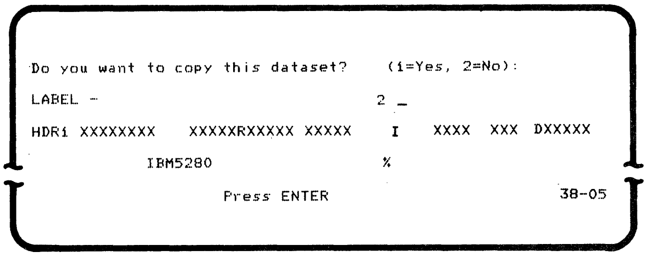
   You can modify the label to try to reconstruct the correct label data from the label information being displayed, and/or from other labels on the diskette; see *Modifying the Data Set Label* in this section.

4. If you do not want to copy the data set, accept the default of 2 by pressing the Enter key. The next label is read from the diskette and displayed in lines 4 and 5 of the Label prompt (38-05). You may repeat this section for any data set label.

5. If you do want to copy the data set, enter 1. The first line of the Label prompt is changed; see *Select Copy Options,* in this section.

Modifying the Data Set Label

1. The following prompt is on your display:



```
Do you want to copy this dataset?    (1=Yes, 2=No):

LABEL -                              2 _

HDR1 XXXXXXXX   XXXXXRXXXXX XXXXX   I   XXXX  XXX  DXXXXX

          IBM5280                   %

                    Press ENTER                    38-05
```

2. If you have an error code on line 3 of your display, this label space of the diskette is defective. Try entering the label data into deleted or unused label space. To find this space, press the Enter key to advance through the labels or the Home key to return to previous labels. The system can then attempt to copy the data set using the new data set label.

3. You can modify any field of the label. See the *IBM 5280 Functions Reference Manual,* GA21-9353, or the *IBM 5280 Data Areas Handbook,* SY21-0595, for complete descriptions of the fields of the label.

4. Press the Field Advance (⟶|) key or the Field Backspace (|⟵) key to move the cursor to the fields you want to modify.

   Note: As the cursor enters a field of the label, the field is identified on line 1 of the label prompt.

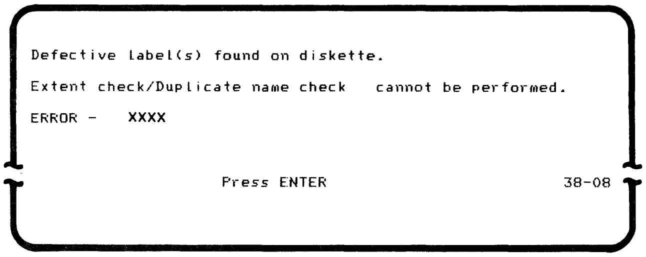
5. Modify the label as necessary. Record the changes you have made.

6. Press the Enter key.

7. The system will attempt to write the modified label to the original diskette, replacing the original label. If the label is successfully written to the original diskette, the system opens the corresponding data set to test the validity of the modified label. If the data set can be opened, the label is assumed to be valid and the modified label is redisplayed.

   If an error occurs (an error code is displayed on the status line), the original (unmodified) label is restored to the original diskette and redisplayed. If the copy option was selected for the data set, the label data is validated after the data is restored.

8. If a defective header label exists anywhere on the diskette, the extent checking cannot be performed during the label validation. The following prompt is displayed:



```
Defective label(s) found on diskette.
Extent check/Duplicate name check   cannot be performed.
ERROR -   XXXX

                 Press ENTER                      38-08
```

9. Press the Enter key. The modified header label will be redisplayed.

Deleting Labels

1. While the label is being displayed, press the Cmd key, then the Delete Record key.

   The system replaces the first letter in the label with a D. The deleted label can be redisplayed later, unless the system uses this deleted space for a new label.

Reinstating Deleted Labels

Note: If you want a deleted data set to be copied, you must reinstate the deleted label before you request the copy.

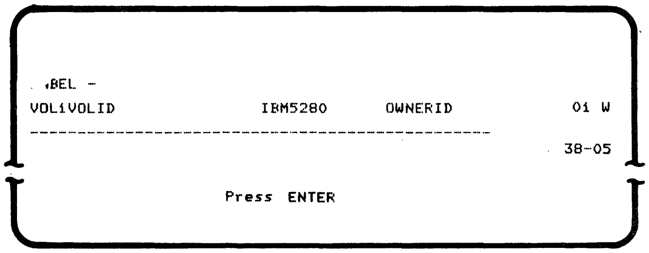
1. While the label is being displayed, move the cursor to the first character (a D) in the label.

2. Press the H key.

3. Change any other fields that are in error, then press the Enter key.

Modifying the Volume Label

1. The following prompt is on your display:



```
  BEL -
VOL1VOLID                   IBM5280      OWNERID              01 W
--------------------------------------------------
                                                             38-05

                   Press  ENTER
```

   Note: If the volume label is defective the diskette data recovery program cannot be used.

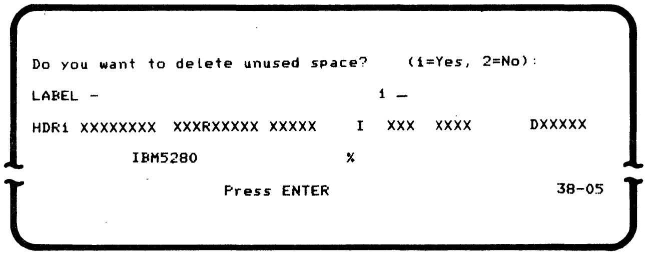
2. Press the Field Advance (⟶|) key or the Field Backspace (|⟵) key to move the cursor to the fields you want to modify.

3. Modify the volume label as necessary. Record the changes you have made.

4. Press the Enter key. The system will write the modified label to the original diskette.

Select Copy Options

1. When you request that a data set be copied, the following prompt is displayed:

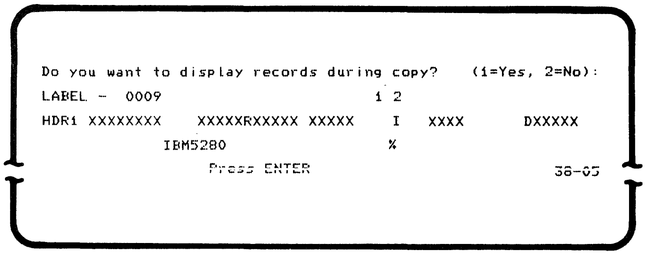


```
Do you want to delete unused space?    (1=Yes, 2=No):
LABEL -                              1 _
HDR1 XXXXXXXX  XXXRXXXXX XXXXX     I  XXX  XXXX       DXXXXX
            IBM5280                 %
                     Press ENTER                      38-05
```

2. If you enter 1, the deleted records in the data set are not copied; the unused space in the copied data set is released.

3. If you enter 2, all deleted records in the original data set are copied and marked as deleted records in the copied data set. The copied data set is the same size as the original data set.

4. After you have entered a number, the Label prompt is changed as follows:

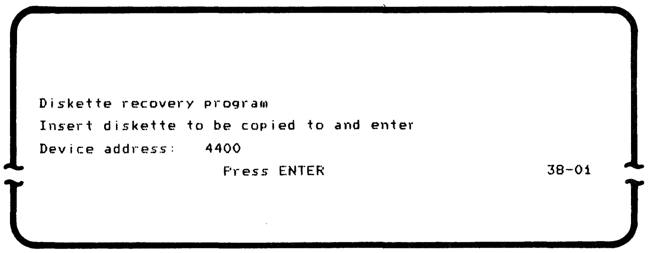


```
Do you want to display records during copy?    (1=Yes, 2=No):
LABEL  -  0009                        1 2
HDR1 XXXXXXXX    XXXXXRXXXXX XXXXX     I   XXXX       DXXXXX
           IBM5280                    %
                 Press ENTER                          38-05
```

5. If you enter 1 and press the Enter key, the first record of the data set is displayed when the copy process begins (38-06).

6. If you enter 2 and press the Enter key, a record is displayed only if an error occurs during the copy process (38-06).

7. If this is the first data set to be copied, the following prompt is displayed:



```
Diskette recovery program
Insert diskette to be copied to and enter
Device address:   4400
                    Press ENTER                         38-01
```

8. Insert the output diskette into a diskette drive.

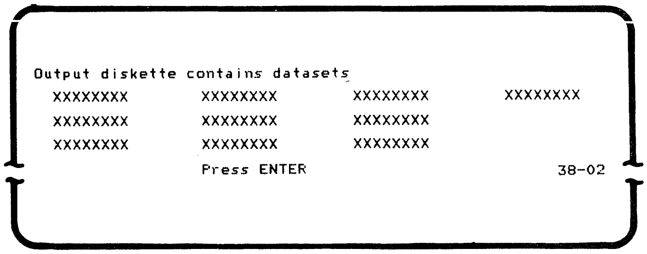
9. Enter the device address of the diskette drive.

10. Press the Enter key.

11. If the diskette is volume-protected, the volume-protected prompt is displayed. Enter the owner identifier and press the Enter key.

12. The data set labels on the output diskette are scanned for undeleted data sets. If the diskette does not contain undeleted data sets, the copy process begins; see *Copy the Data Set,* in this section.

13. If undeleted data sets are found, the following prompt is displayed:

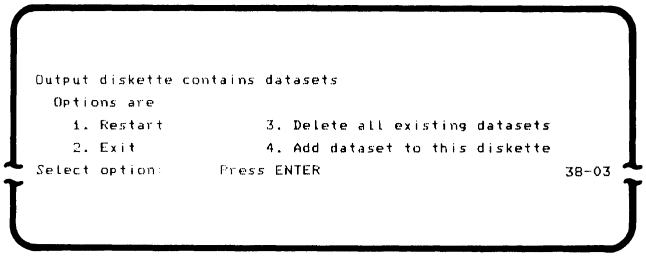


```
Output diskette contains datasets
  XXXXXXXX     XXXXXXXX     XXXXXXXX     XXXXXXXX
  XXXXXXXX     XXXXXXXX     XXXXXXXX
  XXXXXXXX     XXXXXXXX     XXXXXXXX
                  Press ENTER                          38-02
```

14. Press the Enter key.

15. If there are more than 12 undeleted data sets on the diskette, the other names are displayed.

16. After all the data set names have been displayed, the following prompt appears:



```
Output diskette contains datasets
  Options are
    1. Restart             3. Delete all existing datasets
    2. Exit                4. Add dataset to this diskette
Select option:        Press ENTER                          38-03
```

17. Select an option:

    - Select 1 if you want the procedure to be restarted. The Insert defective diskette prompt (38-04) is displayed.
    - Select 2 if you want to exit from the procedure.
    - Select 3 if you want to delete all data set labels on the output diskette, then replace them with the data set labels being copied from the defective diskette.
    - Select 4 if you want to add the data set being copied to the output diskette.

      Note: An error will occur if the data set label to be copied already exists on the output diskette. You can press the Reset key to delete the data set on the output diskette. The data set from the defective diskette can now be copied. Or you can press the CMD key and then press the End of Job key to terminate the procedure. The data sets are not deleted or copied.

    If you select 3 or 4, the same output diskette is used for copying successive data sets; this prompt (38-03) is not repeated.

18. Press the Enter key. The copy process begins.

Copy the Data Set

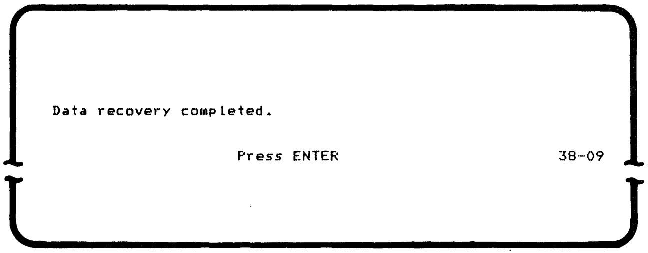
The system opens the data set to be copied, then allocates a data set on the output diskette. If an error occurs during the open or allocation, an error code is displayed on the status line. Before you press the Reset key, see the *IBM 5280 Message Manual* for the appropriate recovery procedures.

Note: If you attempt to copy a basic or H exchange data set to a diskette that does not allow this exchange type, an error will occur. Press the Reset key. The data set is converted to an I exchange type and copied to the output diskette.

After a successful open and allocation, the input data set is copied to the output diskette. If you selected to display a data set record (option 1 in the last copy option for prompt 38-05), or if an error occurred while a record was being read from the defective diskette, the record is displayed (see *Display Data Set Record,* in this section).

In an error occurs while the record is being written to (or read from) the output diskette, an error code is displayed on the status line. After you reset the error, you can press the Enter key to attempt to continue the copy, or use the Cmd and End-of-Job key sequence to terminate the program (see *Procedure Termination, in this section).*

After the data set is copied, the following prompt appears:

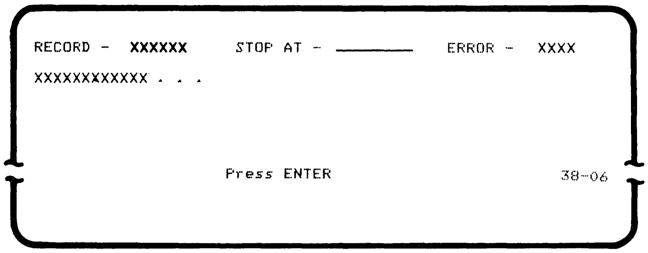


```
Data recovery completed.

                         Press ENTER                  38-09
```

If the data set is copied successfully, another data set label can be displayed. If you entered a data set name for the insert defective diskette prompt, that prompt (38-04) is redisplayed. Otherwise, the label for the next data set on the input diskette is displayed (38-05).

Display Data Set Record

1. If you selected to display a record, or if an error occurred, the following prompt appears:



```
RECORD - XXXXXX     STOP AT - ______     ERROR - XXXX
XXXXXXXXXXXX . . .



                      Press ENTER                     38-06
```

The record number in line 1 is a sequential count of the records that were copied, including deleted records.

2. The cursor is in the first position of the STOP AT field.

   Enter the record number of the record you want to be displayed next. If you do not enter a record number, the next record is displayed. If you want records displayed only when an error occurs, enter any number greater than the total number of records in the data set.

3. If the record to be displayed next has already been copied, it is reread from the *output* diskette and displayed with any previous modifications.

4. If the specified record has not been copied, the program continues to copy records until that record is encountered or an error occurs, then it displays the record.

   Note: The word ERROR and the error code are displayed only if an error occurs while the record is being read.

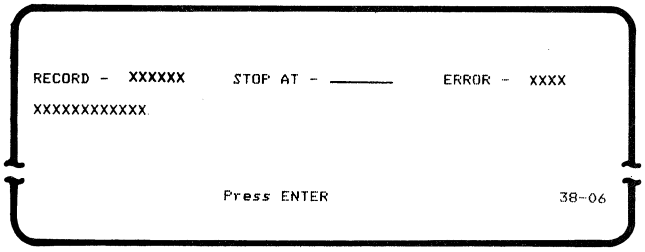
5. The record beginning in line 3 may contain incorrect characters. Any record position being displayed can be modified (see *Modifying a Data Record,* in this section), before you press the Enter key.

   If the record is too large to fit on the screen, the record is truncated. The remaining data is copied but not displayed. The maximum number of record bytes that can be displayed on the different size screens are:

Screen Size (Characters)	Bytes Displayed
480	256
960	736
1920	1696

Modifying a Data Record

1. The Record prompt is on your display:



```
RECORD - XXXXXX     STOP AT - ______          ERROR - XXXX
XXXXXXXXXXXX



                    Press ENTER                       38-06
```

2. Press the Field Advance (⇥) key to place the cursor at the first position of the displayed record.

3. Use the cursor movement keys to position the cursor at the characters you want to modify.

4. If you place the cursor under an undisplayable character (represented by a solid rectangular block on the screen), the hexadecimal value of that record byte is displayed on the status line.

5. Modify the characters of the displayed record where necessary.

   Note: If you press the Home key, the cursor will move to the first position of the STOP AT field. If the cursor is already in the first position of the STOP AT field, press the Home key to copy the record and display the previous record.

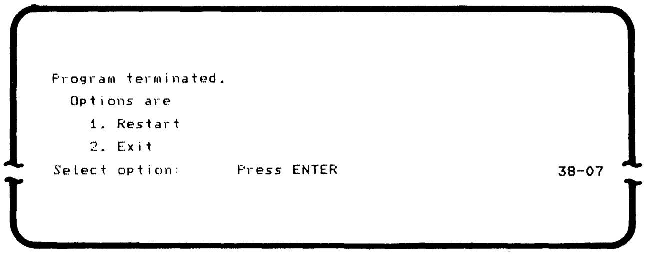
6. Press the Enter key. The modified record is copied to the output diskette. The input data set is not changed.

Deleting Records

You can delete a record by using the Cmd and Delete Record key sequence while the record is being displayed. The record will be copied to the output diskette as a deleted record.

Procedure Termination

1. When the Diskette Data Recovery procedure is terminated, the following prompt appears:



```
Program terminated.
  Options are
    1. Restart
    2. Exit
Select option:         Press ENTER                    38-07
```

2. If you select option 1 and press Enter, the Insert Defective Diskette prompt (38-04) is displayed.

3. If you select option 2 and press Enter, the Load prompt is displayed if in a foreground partition. Otherwise, the program will exit and free the partition.

   The diskette data recovery procedure can be terminated any time during the procedure by the Cmd and End-of-Job key sequence.

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Appendix A. Formatted SNA Trace Table Terms and BIND Error Messages

SNA Trace Table Terms

TERM	MEANING
(ABORT)	Abort Data Set
(ADS/CPC)	Abort Data Set Compacted
(ADA/CPR)	Abort Data Set Compressed
(ADS/EXC)	Abort Data Set Basic Exchange
(B&E/CPC)	Begin and End Data Set Compacted
(B&E/CPR)	Begin and End Data Set Compressed
(B&E/EXC)	Begin and End Data Set Basic Exchange
(BDS)	Begin Data Set
(BDS/CPC)	Begin Data Set Compacted
(BDS/CPR)	Begin Data Set Compressed
(BDS/EXC)	Begin Data Set Basic Exchange
(BDS,EDS)	Begin and End Data Set
(CDS/CPC)	Continue Data Set Compacted
(CDS/CPR)	Continue Data Set Compressed
(CDS/EXC)	Continue Data Set Basic Exchange
(CNTINUE)	Continue Data Set
(EDS)	End Data Set
(EDS/CPC)	End Data Set Compacted
(EDS/CPR)	End Data Set Compressed
(EDS/EXC)	End Data Set Basic Exchange
(RESUME)	Resume Data Set
(RDS/CPC)	Resume Data Set Compacted
(RDS/CPR)	Resume Data Set Compressed
(RDS/EXC)	Resume Data Set Basic Exchange
(SDS/CPC)	Suspend Data Set Compacted
(SDS/CPR)	Suspend Data Set Compressed
(SDS/EXC)	Suspend Data Set Basic Exchange
(SUSPEND)	Suspend Data Set
+RSP	Positive Response Indication
−RSP	Negative Response Indication
ACTLU	Activate Logical Unit
ACTPU	Activate Physical Unit
BB	Begin Bracket
BB,EB	Begin and End Bracket
BC	Begin Chain Indication
BC,EC	Begin Chain, End Chain
BID	Bid Command
BIND	Bind Command
CANCEL	Cancel Command
CARD	Card Media

TERM	MEANING
CD	Change Direction
CHASE	Chase Command
CLEAR	Clear Command
CONS	Console Media
DACTLU	Deactivate Logical Unit
DACTPU	Deactivate Physical Unit
DAF	Destination Address Field
DFC	Data Flow Control Command
DR1	Definite Response One
DR1&2	Definite Response One and Two
DR2	Definite Response Two
EB	End Bracket
EC	End Chain Indication
ER	Exception Response
EXCH	Exchange Media
EXPED	Expedited Flow
FMD	Function Management Data
FMH	Function Management Header
LUSTAT	LU Status
MOC	Middle of Chain Indication
NC	Network Control Command
NORMAL	Normal Flow
NORSP	No Response
NOTIFY	Notify Command
OAF	Origin Address Field
PACREQ	Pacing Request
PACRSP	Pacing Response
PRNT	Print Media
RECFMS	Record Formatted Maintenance Statistics Command
RECMS	Record Maintenance Statistics Command
RSHUTD	Request Shutdown Command
SC	Session Control Command Type
SDT	Start Data Traffic Command
SHUTC	Shutdown Complete Command
SHUTD	Shutdown Command
SIGNAL	Signal Command
UNBIND	Unbind Command

Bind Error Messages

If the program encounters a Bind command in the trace table, the Bind image will be printed on the report directly after the Bind entry. If a negative response to the Bind is encountered, an error message will be printed directly after the Bind image. This message will consist of an error number, the decimal number of the byte within the Bind where the error was found, and a short description of the error.

For a complete description of the correct bit settings for each byte of the Bind, see Appendix E of the *IBM 5280 Communications Reference Manual,* SC34-0247. The decimal number of the byte given by the error message in the formatted trace table corresponds to the decimal displacement of the byte in Appendix E of that manual.

Note: Byte zero is not in the Bind image printed in the formatted trace table. Byte zero corresponds to the code for the Bind command and is always hexidecimal 31.

The error messages for a negative response to a Bind command are:

ERR001 BYTE 01 – FORMAT & TYPE MISMATCH
This error will occur if this byte is not x'01'.

ERR002 BYTE 02 – FM PROFILE MISMATCH
The FM Profile allowed for SYSSNAD, SYSSNAU, AND SYSSNAR is x'03'.

ERR003 BYTE 03 – TS PROFILE MISMATCH
The TS Profile allowed for SYSSNAD, SYSSNAU, and SYSSNAR is x'03'.

ERR004 BYTE 04 – NO RESPONSE NOT ALLOWED
This error will occur if the immediate request mode bit is on (bit 1), the primary may send EB bit is off (bit 7), or if either of the reserved bits are on (bits 4 &5). When using SYSSNAU this error will occur if the compression bit is on (bit 6).

ERR005 BYTE 04 – NO RESPONSE NOT ALLOWED
This error will occur if both response bits are off (bits 1 & 2). Response types allowed are: exception response (b'01'), definite response (b'10'), or both (b'11').

ERR006 BYTE 05 – SLU PROTOCOL MISMATCH
This error will occur if the multiple RU chains allowed bit is off (bit 0), if immediate request mode bit is on (bit 2), or if the reserved bits (bits 4 & 5) are on. In addition, when using SYYSSNAU, this error will occur if the compression bit is on (bit 6).

ERR007 BYTE 05 – NO RESPONSE NOT ALLOWED
This error will occur if both response bits are off (bits 1 & 2). Response Types allowed are: exception response (b'01'), definite response (b'10'), or both (b'11').

ERR008 BYTE 05 – END BRACKET SHOULD BE ALLOWED
This error will occur only when using SYSSNAR if the send EB bit is off (bit 7).

ERR009 BYTE 05 – END BRACKET SHOULD NOT BE ALLOWED
This error will occur only when using SYSSNAD if the send EB bit is on (bit 7).

ERR010 BYTE 06 – COMMON PROTOCOL MISMATCH
This error will occur if the brackets used bit is off (bit 2), if the bracket rule termination bit is off (bit 3), or if any of the reserved bits are on occur if the FM headers allowed bit is off (bit 1).

ERR011 BYTE 06 – ASCII SHOULD BE ALLOWED

This error will occur if the IBM 5280 has been configured to use the ASCII character set (question C18 of the SYSCCU) and the bind has been received with the alternate character set allowed bit off (bit 4).

ERR12 BYTE 06 – ASCII SHOULD NOT BE ALLOWED

This error will occur if the IBM 5280 has been configuerd to use the EBCDIC character set (question C18 of the SYSCCU) and the bind has been received with the alternate character set allowed bit on (bit 4).

ERR013 BYTE 07 – COMMON PROTOCOL MISMATCH

This error will occur if the byte is not x'80'.

ERR014 BYTE 08 – SEC SEND PACING COUNT MISMATCH

This error will occur if the secondary send pacing count in the bind does not match the secondary send pacing count specified for the IBM 5280 (question S6 of the SYSCCU).

ERR015 BYTE 09 – SEC RECV PACING COUNT MISMATCH

This error will occur if the socondary receive pacing count in the bind does not match the secondary receive pacing count specified for the IBM 5280 (question S5 of the SYSCCU).

ERR016 BYTE 11 – PRI MAX SEND RU SIZE GT 256

This error will occur when using SYSSNAD and SYSSNAU if the FU size specified is greater than 256. The specification for 256 is x'85' meaning 8 X (2 **5).

ERR017 BYTE 10 – SEC MAX SEND RU SIZE LT 256

This error will occur when using SYSSNAR if the RU size specified is less than 256. The specification for 256 is x'85' meaning 8 X (2 **5).

ERR018 BYTE 14 – LU PROFILE TYPE NOT EQUAL TO 1

This error will occur if the LU Profile type is not equal to one.

ERR019 BYTE 15 – INVALID FM HEADER SUBSET

This error will occur when using SYSSNAD and SYSSNAR if the FM header subset bits (bits 0 to 3) are anything other than b'0001' or b'0010'.

ERR020 BYTE 15 – INVALID SCS CHARACTER SUBSET

This error will occur when using SYSSNAD and SYSSNAR if the SCS control bits (bits 4 to 7) are anything other than b'0000' or b'0001'.

ERR021 BYTE 16 – PLU USAGE MISMATCH

This error will occur when using SYSSNAD and SYSSNAR if any of the bits in this byte are on.

ERR022 BYTE 17 – PLU USAGE MISMATCH

This error will occur when using SYSSNAD and SYSSNAR if any of the bits in this byte are on.

ERR023 BYTE 18 – PLU USAGE MISMATCH

This error will occur when using SYSSNAD and SYSSNAR if the reserved bit (bit 5) is on.

ERR024 BYTE 19 – PLU USAGE MISMATCH

This error will occur when using SYSSNAD and SYSSNAR if any of the bits in this byte are on.

ERR025 BYTE 20 – PLU USAGE MISMATCH

This error will occur when using SYSSNAD and SYSSNAR if the extended card format bit is on (bit 4), the extended document format bit is on (bit 5), or if the reserved bit is on (bit 7).

ERR026 BYTE 20 – EXCHANGE MEDIA NOT ALLOWED

This error will occur when using SYSSNAD if the exchange media format allowed bit is on (bit 2).

ERR027 BYTE 20 – MUST NOT SEND CD EVERY EDS

This error will occur when using SYSSNAR if the SLU must send CD every EDS bit is on (bit 6).

ERR028 BYTE 20 – DATA MANAGEMENT NOT ALLOWED

This error will occur when using SYSSNAR if the disk data management allowed bit is on (bit 3).

ERR029 BYTE 26 – CRYPTO FIELD NOT ALLOWED

This error will occur if the crypto field is anything other than x'00'.

ERR030 BYTE 27 – ZERO LENGTH PLU NAME RECEIVED

This error will occur if the PLU name length field is x'00'.

ERR031 BYTE 28 – PLU NAME MISMATCH

This error will occur if the PLU name specified in the Bind does not match the PLU name specified for the IBM 5280 (question S1 of the SYSCCU).

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This technical newsletter provides replacement pages and additional information for the subject manual. Pages to be inserted and/or removed are:

Title page
iii–viii
7, 8
21–26
26.1, 26.2 (added)
27, 28
31–34
49–58

Changes to the text and illustrations are indicated by a vertical line to the left of the change. Absence of a vertical line on a page bearing an 'updated' notice means only that previously existing text has been removed or rearranged or that a minor typographical error has been corrected.

Summary of Amendments

- Addition of IBM 5224 printer test pattern.
- Updates to SYSSTTFU and SYSRCVR.

Note: *Please file this cover letter at the back of the manual to provide a record of changes.*

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