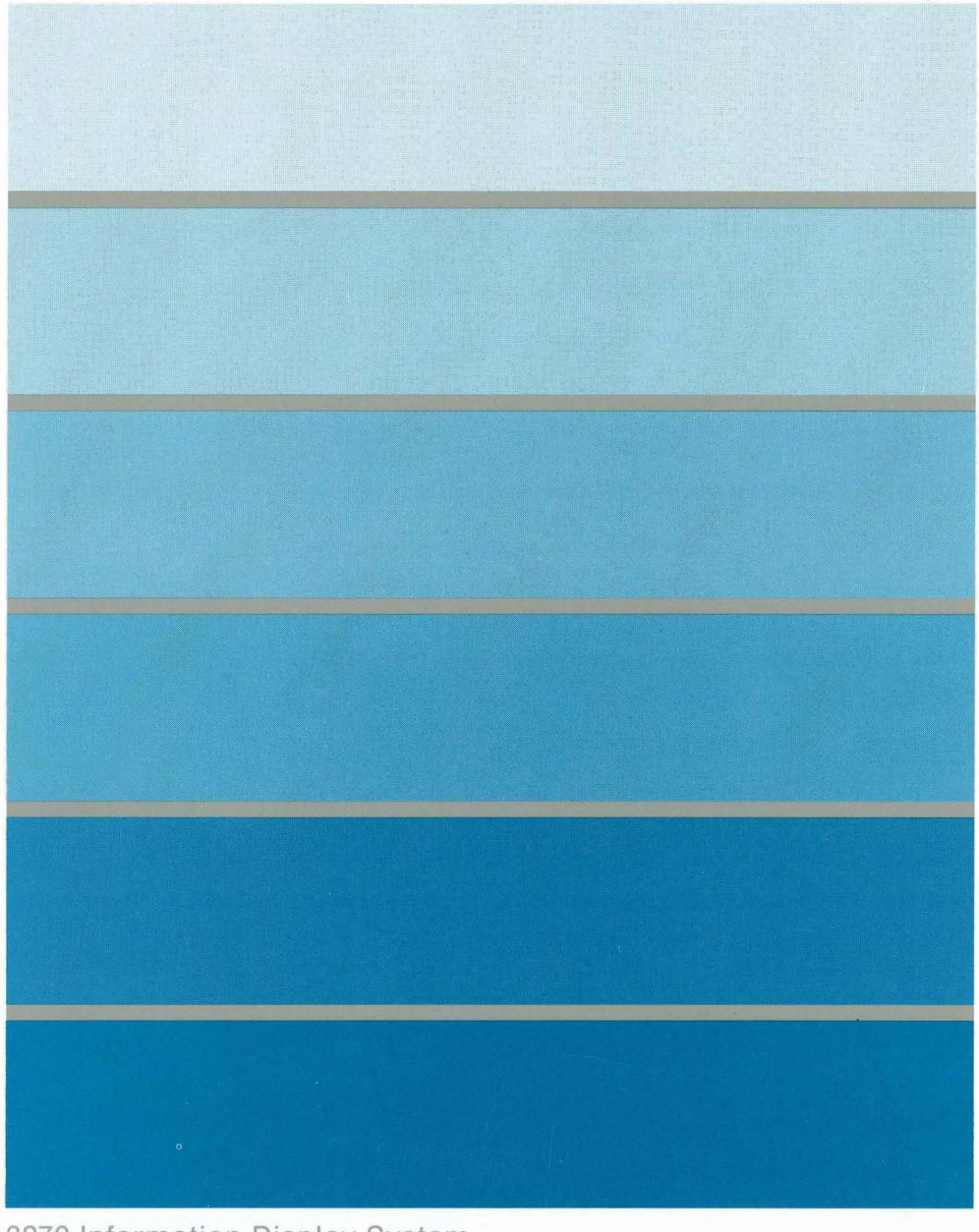
3174 Establishment Controller

GA27-3863-02

Utilities Guide

Configuration Support B Release 3



3270 Information Display System

3174 Establishment Controller

GA27-3863-02

Utilities Guide

Configuration Support B Release 3

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Second Edition (September 1990)

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Choosing the Right Book from the 3174 Library

The 3174 library contains information for installing, customizing, operating, maintaining, and programming the data stream for the 3174 controller. The list below shows the manuals you need to perform these tasks.

To Find Translations of Safety Notices:

Safety Notices, GA27-3824

To Organize Library Materials:

Binders and Inserts, SBOF-0089
Binder, SX23-0331
Inserts, SX23-0332

To Become Familiar with the 3174:

Master Index, GC30-3515
3174 Introduction, GA27-3850

To Prepare Your Site for the 3174:

Site Planning, GA23-0213
Physical Planning Template, GX27-2999

To Set Up and Operate the 3174:

Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, and 13R User's Guide, GA23-0337
Models 21L and 21R User's Guide, GA27-3874
Models 51R, 52R, 53R, 61R, 62R, and 63R User's Guide, GA23-0333
Models 81R, 82R, 90R, 91R, and 92R User's Guide, GA23-0313

To Plan for and Customize the 3174:

Configuration Support A and S

Planning Guide, GA27-3844
Utilities Guide, GA27-3853
Central Site Customizing User's Guide, GA23-0342
Asynchronous Emulation Adapter Description and Reference, GA27-3872

Configuration Support B

Planning Guide, GA27-3862
Model 90R Planning, GD21-0036
Utilities Guide, GA27-3863
Central Site Customizing User's Guide, GA27-3868
Asynchronous Emulation Adapter Description and Reference, GA27-3872

To Perform Problem Determination:

Customer Problem Determination, GA23-0217
Status Codes, GA27-3832

To Install Features or Convert Models on the 3174:

Fixed Disk Installation and Removal Instructions, GA27-3864
Diskette Drive Installation and Removal Instructions, GA23-0263
Terminal Multiplexer Adapter and Fiber Optic Terminal Adapter Installation and Removal Instructions, GA23-0265
Model Conversion Instructions, GA23-0295
Token-Ring Network Feature Installation and Removal Instructions, GA23-0329
Storage Expansion Feature Installation and Removal Instructions, GA23-0330
Communication Adapter Installation and Removal Instructions, GA27-3830
Asynchronous Emulation Adapter Installation and Removal Instructions, GA23-0341
Concurrent Communication Adapter Installation and Removal Instructions, GA27-3851
Models 21L, and 21R Feature Installation and Removal Instructions , GA27-3875

To Use the Asynchronous Emulation Adapter Feature

Asynchronous Emulation Adapter Description and Reference, GA27-3872
Terminal User's Reference for Expanded Functions, GA23-0332

To Use the Multiple Logical Terminals Function:

Terminal User's Reference for Expanded Functions, GA23-0332

To Obtain Data Stream Programming and Reference Information:

Functional Description, GA23-0218
Data Stream Programmer's Reference, GA23-0059
Asynchronous Emulation Adapter Description and Reference, GA27-3872
3174 Reference Summary, GX27-3872
3174 Character Set Reference, GA27-3831
3270 X.25 Operation, GA23-0204

To Perform Maintenance (Service Personnel):

Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, and 13R Maintenance Information, SY27-2572
Models 21L, and 21R Maintenance Information, SY27-0323
Models 51R, 52R, 53R, 61R, 62R, and 63R Maintenance Information, SY27-2573
Models 81R, 82R, 90R, 91R, and 92R Maintenance Information, SY27-2584
CE Reference Summary, SX27-3873
Status Codes, GA27-3832

Preface

This *Utilities Guide* supports 3174 Configuration Support B Release 3 microcode. It is written for those who customize the Control disk microcode and run the utilities for the 3174 Establishment Controller. The customizing planning information for Configuration Support B Release 3 can be found in the *3174 Planning Guide*, GA27-3862-2.

How This Book is Organized

Chapter 1 contains the initial steps necessary to prepare for and choose the desired customizing or utility procedure.

Chapters 2 through 7 contain the customizing and support utility procedures.

The **3174 Configuration Questions Reference** lists the possible responses for each of the configuration questions and indicates the worksheets on which they appear. The Configuration Reference is found at the end of Chapter 2.

How To Use This Book

First-time users should start with Chapter 1. This chapter has the procedure for displaying the Master Menu. You then use a table to match customizing worksheets or support utility tasks to a Master Menu Option. This option in turn suggests the appropriate beginning.

Use Chapter 2 to Customize the Control Disk
Use Chapter 3 for merging DSL Code.
Use Chapter 4 for copying files
Use Chapter 5 for upgrading Microcode
Use Chapter 6 for Media Management.
Use Chapter 7 for identifying keyboards.

Use the 3174 Configuration Questions Reference as a check against worksheet responses. Be sure to use the *3174 Planning Guide* to initially fill out the worksheets.

How This Book is Organized	How To Use This Book
Appendixes A, B and C contain reference and background material the first-time user may find particularly helpful.	**Use Appendix A** for background on the customizing and support utilities. Appendix A also has information on microcode releases, available display stations, a physical description of the 3174, and a lesson on inserting diskettes. There is also a procedure for **securing (parking) the fixed disk head**. Use this procedure **before moving** the controller. **Use Appendix B** to learn about record-keeping methods such as local copy, diskette duplication and using the copy procedure to manage customization data. **Use Appendix C** to gain insight into the Customizing process. It contains information on Master Menu and Customize Control Disk Menu options.
Appendix D contains reference material for the automatic interutility checking program.	**Use Appendix D** when the automatic interutility checking program discovers incompatibility errors when more than one utility has been used during customizing.
Appendix E contains reference material for the Limited Function Utility disk.	**Use Appendix E** for information on the Limited Function Utility (LFU) Disk.
Appendix F contains the fixed disk initializing procedure.	**Use Appendix F** when you have a new controller with a fixed disk or a new field-installed fixed disk feature.

Related Publications

You may wish to refer to one of these publications for more detailed information on a particular subject:

IBM 3174 Establishment Controller

- *Character Set Reference*, GA27-3831
- *Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, and 13R User's Guide*, GA23-0337
- *Models 51R, 52R, 53R, 61R, 62R, and 63R User's Guide*, GA23-0333
- *Models 81R, 82R, 91R, and 92R User's Guide*, GA23-0313
- *Customer Problem Determination*, GA23-0217
- *Functional Description*, GA23-0218
- *Central Site Customizing User's Guide*, GA23-0342
- *Terminal User's Reference for Expanded Functions*, GA23-0332
- *Status Codes*, GA27-3832.

Contents

Figures

Tables

Chapter 1. Getting Started

In this chapter, you will:

- Display the Master Menu.
- View a table that lists the customizing utility worksheets. From this table you are directed to the Verify Drives section in Chapter 2 and in turn to the correct procedure for your worksheets. A second table will help you choose the appropriate option and chapter for support utility tasks you may have to do.

You should have one of the following:

- One or more completed worksheets from the planner. (The worksheets will direct you to a Master Menu customizing utility. The customizing utilities are described in Appendix A.)
- Master Menu support utility tasks you wish to perform. (Support Utilities are listed in Table 1-3 on page 1-7. They are described in Appendix A.)

You will also need:

- A 3174 Utility (UTL) disk (diskette or on fixed disk). A *disk* can be either a diskette or a fixed disk.
- A 3174 Control (CTL) disk.
- A *customizing display station* attached to port 26-00 of the controller. See "Which Display Stations Can You Use?" on page A-5 for a list of display stations that can be used.
- You may also need a copy of *3174 Status Codes*, GA27-3832.

Note: The customizing planning information for Configuration Support B Release 3 can be found in the *3174 Planning Guide*, GA27-3862-2.

The Master Menu

To begin any customizing or support utility procedure, you must first display the Master Menu shown in Figure 1-1 on page 1-3. To display the Master Menu, perform the procedure described in "How to Display the Master Menu" on page 1-2. You can perform the procedure using a diskette drive or a fixed disk drive.

You Have a New Fixed Disk

If you are using a new controller with a fixed disk or have just installed a new fixed disk, you must initialize it. Display the Master Menu using a Utility diskette. (Master Menu instructions are on the next page.) After displaying the Master Menu, you will be directed to Appendix F for instructions on initializing the new fixed disk. Upon completion of the Appendix F procedure, you will be directed to return to the "Worksheet and Task Tables" in this chapter.

How to Display the Master Menu

Step 1 For information about the 3174 switches, indicators, operator panel, and diskette drives, see "Front Panel Layout and Diskette Insertion" on page A-6.

Step 2 If the *customizing display station* is not already on, turn it on.

Step 3 If the *3174 Controller* is not already on, turn it on.

- For Remote (R) models, place the switch in the **I** (on) position.
- For a Model 1L or 11L, place the switch in the Start position and release. Also ensure that the Channel Interface switch on the operator panel is in the Offline position. The offline indicator should be lighted. If the indicator does not light in a reasonable time, you may need to ask the system operator to take the controller offline.

Step 4 If IMLing from a ***diskette drive***, go to step 6.

Step 5 If IMLing from a ***fixed disk drive***, go to step 7.

Step 6 Insert the Utility diskette into a 2.4MB diskette drive. Close the diskette drive.

Step 7 Press and hold the Alt 1 pushbutton on the operator panel.

Step 8 While holding the Alt 1 pushbutton, press and release the IML pushbutton.

Step 9 When you see 31 in the status indicators, release the Alt 1 pushbutton. If 31 does not appear, see *3174 Status Codes*, GA27-3832.

Step 10 If you have a Model 81R, 82R, 90R, 91R, or 92R, go to Step12 . For other models, continue with Step 11.

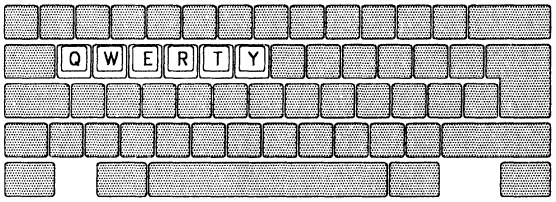
Step 11 When you see 40 in the status indicators, use the keypad on the controller operator's panel to key in one of the following:

0140 if you are IMLing from Diskette Drive 1
0240 if you are IMLing from Diskette Drive 2
0340 if you are IMLing from Fixed Disk 3
0440 if you are IMLing from Fixed Disk 4.

Step 12 Press and release the Enter pushbutton on the operator panel. After approximately 30 seconds, 7000 appears on the operator panel and the Master Menu appears on the customizing display station screen. If 7000 does not appear, see *3174 Status Codes*. The title "Master Menu" should be highlighted. If it is not, adjust the contrast for the screen so that the title is brighter than the other characters. You need to distinguish highlighted characters during the customizing procedures.

Step 13 If you want to print copies of the customization panels as you complete them, turn on your printer and press the Print key. (This printer can be attached to any port except port 0). After you have received a copy, attach a label with information on the serial number and location of the controller, date of the customization and microcode release level. For more information on this procedure, see "Local Copy" on page B-2.

Step 14 Check the keyboard of the customizing display station. The default is a QWERTY with either Typewriter, Data Entry, APL (with APL off), or Text (with Text off) QWERTY layout. The "QWERTY" keyboards get their name from the first six characters on the top row of alphabetic keys: Q-W-E-R-T-Y. Other types of keyboards get their names in a similar way. On AZERTY keyboards, for example, the first six characters are A-Z-E-R-T-Y. See the *3174 Planning Guide*, GA27-3844, for examples. If the keyboard is not a QWERTY layout, you must select the Identify Customizing Keyboard procedure first from the Master Menu. See Chapter 7, "How to Identify Customizing Keyboards."



You Have a New Fixed Disk

If you have a new controller with fixed disk or a new fixed disk in your controller, you need now to initialize the disk. Go to Appendix F, "Initializing the Fixed Disk," for the procedure.

The Master Menu Displayed

```
                    ___ Master Menu ___

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Select option; press ENTER

 Option   Description
   1      Customize the Control Disk
   2      Merge DSL
   3      Copy Files
   4      Diagnostics
   5      Microcode Upgrade
   6      Central Site Customizing
   7      Media Management
   K      Identify Customizing Keyboard


 Select ===> __
```

Figure 1-1. The Master Menu

If the Master Menu displayed does not contain all of the options shown in Figure 1-1 on page 1-3, you have the Limited Function Utility disk. In a network that uses the Limited Function Utility Disk, all the controllers are configured from your central site.

If you have the Limited Function Utility (LFU) disk, the Master Menu will look like the one shown in Figure 1-2.

```
                ___ Limited Function Master Menu ___


                  3174 MICROCODE © COPYRIGHT IBM CORP 1990
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Select option; press ENTER

 Option   Description
   1      Diagnostics
   2      Copy Files
   3      Media Management
   K      Identify Customizing Keyboard




 Select ===> __
```

Figure 1-2. The Limited Function Utility (LFU) Master Menu

If you would like a more detailed explanation of this Master Menu, see Appendix E, "Limited Function Utility Disk."

Worksheet and Task Tables

Now that the Master Menu is displayed, you are ready to determine the menu option.

- If you have customizing worksheets, go to "The Worksheet Table" on page 1-5.
- If you have support utility tasks to perform, go to "The Task Table" on page 1-7.

The Worksheet Table

The Worksheet Table lists the worksheets and directs you to the verify drives section in Chapter 2.

1. Locate your worksheet in this table.
2. Select Option 1 from the displayed Master Menu and press ENTER.
3. Turn to page 2-3 for verify drive instructions. (If you are familar with the verify drives procedure, turn to page 2-4. Use the table at the bottom of page 2-4 to match worksheets with procedures.)

Table 1-1. Worksheet Table.

Worksheet		Master Menu	Go to Page
1	Host Attach	Option 1	2-3
2	Multi-Host Definition		
3	BSC		
3S	Secondary BSC		
4	SDLC		
4S	Secondary SDLC		
5	X.25		
5S	Secondary X.25		
6	Local (Non-SNA)		
7	Local (SNA)		
8	X.21 Switched		
8S	Secondary X.21 Switched		
9	Token-Ring Network		
9S	Secondary Token-Ring Network		
10A	Multiple Logical Terminals		
10B	Multiple Logical Terminals (AEA)		
11	117: Port Assignment		
12	128: RTM		
13	X.25 Options		
13S	Secondary X.25 Options		
14	Common SNA		
15	3270 Attachment Diagram		
16	ASCII Attachment Diagram		
17	AEA Configure		
18	AEA Port Set		
19	AEA Port-to-Port Set Map		
20	AEA Station Set		
21	AEA Default Destination		
22	User Terminal Tables Definition		
23A	Inbound Sequence Panels		
23B	Inbound Sequence Panels		
24	Outbound Sequence Panels		
25	Translate Tables Definition		
26	EBCDIC to ASCII Translation (Outbound)		
27	ASCII to EBCDIC Translation (Inbound)		

Table 1-2. Worksheet Table.

Worksheet		Master Menu	Go to Page
28	Device Definition	Option 1	2-3
29	Printer Authorization Matrix (PAM)		
30	Logical Terminal Assignment (LTA)		
31	Extended VPD		
32	Token-Ring Gateway		
33	Ring Address Assignment		
34	Ring Transmission		
35	Storage Requirement Definition		
Katakana Converged Keyboard		Option 1	2-3
Non-Katakana Converged Keyboard			
Enhanced Keyboard (U.S)			
Enhanced Keyboard (World Trade)			
Enhanced Keyboard (Katakana)			

Note: Worksheets 15 and 16 are not used in the *Utilities Guide*. These two worksheets are used by the planner to complete remaining AEA worksheets.

The Task Table

The Task Table (Table 1-3) allows you to match a support utility task with an option from the Master Menu or LFU Master Menu. This option is then matched to a specific page.

1. Locate your task in this table.
2. Select the option designated by the table from the displayed Master Menu or LFU Master Menu, and press ENTER.
3. Turn to the chapter designated by the table and perform the procedure.

Table 1-3. Task Table.

Task	Master Menu	LFU Menu	Go To Page
Merge RPQ	Option 1	N/A	2-38
Merge DSL	Option 2	N/A	3-2
Copy Files	Option 3	Option 2	4-2
Microcode Upgrade	Option 5	N/A	5-2
Media Management	Option 7	N/A	6-2

Note: Option 4 (Diagnostics) and Option 6 (Central Site Customizing) of the Master Menu are not shown in the task table. See *3174 Customer Problem Determination* for information about Option 4. See *3174 Central Site Customizing User's Guide* for information about Option 6.

Chapter 2. How to Customize the Control Disk

Customizing the Control Disk

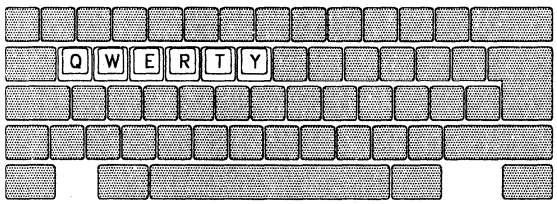
In this section you will:

- Choose (verify) the disk drives you wish to use
- Display the Customize Control Disk Menu
- View a table that will help you to determine the Customize Control Disk Menu option you wish to perform.

Before you Start

You will need:

- The Control (CTL) disk you want to customize and the Utility disk. The Control disk must be *the same microcode level as the Utility disk* that was IMLed. For example, if the Control disk is labeled `Microcode Level B3.0` , the Utility disk must be labeled `Microcode Level B3.0`. For more information, see "How to Determine Maintenance and Microcode Levels" on page 4-8.
- The identity of the customizing keyboard. On a QWERTY keyboard, the first six characters on the left side of the top row of alphabetic characters are Q-W-E-R-T-Y.



  If you do not have a QWERTY keyboard, you will need to perform a procedure that will help you to identify your keyboard. See Chapter 7, "How to Identify Customizing Keyboards" for more information.

- Completed worksheets from the Planner.
- You may also need a copy of *3174 Status Codes*, GA27-3832.

Using This Manual

Attempting to customize without benefit of completed worksheets may produce puzzling results. Completed worksheets lessen the possibility of recording conflicting responses between the customizing procedures. If you should have incompatible response errors, refer to Appendix D, "Interutility and Interconfigure Checking" for assistance.

Verify the Disk Drives

When you verify the disk drives, you are choosing the drives you wish to use for your Utility and Control disks. (Make sure the microcode level of the Control disk matches the microcode level of the Utility disk you used to display the Master Menu.) If you have not already displayed the Master Menu as instructed in Chapter 1, do so now by performing the procedure "How to Display the Master Menu" on page 1-2.

Step 1 If you have not already selected the `Customize the Control Disk` option from the Master Menu (type **1** after `Select ===>` and press Enter), do so now. The Disk Drive Assignment panel is displayed on your screen.

Step 2 Verify drives.

```
Available drives: 1  2  3  4   Utility ===> 1  Control ===> 2


(Processing.....................................................)
PF:  3=Quit
```

Figure 2-1. Disk Drive Assignment Panel

Figure 2-1 shows a four-drive controller. Disk drives 1 and 2 are diskette drives and disk drives 3 and 4 are fixed disk drives. The `Utility ===>` and `Control ===>` drive fields contain default drive selections.

- If you want to use the default drive selection, press ENTER and follow the prompts that appear on your screen.
- If you do *not* want to use the default drive selection that is displayed on the screen, after `Control ===>`, type the number of the drive you want to use, press ENTER, and follow the prompts that appear on your screen.

After completing the verify drives section, go to page 2-4 for the Customize Control Disk Menu. The table on page 2-4 will direct you to the proper procedure for your worksheets.

Using This Manual

Once you begin the verify disk drive procedure, on-screen prompts and messages allow you to complete the verify procedure without having to refer to this manual. Although the configure/worksheet screens also offer helpful prompts and messages, you should carefully follow the steps as they are presented in this manual. The progression of these procedures cannot always be fully presented by on-screen prompts and messages.

Customize Control Disk Menu

After you have verified the drives and pressed ENTER, the Customize Control Disk Menu is displayed.

```
                ___ Customize Control Disk Menu ___

  Select option; press ENTER

Option    Description

   1      Configure

   2      Define Devices

   3      Merge RPQs

   4      Modify Keyboards

   5      Define AEA



   Select ===>

   PF:  3=Quit                                12=File
```

Figure 2-2. Customize Control Disk Menu

To determine the proper procedure for the worksheets you have, use the following table to match procedures with worksheets.

You want to:	If you have worksheets:	Go to page:
Configure	1 through 14 or 32 through 34	2-8
Define Devices	28 through 31	2-28
Merge RPQs	N/A (you have an RPQ diskette(s))	2-38
Modify Keyboards	Keyboard Worksheets	2-46
Define AEA	17 through 21	2-61

PF Keys for Configure

You can call up a specific function of the customizing program by pressing a PF key. As you follow the Configure procedure, your choice of PF keys varies from panel to panel. Some or all of these PF keys may appear on the panels during the Configure procedure. Use the following table to determine Configure Control Disk PF key functions.

PF Keys:	Function:
PF3	PF3 (Quit) is used to quit the procedure. Pressing it discards all the responses you have entered on all the previous panels. Then the Customize Control Disk Menu appears on your screen.
PF4	PF4 (Default) erases your responses from the current panel on your screen. The screen clears, and the same panel, filled with default responses, reappears.
PF7	PF7 (Back) brings up the previous panel. When you press PF7, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed. When you return to the partially completed panel, you can complete it.
PF8	PF8 (Forward) checks the responses on the current panel for errors, and if there are none, causes the next panel to appear on the screen. If there are any errors, an error message appears on the message line. You cannot advance to the next panel until all errors are corrected. When you press PF8, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed.
PF9	PF9 (Return Host) returns you to the host panel you have completed (titled BSC, SDLC, X.25, X.21 Switched, Local Non-SNA, Local SNA, or Token-Ring Network). When you press PF9, the responses you entered on the current panel are saved temporarily, even if the panel is not completed. After you return to the host panel, press PF8 to advance through the subsequent panels. When you return to the partially completed panel, you can complete it. **Note:** If you are using a keyboard without a PF9 key, use the attention (ATTN) key.
PF10	PF10 (Page Back) This key checks the entire panel, which is made up of a series of screens, for errors, and pages back to the previous screen while displaying any errors that are encountered. **Note:** If you are using a keyboard without PF10, use the Cursor Select Key.
PF11	PF11 (Page Forward) This key checks the entire panel, which is made up of a series of screens, for errors, and pages forward to the next screen while displaying any errors that are encountered. **Note:** If you are using a keyboard without PF11, use the PA1 key.
PF12	Pressed at the end of the Configure procedure, PF12 (Done) saves all the responses you have entered on all the previous panels onto the Utility disk. The Customize Control Disk Menu appears on your screen. **Note:** If you are using a keyboard without a PF12 key, use the PA2 key.

Note: PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1, and PF15 is PF3.

Configure Panel Flow

Figure 2-3 shows an overview of the panel sequence for the Configure procedure.

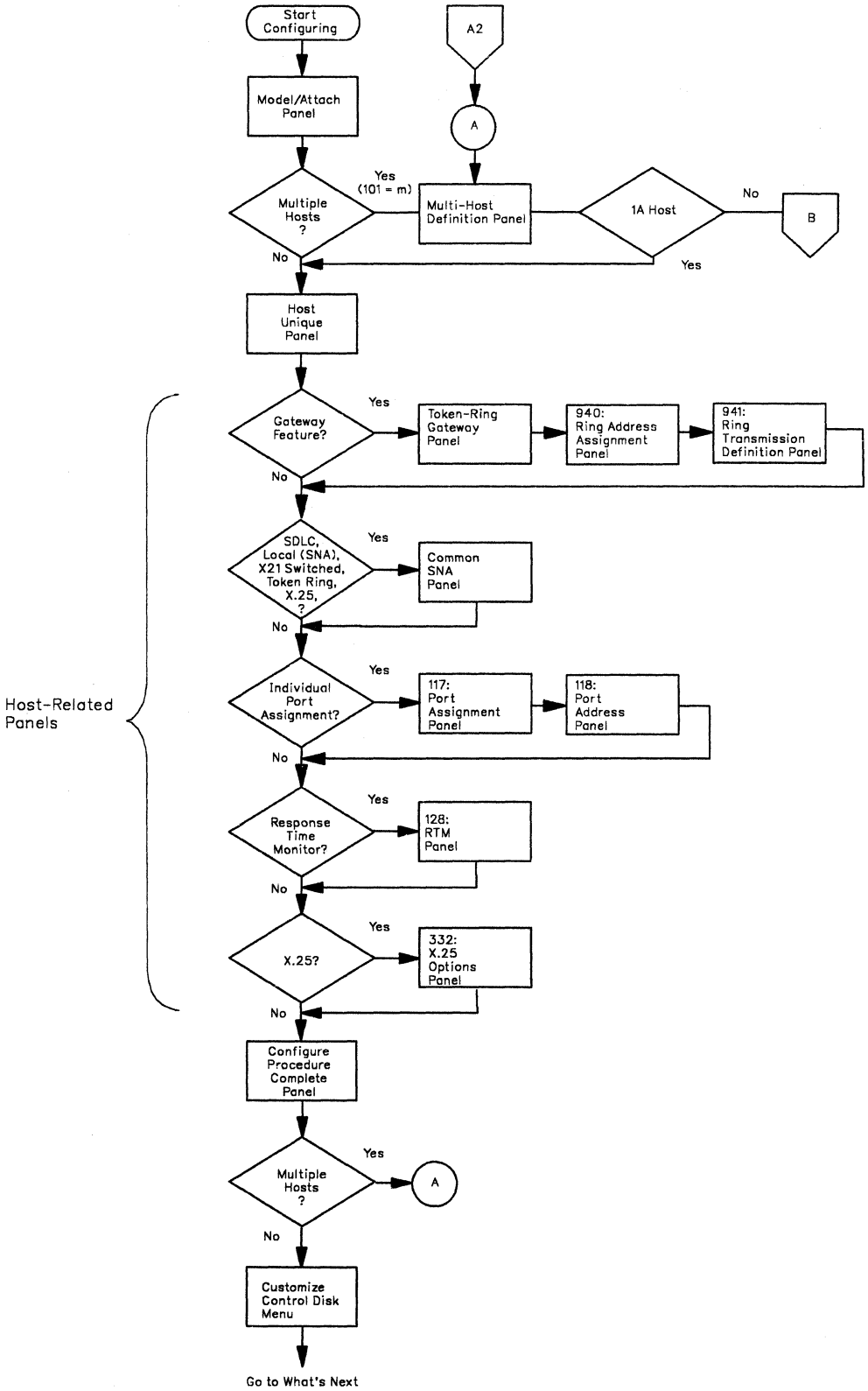


Figure 2-3 (Part 1 of 2). Configure Panel Sequence

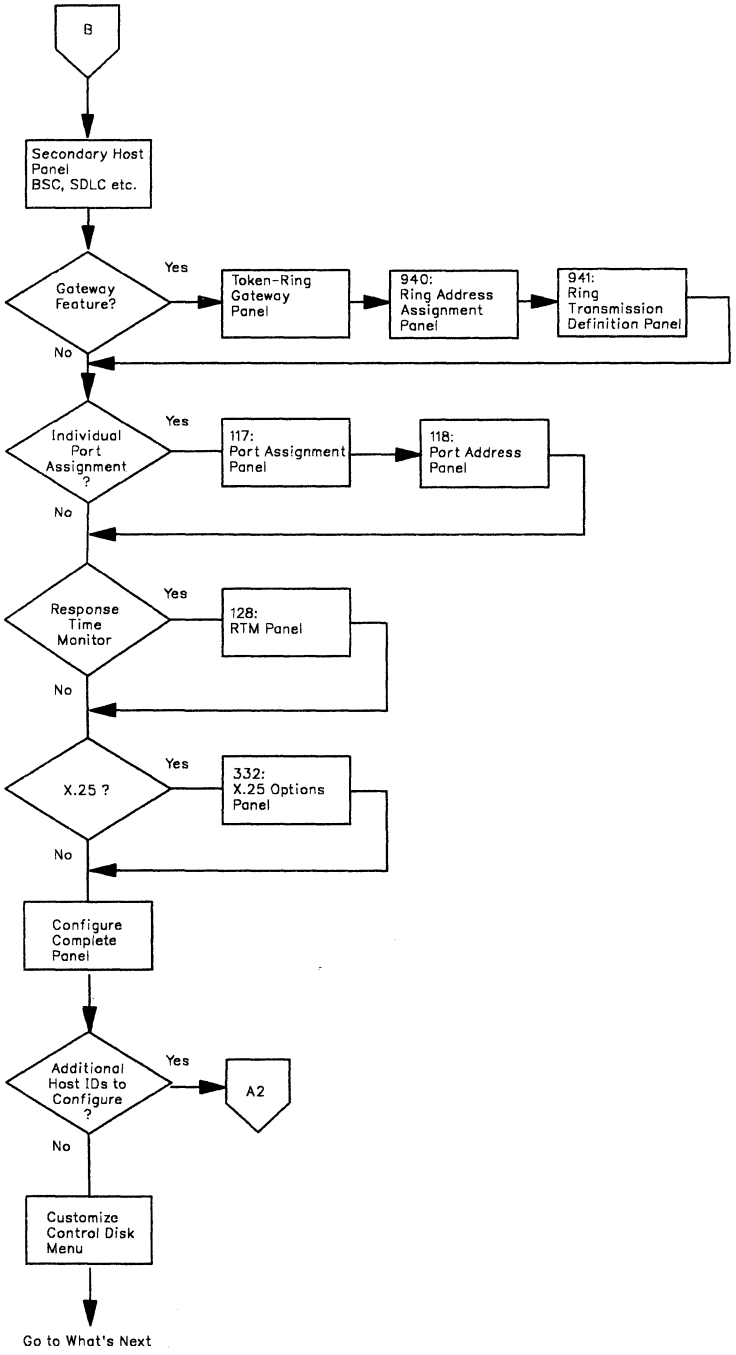


Figure 2-3 (Part 2 of 2). Configure Panel Sequence

Configure the Control Disk Procedure

Before you perform this procedure:

- You need to have previously selected the "Customize the Control Disk" option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not,
  - See page 1-2 for Master Menu instructions.
  - See page 7-2 for identifying keyboard instructions.
  - See page 2-3 for verify drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page F-2 for instructions.)
- If you are not familiar with the Configure PF Key functions, you may wish to review the PF Key table on page 2-5.

The Customize Control Disk Menu is displayed on your screen.

```
                ___ Customize Control Disk Menu ___

  Select option; press ENTER

Option    Description

   1      Configure

   2      Define Devices

   3      Merge RPQs

   4      Modify Keyboards

   5      Define AEA



   Select ===> 1

   PF:  3=Quit                                12=File
```

Figure 2-4. Customize Control Disk Menu with Configure Selected

Step 1 Type **1** after `Select ===>`.

Step 2 Press the ENTER key on the keyboard.

After you press ENTER, the Model/Attach panel (Figure 2-5 on page 2-9) appears on your screen.

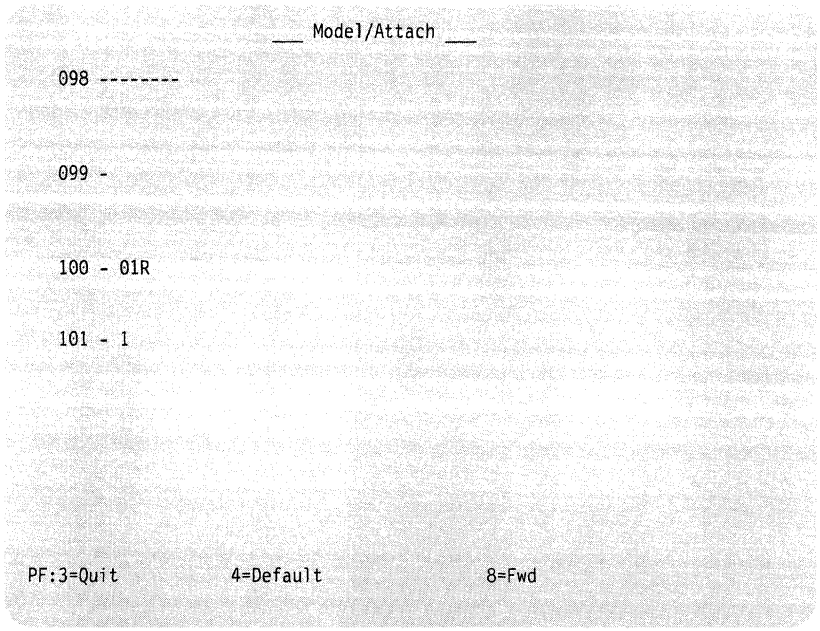


Figure 2-5. Model Attach Panel

Step 3 Locate the first configuration worksheet (Worksheet 1 – Host Attachment). Type in each response that is recorded on the worksheet into the fields following the question numbers on the panel.

Step 4 Press Enter. If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8. (Invalid responses will be highlighted.)

Note: A hard copy of the customized panel is useful for future reference and is easily obtained. After completing valid responses for the panel, turn on your printer and press the Print key. If you would like more information on this option, see "Local Copy" on page B-2.

Step 5 Press PF8 to advance to the next panel.

- If the **Multi-Host Definition Panel** (Figure 2-6 on page 2-10) appears, go to Step 6. (Multi-Host Panel appears if the response to Question 101 = M from Worksheet 1)
- If any panel **other than the Multi-Host Panel** appears, go to Step 8 on page 2-10.

Step 6 Locate Worksheet 2 – Multi-Host Definition Panel and type in the responses written on the worksheet.

```
                    ____Multi-Host Definition ____

Fill in a new host, change a host, or select a host for configuring.

Host    Adapter     Host       Hardware     Include
 ID      Type      Attach       Group      in IML    Host Descriptor
 1A                  _                        _     ________
 2A       _          _          __           _     ________
 3A       _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________
 _        _          _          __           _     ________

   Select ====>

PF: 3=Quit                    7=Back                    12=Done
```

Figure 2-6. Multi-Host Definition Panel Example

Step 7 Type in **1A** after `Select ====>` and press ENTER to advance to the next panel.

Note: The 1A host must be configured before any other host.

The Host Panel appears next. Figure 2-7 is an example of a typical Host Panel. Note that this is **only an example**; the panel you see may differ. You may have a BSC, SDLC, X.25, X.21 Switched, Local Non-SNA, Local SNA, or Token-Ring Network.

Step 8 Compare the title of the panel on your screen with the title of the worksheet that has responses recorded on it. If the titles do not match, have the person who completed Worksheet 1 – Host Attachment check the response to question 101 or have the person who completed Worksheet 2 – Multi-Host Definition check the entries in the "Host Attach" field. These responses determine which host panel is displayed.

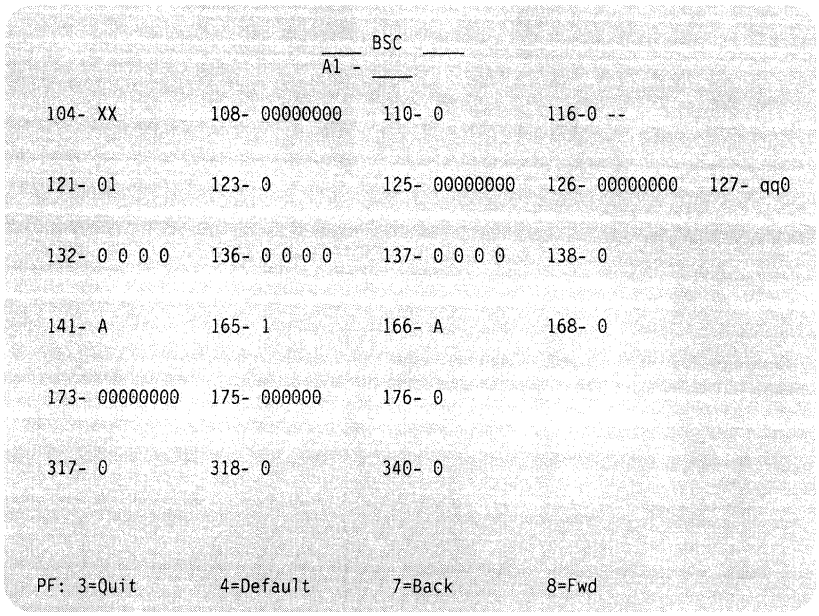


Figure 2-7. Layout of a Typical Host Panel

The title of the panel (BSC, SDLC, X.25, X.21 Switched, Local Non-SNA, Local SNA, or Token-Ring Network) appears at the top of the panel. The numbers, placement, and number of questions that appear on the panel may also be different from the panel shown in Figure 2-7.

Step 9 Type in the responses recorded on the configuration worksheet. Press PF8 to advance to the next panel.

If the:	Go to:
Token-Ring Gateway panel appears	"Token-Ring Gateway Panels" on page 2-12
Common SNA panel appears	"The Common SNA Panel" on page 2-14
117: Port Assignment panel appears	"The 117: Port Assignment Panel" on page 2-15
128: RTM Panel appears	"The 128: RTM Panel" on page 2-17
332: X.25 Options panel appears	"The 332: X.25 Options Panel" on page 2-18
Configure Complete panel appears	Step 26 on page 2-19

The Token-Ring Network Gateway Panels:

The Token-Ring Gateway Panel (Figure 2-8) is the first of a series of panels to appear. The 940 Ring Address Assignment Panel (Figure 2-9 on page 2-13) appears next, followed by the 941 Ring Transmission Definition Panel (Figure 2-10 on page 2-13).

Note: The size of the screen you are using determines how much of the 940 and 941 panels you see.

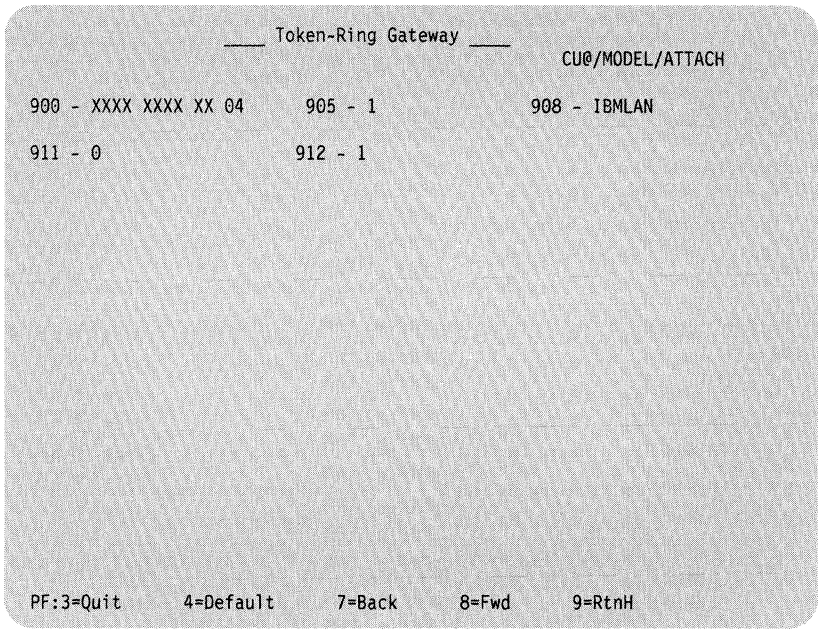


Figure 2-8. Token-Ring Gateway Panel

Step 10 Type in the responses recorded on the Token-Ring Gateway Worksheets (Worksheets 25, 26, and 27). Press PF8 after you complete eac panel to advance to the next panel.

If there is a 1-digit response for a 2-digit field, or a 3-digit response fo a 4-digit field, use a leading zero (for example, 02 for 2, or 0356 for 356). *You cannot use blanks.*

```
          ____ 940:  Ring Address Assignment ____  CU@/MODEL/ATTACH
                                                      ENTRY XXX of YYY
S    Ring            SAP   T          S    Ring            SAP   T
XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
XX   XXXX XXXX XXXX  04    0          XX   XXXX XXXX XXXX  04    0
```

Figure 2-9. 940: Ring Address Assignment Panel (24 Lines Displayed)

```
        ____ 941:  Ring Transmission Definition ____  CU@/MODEL/ATTACH
                                                      ENTRY XXX of YYY
S    Ring            SAP   F  W        S    Ring            SAP   F  W
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
XX   XXXX XXXX XXXX  04                XX   XXXX XXXX XXXX  04
```

Figure 2-10. 941: Ring Transmission Definition Panel (24 Lines Displayed). The F and W fields contain defaults that depend on the response to the T (type) field specified in the 940: Ring Address Assignment panel.

The Common SNA Panel:

Step 11 Locate the worksheet titled "Worksheet 14 — Common SNA." Type in the responses recorded on the worksheet.

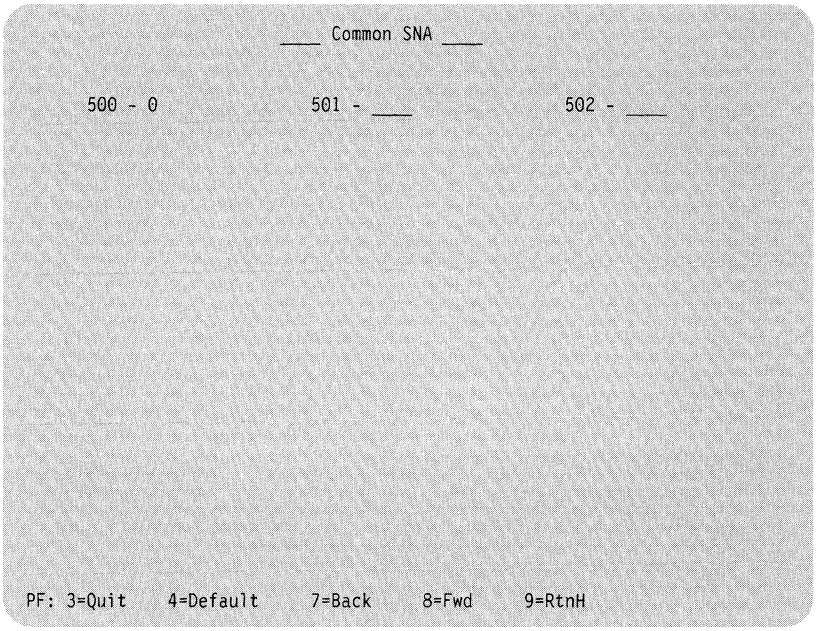


Figure 2-11. Common SNA Panel

Step 12 Press PF8 to advance to the next panel.

If the:	Go to:
117: Port Assignment panel appears	The 117: Port Assignment Panel on page 2-15
128: RTM panel appears	The 128: RTM Panel on page 2-17
332: X.25 Options panel appears	The 332: X.25 Options Panel on page 2-18
Configure Procedure Complete panel appears	Step 26 on page 2-19

The 117: Port Assignment Panel:

Note: The size of the screen you are using to customize determines how much of the panel you see.

```
                    ___ 117: Port Assignment ___

              Host Addresses                              Host Addresses
Port  IS  1    2    3    4    5       Port  IS  1    2    3    4    5
26-00 __  ___  ___  ___  ___  ___     26-01 __  ___  ___  ___  ___  ___
26-02 __  ___  ___  ___  ___  ___     26-03 __  ___  ___  ___  ___  ___
26-04 __  ___  ___  ___  ___  ___     26-05 __  ___  ___  ___  ___  ___
26-06 __  ___  ___  ___  ___  ___     26-07 __  ___  ___  ___  ___  ___
26-08 __  ___  ___  ___  ___  ___     26-09 __  ___  ___  ___  ___  ___
26-10 __  ___  ___  ___  ___  ___     26-11 __  ___  ___  ___  ___  ___
26-12 __  ___  ___  ___  ___  ___     26-13 __  ___  ___  ___  ___  ___
26-14 __  ___  ___  ___  ___  ___     26-15 __  ___  ___  ___  ___  ___
26-16 __  ___  ___  ___  ___  ___     26-17 __  ___  ___  ___  ___  ___
26-18 __  ___  ___  ___  ___  ___     26-19 __  ___  ___  ___  ___  ___
26-20 __  ___  ___  ___  ___  ___     26-21 __  ___  ___  ___  ___  ___
26-22 __  ___  ___  ___  ___  ___     26-23 __  ___  ___  ___  ___  ___
26-24 __  ___  ___  ___  ___  ___     26-25 __  ___  ___  ___  ___  ___
26-26 __  ___  ___  ___  ___  ___     26-27 __  ___  ___  ___  ___  ___
26-28 __  ___  ___  ___  ___  ___     26-29 __  ___  ___  ___  ___  ___
26-30 __  ___  ___  ___  ___  ___     26-31 __  ___  ___  ___  ___  ___
21-00 __  ___  ___  ___  ___  ___     21-01 __  ___  ___  ___  ___  ___
21-02 __  ___  ___  ___  ___  ___     21-03 __  ___  ___  ___  ___  ___
21-04 __  ___  ___  ___  ___  ___     21-05 __  ___  ___  ___  ___  ___
21-06 __  ___  ___  ___  ___  ___     21-07 __  ___  ___  ___  ___  ___

PF:  3=Quit     4=Default     7=Back      8=Fwd       9=RtnH
```

Figure 2-12. 117: Port Assignment Panel (24 lines displayed)

Step 13 Locate Worksheet 11 – 117: Port Assignment.

Step 14 Type in any responses recorded on the worksheet.

IS column:
The IS columns are preset with a response of 0 or 1. You can change these preset responses by typing over the 1 with the desired value (0, 1, 2, 3, 4, or 5). To generate zeros automatically in the IS fields for ports with no assignments, press PF4.

Address columns (LT1/P, LT2/S1, LT3/S2, LT4/S3, LT5/S4):
When typing in responses in the address columns, you can enter the digit(s) anywhere in the 3 digit response field. You do not need to use leading zeros.

Use PF10 or PF11 to display ports that are not displayed.

Step 15 Press ENTER. The customizing program checks the responses on the panel.

If all the responses are valid, the panel reappears, completed with new information (Figure 2-13 or Figure 2-14).

```
                ____ 117: Port Assignment ____
                     A1 - ____
LT=000
 Port IS  1   2   3   4   5          Port IS  1   2   3   4   5
26-00 1  02  __  __  __  __         26-01 0  __  __  __  __  __
26-02 1  03  __  __  __  __         26-03 0  __  __  __  __  __
26-04 4  04  05  06  07  __         26-05 0  __  __  __  __  __
```

Figure 2-13. 117 Panel When Responses Are Typed in the IS Column

Step 16 If you typed valid responses in the IS column, the panel reappears with the primary and secondary addresses filled in.

```
                ____ 117: Port Assignment ____
                     A1 - ____
LT=000
 Port IS  1   2   3   4   5          Port IS  1   2   3   4   5
26-00  1  02  __  __  __  __        26-01 0  __  __  __  __  __
26-02  2  03  04  __  __  __        26-03 0  __  __  __  __  __
26-04  4  06  07  08  09  __        26-05 0  __  __  __  __  __
```

Figure 2-14. 117 Panel When Responses Are Typed in the Address Columns

Step 17 If you typed valid addresses in the address columns, the panel reappears with the IS fields filled in.

Step 18 If a response on the 117 panel is invalid, it is highlighted. If you need information on correcting invalid responses, see "Correcting Invalid Responses" on page C-8.

Note: A hard copy of the customized panel is useful for future reference and is easily obtained. After checking your responses for validity, turn on your printer and press the Print key. If you would like more information on this option, see "Local Copy" on page B-2.

Step 19 Press PF8 to advance to the 118: Port Address panel.

If you wish to return to the 117: Port Assignment panel, press PF7. You will not see the responses that were generated by the customizing program. Otherwise press ENTER, and the responses the utility generated are displayed.

Use PF10 and PF11 to display ports that are not already displayed. (You do not need to press ENTER to check the 118 panel.)

Step 20 Press PF8 to advance to the next panel.

The 128: RTM Panel:

If the 128: RTM Panel is not on your screen, go to the 332: X.25 Options Panel on page 2-18.

Version A (Figure 2-15) of the 128 panel appears on the screen if your first-digit response to question 127 was 1 or 2. Version B (Figure 2-16) of the 128 panel appears on the screen if your first-digit response to question 127 was 3, 4, or 5.

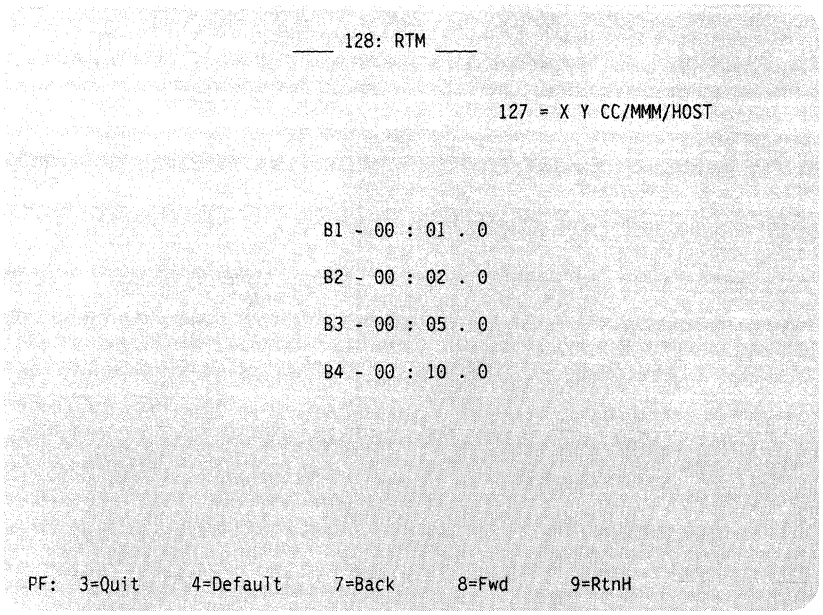


Figure 2-15. Version A of the 128 Panel

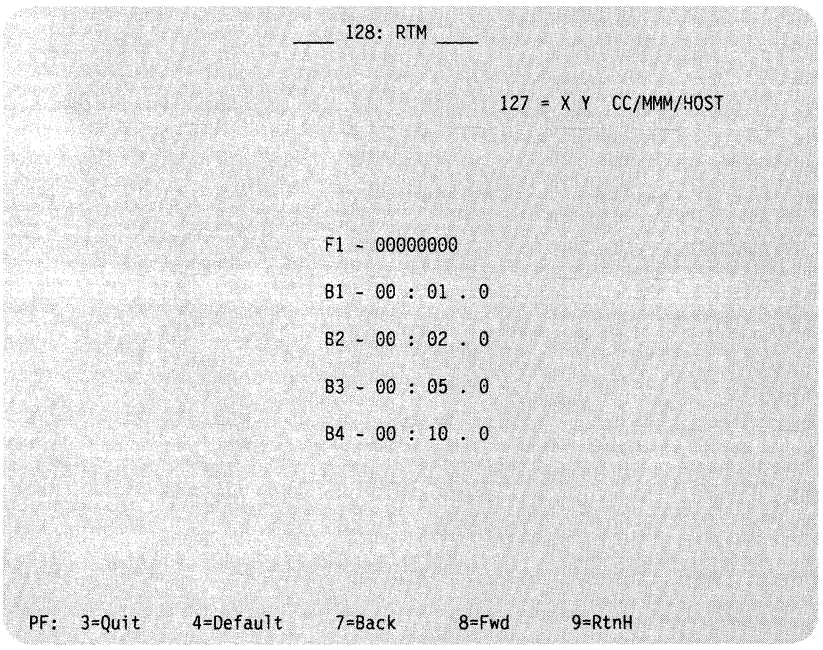


Figure 2-16. Version B of the 128 Panel

Step 21 Locate the responses recorded on Worksheet 12 — 128: RTM. The responses are written in *one* of three areas:

- Default Values
- Version A
- Version B.

Step 22 Look at the name that is circled on the worksheet.

- If the **Default Values** name is circled, press PF4.
- If **Version A** or **B** is circled, type in the responses recorded on the worksheet.

Step 23 Press PF8 to advance to the next panel.

The 332: X.25 Options Panel:

If the 332: X.25 Options Panel, Figure 2-17, is not on your screen, go to Step 26 on page 2-19.

The 332: X.25 Options Panel appears on your screen if your response to question 101 on the Model/Attach panel was 3.

```
                    ___ 332: X.25 Options ___

                                                  CC/CCC/X25

   400 - 00 0 0     401 -  4       402 - XXXX

   409 - 10100100   420 -  00000000               421 - 00000000

   423 - ______           424 - ______

   430 - 1          431 - 0        432 - 02       433 - 2

   434 - 1          435 - 02

   440 - 9          441- ___       442 - ___

   450 - XXXX       451 - XX       452 - ____   453 - 00000000

   461 - ____     462 - ____   463 - ____   464 - ____

   465 - ____     466 - ____

PF:  3=Quit     4=Default     7=Back      8=Fwd      9=RtnH
```

Figure 2-17. 332: X.25 Options Panel

Step 24 Type in the responses recorded on Worksheet 13 — X.25 Options.

If there is a 1-digit response for a 2-digit field, or a 3-digit response for a 4-digit field, use a leading zero (for example, 02 for 2, or 0356 for 356). *You cannot use blanks.*

Note: Responses to questions **423, 424, and 452** may not fill the entire field. You may leave underscores wherever you have not typed an alphanumeric character.

Step 25 To advance to the next panel, press PF8.

Step 26 The Configure Complete panel is shown. See Figure 2-18.

Warning: If you press PF3, all the new configure responses will be erased.

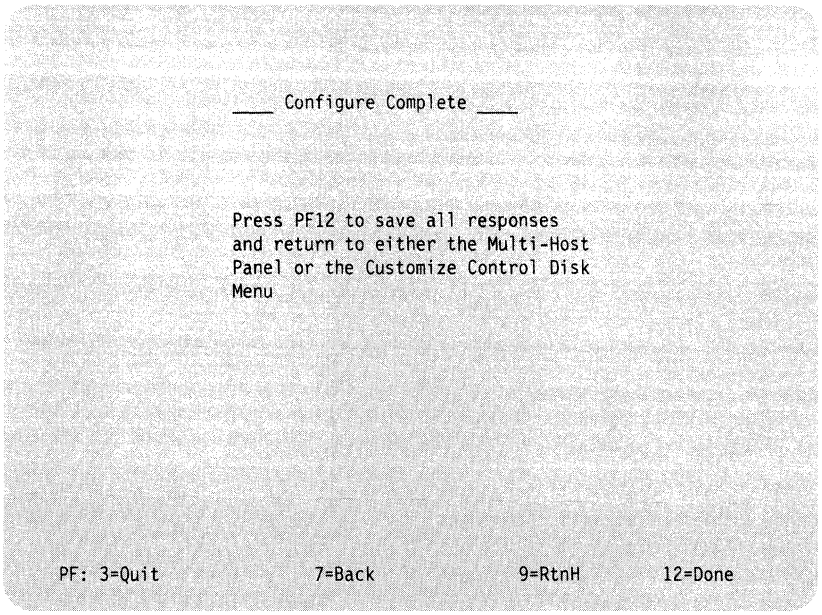


Figure 2-18. Configure Complete Panel

Step 27 Press PF12.

- If the **Multi-Host Definition Panel** appears, go to Step 28 on page 2-20.
- If the **Customize Control Disk Menu** appears, go to "What's Next?"on page 2-27.

Step 28 The Multi-Host Definition Panel with filled in responses is displayed. Locate the worksheets for the next Host ID you must configure. The possible Host IDs are 2A, 3A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 2B, 2C, 2D, 3B, 3C or 3D.

Note: Though 2A and 3A are secondary links, they are considered primary hosts. The 2A host must be configured before configuring for the 2B – 2D hosts. Similary, the 3A host must be configured before configuring for the 3B – 3D hosts.

```
                    ____Multi-Host Definition ____

Fill in a new host, change a host, or select a host for configuring.

Host    Adapter     Host       Hardware     Include
 ID      Type      Attach       Group      in IML    Host Descriptor
 1A                  _                        _     ________
 2A                  _          __            _     ________
 3A        _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________
 _         _         _          __            _     ________

   Select ====>

PF: 3=Quit                    7=Back                    12=Done
```

Figure 2-19. Multi-Host Definition Panel Example

Note: In order to accommodate potentially a large number of Host Ids, PF10 and PF11 paging keys are available on the multi-host definition panel. If necessary, you may page forward by pressing PF10. This allows the display of additional Host Ids. PF11 allows you to page backward.

Important

If you make a change to the Multi-Host Definition Panel, you must press ENTER and then progress through the subsequent panel flow. After you have completed all secondary host panels, press the PF12 Done key. This sequence is necessary because of the interdependence of the configuration panels.

Step 29 If all secondary host panels have been completed, press PF12 and go to "What's Next?" on page 2-27.

If you still have panels to do, Type in the Host ID recorded on the worksheet after `Select ====>` and press Enter.

A secondary Host Panel appears next. Figure 2-20 is an example of a typical secondary Host Panel. Note that this is **only an example**; the panel you see will depend on responses entered on the Multi-Host Definition Panel.

```
                    ____ SDLC ____

  104 - XX   105 -00                  110 - 0          116 0- --

                       125 - 00000000                  127 - 00

                                                       139 - 00

             150 - 0      165 - 1      179 - 00

  213 - 1    215 - 00000  220 - 0

  310 - 0    313 - 0      317 - 0        318 - 0        340 - 0

  365 - 0    370 - 0

PF:  3=Quit          4=Default          7=Back        8=Fwd
```

Figure 2-20. Layout of a Typical Secondary Host Panel

The title of the panel (BSC, SDLC, SNA, X.25, X.21 Switched, or Token-Ring Network) appears at the top of the panel. The numbers, placement, and number of questions that appear on the panel may also be different from the panel shown in Figure 2-20.

Note: Secondary worksheets such as Secondary BSC, Secondary SDLC, Secondary X.25, Secondary X.21 Switched, and Secondary Token-Ring Network are comparable to BSC, SDLC, X.25, Local SNA, X.21, and Token-Ring Network worksheets respectively.

Step 30 Compare the title of the panel on your screen with the title of the worksheet. (If the titles do not match, the person who completed the worksheet should check the response on the Multi-Host Definition Panel. This response determines which host panel is displayed.)

Step 31 Type in the responses recorded on the configuration worksheet. Press PF8 to advance to the next panel.

If the:	Go to:
Token-Ring Gateway panel appears	"Token-Ring Gateway Panels" on page 2-23
117: Port Assignment panel appears	The 117: Port Assignment Panel on page 2-24
128: RTM panel appears	The 128: RTM Panel on page 2-25
332: Secondary X.25 Options panel appears	The 332: Secondary X.25 Options Panel on page 2-26
Configure Procedure Complete panel appears	Step 41 on page 2-26

The Token-Ring Network Gateway Panels:

The Token-Ring Gateway Panel (Figure 2-21) is the first of a series of panels to appear. The 940-Ring Address Assignment Panel (Figure 2-22) appears next, followed by the 941-Ring Transmission Definition Panel (Figure 2-23).

Note: Secondary host panel *content* varies depending upon the host chosen. The panel *flow* (the order of panel appearance) however, is predictable, similar to the panel flow of the primary host. For that reason, the secondary host configuration panel flow displays only the predictable title of the panel and not the unpredictable content.

```
___ Token-Ring Gateway ___
                          CU@/MODEL/ATTACH
```

Figure 2-21. Token-Ring Gateway Panel (partial representation)

Note: Screen Size: The size of the screen you are using determines how much of the 940 and 941 panels you see. For example, a 3278 Model 2 shows only 24 lines (as shown in Figure 2-9 and Figure 2-10), while a 3278 Model 4 displays 43 lines.

Step 32 Type in the responses recorded on the Token-Ring Gateway Worksheet (Worksheet 9s). Press PF8 after you complete each panel to advance to the next panel.

```
___ 940:  Ring Address Assignment ___
                                    CU@/MODEL/ATTACH
                                    ENTRY XXX of YYY
```

Figure 2-22. 940: Ring Address Assignment Panel (partial representation)

If there is a 1-digit response for a 2-digit field, or a 3-digit response for a 4-digit field, use a leading zero (for example, 02 for 2, or 0356 for 356). *You cannot use blanks.*

```
___ 941:  Ring Transmission Definition ___
                                        CU@/MODEL/ATTACH
                                        ENTRY XXX of YYY
```

Figure 2-23. 941: Ring Transmission Definition Panel (partial representation). The F and W fields contain defaults that depend on the response to the T (type) field specified in the 940: Ring Address Assignment panel.

The 117: Port Assignment Panel:

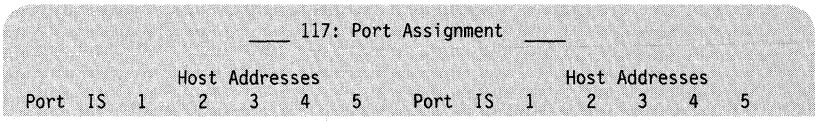


Figure 2-24. 117: Port Assignment Panel (partial representation)

Step 33 Locate Worksheet 11 – 117: Port Assignment. Type in any responses recorded on the worksheet.

Use PF10 or PF11 to display ports that are not displayed.

Step 34 Press ENTER. The customizing program checks the responses on the panel. If all the responses are valid, the panel reappears completed with new information.

Step 35 Press PF8 to advance to the 118: Port Address panel. (If you wish to return to the 117: Port Assignment panel, press PF7. To see the responses that were generated by the customizing program, press ENTER.)

Use PF10 and PF11 to display ports that are not already displayed.

Step 36 Press PF8 to advance to the next panel.

The 128: RTM Panel:

If the 128: RTM Panel is not on your screen, go to the 332: X.25 Options Panel on page 2-26.

Version A (Figure 2-25) of the 128 panel appears on the screen if your first-digit response to question 127 was 1 or 2. Version B (Figure 2-26) of the 128 panel appears on the screen if your first-digit response to question 127 was 3, 4, or 5.

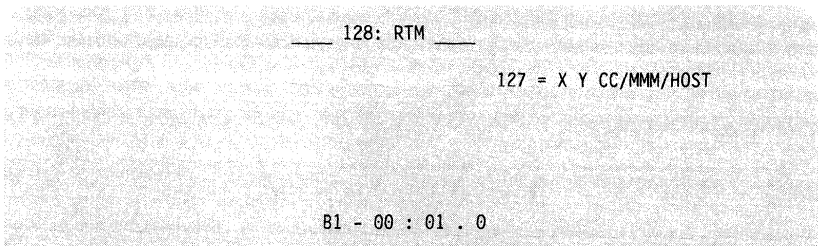


Figure 2-25. Version A of the 128 Panel (partial representation)

Version A of the 128 Panel

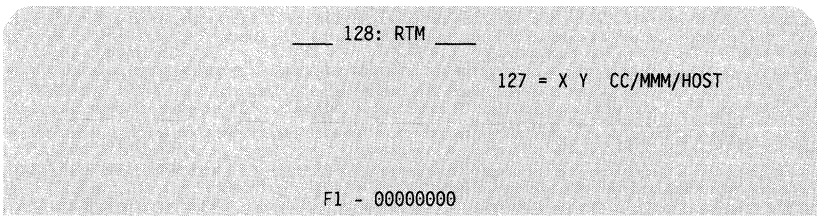


Figure 2-26. Version B of the 128 Panel (partial representation)

Version B of the 128 Panel

Step 37 Locate the responses recorded on Worksheet 12—128: RTM. The responses are written in *one* of three areas:

- Default Values
- Version A
- Version B.

Step 38 Look at the name that is circled on the worksheet.

- If the **Default Values** name is circled, press PF4.
- If **Version A** or **B** is circled, type in the responses recorded on the worksheet.

Step 39 Press PF8 to advance to the next panel.

The 332: X.25 Options Panel:

If the 332: X.25 Options Panel (Figure 2-27) is not on your screen, go to Step 41.

The 332: X.25 Options Panel appears on your screen if your response to question 101 on the Model/Attach panel was 3.

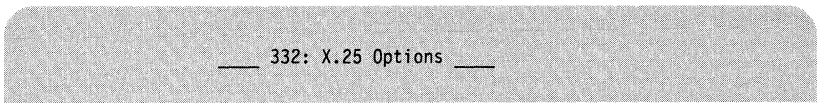


Figure 2-27. 332: X.25 Options Panel (partial representation)

Step 40 Type in the responses recorded on Worksheet 13S – X.25 Options. Press PF8 to advance to the next panel.

Step 41 When all the panels that you need have appeared, the screen clears. A new panel, Configure Complete, appears. See Figure 2-28.

Warning: If you press PF3, all the new configure responses will be erased.

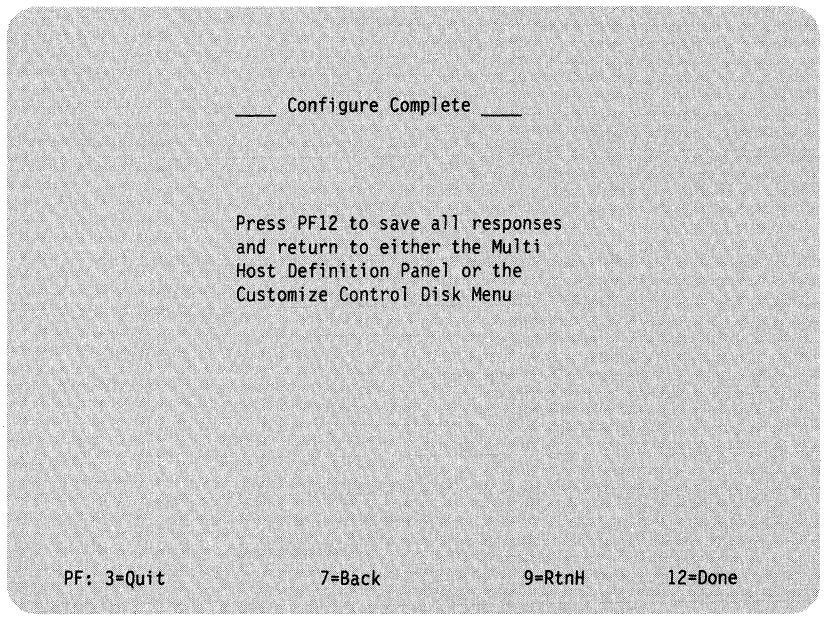


Figure 2-28. Configure Complete Panel

Step 42 Press PF12. The Host Definition panel appears:

- If you have additional Host IDs to configure, return to Step 28 on page 2-20. (You have additional Host IDs to configure if you have any of the worksheets 1 through 14 or 25 through 27 that you have not used.)
- If you have configured all of the required Host IDs, press PF12 again and go to "What's Next?" on page 2-27.

What's Next?

With the Customize Control Disk Menu on your screen:

- You can continue customizing by selecting a different customizing procedure.

  Use the following table to locate the procedure for the option you want.

If you want to:	You have worksheets:	Go to page:
Define Devices	28 through 31	2-28
Merge RPQs	N/A (you have an RPQ diskette)	2-38
Modify Keyboards	Keyboard Worksheets	2-46
Define AEA	17 through 20	2-61

- You can complete customizing the Control disk.
  Warning: To complete customizing the Control disk, the responses you made must be transferred from the Utility disk to the Control disk, *or they will not be permanently saved.*

  For a Controller with more than one Disk Drive:
  Press PF12. When the Master Menu appears, transfer is complete.

  For a Controller with one Disk Drive:
  Press PF12. A processing message appears at the bottom of the menu. Follow the instructions as they appear on the screen. When the Master Menu appears, transfer is complete.

Defining Devices – PAM, LTA and VPD

The Printer Authorization Matrix (PAM), Logical Terminal Assignment (LTA), and Prompts for Extended VPD options (from the Device Definition Panel) assist with the assignment of devices that connect to the controller. Each contains default values for these assignments.

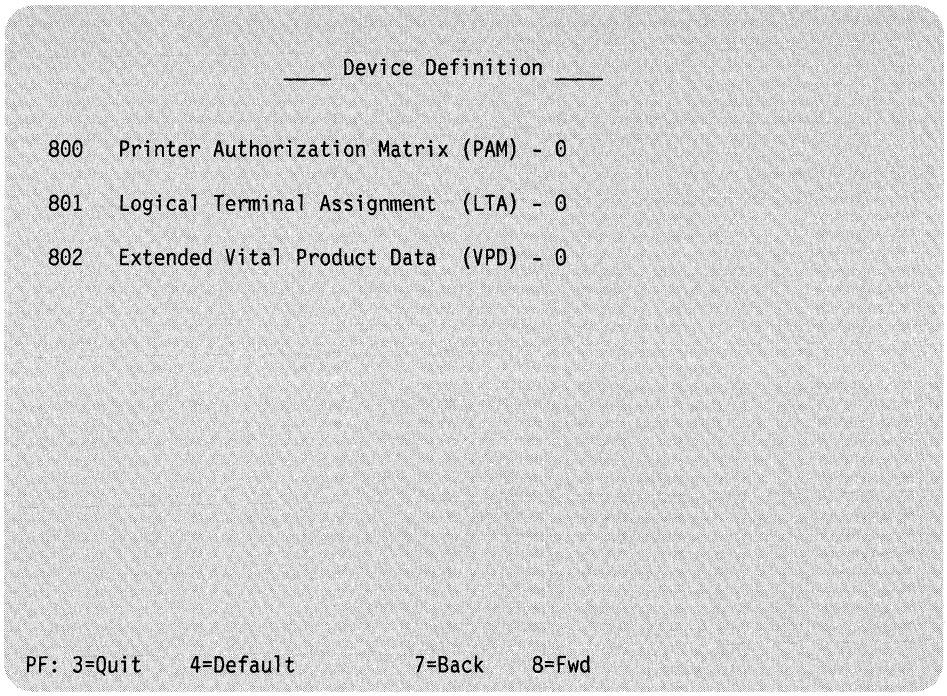


Figure 2-29. Device Definition Panel

Printer Authorization Matrix allows you to define which printers you can use with the clustered display stations. The functions involved are local copy, host printing, and shared printing operations.

Logical Terminal Assignment allows you to define which host sessions individual display stations can access.

Prompts for Extended VPD presents panels with information relating to the controller and each attached device.

PF Keys for Defining Devices

You call up a specific function of the customizing program when you press a PF key. Some or all of these PF keys may appear on panels during the device definition procedure.

PF Keys:	Function:
PF3	PF3 (Quit) is used to quit the procedure, erase all the new responses you have entered on the device definition panels, and display the Master Menu on your screen.
PF4	PF4 (Default) For PAM panels, PF4 erases the responses from all of the PAM panels. The screen clears. The first PAM panel, with printer entries 1—5, appears with no responses entered on it. For LTA panels, PF4 assigns default values to the panels.
PF7	PF7 (Back) brings up the previous panel. When you press PF7, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed. When you return to the partially completed panel, you can complete it.
PF8	PF8 (Forward) checks the responses on the current panel for errors, and if there are none, causes the next panel to appear on the screen. If there are any errors, an error message appears on the message line. You cannot advance to the next panel until all errors are corrected. When you press PF8, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed.
PF10	PF10 (Page Back) This key checks the entire panel, which is made up of a series of screens, for errors, and pages back to the previous screen while displaying any errors that are encountered. **Note:** If you are using a keyboard without PF10, use the Cursor Select Key.
PF11	PF11 (Page Forward) This key checks the entire panel, which is made up of a series of screens, for errors, and pages forward to the next screen while displaying any errors that are encountered. **Note:** If you are using a keyboard without a PF11, use the PA1 key.
PF12	PF12 (Done) pressed at the end of the Define Devices procedure checks all the responses you have entered. When the responses on all the device definition panels are valid, PF12 saves them and then displays the Customize Control Disk Menu on your screen. **Note:** If you are using a keyboard without a PF12, use PA2.

Note: PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

Define Devices Procedure

Before you perform this procedure:

- You need to have previously selected the "Customize the Control Disk" option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not,
  - See page 1-2 for Master Menu instructions.
  - See page 7-2 for identifying keyboard instructions.
  - See page 2-3 for verify drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page F-2 for instructions.)
- If you are not familiar with the Define Devices option or its PF Key functions, you may wish to review the introductory material and the PF Key table beginning on page 2-28.
- You will need at least two or more of the following completed Worksheets:
  - Worksheet 28 — Device Definition
  - Worksheet 29 — Printer Authorization Matrix
  - Worksheet 30 — Logical Terminal Assignment
  - Worksheet 31 — Extended Vital Product Data
- You may also need a copy of *3174 Status Codes*, GA27-3832.

The Customize Control Disk Menu is displayed on your screen.

```
                ____ Customize Control Disk Menu ____

  Select option; press ENTER

Option    Description

   1      Configure

   2      Define Devices

   3      Merge RPQs

   4      Modify Keyboards

   5      Define AEA



   Select ===> 2

   PF:  3=Quit                                12=File
```

Figure 2-30. Customize Control Disk Menu (select Define Devices)

Step 1 Type **2** after Select ===>

Step 2 Press ENTER on the keyboard. The Device Definition Panel appears on your screen.

```
                    ____ Device Definition ____

  800   Printer Authorization Matrix (PAM) - 0

  801   Logical Terminal Assignment (LTA)  - 0

  802   Prompts for Extended VPD (VPD)     - 0









PF: 3=Quit    4=Default          7=Back    8=Fwd
```

Figure 2-31. Device Definition Panel

Step 3 From Worksheet 28 — Device Definition, you determine whether to define the PAM, the LTA, or the Extended VPD (you may do more than one). Type in the response from the worksheet. Press the PF8 key.

- If the PAM panel appears, continue with Step 4.
- If the LTA panel appears, go to Step 7 on page 2-33.
- If the Extended VPD panel appears, go to Step 10 on page 2-34.

Step 4 Locate Worksheet 29-Printer Authorization Matrix.

Note: Screen Size: The size of the screen you are using determines how much of the 940 and 941 panels you see. For example, a 3278 Model 2 shows only 24 lines (as shown in Figure 2-32 on page 2-32 and Figure 2-33 on page 2-32), while a 3278 Model 4 displays 43 lines.

```
                        ____ PAM Definition ____

Entry    Printer       Mode           Class
          Port                 7           8
  1      ___ - ___      _      01234 56789 012345
  2      ___ - ___      _      ..... ..... ......
  3      ___ - ___      _      ..... ..... ......
  4      ___ - ___      _      ..... ..... ......
  5      ___ - ___      _      ..... ..... ......
  6      ___ - ___      _      ..... ..... ......
  7      ___ - ___      _      ..... ..... ......
  8      ___ - ___      _      ..... ..... ......
  9      ___ - ___      _      ..... ..... ......
  10     ___ - ___      _      ..... ..... ......
  11     ___ - ___      _      ..... ..... ......
  12     ___ - ___      _      ..... ..... ......
  13     ___ - ___      _      ..... ..... ......
  14     ___ - ___      _      ..... ..... ......

    Select ===>

PF: 3=Quit    4=Default         7=Back    8=Fwd    11=page forward
```

Figure 2-32. PAM Definition Panel (24 Lines Displayed)

```
               TA Display Port                     AEA Display Port
Entry  26                                     26 21       22       23
       0           1           2              3  0        0        0
       01234 56789 01234 56789 01234 56789 01 01234567 01234567 01234567
  1    ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  2    ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  3    ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  4    ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  5    ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  6    ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  7    ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  8    ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  9    ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  10   ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  11   ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  12   ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  13   ..... ..... ..... ..... ..... ..... .. ........ ........ ........
  14   ..... ..... ..... ..... ..... ..... .. ........ ........ ........

    Select ===>

PF: 3=Quit    4=Default         7=Back    8=Fwd    10=page backward
```

Figure 2-33. PAM Definition Panel (24 Lines Displayed)

Note: If the first two digits of the printer port number (prefix number) are not filled in or are deleted, all the information on the panel that relates to that entry is deleted after ENTER, PF10, PF11, or PF12 is pressed.

- To advance to the next panel, press PF11.
- To return to a previous panel, press PF10.
- To locate a specific printer entry without having to scroll forward or backward, use the LOCATE command. For example, to locate entry 16, type **L16** in the select field and press ENTER. Entry 16 and the next four entries appear on your screen.

  Any number between 1 and 47 can be used with the LOCATE command.

Step 5 Type the responses from the worksheet to the Printer Authorization Matrix panel displayed on your screen and press ENTER.

If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Note: A hard copy of the customized panel is useful for future reference and is easily obtained. After checking your responses for validity, turn on your printer and press the Print key. If you would like more information on this option, see "Local Copy" on page B-2.

Step 6 When you have completed your entries, press PF8.

If there are no errors on the PAM: Either the LTA panel, the Extended VPD panel, or the Device Definition Complete panel appears next.

- If the LTA panel appears, go to Step 7.
- If the Extended VPD panel appears, go to Step 10 on page 2-34.
- If the Device Definition Complete panel appears, press PF12 and go to Step 13 on page 2-36.

If there are errors on the PAM: An error message appears on the message line of the panel currently displayed. You can then move backward or forward among the panels, correcting the highlighted errors. When the errors are corrected, press PF8 again.

- If the LTA panel appears, go to Step 7.
- If the Extended VPD panel appears, go to Step 10 on page 2-34.
- If the Device Definition Complete panel appears, press PF12 and go to Step 13 on page 2-36.

Step 7 Locate Worksheet 30—Logical Terminal Assignment Panel. Type the responses from the worksheet to the Logical Terminal Assignment panel displayed on your screen.

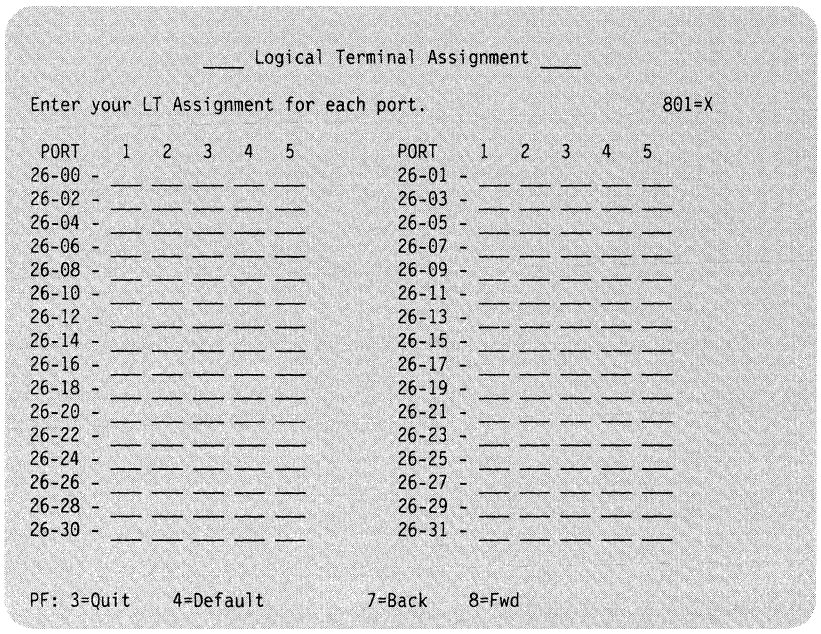


Figure 2-34. Logical Terminal Assignment Panel

Note: To return to a previous panel, press PF7.

Step 8 Press ENTER.

If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Step 9 When you have completed your entries, press PF8.

If there are no errors on the LTA: Either the Extended VPD panel or the Device Definition Complete panel appears next.

If the VPD panel appears, go to Step 10.

If the Device Definition Complete panel appears, go to Step 13 on page 2-36.

If there are errors on the LTA: An error message appears on the message line of the panel currently displayed. You can then move backward or forward among the panels, correcting the highlighted errors. When the errors are corrected, press PF8 again.

- If the VPD panel appears, go to Step 10.
- If the Device Definition Complete panel appears, press PF12 and go to Step 13 on page 2-36.

Step 10 Locate Worksheet 31 – Extended Vital Product Data Panel. Type the responses on the Extended Vital Product Data panel displayed on your screen.

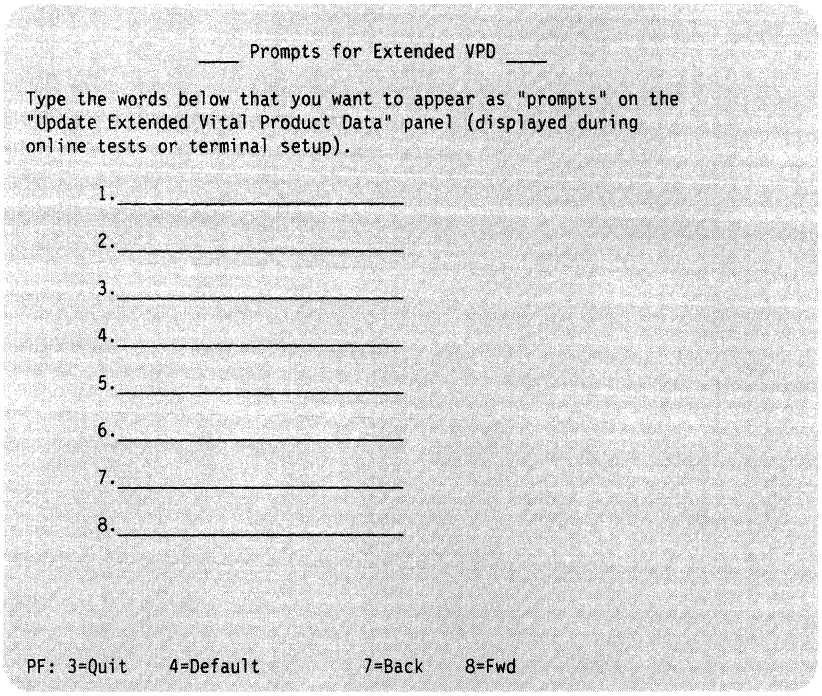


Figure 2-35. Extended Vital Product Data Panel

Step 11 Press ENTER.

If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Step 12 When you have completed your entries, press PF8 to save the VPD panel.

If there are no errors on the VPD Panel: the Device Definition Complete Panel (Figure 2-36 on page 2-36) appears on your screen. Continue with step 13 on page 2-36.

If there are errors on the VPD Panel: An error message appears on the message line of the panel displayed. When the errors are corrected, press PF8 again. The Device Definition Complete Panel (Figure 2-36 on page 2-36) appears on your screen.

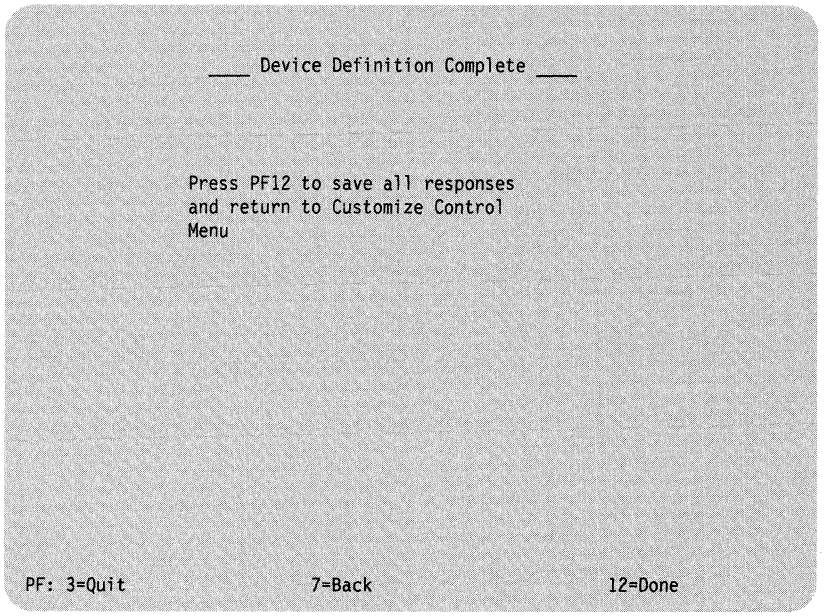


Figure 2-36. Device Definition Complete Panel

Step 13 Press PF12. The Customize Control Disk Menu appears on your screen.

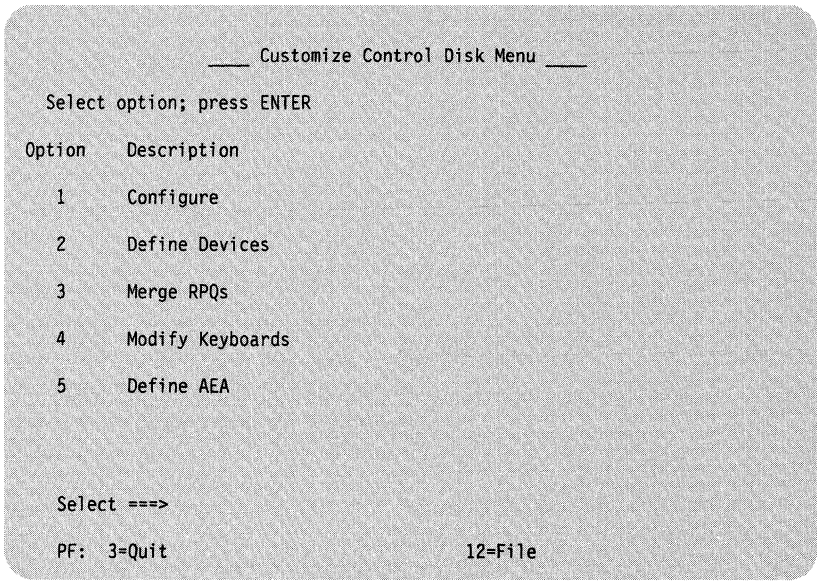


Figure 2-37. Customize Control Disk Menu

What's Next?

With the Customize Control Disk Menu on your screen:

- You can continue to customize by selecting a different customizing procedure.

  Use the following table to locate the procedure for the option you want.

If you want to:	You have worksheets:	Go to page:
Configure	1 through 14 or 32 through 34	2-8
Merge RPQs	N/A (you have an RPQ diskette(s))	2-38
Modify Keyboards	Keyboard Worksheets	2-46
Define AEA	17 through 20	2-61

- You can complete customizing the Control disk.
  Warning: The Customizing responses you made must be transferred from the Utility disk to the Control disk, *or they will not be permanently saved.*

  For a Controller with more than one Disk Drive:
  Press PF12. When the Master Menu appears, transfer is complete.

  For a Controller with one Disk Drive:
  Press PF12. A processing message appears at the bottom of the menu. Follow the instructions as they appear on the screen. When the Master Menu appears, transfer is complete.

Merging RPQs

An RPQ (request for price quotation) is an alteration or addition to the functional capabilities provided by the controller microcode. An RPQ diskette, purchased from IBM, can contain the microcode for one to 30 RPQs. RPQs are merged to the Utility disk and are then transferred to the Control disk. A maximum of 10 RPQs can reside on a Control disk.

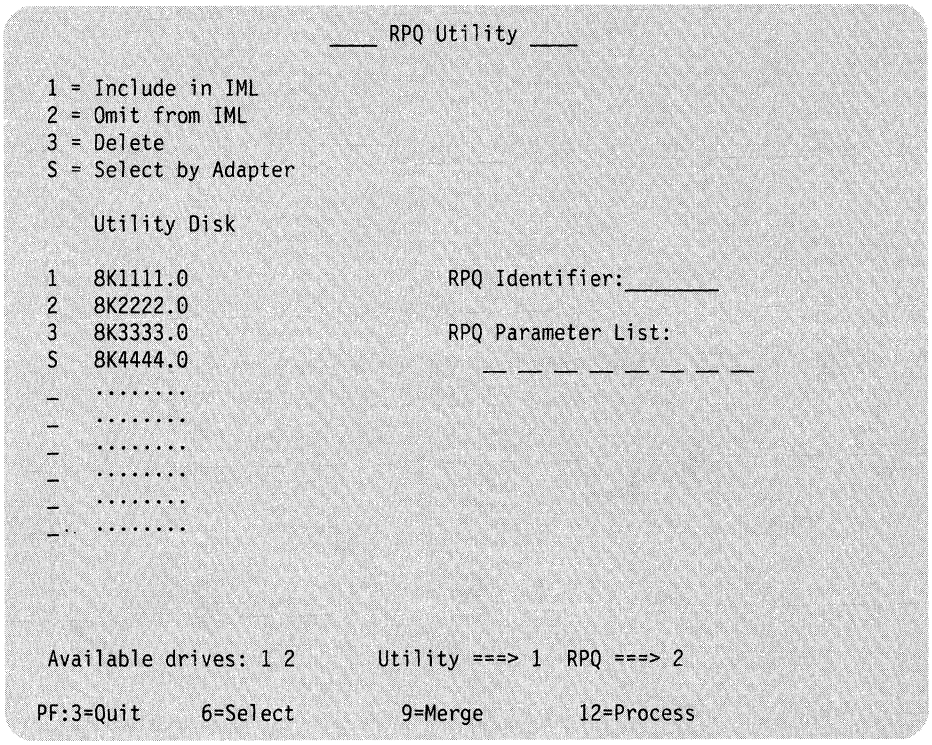


Figure 2-38. RPQ Utility Panel (Merge Procedure)

RPQ Identifier: The RPQ Identifier field is optional. The Identifier field enables you to name sets of merged RPQs for Central Site Processing (See Figure 2-40 on page 2-41.) The name used in the Identifier field should be associated with the merged RPQ data.

The name can contain up to eight alphanumeric characters (first character must be uppercase alphabetic and no blanks/spaces between characters are allowed). If your location is using Central Site Customizing, you should obtain the name for the identifier field from the person controlling your Central Site Library. See the *Central Site Customizing User's Guide*, GA27-3868 for more information.

See the following examples of valid and invalid names.

Example

Valid Names:	Invalid Names:
RPQSET1_	1ARPQSET
RPQSET1A	RPQSET 1

RPQ Parameter List Field: The RPQ Parameter List field lists the parameters required by an RPQ. (See Figure 2-40 on page 2-41.) The documentation available with the RPQ describes the parameters required. Duplicate RPQs cannot exist on the same disk. If no data exists in the parameter list of the Utility disk, the field is padded with underscores.

PF Keys for Merge RPQs

You call up a specific function of the customizing program by pressing a PF key. A PF key is operational only if it appears on the panel you are using.

Use the following table to reference Merge RPQ PF key functions.

PF Keys:	Function:
PF3	PF3 (Quit) quits the procedure and erases all the responses you that were not processed when you pressed PF12.
PF6	PF6 (Select Adapter) displays the Host Adapter RPQ selection panel. This allows you to assign an RPQ to a specific host adapter.
PF9	PF9 (Merge) invokes the RPQ Merge panel while the RPQ Utility panel is displayed. You may then press PF9 (New RPQ Dsk) to merge RPQs from any additional disks. **Note:** If you are using a keyboard without a PF9, use the Attention (ATTN) key.
PF12	PF12 (Process) processes the options specified during this procedure. **Note:** If you are using a keyboard without PF12, use PA2.

Note: PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

Merge RPQs Procedure

Before you perform this procedure:

- You need to have previously selected the "Customize the Control Disk" option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not,
  - See page 1-2 for Master Menu instructions.
  - See page 7-2 for identifying keyboard instructions.
  - See page 2-3 for verify drive instructions.
- If you are not familiar with the Merge RPQ option or its PF Key functions, you may wish to review the introductory material and the PF Key table on pages 2-38 and 2-39.
- You will need a diskette drive for the required RPQ diskettes. You may also need a copy of *3174 Status Codes*, GA27-3832.

Warning: If you have been issued a **new** Control Disk, you must perform the Microcode Upgrade procedure on the Control disk **before** you perform the Merge RPQs procedure. Performing the Microcode Upgrade erases all the RPQs found on the disk being upgraded. For information on the Microcode Upgrade procedure, see Chapter 5, "How to Upgrade Microcode."

The Customize Control Disk Menu is displayed on your screen.

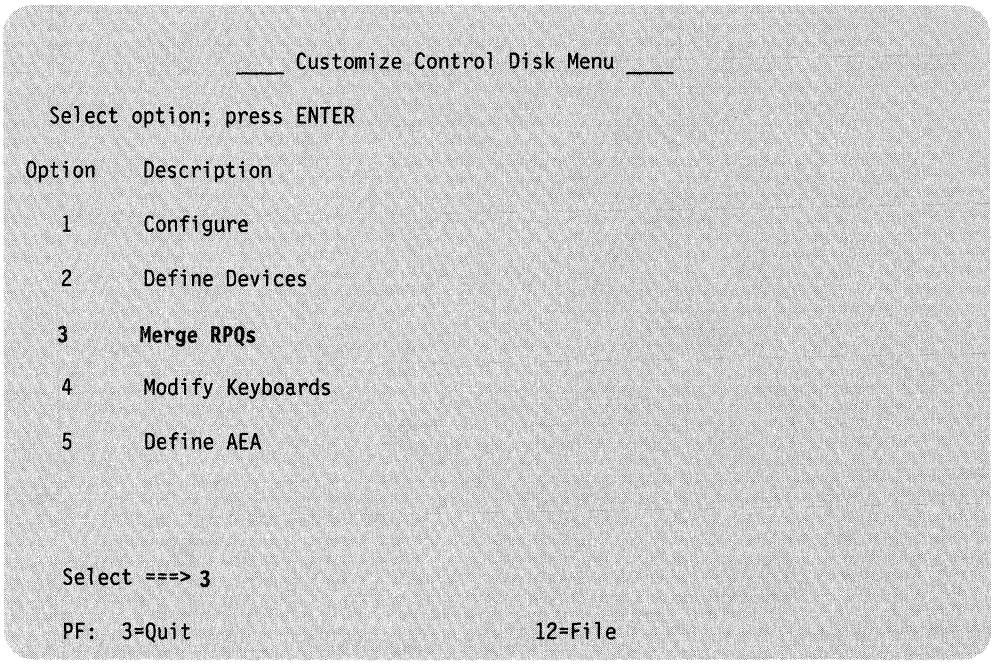


Figure 2-39. Customize Control Disk Menu with Merge RPQs Selected

Step 1 Type `3` after `Select ===>`

Step 2 Press ENTER on the keyboard. The RPQ Utility panel (Figure 2-40 on page 2-41) appears on your screen.

If any RPQs reside on the Control disk, they are transferred to the Utility disk and are displayed under the Utility disk field.

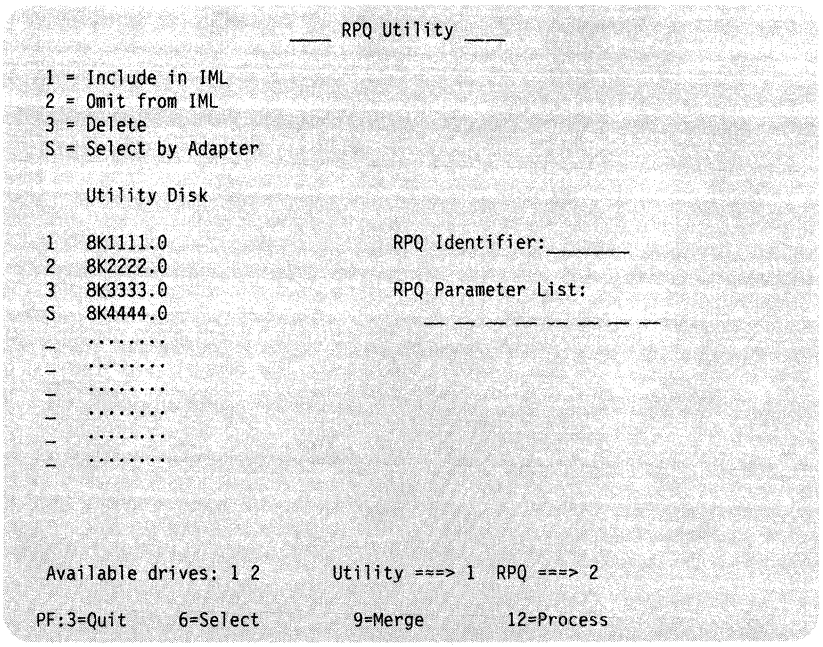


Figure 2-40. RPQ Utility Panel (Merge Procedure)

Note: A hard copy of the customized panel is useful for future reference and is easily obtained. After checking your responses for validity by pressing ENTER, turn on your printer and press the Print key. If you would like more information on this option, see "Local Copy" on page B-2.

You may exit this procedure by pressing PF3, or go to the next step.

Step 3 Verify drives.

The RPQ Utility panel (Figure 2-40) with the Available drives selection fields is on your screen. The Available drives field identifies the drives available in your controller, and the default selections for the Utility and RPQ disks. The diskette drives (the only drives you will be using) are numbered 1 and 2.

Note: On multiple-drive controllers, the `Utility ===>` drive field is defaulted to the drive used for the IML, and cannot be altered.

If you do not want to use the default drive selection, after `RPQ ===>`, type the number for the diskette drive you want to use.

Step 4 Press Enter.

Step 5 Continue with one of the following:

- To include, omit, or delete an RPQ from the Utility disk, go to Step 6.
- To merge RPQs from an RPQ diskette to a Utility disk, go to Step 14 on page 2-43.

Step 6 To change the option of selected RPQs, move the cursor to the entry you wish to change and type over the displayed value in the option field.

- Type a **1** to indicate RPQs to be included at IML.
- Type a **2** to indicate RPQs to be omitted at IML.
- Type a **3** to indicate RPQs to be deleted.
- Type an **S** to indicate RPQs that must be associated with a specific host adapter.

Step 7 If you wish to name this set of merged RPQs, fill in the Identifier field with a valid name (see "RPQ Identifier" on page 2-38).

Step 8 If any RPQs require parameters, enter this information into the Parameter List field. (See the documentation that accompanies the RPQ for these parameters.)

Step 9 To process the options you have selected:

- If you entered a **1**, **2**, or a **3**, press PF12 and go to Step 10.
- If you entered an **S**, press PF6 and go to Step 11 on page 2-43.

Step 10 Merge or exit.

- To Merge RPQ(s) from an RPQ diskette to a Utility disk, go to Step 14 on page 2-43.
- To exit this procedure, go to "What's Next?" on page 2-45.

Step 11 The Host Adapter RPQ Selection panel appears with pre-assigned values obtained from your previous entries on the RPQ Utility panel.

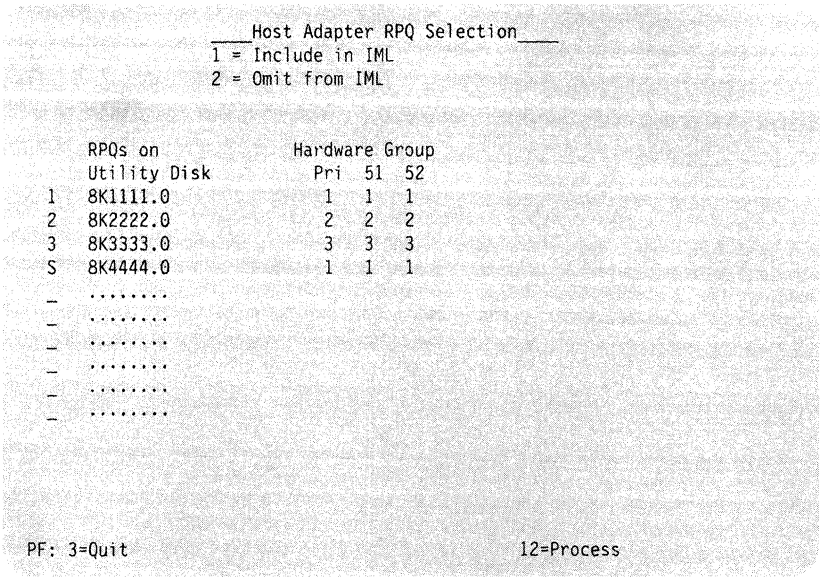


Figure 2-41. Host Adapter RPQ Selection Panel

Step 12 For the RPQ(s) marked with an S, enter a **1** or a **2** in the fields labeled PRI 51 52 to include or omit the RPQ for a particular host adapter.

The field labeled PRI is associated with the following controller host adapters:

- Channel Adapter (16)
- Type 1 and Type 2 Communication Adapters (11)
- Token-Ring Adapter (31).

The fields labeled 51 and 52 are associated with the Type 1 and Type 2 Concurrent Communication Adapters.

Step 13 Press PF12 to process the selected options.

Step 14 Press PF9 to invoke the merge option of the RPQ procedure. See Figure 2-42 on page 2-44.

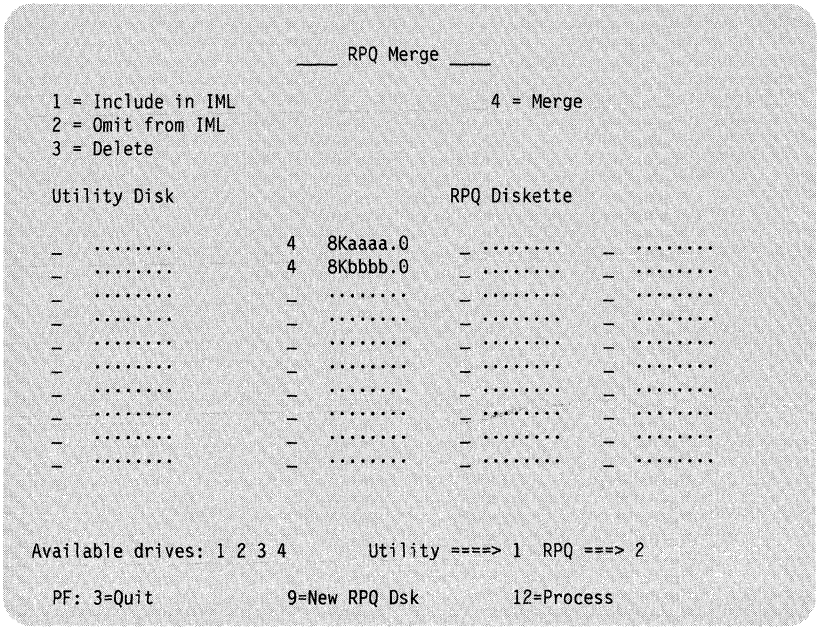


Figure 2-42. RPQ Merge Panel

Step 15 After you have inserted the RPQ diskette, press ENTER.

Step 16 To select RPQs for merging onto the Utility disk, move the cursor to the RPQ entry you wish to merge. Type a **4** in the options field.

Step 17 Press PF12 to process the options.

For a Controller with One Disk Drive:
If no errors are detected, you are prompted to insert a Utility diskette. Insert the diskette and press ENTER. The RPQ Utility panel is displayed, showing all the merged RPQs on the Utility diskette and indicating that they have been included.

For a Controller with More Than One Disk Drive:
If no errors are detected, the merged RPQs are displayed under the Utility disk portion of the screen on the RPQ Utility panel.

What's Next?

You can:

- Continue to select RPQ options: See Step 6 on page 2-42 or Step 14 on page 2-43.
- Quit the Merge RPQs Procedure: Press PF3 to return to the Customize Control Disk Menu.
  - If you want to continue customizing the Control Disk, select a different customizing procedure. Use the following table to locate the procedure for the option you want.

If you want to:	You have worksheets:	Go to page:
Configure	1 through 14 or 32 through 34	2-8
Define Devices	28 through 31	2-28
Modify Keyboards	Keyboard Worksheets	2-46
Defining AEA	17 through 21	2-61

Warning: If you have completed customizing the Control disk, the responses you made must be transferred from the Utility disk to the Control disk, *or they will not be permanently saved.*

For a Controller with more than one Disk Drive:
Press PF12. When the Master Menu appears, transfer is complete.

For a Controller with one Disk Drive:
Press PF12. A processing message appears at the bottom of the menu. Follow the instructions as they appear on the screen. When the Master Menu appears, transfer is complete.

Modifying Keyboards

Select this procedure when you want to tailor keyboard layouts to be used on IBM display stations with modifiable keyboards. Keyboard layouts can be tailored to meet specific user applications requirements. Figure 2-43 shows the steps used in defining keyboard layouts.

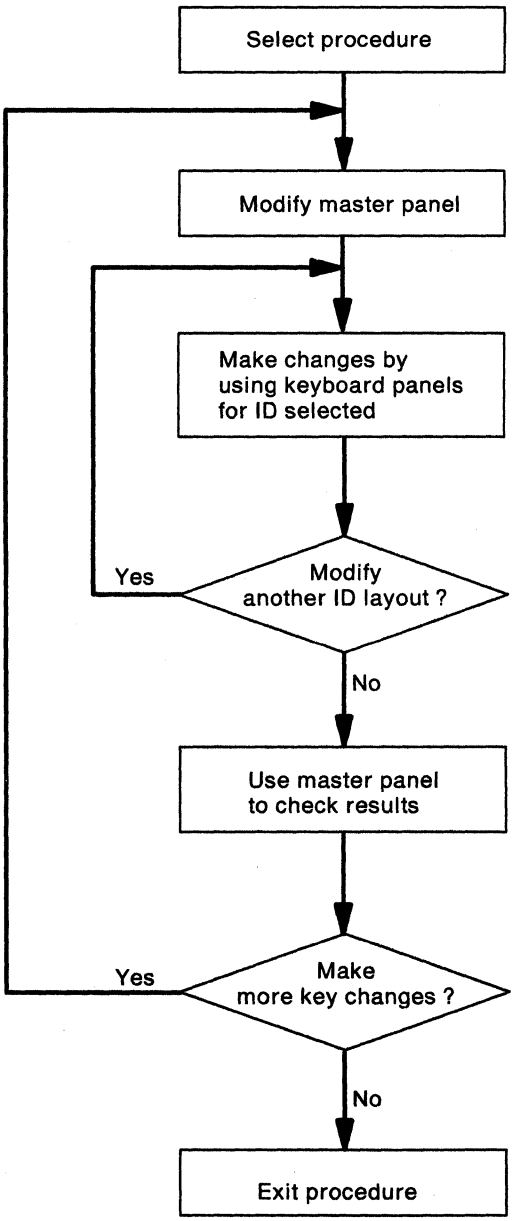


Figure 2-43. Steps for Defining Keyboard Layouts

Modify Keyboards Procedure

Before you perform this procedure:

- You need to have previously selected the "Customize the Control Disk" option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not,
  - See page 1-2 for Master Menu instructions.
  - See page 7-2 for identifying keyboard instructions.
  - See page 2-3 for verify drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page F-2 for instructions.)
- You will also need the completed Keyboard Layout Worksheets.
- You may also need a copy of *3174 Status Codes*, GA27-3832.

The Customize Control Disk Menu is displayed on your screen.

```
                ____ Customize Control Disk Menu ____

  Select option; press ENTER

Option    Description

   1      Configure

   2      Define Devices

   3      Merge RPQs

   4      Modify Keyboards

   5      Define AEA



   Select ===> 4

   PF:  3=Quit                                12=File
```

Figure 2-44. Customize Control Disk Menu (Select Modify Keyboards)

Step 1 Type 4 after Select ===>.

Step 2 Press ENTER.

After you press ENTER, the Modify Keyboard Master Panel (Figure 2-45 on page 2-48) appears on your screen.

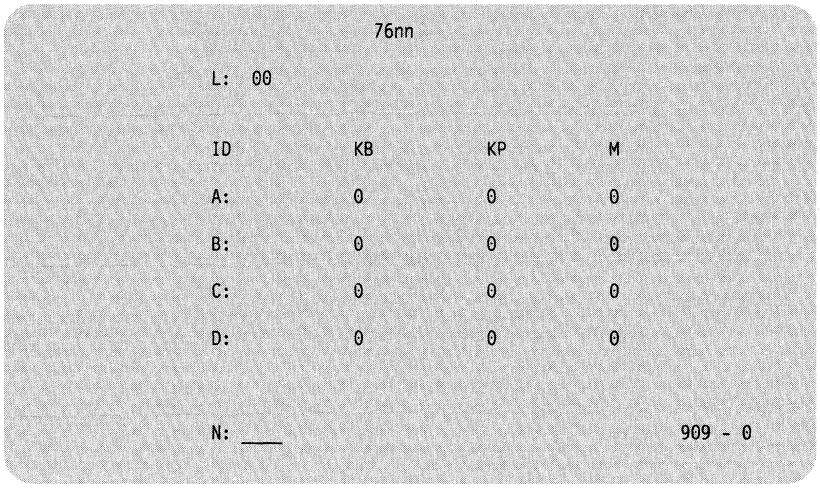


Figure 2-45. Modify Keyboard Master Panel

The cursor is positioned at the language (L) field entry. If previously defined keyboard layouts are on the disk, entries on the master panel show the ID, the keyboard (KB) type, and the keypad (KP) type for each previously defined layout. There may be an entry in the name (N) field that identifies this set of modified keyboard layouts. An R in the modify (M) field indicates that this keyboard layout has been modified.

Use the following table (on this page and the next) to match field with description.

Table 2-1. Field / Description Table (part 1).

Fields:	**Description:**
76nn	Four-digit error code (displayed only if an error is detected). See *3174 Status Codes*, GA27-3832, for more information.
L	Keyboard language number
ID	Keyboard identification
KB	0 - No keyboard type specified
	1 - Converged Typewriter keyboard
	2 - Converged Data Entry keyboard
	3 - Converged APL keyboard
	4 - Enhanced Typewriter keyboard
KP	0 - Default National Language keypad
	1 - Data Entry keypad
	2 - Program Function keypad
N	Name field. Up to eight alphanumeric characters (first character uppercase alphabetic, no blanks/spaces between characters allowed). See the naming conventions in the *Central Site Customizing User's Guide*.

Table 2-2. Field / Description Table (part 2).	
Fields:	**Description:**
M	0 - Not a modified keyboard layout
	1 - Modify standard keyboard layout
	2 - Make more changes to a modified layout
	3 - View keyboard panels
	R - Keyboard layout was modified
909	0 - Original value – Entries not confirmed
	1 - Entries confirmed – Go to keyboard panels
	F - Definition process finished – Exit procedure

Use the information on the top of the completed worksheet to fill in the Modify Keyboard Master Panel.

You can change the keyboard language number by typing the new 2-digit language number over the current entry. The *3174 Planning Guide* lists the keyboard languages and I/O interface codes that are supported. All keyboards must use the same language, and this same language number must be specified during customizing (question 121 : Keyboard Language and I/O Interface Code.)

If you assign a new language number, status code 7604 is displayed when the ENTER key is pressed. This is not an error, but it is a warning. If you confirm this entry by pressing ENTER, all previously modified layouts are erased, and all new keyboard layouts are loaded. The master panel is reset to all zeros except for the L field.

Updating the master panel:

Step 3 To change the keyboard language, type the new 2-digit language number and press ENTER. Otherwise, continue with Step 4.

Step 4 Fill in the KB, KP, and M fields for each ID that you are defining. If all entries are equal to 0 for a particular ID, no keyboard layout exists for that ID.

Step 5 Type one of the following in the row for each ID in the column under KB:

KB = 1 means that the keyboard to be modified for this ID is a converged typewriter keyboard layout.

KB = 2 means that the keyboard to be modified for this ID is a converged data entry keyboard layout.

KB = 3 means that the keyboard to be modified for this ID is a converged APL keyboard layout.

Note: You can modify an APL keyboard only if the display station at which you are performing this procedure has APL read-only storage (ROS).

KB = 4 means that the keyboard to be modified for this ID is an Enhanced Typewriter keyboard layout.

Step 6 Type one of the following in the column under KP:

KP = 0 means that the default national language keypad is used for this ID.

KP = 1 means that the data entry keypad is used for this ID.

KP = 2 means that the PF keypad is used for this ID.

Step 7 Modify code (0, 1, 2, or 3) in the column under M:

If M equals 0 when the master panel is first displayed, you can:

- Leave the M field 0. Do this if you do not want to define a keyboard for this ID (that is, KB = 0 and KP = 0 for this ID), *or* if you do not want to make any key changes but only want to specify a unique keyboard/keypad combination for this ID. (For example, if you wanted a Converged Typewriter KB = 1 with a Data Entry Keypad KP = 1 with no other changes, you would enter KB = 1 KP = 1 M = 0.)
- Change the M field to a 1 if you want to modify the keyboard layout for this ID.

If M equals R when the master panel is first displayed, the keyboard layout for this ID has previously been modified. You can do one of the following with this already modified keyboard:

- Set M equal to 0 to erase the keyboard modifications for this ID.
- Set M equal to 1 to define a new keyboard layout. Replacing an R with a 1 in the M field erases all previous changes made to this keyboard layout.
- Set M equal to 2 to make changes to a modified keyboard layout.
- Set M equal to 3 to view the modified keyboard layout. The keyboard panels are displayed, but cannot be altered in any way.

Step 8 Fill in the optional N (name) field to identify this set of modified keyboards. The name is useful when you are storing or retrieving sets of modified keyboards from the central site library. See the *Central Site Customizing User's Guide* for information on naming conventions and library member names.

For an explanation of a valid name, see the description of the fields discussed earlier in this step. Following are examples of valid and invalid names.

Example

```
KBDSET1A (valid)
1A KBSET (invalid)
```

Step 9 Check the master panel to be sure all entries are correct. Move the cursor to the 909 field at the bottom of the master panel, and change the 0 to a 1. Press ENTER.

Step 10 **If an error is detected,** all fields that contain errors are highlighted. The cursor is placed at the location of the first error, and a status code is displayed at the top of the screen. See *3174 Status Codes*, GA27-3832, to determine what type of error was made.

Correct the error and press ENTER.

If there is more than one error, after the first error is corrected, the cursor is placed at the location of the next error and its error code is displayed at the top of the screen. Repeat this step until all errors are corrected.

Step 11 Continue with one of the following:

- If you do not want to make any changes at this time (all M fields are equal to 0, 3, or R), then go to "Use the Master Panel to Check Your Results" on page 2-59 or to "Exit from the Procedure" on page 2-60.
- If you do want to make changes, go to "Modify Keyboard Panels Description."

Modify Keyboard Panels Description

Warning: When modifying keyboards panels that have characters **unique** to APL2 and CECP, you need to use a device that supports those characters. Otherwise, characters may be misrepresented or displayed as blanks.

When you have finished updating the master panel, keyboard panel 1 is displayed. Because the entire keyboard cannot be shown on a single screen, there are three keyboard panels for each ID. See Figures 2-46 through 2-48.

On the top left of each keyboard panel is the mode selection row. It is divided into three groups: the keyboard group (0, 1, 2), the shift group (3, 4), and the function group (5, 6, 7, 8). Only one selection is allowed in each group for each key change.

Note that you can perform all of the same kinds of changes while working on a particular keyboard ID after selecting these operations only once. However, each time a different shift and/or type of change is desired, new selections must be made in the mode selection row.

The information at the bottom left of the screen is the ID, the keyboard (KB) type, and the keypad (KP) type for the keyboard layout that is being defined.

On the bottom right of the keyboard panel is the 910 field. It shows which keyboard panel is displayed. It is used:

- To change from one keyboard panel to another by entering **1**, **2**, or **3**.

  For two-language keyboards, enter 0 or 1 in the 910 subfield, to specify the secondary or primary language nomenclature, respectively.
- To cancel the pending key-change operation by entering an **A**.
- To end the modification of the current keyboard ID by entering an **F**.

If an error is detected at any time during a key change, the error number is displayed at the top of the screen. See *3174 Status Codes*, GA27-3832, for keyboard panel error codes. Correct the error and continue.

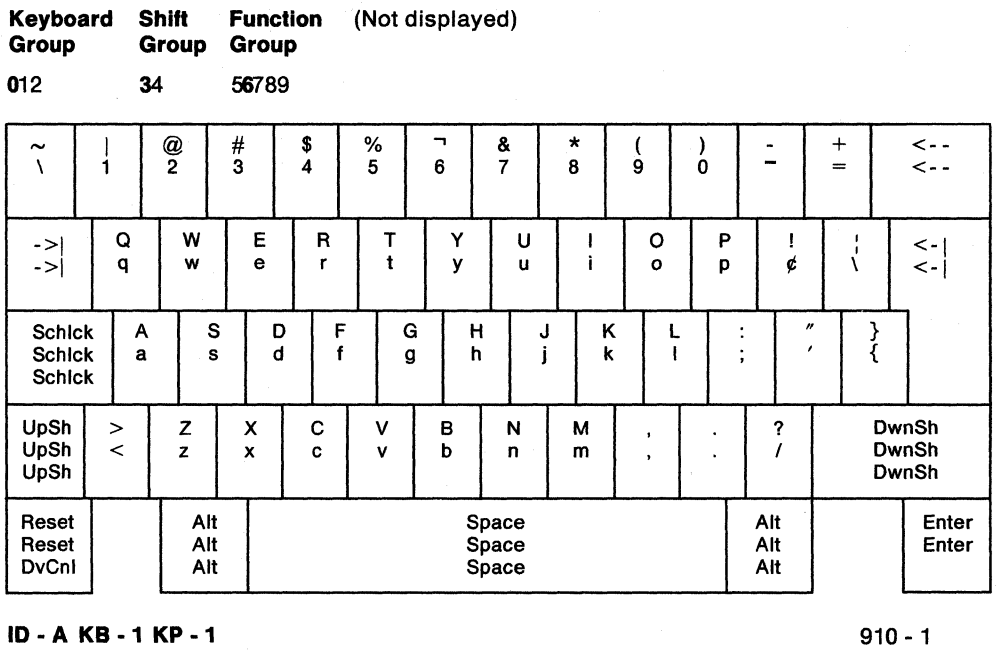


Figure 2-46. Typical Converged Typewriter Keyboard Panel 1 — Main Part of Keyboard

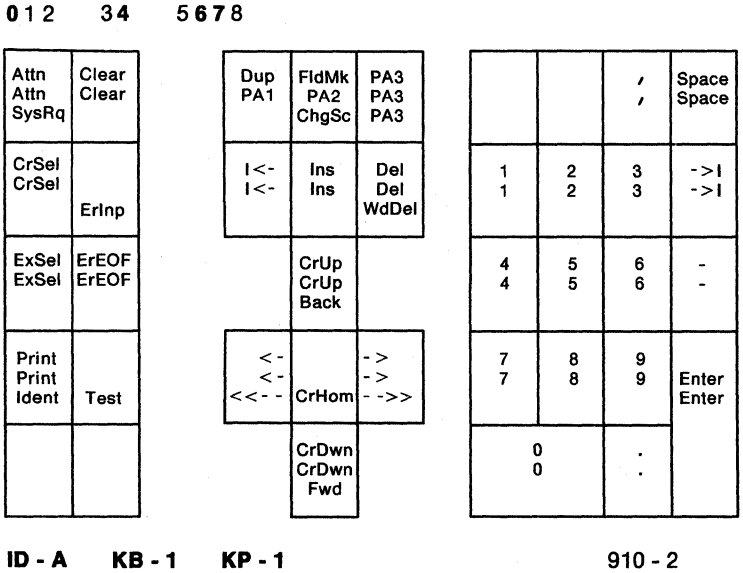


Figure 2-47. Typical Converged Typewriter Keyboard Panel 2 — Keys to Right and Left of Main Keyboard

012 34 56789

P13 P13	P14 P14	P15 P15	P16 P16	P17 P17	P18 P18	P19 P19	P20 P20	P21 P21	P22 P22 CrBnk	P23 P23 CrAlt	P24 P24 Click
P1 P1	P2 P2	P3 P3	P4 P4	P5 P5	P6 P6	P7 P7	P8 P8	P9 P9	P10 P10	P11 P11	P12 P12

ID - A KB - 1 KP - 1 910 - 3

Figure 2-48. Typical Converged Typewriter Keyboard Panel 3 — Program Above Main Keyboard Function Keys Above Main Keyboard

Keyboard Group (0, 1, 2)

0 = The desired change is on a converged typewriter, converged data entry typewriter, enhanced typewriter, or the typewriter functions on a converged APL keyboard.
1 = The desired change applies only to the APL key functions on a converged APL keyboard.
2 = The desired change applies to both the typewriter and APL functions on a converged APL keyboard.

Shift Group (3, 4)

3 = Full-key change.
4 = Single-shift change.

Function Group (5, 6, 7, 8)

5 = Copy from I/O interface code table.
6 = Exchange two functions.
7 = Copy a function to another key.
8 = Delete a key function.

910 Field Entries

1 = Display keyboard panel 1.
2 = Display keyboard panel 2.
3 = Display panel keyboard 3.
A = Cancel (abort) the pending key-change operation.
F = All changes have been finished for this id.

910 Subfield Entries (displayed for two-language keyboards)

0 = Display keyboard layout with secondary language nomenclature.
1 = Display keyboard layout with primary language nomenclature.

Make Mode Selection Row Entries

These selections have already been made on the worksheet; refer to the Keyboard, Shift, and Function Groups section of the Keyboard Changes Chart.

Start each key change by replacing the proper numbers with an X in the mode selection row as follows.

Make only one selection in each group in the mode selection row:

Step 1 The first three numbers (0, 1, 2) are the keyboard group. If the keyboard type specified on the master panel is a converged typewriter (KB=1), data entry typewriter (KB=2), or enhanced typewriter (KB=4), the 0 is highlighted. Do not make an entry in this field; go to step 3 of this section.

Step 2 If the keyboard type specified on the master panel is an APL keyboard (KB=3), and the display station at which you are running the procedure has an APL ROS, then the entire keyboard group (0, 1, 2) is highlighted:

- To change only the Typewriter key functions, type **X** over the 0.
- To change only the APL mode functions, type **X** over the 1.
- To change both Typewriter and APL mode functions, type **X** over the 2.

  If you type **X** over the 2, the Typewriter keys are displayed when keyboard panel 1 is on the screen. The APL functions for the keys modified are changed along with the Typewriter functions. To display the APL functions to verify that they were changed, type an **X** over the 1 in the keyboard group and press ENTER.

Step 3 Numbers 3 and 4 are the shift group.

- To change the entire key (upper-shift, lower-shift, and alternate-shift positions), type **X** over the 3.
- To choose a single-shift position change, type **X** over the 4.

Step 4 Numbers 5, 6, 7, and 8 are the function group. Type an **X** over the appropriate number to select the type of key change.

5 – Copy from the I/O interface code table.
6 – Exchange two functions.
7 – Copy a function from one key to another key.
8 – Delete a key function.

Step 5 Press ENTER.

Step 6 **If an error is detected**, place the cursor at the location of the first group in error. The status code of the first error is displayed at the top of the screen, and all groups with errors are highlighted. See *3174 Status Codes*, GA27-3832, to determine what type of error was made.

Correct the error and press ENTER.

Repeat this step until all errors in the mode selection row are corrected.

Step 7 Proceed with the key change as follows:

- Copy from the I/O interface code table (see "Perform a Copy from the I/O Interface Code Table" on page 2-55).
- Exchange two functions (see "Exchange the Function of Two Keys" on page 2-56).
- Copy a function to another key (see "Copy from One Key to Another" on page 2-57).
- Delete a function (see "Delete a Key Function" on page 2-58).

Perform a Copy from the I/O Interface Code Table

After the mode selection row is updated, the number 5 in the mode selection row is highlighted and I/O = 00 is displayed to the right of the mode selection row. The cursor is positioned under the first 0.

Step 1 Type the hexadecimal (hex) code that you are assigning over the 00. The I/O Code is located on the worksheet in the I/O Code field. (If the I/O code is not present in this field, the code for the I/O Code Character you are copying can be found in the *Character Set Reference*, GA27-3831.)

For example: The hex code for the plus sign (+) is defined as 4E in the English (U.S.) I/O Interface Code Table.

For two-language keyboards, enter the **0** or **1** in the 910 subfield to specify the secondary or primary language layout, respectively. Modifications made to keys during this copy procedure do not affect the keys on the hidden keyboard layout. For more information about two-language modifications, see the *3174 Planning Guide*, GA27-3862-2.

Step 2 Press ENTER.

The hex code is translated into its corresponding character, followed by -->. In the example, I/O = 4E becomes I/O = + -->.

Step 3 If the key to be changed is not displayed on the screen, call up the needed keyboard panel by typing its number (**1**, **2** or, **3**) after the 910 and pressing ENTER.

Note: Entering an **A** after the 910 cancels the current key change operation.

Step 4 Move the cursor to the key that you are changing (the *To* key on the worksheet).

For a full-key change, place the cursor anywhere within the key.

For a single-shift change, place the cursor in the proper shift row within the key.

Step 5 Press ENTER.

The character representation for the hex I/O code that you selected is placed on the key and highlighted.

Step 6 If you have another change for the current ID in which *all* the mode selection row entries are identical with those highlighted, it is not necessary to make entries in the mode selection row for your next change. Start from Step 1.

To make a different type of key change for the current keyboard ID, return to "Modify Keyboard Panels Description" on page 2-51.

Note: You can start another key change from any keyboard panel (1, 2, or 3).

Step 7 If you have finished defining the current keyboard ID, replace the number after the 910 with an F and press ENTER.

If another keyboard is to be defined, keyboard panel 1 of the next keyboard ID is displayed. Return to "Modify Keyboard Panels Description" on page 2-51.

If all the keyboard IDs specified in the master panel have been defined, the master panel is displayed. Go to "Use the Master Panel to Check Your Results" on page 2-59, or go to "Exit from the Procedure" on page 2-60.

Exchange the Function of Two Keys

After the mode selection row is updated, the number 6 in the mode selection row is highlighted and the cursor is at the home position in the mode selection row.

Step 1 If neither key (*From* or *To*) that you are going to exchange is displayed on the current keyboard panel, call up the needed panel by typing its number (**1**, **2** or, **3**) after the 910 at the bottom of the screen.

For two-language keyboards, enter the **0** or **1** in the 910 subfield to specify the secondary or primary language layout, respectively. For more information about two-language modifications, see the *3174 Planning Guide* GA27-3862.

Press ENTER.

Step 2 Move the cursor to the first key to be changed (the *From* key on the worksheet).

For a full-key exchange, place the cursor anywhere within the key.

For a single-shift exchange, place the cursor anywhere in the proper shift row within the key.

Step 3 Press ENTER.

The selected key is highlighted and is displayed to the right of the mode selection row, followed by <--> to signify that an exchange is pending. If full-key mode was selected, all the shift states (upper/lower/alternate) of the selected key are displayed to the right of the mode selection row.

Step 4 If the other key to be exchanged (the *To* key) is not displayed on the screen, call up the needed keyboard panel by typing its number (**1**, **2**, or **3**) after the 910 and pressing ENTER.

Note: Entering an **A** after the 910 cancels the current key change operation.

Step 5 Move the cursor to the other key to be exchanged (the *To* key on the worksheet).

For a full-key exchange, place the cursor anywhere on the key.

For a single-shift exchange, place the cursor in the proper shift row on the key.

Step 6 Press ENTER.

The exchange is made. The keys that were exchanged are highlighted if they are on the current keyboard panel. For two-language keyboards, if a modification occurred on both the secondary and primary language layouts, a 2 appears to the right of the mode selection row.

Step 7 If you have another change for the current ID in which *all* the mode selection row entries are identical with those highlighted, it is not necessary to make entries in the mode selection row for your next change. Start from Step 1 on page 2-56.

To make a different type of key change for the current keyboard ID, return to "Modify Keyboard Panels Description" on page 2-51.

Note: You can start another key change from any keyboard panel (1, 2, or 3).

Step 8 If you have finished defining the current keyboard ID, replace the number after the 910 with an **F** and press ENTER.

If another keyboard is to be defined, keyboard panel 1 of the next keyboard ID is displayed. Return to "Modify Keyboard Panels Description" on page 2-51.

If all the keyboard IDs specified in the master panel have been defined, the master panel is displayed. Go to "Use the Master Panel to Check Your Results" on page 2-59 or to "Exit from the Procedure" on page 2-60.

Copy from One Key to Another

After the mode selection row is updated, the number 7 in the mode selection row is highlighted and the cursor is at the home position in the mode selection row.

Step 1 If the key that you are going to copy (the *From* key) is not displayed on the current keyboard panel, call up the needed panel by typing its number (**1**, **2**, or **3**) after the 910.

For two-language keyboards, enter the **0** or **1** in the 910 subfield to specify the secondary or primary language layout.

Press ENTER.

Step 2 Move the cursor to the key to be copied (the *From* key on the worksheet).

For a full-key copy, place the cursor anywhere within the key.

For a single-shift copy, place the cursor in the proper shift row within the key.

Step 3 Press ENTER.

The selected key is highlighted and is displayed to the right of the mode selection row, followed by ===> to signify that a copy is pending. If full-key mode was selected, all the shift states (upper/lower/alternate) of the selected key are displayed to the right of the mode selection row.

Step 4 If the key to which you are copying the *From* key (the *To* key) is not displayed on the screen, call up the needed keyboard panel by typing its number (**1**, **2**, or **3**) after the 910 and pressing ENTER.

Note: Entering an **A** after the 910 cancels the current key change operation.

Step 5 Move the cursor to the destination key (the *To* key on the worksheet).

For a full-key copy, place the cursor anywhere within the key.

For a single-shift copy, place the cursor in the proper shift row within the key.

Step 6 Press ENTER.

The copy is made, and the changed key is highlighted.

For two-language keyboards, if a modification occurred on both the secondary and primary language layouts, a 2 appears to the right of the mode selection row.

Step 7 If you have another change for the current ID in which *all* the mode selection row entries are identical with those highlighted, it is not necessary to make entries in the mode selection row for your next change. Start from Step 1 on page 2-57.

To make a different type of key change for the current keyboard ID, return to "Modify Keyboard Panels Description" on page 2-51.

Note: You can start another key change from any keyboard panel (1, 2, or 3).

Step 8 If you have finished defining the current keyboard ID, replace the number after the 910 with an F and press ENTER.

If another keyboard is to be defined, keyboard panel 1 of the next keyboard ID is displayed. Return to "Modify Keyboard Panels Description" on page 2-51.

If all the keyboard IDs specified in the master panel have been defined, the master panel is displayed. Go to "Use the Master Panel to Check Your Results" on page 2-59 or to "Exit from the Procedure" on page 2-60.

Delete a Key Function

After the mode selection row is updated, the number 8 in the mode selection row is highlighted and the cursor is at the home position in the mode selection row.

Step 1 If the key that you are going to delete (the *From* key) is not displayed on the current keyboard panel, call up the needed panel by typing its number (**1**, **2**, or **3**) after the 910 at the bottom of the screen.

For two-language keyboards, enter a **0** or **1** in the 910 subfield to specify the secondary or primary language layout, respectively.

Press ENTER.

Step 2 Move the cursor to the key to be deleted (the *From* key on the worksheet).

To delete a full key, place the cursor anywhere within the key.

To delete a single-shift position, place the cursor in the proper shift row within the key.

Step 3 Press ENTER.

The key is deleted, and the line to the right of the key is highlighted.

For two-language keyboards, if a modification occurred on both the secondary and primary language layouts, a 2 appears to the right of the mode selection row.

Step 4 If you have another change for the current ID in which *all* the mode selection row entries are identical with those highlighted, it is not necessary to make entries in the mode selection row for your next change. Start from step 1.

To make a different type of key change for the current keyboard ID, return to "Modify Keyboard Panels Description" on page 2-51.

Note: You can start another key change from any keyboard panel (1, 2, or 3).

Step 5 If you have finished defining the current keyboard ID, replace the number after the 910 with an F and press ENTER.

Another keyboard has to be defined, keyboard panel 1 of the next keyboard ID is displayed. Return to "Modify Keyboard Panels Description" on page 2-51.

If all the keyboard IDs specified in the master panel have been defined, the master panel is displayed. Go to "Use the Master Panel to Check Your Results" or to "Exit from the Procedure" on page 2-60.

Use the Master Panel to Check Your Results

When you have completed all the keyboard changes, the master panel is again displayed. The 0's, 1's, and 2's in the modify (M) field have been replaced by Rs for the new keyboards that have been defined.

Note: If you want to make more changes, go back to page 2-48 and follow the steps.

To view one or more of the keyboards again:

Step 1 Enter a **3** in the modify fields of the IDs that you want to check. A 3 in the modify field allows you to view the keyboard panels, but you cannot make any additional changes at this time.

Step 2 Change the 0 to the right of the 909 to a 1.

Step 3 Press ENTER.

Keyboard panel 1 for the first ID with a 3 in the M field is displayed. There are now only two numbers in the mode selection row, 0 and 1. These two numbers are used only if the keyboard type for this ID is APL (KB = 3 on the master panel), and if the display station at which you are performing this procedure has APL read-only storage (ROS). Then you can display the APL key functions by entering an **X** over the 1. To return to the Typewriter layout, enter an **X** over the 0.

Step 4 Look at the other keyboard panels for this ID by entering the corresponding number (1, 2, or 3) in the 910 field.

For two-language keyboards, enter a 0 or 1 in the 910 subfield to view the secondary or primary language keyboard layout, respectively.

Step 5 When you have finished checking the panels for that ID, type an **F** in the 910 field.

Step 6 Press ENTER.

If there is another keyboard ID with a 3 in the M field, keyboard panel 1 for that ID is displayed.

Step 7 After all the keyboards requested have been displayed, the master panel is displayed again.

To make more keyboard changes, return to page 2-48.

Exit from the Procedure

After completing all the keyboard definitions, exit from the keyboard definition procedure by replacing the 0 to the right of the 909 with an F. Press ENTER.

The master panel is removed from the screen, and the definition procedure is completed.

What's Next?

With the Customize Control Disk Menu on your screen:

- You can continue customizing by selecting a different customizing procedure.

  Use the following table to locate the procedure for the option you want.

If you want to:	You have worksheets:	Go to page:
Configure	1 through 14 or 32 through 34	2-8
Define Devices	22 through 24	2-28
Merge RPQs	N/A (you have an RPQ diskette)	2-38
Define AEA	17 through 21	2-61

- You can complete customizing the Control disk.

Warning: The Customizing responses you made must be transferred from the Utility disk to the Control disk, *or they will not be permanently saved.*

For a Controller with more than one Disk Drive:
Press PF12. When the Master Menu appears, transfer is complete.

For a Controller with one Disk Drive:
Press PF12. A processing message appears at the bottom of the menu. Follow the instructions as they appear on the screen. When the Master Menu appears, transfer is complete.

Defining AEA

Select Define AEA from the Master Menu when you initially customize a Control disk for the Asynchronous Emulation Adapter (AEA). You can also use it if you want to change any information entered previously while customizing the Control disk. Type over or delete any previous responses you want to change.

Define AEA Menu Options

Define AEA provides you with three options from the AEA Menu.

```
                    ____ AEA Menu ____

Select Option; press ENTER

Option     Description

   1       Configure AEA
   2       Define UDT
   3       Define UDX

   Select===>

PF: 3=Quit                                    12=File
```

Figure 2-49. AEA Menu

Configure AEA: Select Configure AEA if you want to type in the responses to the numbered questions on the AEA Configure Worksheets 17 through 21.

Define UDT: Define UDT allows you to create a User-defined Terminal definition for an ASCII Terminal Type being attached to the controller. Use worksheets 22 through 24.

Define UDX: Define UDX allows you to create or modify one or more User-Defined Translate Table definitions based on an FPC Translate Table definition. Use worksheets 25 through 27.

Use the following table to locate the procedure for the option you want.

If you want to:	You have worksheets:	Go to page:
Configure AEA	17 through 21	2-64
Define UDT	22 through 24	2-71
Define UDX	25 through 27	2-80

PF Keys for Define AEA

You call up a specific function of the customizing program by pressing a PF key. As you follow the Define AEA procedure, your choice of PF keys varies from panel to panel. Some or all of these PF keys may appear on panels during the Define AEA procedure.

Use the following table to reference Define AEA PF key functions.

PF KEYS:	FUNCTION:
PF3	PF3 (Quit) is used to quit the procedure, and erases your responses made during the present session from all the panels. You must press this key twice to exit the AEA procedure. After pressing this key once, you receive a message asking you if you are sure that you wish to quit this procedure. Press this key a second time to return to the Customize Control Disk Menu.
PF4	PF4 (Default) erases your responses from the current panel. The screen clears, and the same panel, filled with default responses, reappears.
PF7	PF7 (Back) brings up the previous panel. When you press PF7, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed. When you return to the partially completed panel, you can complete it.
PF8	PF8 (Forward) checks the responses on the current panel for errors. If there are none, the next panel appears on the screen. If there are any errors, an error message appears on the message line. You cannot advance to the next panel until all errors are corrected. When you press PF8, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed.
PF10	PF10 (Page Back) This key checks the entire panel, which is made up of a series of screens, for errors, and pages back to the previous screen while displaying any errors that are encountered. **Note:** If you are using a keyboard without PF10, use the Cursor Select Key.
PF11	PF11 (Page Forward) This key checks the entire panel, which is made up of a series of screens, for errors, and pages forward to the next screen while displaying any errors that are encountered. **Note:** If you are using a keyboard without PF11, use the PA1 key.
PF12	PF12 pressed at the end of the Defining AEA procedure saves all the responses you have entered on all the previous panels. The AEA Configure Complete appears on your screen. **Note:** If you are using a keyboard without PF12, use the PA2 key.

Note: Keyboards with PF13 through 24 are mapped into PF1 through 12. For example, PF13 is PF1 and PF15 is PF3.

Configure AEA Procedure

Before you perform this procedure:

- You need to have previously selected the "Customize the Control Disk" option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not,
  - See page 1-2 for Master Menu instructions.
  - See page 7-2 for identifying keyboard instructions.
  - See page 2-3 for verify drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page F-2 for instructions.)
- If you are not familiar with the Define AEA PF Key functions, you may wish to review the PF Key table on page 2-63.
- You may also need a copy of *3174 Status Codes*, GA27-3832.

The Customize Control Disk Menu is displayed on your screen.

```
                ____ Customize Control Disk Menu ____

  Select option; press ENTER

Option    Description

   1      Configure

   2      Define Devices

   3      Merge RPQs

   4      Modify Keyboards

   5      Define AEA



   Select ===> 5

   PF:  3=Quit                                12=File
```

Figure 2-50. Customize Control Disk Menu

Step 1 Type `5` after `Select ===>`

Step 2 Press the ENTER key on the keyboard.

The AEA Menu (Figure 2-51 on page 2-65) is displayed on your screen.

```
                    ___ AEA Menu ___

Select Option; press ENTER

Option     Description

   1       Configure AEA
   2       Define UDT
   3       Define UDX









   Select===>1

PF: 3=Quit                                    12=File
```

Figure 2-51. AEA Menu

Step 3 Type 1 after Select ===> for the Configure AEA Option.

```
                   ___ AEA Configure ___


   700 - - 0

   702 - - 1

   703 - - 0

   710 - 000000000  711 - 00000000  712 00000000   713 00000000









PF:3=Quit       4=Default       8=Fwd            12=Done
```

Figure 2-52. AEA Configure Panel

Step 4 Locate Worksheet 17 — AEA Configure.

Step 5 Type each response written on the worksheet in the fields following the question number.

Step 6 Press the ENTER key.

If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Note: A hard copy of the customized panel is useful for future reference and is easily obtained. After validating your responses for the panel, turn on your printer and press the Print Key. If you would like more information on this option, see "Local Copy" on page B-2.

Step 7 Press PF8 to advance to the next panel.

Step 8 Locate Worksheet 18 — AEA Port Set.

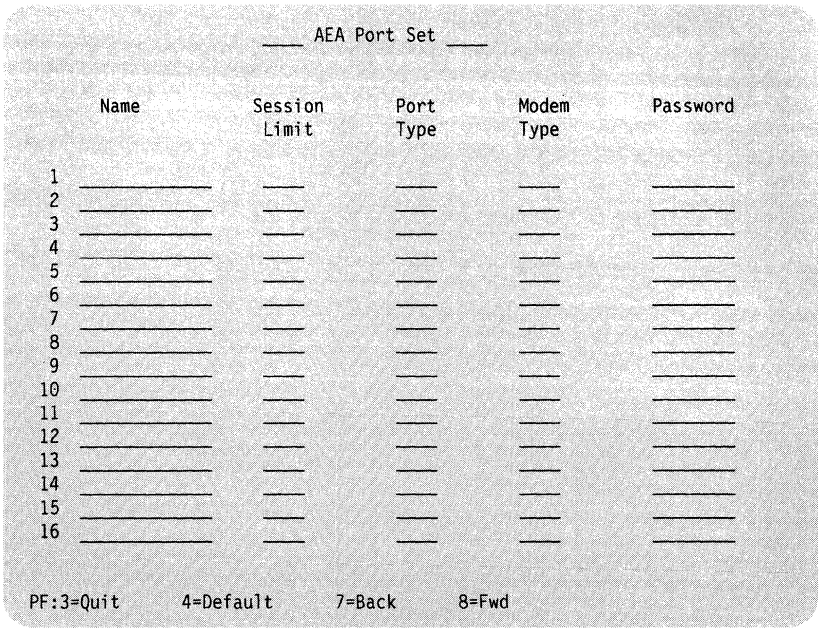


Figure 2-53. AEA Port Set Panel

Step 9 Type in the responses recorded on the worksheet.

Note: If you clear out the name field on a Port Set entry, the rest of the responses are erased when you press ENTER or PF8.

Step 10 Press the ENTER key.

If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Step 11 Press PF8 to advance to the next panel.

Step 12 Locate Worksheet 19 — Port-to-Port Set Map Panel.

```
                ____ AEA Port to Port Set Map ____

Type the port set number to group the 3174 ports.


  3270 Ports          0  1  2  3  4  5  6  7

26-00 to 26-07        __ __ __ __ __ __ __ __
26-08 to 26-15        __ __ __ __ __ __ __ __
26-16 to 26-23        __ __ __ __ __ __ __ __
26-24 to 26-31        __ __ __ __ __ __ __ __


   AEA Ports

21-00 to 21-07        __ __ __ __ __ __ __ __
22-00 to 22-07        __ __ __ __ __ __ __ __
23-00 to 23-07        __ __ __ __ __ __ __ __

   Port Sets

1 =                2 =                3 =                4 =
5 =                6 =                7 =                8 =
9 =               10 =               11 =               12 =
13 = ps name 13   14 = ps name 14    15 = ps name 15    16 =ps name 16

PF: 3=Quit      4=Default      7=Back      8=Fwd
```

Figure 2-54. AEA Port-to-Port Set Map Panel

Step 13 Type in the responses recorded on the worksheet.

Step 14 Press the ENTER key.

Step 15 Press PF8 to advance to the next panel.

Step 16 Locate the AEA Station Set Worksheets (worksheets numbered 20) for the AEA Station Set panel.

```
                        ____ AEA Station Set ____

1 721 - _____________________   722 - __   723 - _______ 725 - __
  731 - 1   732 - 1   733 - 0  734 - _   735 - 0  736 - 1  737 -__
  741 - 000 742 - 015 743 - 1   744 - 0   745 - 0  746 - 0 0
  751 - _   752 - ____________________________________________
  761 - 1   762 - 1   763 - 1   764 - 1    765 - 0
  771 - 1   772 - 1   773 - 1   774 - 1    775 - 1  776 - 1
  781 - 0  782 - 0  783 - 066  784 -1 785 - 11111000  786 - 132  787 - 0


2 721 - _____________________   722 - __   723 - _______ 725 - __
  731 - 1   732 - 1   733 - 0   734 - _    735 - 0  736 - 1  737 -
  741 - 000 742 - 015 743 - 1
  751 - _   752 - ____________________________________________
  761 - 1   762 - 1   763 - 1   764 - 1    765 - 0
  771 - 1   772 - 1   773 - 1   774 - 1    775 - 1  776 - 1
  781 - 0  782 - 0  783 - 066  784 -1 785 - 11111000  786 - 132  787 - 0


PF: 3=Quit  4=Default  7=Back  8=Fwd  10=Page Backward  11=Page Forward
```

Figure 2-55. AEA Station Set Panel

Step 17 Type in the responses recorded on the AEA Station Set Worksheet; the worksheets are numbered to the left of question 721.

Step 18 Press PF11.

The customizing program checks the responses.

- If responses are compatible, you advance to the next AEA Station Set page.
- If responses are incompatible, a message indicating the type of error is displayed in the message area. The AEA Station Set numbers in conflict are displayed in the error message. The question numbers with contradictory responses are highlighted on each AEA Station Set Panel in error. Correct the first error as described in "Correcting Invalid Responses" on page C-8 and proceed to correct each additional error until no errors are displayed. After invalid responses have been corrected press PF8 to advance to the next AEA Station Set Panel.

Note: If you wish to change the responses on a previous page of the AEA Station Set Panel, press PF10 to page back. Press PF11 to check the new responses and advance to the next AEA Station Set Panel page.

If you plan to change all the responses on an AEA Station Set, clear the Station Set name question (721) and press ENTER. Clearing the name field clears all other entries on the AEA Station Set.

Step 19 Repeat Step 16 through step 18 on page 2-68 for each AEA Station Set Worksheet, but **be sure to enter the AEA Station Sets in numeric order** (for example, AEA Station Set 1, AEA Station Set 2, and so on).

Step 20 When you have typed in all the responses on all the AEA Station Set worksheets, press PF8 to advance to the AEA Default Destination Panel (Figure 2-56).

The size of the screen you are using to customize determines how much of the panel you see.

Note: The Station Set Name and Session Limit fields are filled in by the customizing program according to previous responses.

Step 21 Locate Worksheet 21 – AEA Default Destination for the AEA Default Destination panel.

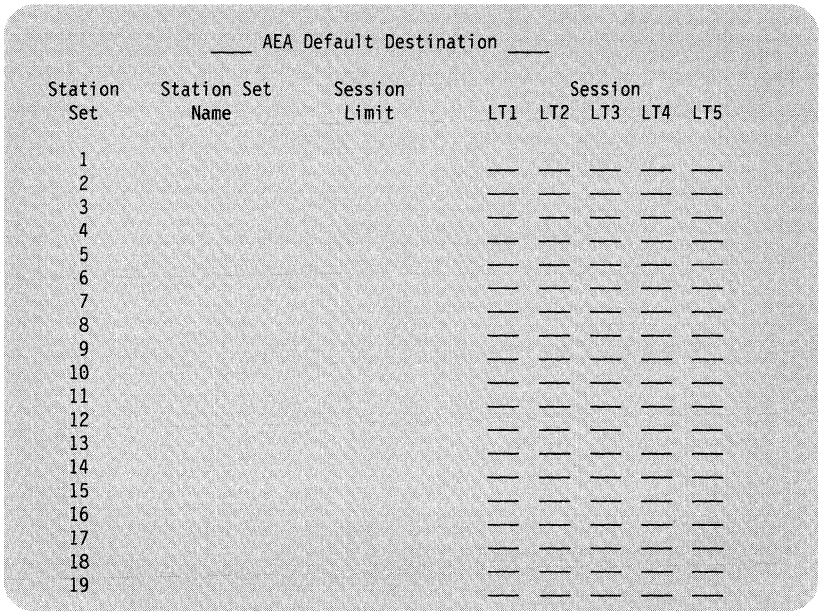


Figure 2-56. AEA Default Destination Panel (24 lines displayed)

Step 22 Type in the responses recorded on the AEA Default Destination Worksheet.

Step 23 Press ENTER.

Step 24 To advance to the last AEA Default Destination panel, press PF11. If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

If you wish to change the responses on the previous AEA Default Destination panel, press PF10 to page back to the panel.

Press PF11 to check your new responses.

Step 25 When you have completed typing in all the responses on the AEA Default Destination panels, press PF8 to advance.

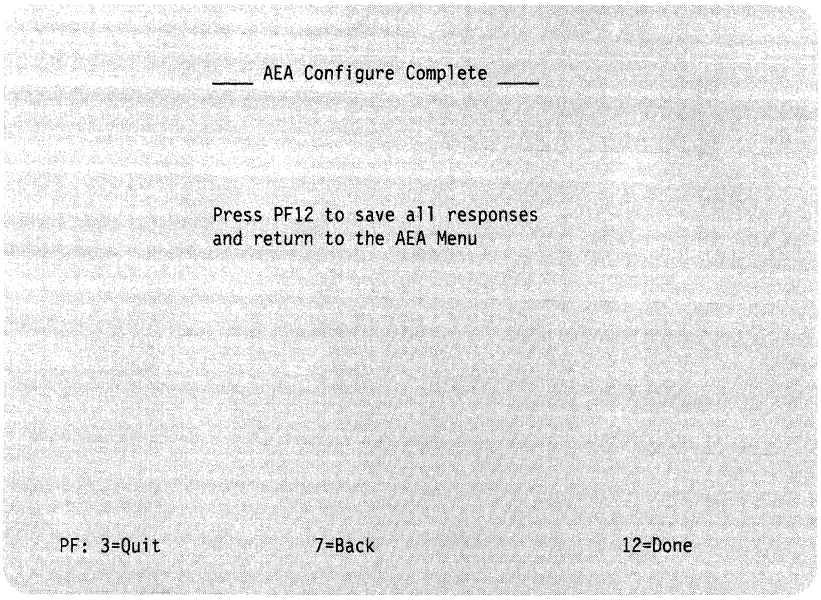


Figure 2-57. AEA Configure Complete Panel

Warning: If you press PF3, the responses you have entered on **all** previous panels within this procedure will be erased.

Step 26 Press PF12 to save all the panels completed during the AEA Configure procedure. This information is stored on the Utility disk.

If you have Define AEA worksheets that you have not used, use the following table to locate the procedure for the option you want.

If you do not have any remaining Define AEA worksheets, go to"What's Next?" on page 2-85.

If you want to:	You have worksheets:	Go To:
Define UDT	22 through 24	Step 3 on page 2-72
Define UDX	25 through 27	Step 3 on page 2-81

Define UDT Procedure

Before you perform this procedure:

- You need to have previously selected the "Customize the Control Disk" option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not,
  - See page 1-2 for Master Menu instructions.
  - See page 7-2 for identifying keyboard instructions.
  - See page 2-3 for verify drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page F-2 for instructions.)
- If you are not familiar with the Define AEA PF Key functions, you may wish to review the PF Key table on page 2-63.
- You may also need a copy of *3174 Status Codes*, GA27-3832.

The Customize Control Disk Menu is displayed on your screen.

```
                ____ Customize Control Disk Menu ____

  Select option; press ENTER

Option    Description

   1      Configure

   2      Define Devices

   3      Merge RPQs

   4      Modify Keyboards

   5      Define AEA


   Select ===> 5

   PF:  3=Quit                                12=File
```

Figure 2-58. Customize Control Disk Menu

Step 1 Type 5 after Select ===>

Step 2 Press the ENTER key on the keyboard.

The AEA Define Parameters Menu (Figure 2-59 on page 2-72) is displayed on your screen.

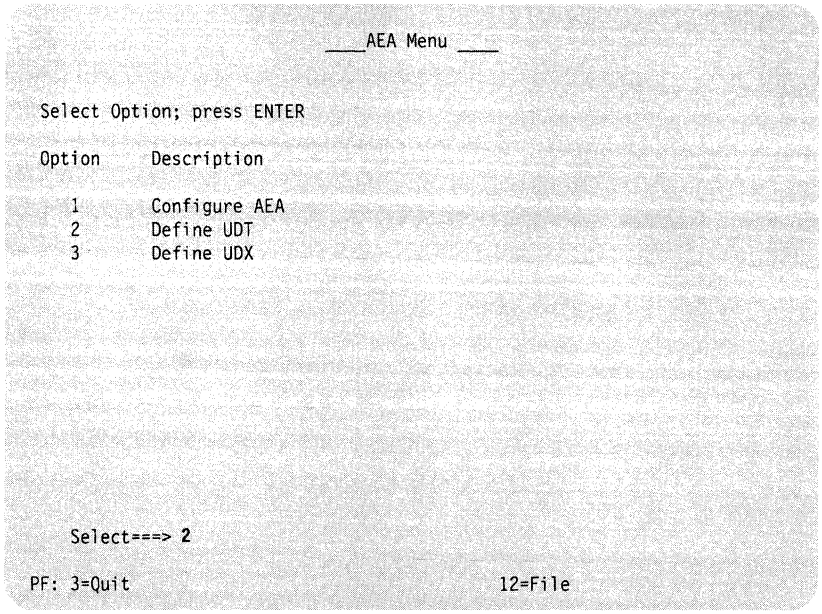


Figure 2-59. AEA Menu

Step 3 Type **2** after `Select===>` and press ENTER for the Define UDT Option.

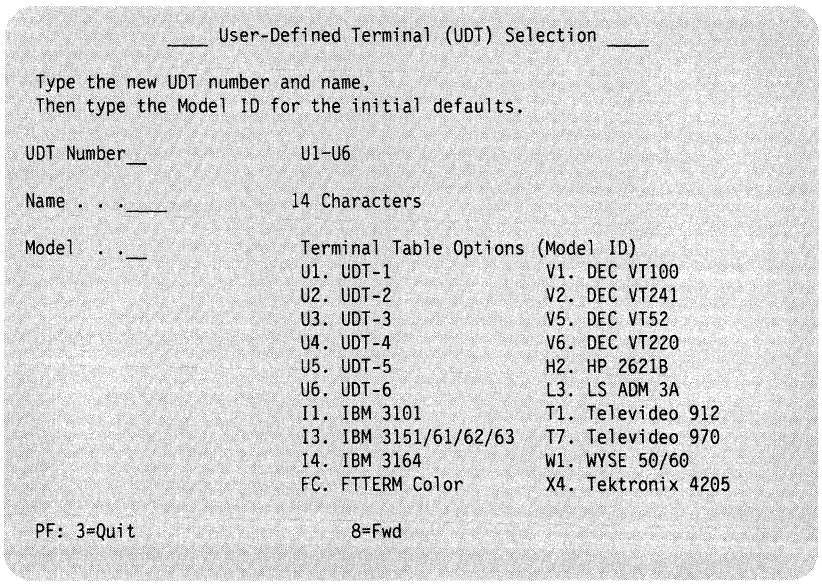


Figure 2-60. User-Defined Terminal (UDT) Selection

Note: Up to six terminals can be defined. Each UDT terminal definition requires its own set of worksheets 22 through 24. For example, if you are creating UDT definitions for three ASCII Terminals, you need three distinct sets of worksheets 22 through 24. You must perform the UDT procedure three times, a pass for each set of worksheets, for each of the terminals defined.

Step 4 Locate Worksheet 22 — Terminal Tables Definition.

This worksheet is to be used for **both the User-Defined Terminal Selection screen and the User-Defined Terminal Attributes screen.** For the User-Defined Terminal Selection screen, fill in only the following fields from the worksheet.

- UDT Number
- Name
- Model.

Step 5 Press the ENTER key.

If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Note: A hard copy of the customized panel is useful for future reference and is easily obtained. After completing valid responses for the panel, turn on your printer and press the Print Key. If you would like more information on this option, see "Local Copy" on page B-2.

Step 6 Press PF8 to advance to the next panel.

The User-Defined Terminal Attributes Panel (Figure 2-61) appears next.

Note: Default values (if any) in the UDT panels are model dependent. If model numbers are not chosen, the defaults are underscores.

```
____ U1 User-Defined Terminal Attributes ____

Tab to the Selection field, then type the Option.

                              Selection          Options
                              _______    _________

Last Line Reserved for Status      _          Y=Yes      N=No
Status Line Character Set . .      _          0-2
Status Line Clear Option  . .      _          0-3
Use Cursor Seq on Status Line      _          Y=Yes      N=No
Scrolling On  . . . . . . . .      _          Y=Yes      N=No
Cursor Wraps at End of Line .      _          Y=Yes      N=No
Color Supported . . . . . . .      _          Y=Yes      N=No
Cursor Class  . . . . . . . .      _          0-5
Cursor Sequence . . . . . . .      ____     ASCII hex codes
Alternate Screen Size . . . .      _          0-2
Graphics Query Reply  . . . .      ____     8 Characters
Graphics Input Wait Time  . .      __         0-99 (100 milliseconds)
Graphics Input Ending Seq . .      ____     ASCII hex codes
Graphics Input Length . . . .      __         1-128 Bytes

PF: 3=Quit        4=Default              8=Fwd
```

Figure 2-61. U1 User-Defined Terminal Attributes

Step 7 Still using Worksheet 22, type in the responses recorded on the worksheet listed under "Attributes of Station Type."

Step 8 Press the ENTER key.

If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Step 9 Press PF8 to advance to the next panel.

The Inbound Sequence Panels (Figure 2-62), appear next.

Note: The size of the screen you are using to customize determines how much of the panel you see.

Use PF10 to page forward and PF11 to page backward to display functions that are not shown on the immediate screen. Refer to the following figures.

```
          ____U1 Inbound Sequences - ASCII Device to 3174____
Type the ASCII Sequence(s) for each 3270 function.

      3270              ASCII Sequence from Terminal
    Function            Primary     Alternate

   PF1 . . . . .      _________    _________
   PF2 . . . . .      _________    _________
   PF3 . . . . .      _________    _________
   PF4 . . . . .      _________    _________
   PF5 . . . . .      _________    _________
   PF6 . . . . .      _________    _________
   PF7 . . . . .      _________    _________
   PF8 . . . . .      _________    _________
   PF9 . . . . .      _________    _________
   PF10  . . . .      _________    _________
   PF11  . . . .      _________    _________
   PF12  . . . .      _________    _________
   PF13  . . . .      _________    _________
   PF14  . . . .      _________    _________
   PF15  . . . .      _________    _________
   PF16  . . . .      _________    _________
   PF17  . . . .      _________    _________
   PF18  . . . .      _________    _________
   PF19  . . . .      _________    _________
   PF20  . . . .      _________    _________
   PF21  . . . .      _________    _________

PF: 3=Quit  4=Default   7=Back   8=Fwd  11=Page Forward
```

Figure 2-62. U1 Inbound Sequences - ASCII Device to 3174

```
          ____U1 Inbound Sequences - ASCII Device to 3174____
Type the ASCII Sequence(s) for each 3270 function.

       3270                ASCII Sequence from Terminal
     Function              Primary       Alternate

   PF22  . . . .       _________     _________
   PF23  . . . .       _________     _________
   PF24  . . . .       _________     _________
   PA1 . . . . .       _________     _________
   PA2 . . . . .       _________     _________
   PA3 . . . . .       _________     _________
   ATTN  . . . .       _________     _________
   SysRq . . . .       _________     _________
   Reset . . . .       _________     _________
   Dev Cancel  .       _________     _________
   Enter . . . .       _________     _________
   Clear Screen        _________     _________
   Cursor Select       _________     _________
   Cursor Up . .       _________     _________
   Cursor Down .       _________     _________
   Cursor Left .       _________     _________
   Cursor Right        _________     _________
   Tab . . . . .       _________     _________
   Backtab . . .       _________     _________
   Newline . . .       _________     _________
   Home  . . . .       _________     _________

PF: 3=Quit  4=Default   7=Back   8=Fwd  10=Page Back  11=Page Forward
```

Figure 2-63. U1 Inbound Sequences - ASCII Device to 3174

```
          ____U1 Inbound Sequences - ASCII Device to 3174____
Type the ASCII Sequence(s) for each 3270 function.

       3270                ASCII Sequence from Terminal
     Function              Primary       Alternate

   Change Screen       _________     _________
   Ex Sel  . . .       _________     _________
   Field Mark. .       _________     _________
   Dup . . . . .       _________     _________
   Erase EOF . .       _________     _________
   Erase Input .       _________     _________
   Insert  . . .       _________     _________
   Delete  . . .       _________     _________
   Print . . . .       _________     _________
   Ident . . . .       _________     _________
   Status ON/OFF       _________     _________
   Refresh . . .       _________     _________
   Fast Left . .       _________     _________
   Fast Right  .       _________     _________
   Suspend Print       _________     _________
   Resume Print        _________     _________
   Test  . . . .       _________     _________
   File Tran En        _________     _________
   File Tran Dis       _________     _________
   ECHO  . . . .       _________     _________
   ECHO  . . . .       _________     _________

PF: 3=Quit  4=Default   7=Back   8=Fwd  10=Page Back  11=Page Forward
```

Figure 2-64. U1 Inbound Sequences - ASCII Device to 3174

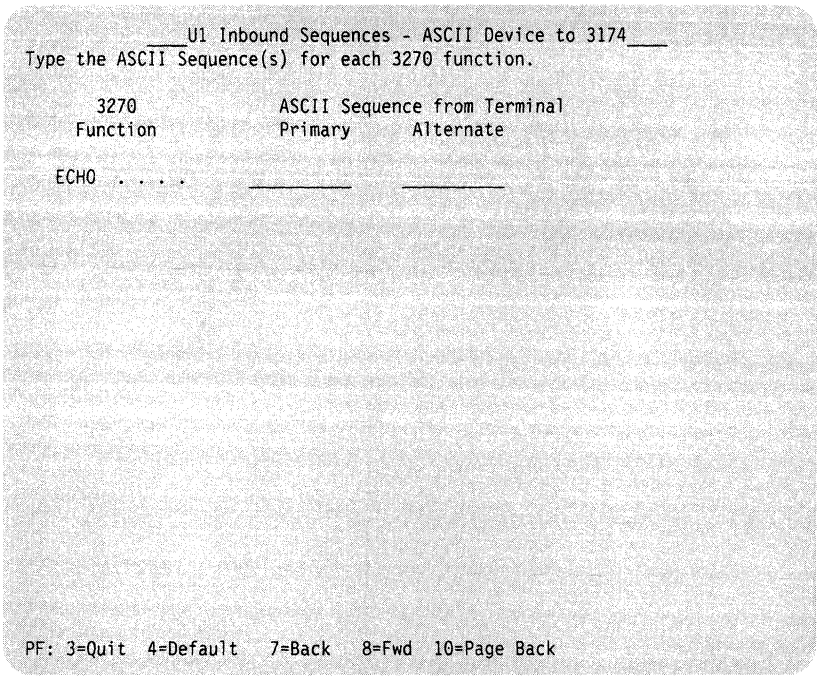


Figure 2-65. U1 Inbound Sequences - ASCII Device to 3174

Step 10 Locate Worksheet 23 (A and B) — Inbound Sequence Panels

Step 11 Type in the responses recorded on the worksheet.

Step 12 Press Enter. If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Step 13 PF8 to advance to the next panel.

Note: The size of the screen you are using to customize determines how much of the panel you see.

```
          ____U1 Outbound Sequences - 3174 to ASCII Device____
Type the ASCII Sequence(s) for each 3270 function.

   Function          ASCII Sequence to the Terminal

   Term Init Seq     _______________
                     _______________
                     _______________
                     _______________
                     _______________
                     _______________
   Term Exit Seq     _______________
                     _______________
   Erase EOL         _______________
   Clear Screen      _______________
   Cursor Up         _______________
   Cursor Down       _______________
   Cursor Left       _______________
   Cursor Right      _______________
   Status On         _______________
   Status Off        _______________
   Bell              _______________
   Dim Unprot        _______________
   Highlt Unprot     _______________
   Dim Protec        _______________
   Highlt Protec     _______________
   Transparency On   _______________

PF: 3=Quit  4=Default   7=Back   8=Fwd   11=Page Forward
```

Figure 2-66. U1 Outbound Sequences - 3174 to ASCII Device

```
          ____U1 Outbound Sequences - 3174 to ASCII Device____
Type the ASCII Sequence(s) for each 3270 function.

   Function          ASCII Sequence to the Terminal


   Transparency Off  _______________
   Alpha Clear       _______________
   Start Printer     _______________
   Stop Printer      _______________









PF: 3=Quit  4=Default   7=Back   8=Fwd  10=Page Back
```

Figure 2-67. U1 Outbound Sequences - 3174 to ASCII Device

Step 14 Locate Worksheet 24 (A and B) – Outbound Sequence Panels

Step 15 Type in the responses recorded on worksheet 24.

Step 16 Press ENTER to check the changed responses.

- If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

  If you wish to change the responses on the previous panel, press PF10 to page back on the panel.

- Press ENTER to check your amended responses.

Step 17 After you have completed typing in all the responses on the Outbound Sequences panel, press PF8 to advance to the UDT Definition Complete Panel.

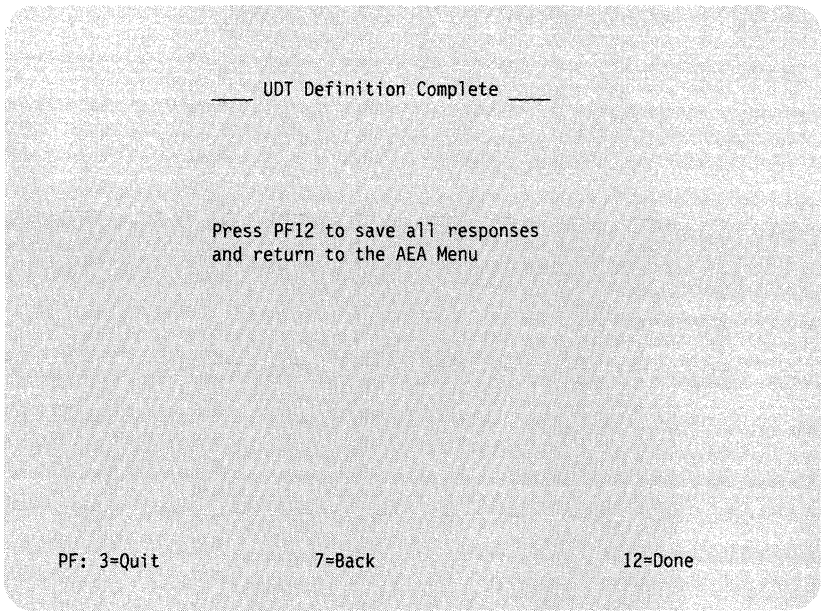


Figure 2-68. UDT Definition Complete Panel

Warning: If you press PF3, the responses you have entered on **all** Outbound Sequences within this procedure are erased.

Step 18 Press PF12 to save all the panels completed during the UDT Definition procedure. This information is stored on the Utility disk and you will return to the AEA Menu Panel.

If you have Define AEA worksheets which you have not used, use the following table to locate the procedure for the option you want.

If you do not have any remaining AEA Define worksheets, go to"What's Next?" on page 2-85.

If you want to:	You have worksheets:	Go To:
Configure AEA	17 through 21	Step 3 on page 2-65
Define UDT	22 through 24	Step 3 on page 2-72
Define UDX	25 through 27	Step 3 on page 2-81

Define UDX Procedure

Before you perform this procedure:

- You need to have previously selected the "Customize the Control Disk" option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not,
  - See page 1-2 for Master Menu instructions.
  - See page 7-2 for identifying keyboard instructions.
  - See page 2-3 for verify drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page F-2 for instructions.)
- If you are not familiar with the Define AEA PF Key functions, you may wish to review the PF Key table on page 2-63.
- You may also need a copy of *3174 Status Codes*, GA27-3832.

The Customize Control Disk Menu is displayed on your screen.

```
                ____ Customize Control Disk Menu ____

  Select option; press ENTER

Option    Description

   1      Configure

   2      Define Devices

   3      Merge RPQs

   4      Modify Keyboards

   5      Define AEA



   Select ===> 5

   PF:  3=Quit                                12=File
```

Figure 2-69. Customize Control Disk Menu

Step 1 Type **5** after Select ===>

Step 2 Press the ENTER key on the keyboard.

```
                    ____ AEA Menu ____

Select Option; press ENTER

Option     Description

   1       Configure AEA
   2       Define UDT
   3       Define UDX




   Select===>3

PF: 3=Quit                                    12=File
```

Figure 2-70. AEA Menu

Step 3 Type 3 after Select ===>.

```
          ____User-Defined Translate Table (UDX) Selection____

  Type the UDX number and name, then type the Language,
  CECP Support and Model options for the UDX defaults.

                          ------------ Options ------------

  UDX Number . . . . __     1-3
  Name ______               14 Characters
  Language . . . . . __     2 Digit Language Code
  CECP Support . . . __     Y or N

  Model  . . . . . . __      1.  UDX-1
                             2.  UDX-2
                             3.  UDX-3
                             4.  Standard US ASCII to EBCDIC
                             5.  DEC MCS 8 bit Character table
                             6.  DEC NRC 7 bit Character table
                             7.  ISO 8859/1.2 7/8 bit Character table
                             8.  3101 CS1 Character Set table
                             9.  31XX CS1/CS2 SI/SO Character table

  PF:  3=Quit                              8=Fwd
```

Figure 2-71. User-Defined Translate Table (UDX) Selection

Note: Up to three tables can be defined. Each UDX table definiti requires its own set of worksheets 25 through 27. For exa if you are creating UDX definitions for three tables, you n three distinct sets of worksheets 25 through 27. You mus perform the UDX procedure three times, a pass for each worksheets, for each of the tables defined.

Step 4 Locate Worksheet 25 — Translate Tables Definition

Step 5 Type each response written on the worksheet in the required fi your screen.

Step 6 Press the ENTER key.

If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Note: A hard copy of the customized panel is useful for future reference and is easily obtained. After completing valid responses for the panel, turn on your printer and press the Print Key. If you would like more information on this option, see "Local Copy" on page B-2.

Step 7 Press PF8 to advance to the next panel.

Note: Default values (if any) in the UDX panels are language and model dependent. Defaults may be listed on your panel.

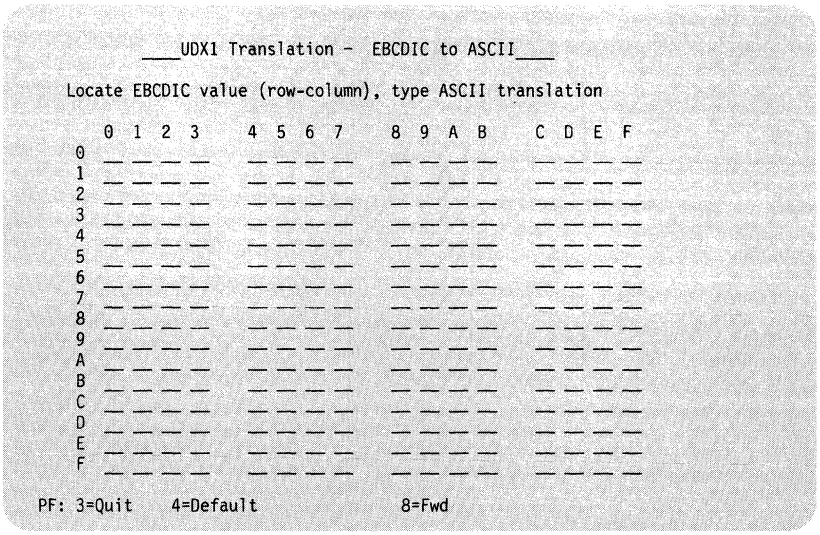


Figure 2-72. UDX1 Translation - EBCDIC to ASCII

Step 8 Locate Worksheet 26 – EBCDIC to ASCII Translation (Outbound).

Step 9 Type in the responses recorded on the worksheet.

Step 10 Press the ENTER key.

If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Step 11 Press PF8 to advance to the next panel.

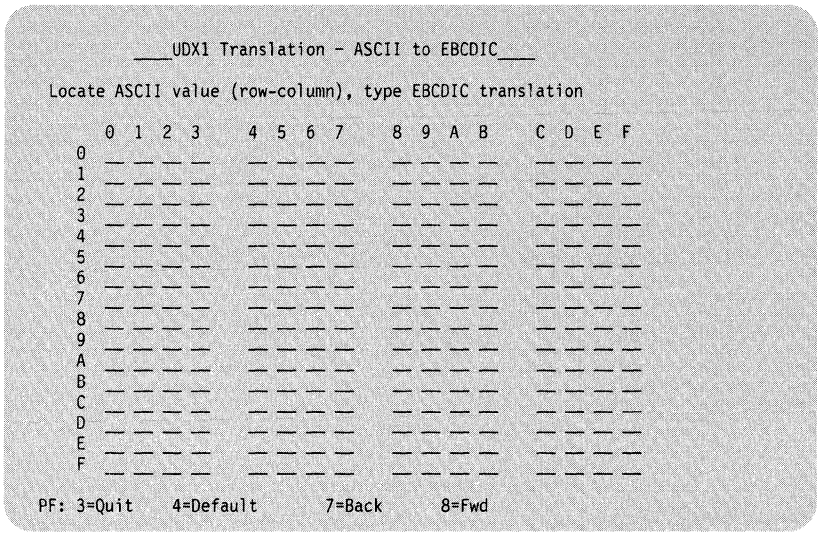


Figure 2-73. UDX1 Translation - ASCII to EBCDIC

Step 12 Locate Worksheet 27 — ASCII to EBCDIC Translation (Inbound).

Step 13 Type each response written on the worksheet in the required field on your screen.

Step 14 Press the ENTER key.

If you have any invalid responses, you can correct them as described in "Correcting Invalid Responses" on page C-8.

Step 15 Press PF8 to advance to the UDX Definition Complete Panel.

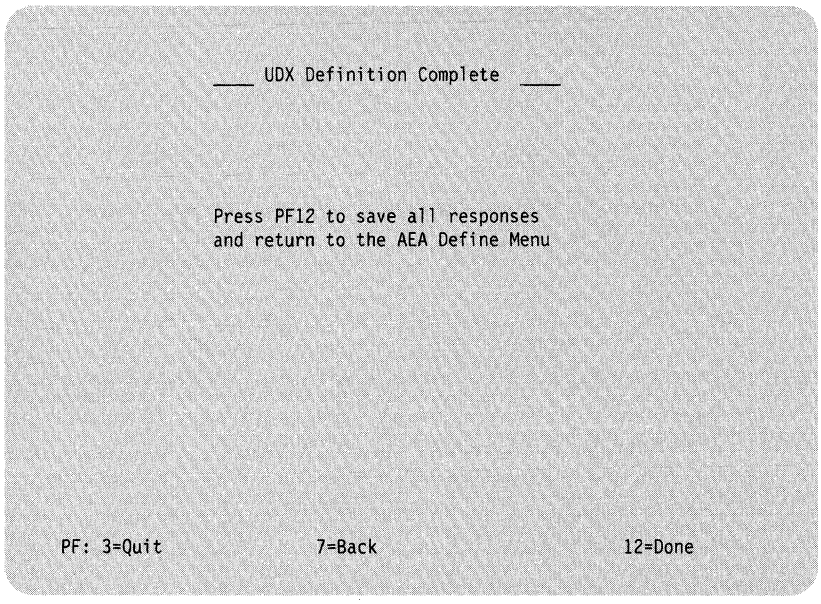


Figure 2-74. UDX Definition Complete Panel

Warning: If you press PF3, the responses you have entered on **all** previous panels within this procedure will be erased.

Step 16 Press PF12 to save all the panels completed during the Define UDX procedure. This information is stored on the Utility disk.

If you have AEA Define worksheets that you have not used, use the following table to locate the procedure for the option you want.

If you want to:	You have worksheets:	Go To:
Configure AEA	17 through 21	Step 3 on page 2-65
Define UDT	22 through 24	Step 3 on page 2-72
Define UDX	25 through 27	Step 3 on page 2-81

If you do not have any remaining AEA Define worksheets, press PF12 and go to"What's Next?" on page 2-85.

What's Next?

The AEA Menu is on your screen. Press PF12, the Customize Control Disk Menu appears.

- You can continue to customize by selecting a different customizing procedure.

  Use the following table to locate the procedure for the option you want.

If you want to:	You have worksheets:	Go to page:
Configure	1 through 14 or 32 through 34	2-8
Define Devices	22 through 24	2-28
Merge RPQs	N/A (you have an RPQ diskette)	2-38
Modify Keyboards	Keyboard Worksheets	2-46

- You can complete customizing the Control disk.

  Warning: The Customizing responses you made must be transferred from the Utility disk to the Control disk, *or they will not be permanently saved.*

  For a Controller with more than one Disk Drive:
  Press PF12. When the Master Menu appears, transfer is complete.

  For a Controller with one Disk Drive:
  Press PF12. A processing message appears at the bottom of the menu. Follow the instructions as they appear on the screen. When the Master Menu appears, transfer is complete.

3174 Configuration Questions Reference

You are authorized to copy the Configuration Questions Reference

Configuration Questions—Worksheet 1	
Question:	**Response:**
098: Online Test Password	Up to 8 alphanumeric characters
099: Product Assistance Data	Up to 68 alphanumeric characters
100: 3174 Model Designation	3174 Model Number
101: Host Attachment	1 = BSC 2 = SDLC 3 = X.25 4 = Local Non-SNA 5 = Local SNA 6 = SDLC (X.21 Switched) 7 = Token-Ring Network M = Multi-Host Support

Configuration Questions—Worksheets 3 through 9S	
Question:	**Response:**
104: Controller Address	Two-digit controller address
105: Upper Limit Address	Two-character hexadecimal address
106: Token-Ring Network Address and SAP - 3174	A hexadecimal address and service access point
107: Token-Ring Network Address and SAP - Gateway	A hexadecimal address and service access point
108: Unique Machine Identifier	Seven alphanumeric characters
110: MLT Configuration Level	0 = No MLT 1 = Level 1 2 = Level 2 3 = Level 3 4 = Level 4 5 = Level 5 6 = Level 6
116: Individual Port Assignment **Note:** 0, 1, SX, and SXAY provide automatic assignment.	One, two, or four alphanumeric characters
117: Port Assignment	Panel
118: Port Address	Panel
121: Keyboard Language	Two-digit language code
123: Country Extended Code Page Support	0 = No CECP 1 = CECP
125: Miscellaneous Feature Options (A)	Eight digits (0 or 1)
126: Miscellaneous Feature Options (B)	Eight digits (0 or 1)
127: RTM Definition	Two digits
128: Boundaries and Interface Specification	Panel
132: Alternate Base Keyboard Selection	Four digits (0, 1, or 2)
136: Standard Keyboard Layouts	Four digits (0 or 1)
137: Modified Keyboard Layouts	Four digits (0 or 1)

Configuration Questions—Worksheets 3 through 9S	
Question:	**Response:**
138: Standard Keypad Layouts	0 = National Language Numeric 1 = Data Entry 2 = Program Function
139: Concurrent Communication Keyboard Language	00 = Same language as primary host on that link. 01 = English (U.S.) 02 = English (U.S.) ASCII-7.
141: Magnetic Character Set	A = None B = Numeric C = Alphanumeric (auto entry; secure data) D = Alphanumeric (auto entry; all data)
150: Token-Ring Network Gateway Controller	0 = Not a gateway controller 1 = Gateway controller
165: Compressed Program Symbols	0 = Compressed PS data not sent 1 = Compressed PS data sent
166: Attribute Select Keypad	A = Attribute Select Keypad not in use B = Attribute Select Keypad in use without numeric lock C = Attribute Select Keypad in use with numeric lock
168: Additional Extension-Mode Key Definition	0 = None 1 = Home key 2 = Print ID key
173: DFT Options	Eight digits (0-No or 1-Yes)
175: DFT Password	Six numeric digits
176: BSC Enhanced Communication	0 = No 1 = Yes
179: Local Format Storage	Three digits (0, 1, 2 or 3)
213: Between Bracket Printer Sharing	0 = No 1 = Yes
215: PU Identification	Five alphanumeric characters
220: Alert Function	0 = None 1 = No operator-generated alert message capability 2 = Operator-generated alert message capability from port 26-00 3 = Operator-generated alert message capability; all ports
221: 3174 Alert Control Point	0 = This host is not the alert control point for the 3174. 1 = This host is the alert control point for the 3174.
222: Support of Command Retry	0 = No 1 = Yes
223: Attention Delay Value	Two digits (whole milliseconds)
224: Mode of Data Transfer	0 = Interlocked mode; normal data transfer 2 = Interlocked mode; high-speed data transfer.

Configuration Questions—Worksheets 3 through 9S	
Question:	**Response:**
225: Channel Burst Size	0 = 002 bytes per burst 1 = 004 bytes per burst 2 = 008 bytes per burst 3 = 016 bytes per burst 4 = 032 bytes per burst 5 = 064 bytes per burst 6 = 256 bytes per burst 7 = 512 bytes per burst
310: CDSTL Operation	0 = Operation: Nonswitched, or switched line (U.S. or Canada), or in DTR/DSR mode (not Canada). 1 = Connection on a switched line via the CCITT 108.1 interface operating in the CDSTL mode.
313: NRZ or NRZI Encoding	0 = Nonreturn to zero encoding 1 = Nonreturn to zero inverted encoding
317: Telecommunication Facilities	0 = Nonswitched facilities 1 = Half-duplex SNBU operation 2 = Switched networks
318: Full- or Half-Speed Transmission	0 = Full-speed Transmission 1 = Half-speed Transmission
332: X.25 Options	Panel (See page 2-18.)
340: RTS Control Response	0 = Controlled RTS 1 = Permanent RTS 2 = BSC special controlled RTS
360: X.21 Switched Retry	00 = Switched feature or Retry not in use 01-99 = Number of times to retry an incoming or outgoing call
361: X.21 Switched Retry Timing	00 = Switched feature not in use, or Retry not in use 01-20 = Number of seconds between retries
362: X.21 Switched Options	Eight digits (0-No and 1-Yes)
365: X.21 Data Transfer Delay	0 = N/A 1 = No delay 2 = Data Transfer Delay
367: X.21 Switched Short-Hold Mode	0 = No 1 = Yes
368: X.21 Switched Short-Hold Mode Dial Number	Up to 14 numeric characters (dial number of the 3174)
370: Maximum Inbound I-Frame Size	0 = 265-byte Maximum I-Frame 1 = 521-byte Maximum I-Frame
371: X.21 Switched Dial Digits	Thirty-one numeric digits (0-9)
372: Autocall/Autodisconnect	Two numeric digits (0, 1 or 2)
382: Maximum Ring I-Frame Size	Four numeric characters • From 265 to 2042 bytes for 4Mbps Token-Ring adapters • From 265 to 2057 bytes for 16/4Mbps Token-Ring adapters
383: Token-Ring Network Maximum Out	One numeric character (from 1 to 7)

Configuration Questions—Worksheets 3 through 9S	
Question:	**Response:**
384: Ring Speed of the Token-Ring Network	0 = 4Mbps - Normal token release 1 = 16Mbps - Normal token release 2 = 16Mbps - Early token release

X.25 Options—Worksheet 13	
Question:	**Response:**
400: Network Type	00 = CCITT-recommended network with announced IBM support. 01 = Connection is to the Netherlands DATANET. 02 = Connection is to UKPSS or TELENET.
401: Circuit Type	1 = Permanent virtual circuit (PVC) 2 = Incoming call (from host) only (SVC) 3 = Outgoing call (to host) only (SVC) 4 = Two-way call (SVC).
402: Logical Channel Identifier	0000 – 4095. Channel identifier for PVC circuit specified in question 401.
409: X.25 Keyboard Support Options	Eight digits (0-No or 1-Yes)
420: Incoming Call Options	Eight digits (0-No or 1-Yes)
421: Outgoing Call Options	Eight digits (0-No or 1-Yes)
423: Host DTE Address	Up to 15 numeric digits
424: 3174 DTE Address	Up to 15 numeric digits
430: Negotiated Packet Size	0 = 64-byte packet 1 = 128-byte packet 2 = 256-byte packet 3 = 512-byte packet
431: Packet Sequence Numbering	0 = Modulo 8 1 = Modulo 128.
432: Negotiated Window Size	01-07 = Modulo 8 range (if 431 = 0) 01-11 = Modulo 128 range (if 431 = 1).
433: K-Maximum Out	1 – 7. Maximum number of link level I-frames.
434: Nonstandard Default Packet Size	0 = 64-byte packet 1 = 128-byte packet 2 = 256-byte packet 3 = 512-byte packet
435: Nonstandard Default Window Size	01-07 = Modulo 8 range (if 431 = 0) 01-11 = Modulo 128 range (if 431 = 1).
440: Throughput Class Negotiation	3 = 75 bps 4 = 150 bps 5 = 300 bps 6 = 600 bps 7 = 1200 bps 8 = 2400 bps 9 = 4800 bps A = 9600 bps B = 19 200 bps C = 48 000 bps

X.25 Options—Worksheet 13	
Question:	**Response:**
441: Closed User Group	00-99. Include CUG facility in outgoing Call Request packet.
442: Recognized Private Operating Agency	0000-9999 = RPOA
450: Link Level Transmit Timeout	0001-2540. Specified in 0.1-second intervals.
451: Number of Retries	01-99. Number of retries required by the network.
452: Connection Identifier Password	Eight-character maximum (0-9, A-F or blanks).
453 Connection Options	Eight digits (0 or 1)
461 Lowest Incoming Channel	0000-4095
462 Highest Incoming Channel	0000-4095
463 Lowest Two-Way Channel	Single digit (0 or 1)
464 Highest Two-Way Channel	0000-4095
465 Lowest Outgoing Channel	0000-4095
466 Highest Outgoing Channel	0000-4095

CSCM Questions—Worksheet 14	
Question:	**Response:**
500: CSCM Unique	0 = No CSCM 1 = CSCM in use as a Network Site Controller. 2 = CSCM in use as a Central Site Controller.
501: Network ID	Up to eight alphanumeric characters (first character must be uppercase alphabetic; no spaces/blanks).
502: Logical Unit Name	Up to eight alphanumeric characters (first character must be uppercase alphabetic; no spaces/blanks).

AEA Configure Questions—Worksheet 17	
Question:	**Response:**
700: Configure the AEA Feature	0 = Turns off AEA and keeps previously stored configuration data. 1 = Turns on AEA and initiates the AEA Configure or Reconfigure procedure.
702 Control Key Assignment	Single digit (0 or 1)
703 Request MLT for AEA	Single digit (0 or 1)
710: Miscellaneous ASCII Feature Options (A)	Eight digits (0-No or 1-Yes)
711: Miscellaneous ASCII Feature Options (B)	Eight digits (0-No or 1-Yes)
712: Miscellaneous ASCII Feature Options (C)	Eight digits (0-No or 1-Yes)

AEA Configure Questions—Worksheet 17	
Question:	**Response:**
713: Miscellaneous ASCII Feature Options (D)	Eight digits (0-No or 1-Yes)

AEA Station Set Questions—Worksheet 20	
Question:	**Response:**
721: Station Set Name	Up to 24 alphanumeric characters (blanks permitted).
722: Station Type	For responses, see the 3174 Planning Guide, Chapter 12.
723: Port Set Name	Up to eight alphanumeric characters (blanks permitted).
725: Host Connection Menu Option	0 = Users can only select the defined Default Destination from the Host Connection Menu. 1 = Users can select alternate host connections from the Host Connection Menu.
731: Flow Control Type	0 = None 1 = XON/XOFF 2 = DTR (for nonswitched port types) 3 = CTS (for direct port types)
732: XON/XOFF Transmission Resumption Trigger	1 = Resume after any character is received 2 = Resume only after XON is received.
733: Line Speed	0 = Autobaud/Autoparity 1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5 = 4800 bps 6 = 9600 bps 7 = 19 200 bps
734: Line Speed (ASCII Host Upper Limit)	2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5 = 4800 bps 6 = 9600 bps 7 = 19 200 bps
735: Parity	0 = Autobaud/Autoparity 1 = Odd 2 = Even 3 = None 4 = Space 5 = Mark
736: Stop Bits	1 = 1 stop bit 2 = 2 stop bits
737: Maximum Modem Line Speed	1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5 = 4800 bps 6 = 9600 bps 7 = 19 200 bps
741: Switched Disconnect Timeout (3270 Host Only)	Three-digit number ranging from 000 to 254. Represents a number of minutes (use leading zeros).
742: Inactivity Timeout	Value from 0 to 254. Represents a number of minutes (use leading zeros).
743: Prompt for Universal/Specific Keyboard Map	0 = Do not display prompt 1 = Display prompt

AEA Station Set Questions—Worksheet 20	
Question:	**Response:**
744: Number of Bits per Character	0 = 7 bits per character 1 = 8 bits per character
745: ASCII Display Character Set	0 = US ASCII 1 = IBM 3101 CS1 2 = IBM 316x CS1 and CS2 3 = ISO 8859/1.2 4 = DEC MCS 5 = DEC NRC
746: Translate Option	0 = Default table 1 = UDX-1 2 = UDX-2 3 = UDX-3
751: Data Stream Supported by the ASCII Host	1 = VT100 data stream 2 = 3101 data stream 3 = Data General D210 data stream 4 = VT200 data stream 7-bit controls 5 = VT200 data stream 8-bit controls
752: ASCII Host Phone Number	Up to 48 alphanumeric characters. Phone number of the ASCII host.
761: Auto XON/XOFF (DEC VT100/VT200)	0 = Disabled 1 = Enabled
762: Wraparound Option (DEC VT100/VT200)	0 = Disabled 1 = Enabled
763: New Line Option (DEC VT100/VT200)	0 = Disabled 1 = Enabled
764: Margin Bell (DEC VT100/VT200)	0 = Disabled 1 = Enabled
765: DEC Host ASCII Character Set (DEC VT100/VT200)	0 = DEC NRC 1 = DEC MCS
771: Automatic Line Feed for Cursor Control (IBM 3101)	0 = Disabled 1 = Enabled
772: Carriage Return/Carriage Return-Line Feed Selection (IBM 3101)	0 = Carriage Return 1 = Carriage Return and Line Feed
773: Automatic New Line for Cursor Control (IBM 3101)	0 = Disabled 1 = Enabled
774: Scrolling (IBM 3101)	0 = Disabled 1 = Enabled
775: Line Turnaround Character (IBM 3101)	0 = EOT 1 = CR 2 = XOFF 3 = ETX
776: IBM ASCII Host Character Set	0 = ISO - 8859/1.2 1 = IBM 3101 CS1 2 = IBM 316x CS1 and CS2
781: Attached Printer Prompt	0 = No 1 = Yes 2 = Assumed (no prompt)
782: Use of Form Feed	0 = Printer does not support form feed 1 = Printer supports form feed
783: Page Length	Value from 1 to 255 (use leading zeros).

AEA Station Set Questions—Worksheet 20	
Question:	**Response:**
784: Printer Character Set	1 = US ASCII 2 = ISO - 8859/1.2 3 = DEC MCS 4 = PC code page 850 5 = UDX-1 6 = UDX-2 7 = UDX-3
785: ASCII Printer Options	Eight digits (0-No or 1-Yes)
786: Page Width	Value from 001 to 255.
787: LU 1 SCS Transparency Translation	0 = LU 1 transparent data is not translated 1 = LU 1 transparent data is translated.

Device Definition Questions—Worksheet 22	
Question:	**Response:**
800: Printer Authorization Matrix	0 = Do not define the PAM 1 = Define the PAM
801: Logical Terminal Assignment	0 = Do not define the LTA 1 = Define the LTA for port 26-00 2 = Define the LTA for individual ports.
802: Prompts for Extended Vital Product Data (VPD)	0 = Do not define Extended VPD 1 = Define Extended VPD

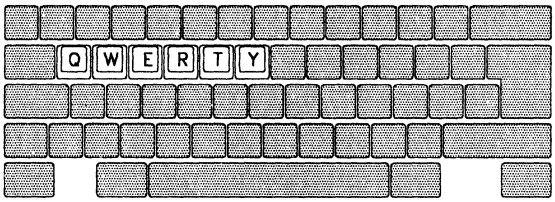
Token-Ring 3270 Gateway Questions—Worksheet 25	
Question:	**Response:**
900: Token-Ring Network Address for the Gateway	12-character hexadecimal address and 2-character SAP (Should be locally administered.)
905: Ring Error Monitor	0 = No 1 = Yes
908: Link Subsystem Name	Eight alphanumeric characters.
911: Ring Speed of the Token-Ring 3270 Gateway	0 = 4Mbps - Normal token release 1 = 16Mbps - Normal token release 2 = 16Mbps - Early token release.
912: Group Poll Address	Two-character hexadecimal address
940: Ring Address Assignment	Panel
941: Ring Transmission Definition	Panel

Chapter 3. How to Merge DSL Code

Getting Ready to Merge DSL Code

Before you start, you will need:

- The identity of the customizing keyboard. If you do not have a QWERTY keyboard (see the figure), refer to Chapter 7.



- *From* disk: a Downstream Load (DSL) disk. This is the disk from which you are merging. If you are using a diskette, it should be unprotected.
- *To* disk: a Downstream Load (DSL) disk. This is the disk to which you are merging. If you are using a diskette, it should be unprotected.

If more than one type of DSL device or an Asynchronous Emulation Adapter (AEA) is to be used with the controller, the different DSL disks must be merged. The microcode of one DSL disk is merged onto another DSL disk.

If you have an unused new controller with a fixed disk or have installed a new fixed disk and have not yet initialized it, you must do so now. See page F-2 for the procedure.

Note: A DSL merge requires a 3174 with two disk drives.

Merge DSL Code Overview

Any 3174 Establishment Controller that has in its cluster at least one type of downstream load (DSL) display station or an AEA installed must have at least two disk drives. (A DSL display station is one that requires the controller to downstream-load its microcode when it is turned on — for example, a 3290 Information Panel). The second drive will contain the DSL disk with the DSL code required for operation of DSL display stations or the Asynchronous Emulation Adapter (AEA).

When Must You Merge the DSL Code?

The requirement for merging DSL disks depends on how many types of DSL display stations are in the cluster and whether an AEA is installed.

You need to merge DSL code if:

- There is more than one type of DSL display station in the cluster.
- There is an AEA attached plus one or more DSL display stations. You merge the code from one DSL disk onto the other DSL disk. To avoid degrading performance when several different DSL display stations connected to the same controller are turned on, always merge the DSL code from the *old* disk to a *new* DSL disk. Repeat the merge procedure until the merged DSL disk contains the code for all the types of DSL display stations in the cluster and code to support any AEAs. If you merged the DSL code to a diskette, you insert it into a diskette drive at IML.

You do not need to merge DSL code if:

- Only one type of DSL display station is in the cluster. You can copy a DSL diskette to the fixed disk or insert the DSL diskette into a diskette drive at IML.
- An Asynchronous Emulation Adapter (AEA) is installed and no DSL display stations are in the cluster. You can copy the DSL diskette to the fixed disk or insert the DSL diskette into a diskette drive at IML.

PF Keys for Merge

You call up a specific function of the customizing program by pressing a PF key. A PF key is operational only if it appears on the panel you are using.

Use the following table to reference Merge DSL Code PF key functions.

PF KEYS:	FUNCTION:
PF3	PF3 (Quit) quits the procedure without saving any responses since the last ENTER key was pressed. Then the Master Menu appears on your screen.
PF12	PF12 (Process) processes the options specified during this procedure. **Note:** If you are using a keyboard without PF12, use PA2.

Note: PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

Merge DSL Code Procedure

If you are not familiar with the Merge DSL Code, you may wish to review the introductory material and PF key functions. This material begins on page 3-2.

Use the following steps to merge DSL code from one DSL disk to another DSL disk.

Step 1 If you have not previously displayed the Master Menu (Chapter 1), do so now. (See "How to Display the Master Menu" on page 1-2, for instructions.)

Step 2 On the Master Menu, type **2** after `Select ===>`

```
Select ===> 2
```

Step 3 Press ENTER on the keyboard.

The DSL Merge panel appears on your screen.

```
                    ____ DSL Merge ____


        1 = Merge                       2 = Delete

        From disk:                      To disk:

__      ........-......          __     ........-......
__      ........-......          __     ........-......
__      ........-......          __     ........-......
__      ........-......          __     ........-......




Available drives: 1  2  3  4          From ===> 1     To ===> 2

Verify drive selection; Press ENTER
PF: 3=Quit
```

Figure 3-1. DSL Merge Panel for Selecting Drives

Step 4 The *From* and the *To* drive fields contain default drive selections. A message will ask you to verify these selections.

If you want to change the default drive selections:

- After `From ===>`, type the number for the *From* drive.
- After `To ===>`, type the number for the *To* drive.

Step 5 Press ENTER.

If you are using a **fixed disk drive**, a processing message appears on the message line.

If you are using a **diskette drive**, a message to insert the diskette appears on the message line near the bottom of your screen.

If you get the message to insert a diskette, insert either the DSL *From* or *To* diskette or both, close the drive(s), and press ENTER.
A processing message appears on the message line.

Note: With the 3174 online, the DSL code will be accessed in the following respective search order; fixed disk drives 3 then 4, diskette drives 1 then 2.

This procedure checks to make sure the DSL disks are valid. If so, the DSL file names on the disks will appear on the panel under their respective drive headings. See Figure 3-2.

```
                    ____ DSL Merge ____

        1 = Merge                       2 = Delete

        From disk:                      To disk:

__      .003290.-001.00           __    .013179.-000.00
__      ........-......           __    ........-......
__      ........-......           __    ........-......
__      ........-......           __    ........-......




Available drives: 1  2  3  4      From ===> 1     To ===> 2

PF: 3=Quit                              12=Process
```

Figure 3-2. The DSL Merge Panel with File Names of Both DSL Disks

Under the *From* and *To* drives appear the name, configuration level, and the microcode level of the product code on the respective DSL device disks. It is possible to have DSL code for as many as four different types of devices or for three different types of devices and any AEAs being used on each DSL disk.

Step 6 Select the Merge/Delete Option

- To merge a file from the *From* disk, type a **1** next to the file name. Press PF12 to process the option. See Figure 3-3.

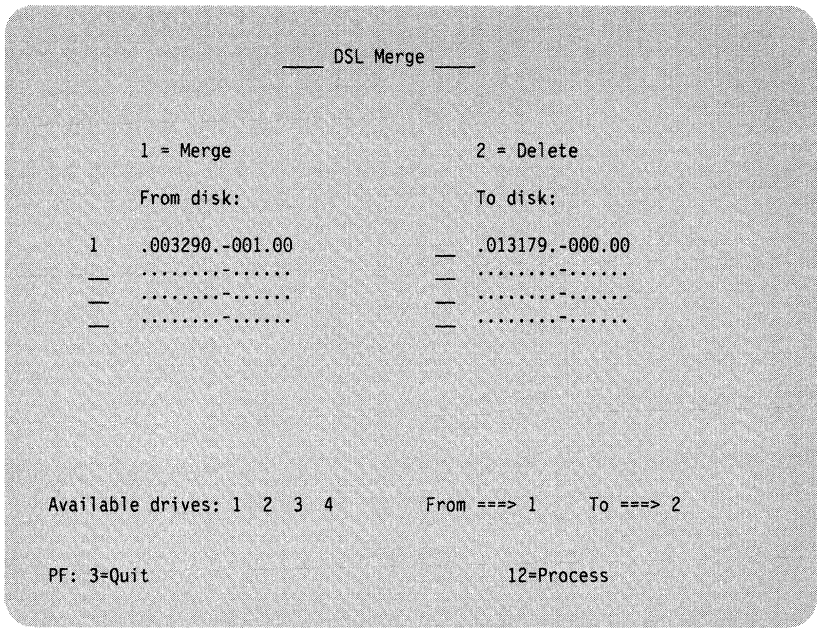


Figure 3-3. Selecting an Option on the DSL Merge Panel

The DSL file of the *From* disk is merged or copied to the *To* disk. When the merge is completed, the panel will show an asterisk in the field where you typed in the option number.

- The DSL Merge procedure lets you delete product code from a DSL *To* disk. For example, you will have to delete a file when you want to merge the microcode of a *From* DSL disk onto a *To* DSL disk that already has the same device microcode but with a different microcode level of product code. You must delete the product code on the *To* disk before or at the same time that you perform the merge function.

  To delete a file from the *To* disk:

  a. Type a **2** next to the file name you want to delete.

  b. Type a **1** next to the file name(s) you want to merge, and press PF12. See Figure 3-4 on page 3-7.

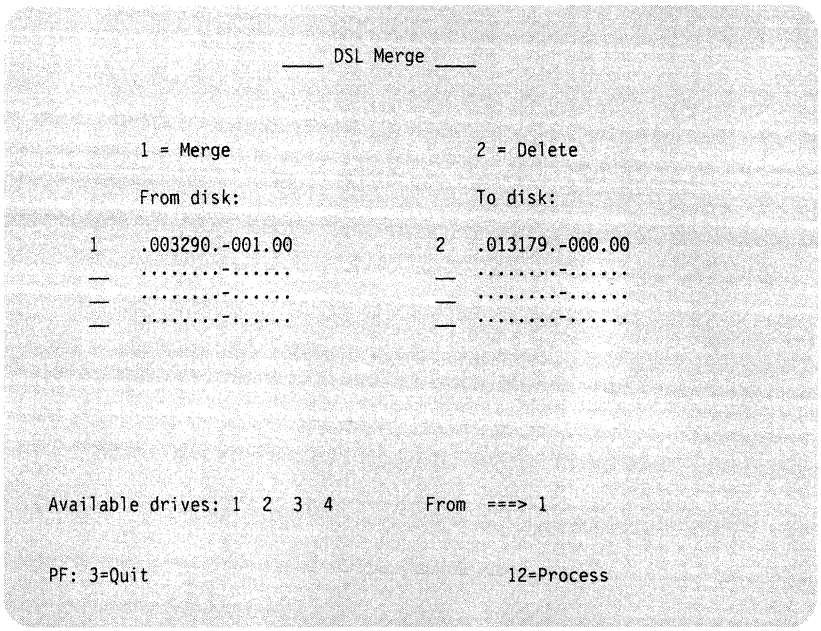


Figure 3-4. The DSL Merge Panel with the Delete Option

The *From* and *To* disks have the same device code with different microcode levels. You must delete the microcode release level on the *To* disk before or during the merge procedure.

When the merge is completed, the panel will show that the DSL code that previously appeared in the *To* heading has been deleted. The DSL code that previously appeared under the *From* heading will now appear under the *To* heading.

Step 7 Making Multiple Merges

After the merge is completed, a message appears that prompts you to perform more DSL merge functions.

When you want to perform a merge or delete (for each):

a. Insert DSL *From* and/or *To* diskettes, if needed, and press ENTER.
b. Type in the option(s) next to the DSL file names, and press PF12.

When you do not want to perform any additional merge options:

a. Remove any DSL diskettes.
b. Insert the Utility diskette in the IML drive (if using a diskette drive).
c. Press PF3. The Master Menu appears on your screen.
d. Go to "What's Next?"

What's Next?

The Master Menu with `Select ===>` is on your screen.

You can:

- Select a different customizing or utility procedure. See the "Worksheet and Task Tables" on page 1-4 to locate the information for the procedure you have chosen or to determine the next procedure to perform.
- Terminate Offline Utility action.

To put the 3174 online, ensure that a disk drive contains a customized 3174 Control disk and perform an IML. See the *3174 User's Guide* for the model you have for instructions.

Chapter 4. How to Copy Files

Getting Ready to Copy Files

From the Copy Menu panel, you can choose whether you want to duplicate a disk, modify certain configuration data while copying a Control disk, or copy specific portions of a disk. (The Copy Menu is shown here only as an example; you will be directed to display the Copy Menu later in this procedure.)

```
                    ____ Copy Menu ____


Option     Description

   1       Full Copy
   2       Modify and Copy
   3       Copy Customizing Data
   4       Copy Device Definition
   5       Copy Patches
   6       Copy Modified Keyboards
   7       Copy RPQs
   8       Copy Vital Product Data



Select===>

PF: 3=Quit
```

Figure 4-1. Copy Menu. You select a copy option on this screen.

If you are undecided on which copy option to choose, review the copy option information on pages 4-4 through 4-7.

If you have decided on the copy option you wish to perform, the following table will direct you to the appropriate starting point.

If you want to perform:	Go to page:
Full Copy	4-4
Modify and Copy	4-5
Copy Customizing Data	4-6
Copy Device Definition	4-6
Copy Patches	4-7
Copy Modified Keyboards	4-7
Copy RPQs	4-7

Full Copy

During a Full Copy, you copy the entire contents of a UTL, CTL, DSL, LIB, or LFU disk onto a fixed disk *or* a two-sided, high-density diskette. Full Copy can also be used to copy an RPQ diskette to a two-sided, high-density diskette. (Unformatted diskettes are automatically formatted during the Copy procedure.)

When performing a Full Copy, keep in mind that:

- A fixed disk can contain only one UTL, CTL, DSL, LIB, and LFU disk. For example, two Control disks cannot be copied to the fixed disk. The second copy will overwrite the first.

  Note: Backup and On-Trial versions are not copied. (See the *Central Site Customizing User's Guide* for more information on Backup and On-trial versions.)

- When copying a LIB disk from a fixed disk to diskettes, all library members are copied. When copying a LIB disk from a fixed disk to fixed disk, all library members are copied. When copying a LIB disk from a diskette to a fixed disk, only unique library members are copied.
- Single drive copy is supported. (The user is prompted by on-screen messages to interchange diskettes.)
- A fixed disk can store a greater number of library members than a diskette; therefore, more than one diskette may be required to hold the LIB disk contents stored on a fixed disk. If you are copying a LIB disk from a fixed disk to a diskette and the number of members exceeds the diskette storage space, you will be prompted to insert another diskette. Each resulting diskette will be a stand alone library diskette.

Warning: Make sure that both the Source and Target diskettes are of the same density.

You can also copy the customizing responses of a Control disk by using the Copy Customizing Data option. This procedure is faster than a Full Copy because only the regular configuration responses, patches, RPQs, modified keyboards, PAM, and AEA configuration responses are copied.

The logs from the original Control disk are copied during a Full Copy. It is recommended that you IML the copied disk and perform a Reset Log/Test 4 on it to reset all the logs. The following procedure can be performed from any 3278 or similar display station:

1. Press and hold ALT; press TEST.
2. Type in **/4,2**
3. Press ENTER.

If you have decided to perform the Full Copy procedure, you will need the following:

- *From* disk: A Utility, Control, DSL, RPQ, LIB, or LFU disk. This is the disk from which you are copying.
- *To* disk: A fixed disk or two-sided, high-density diskette (formatted or unformatted). This is the disk to which you are copying.
- If using a diskette, a *label* indicating the new microcode level of the *To* diskette.

Go to "Copy Files Procedure" on page 4-9 to perform the Full Copy procedure.

Modify and Copy

During a Modify and Copy procedure, you can modify certain configuration responses of a Control disk as you are copying it to another disk. The disk that you copy to can serve as the Control disk for another controller. This modification does not change the original Control disk's information, but instead modifies certain responses for the new Control disk.

You can modify the responses to these configuration questions:

- 099: Assistance Data
- 104: Controller Address
- 105: Upper Address Limit (Non-SNA or the Token-Ring Network 3270 Gateway feature)
- 106: Token-Ring Network Address of the 3174 (Token-Ring Network)
- 107: Token-Ring Network Address of the Gateway (Token-Ring Network)
- 108: Unique Machine Identifier
- 215: Physical Unit Identification.

Notes:

1. Question 105 appears only if you are modifying local non-SNA and the Token-Ring Network 3270 Gateway feature configuration data.
2. Questions 106 and 107 appear only if you are modifying Token-Ring configuration data.
3. If you have the Token-Ring Network 3270 Gateway feature, the new subchannel range (questions 104 and 105) cannot be greater than the previously defined range.

If you have decided to perform the Modify and Copy procedure, you will need the following:

- *From* disk: A customized Control disk with the same *microcode level* as the Utility disk that was IMLed. This is the disk from which you are copying.
- *To* disk: A fixed disk or a two-sided, high-density diskette (formatted or unformatted). This is the disk to which you are copying.
- If using a diskette, a *label* indicating the new microcode level of the *To* diskette.

Go to "Copy Files Procedure" on page 4-9 to perform Modify and Copy.

Copy Customizing Data

This procedure copies only the regular configuration responses, patches, RPQs, modify keyboard tables, Device Definition, and AEA configuration responses from one Control disk to another Control disk of the same microcode level. During this procedure, all existing configuration responses, patches, RPQs, modified keyboards, and the Device Definition on the *To* disk are replaced by the configuration responses (regular and AEA), patches, RPQs, modified keyboards, and the Device Definition on the *From* disk. This method of duplicating customized Control disks is faster than the Full Copy.

If you have decided to perform the Copy Customizing Data procedure, you will need the following:

- *From* disk: A customized Control disk of the same *microcode level* and *maintenance level* as the *To* disk and the same *microcode level* as the IMLed Utility disk. This is the disk from which you are copying.
- *To* disk: A Control disk of the same *microcode level* and *maintenance level* as the *From* disk. This is the disk to which you are copying.

Go to "Copy Files Procedure" on page 4-9 to perform Copy Customizing Data.

Copy Device Definition

During a Copy Device Definition you copy only the Device Definition file from one Control disk to another Control disk of the same configuration and release levels. Doing this will erase any Device Definition data found on the *To* disk.

If you have decided to perform the Copy Device Definition procedure, you will need the following:

- *From* disk: A Control disk with the Device Definition defined, and of the same *microcode level* as the IMLed Utility disk. This is the disk from which you are copying.
- *To* disk: A Control disk of *the same configuration and release levels* as the *From* disk and the IMLed Utility disk. *The* To *disk must be configured for the Device Definition either before or after the copy is made.* This is the disk to which you are copying.

Go to "Copy Files Procedure" on page 4-9 to perform Copy Define Devices.

Copy Patches

During a Copy Patches procedure, you copy only the patch files from one Control disk to another Control disk of the same microcode level or from one Utility disk to another Utility disk of the same microcode level. Doing this will erase any patches found on the *To* disk.

If you have decided to perform the Copy Patches procedure, you will need the following:

- *From* disk: A Control disk with patch data merged onto it and of the same *microcode level* and *maintenance level* as the *To* disk and of the same *microcode level* as the IMLed Utility disk. This is the disk from which you are copying.
- *To* disk: A Control disk of the same *microcode level* and *maintenance level* as the *From* disk and the same *microcode level* as the IMLed Utility disk. This is the disk to which you are copying.

Go to "Copy Files Procedure" on page 4-9 to perform Copy Patches.

Copy Modified Keyboards

During a Copy Modified Keyboards procedure, you copy only the Modified Keyboard tables from one Control disk to another Control disk of the same configuration and release level. Doing this will erase any Modified Keyboard tables found on the *To* disk.

If you have decided to perform the Copy Modified Keyboards procedure, you will need the following:

- *From* disk: A Control disk with Modified Keyboard tables defined on it and of the same *microcode level* as the IMLed Utility disk. This is the disk from which you are copying.
- *To* disk: A Control disk of *the same configuration and release levels* as the *From* disk and the IMLed Utility disk. This is the disk to which you are copying. *The* To *disk must be configured for the Modify Keyboards procedure either before or after the tables are copied; language specifications within the Modified Keyboards tables may differ from the* From *disk.*

Go to "Copy Files Procedure" on page 4-9 to perform Copy Modified Keyboards.

Copy RPQs

During Copy RPQs, you copy only the RPQ files from one Control disk to another Control disk. Doing this will erase any RPQs found on the *To* disk.

If you have decided to perform the Copy RPQs procedure, you will need the following:

- *From* disk: A Control disk with RPQ data merged on it. This disk must have the same *microcode level* as the IMLed Utility disk. This is the disk from which you are copying.
- *To* disk: A Control disk of the *same configuration level* as the IMLed Utility disk and a release level that *is equal to or greater than* the IMLed Utility disk. This is the disk to which you are copying.

Go to "Copy Files Procedure" on page 4-9 to perform Copy RPQs.

Copy Vital Product Data

During Copy Vital Product Data, you copy only Vital Product Data (entered via Online Test 5, Options 2 and 4) from one Control disk to another.

If you have decided to perform the Copy Vital Product Data procedure, you will need the following:

- *From* disk: A Control disk at Microcode level B2 or above. Vital Product Data is present on this disk.
- *To* disk: A Control disk at B3 level or above. This disk does not have Vital Product Data present.

Go to "Copy Files Procedure" on page 4-9 to perform Copy Vital Product Data.

How to Determine Maintenance and Microcode Levels

When a copy procedure involves a diskette, you will need to know the maintenance and microcode levels of the diskette. (The exception to this rule is the Full Copy procedure. See "Full Copy" on page 4-4.) A label in the upper portion of a diskette identifies the diskette type by name, IBM part number, validation number, maintenance and microcode levels. The maintenance and microcode levels appear in the format shown in Figure 4-2 on page 4-8.

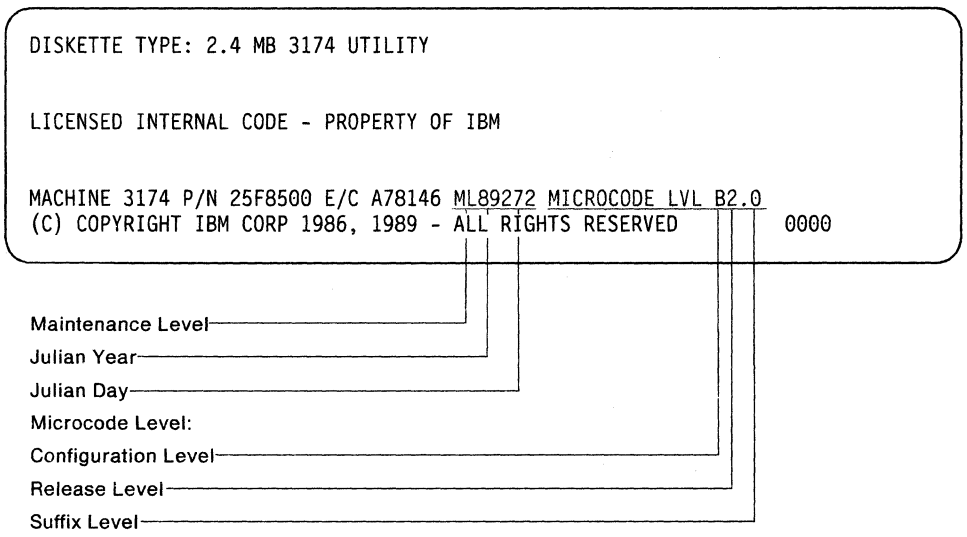


Figure 4-2. The Maintenance and Microcode Levels. The maintenance level represents the Julian date, where *89* is the year and *272* is the day of the year (89272 is September 29, 1989). The microcode level consists of configuration, release, and suffix levels.

To determine the microcode level of a diskette, compare the sequence of letters and numbers. For example, a diskette with a microcode level of B1 has a lower level of microcode than a diskette with a microcode level of B2.

Copy Files Procedure

Use the following steps when you are performing any of the copy procedures. If you have not already done so, go to the description of the type of copy you wish to perform, and review the items you need before starting. This information is found on pages 4-4 through 4-7. You may also need a copy of *3174 Status Codes*, GA27-3832.

Note: Before beginning this procedure you need to have previously identified the keyboard (page 2-2). If you have an unused new controller with fixed disk, or a new unused fixed disk, you need to initialize the fixed disk (see page F-2)

Step 1 If you have not previously displayed the Master Menu (Chapter 1), do so now. (See "How to Display the Master Menu" on page 1-2 for instructions.)

Step 2 On the Master Menu, type **3** after `Select ===>`

```
Select ===> 3
```

Step 3 Press ENTER on the keyboard. The Copy Menu (Figure 4-3 on page 4-9) appears on your screen.

```
                ____ Copy Menu ____

Option     Description

   1       Full Copy
   2       Modify and Copy
   3       Copy Customizing Data
   4       Copy Device Definition
   5       Copy Patches
   6       Copy Modified Keyboards
   7       Copy RPQs
   8       Copy Vital Product Data


Select===>

PF: 3=Quit
```

Figure 4-3. Copy Menu. Select a copy option from this screen.

Step 4 Select and type an option number after `Select ===>`.

Step 5 Press ENTER.

The prompt appears at the bottom of the screen with the option you selected. `Available drives` appears in place of `Select ===>`.

```
Available drives: 1 2 3 4     From ===> 1      To ===> 2
```

The available drive fields identify how many drives you have in the controller, and the default drive selections for the *From* and *To* disks. Diskette drives are numbered 1 and 2 and the fixed disks are numbered 3 and 4.

If you specified a **diskette drive** as the *From* or *To* drive, a message to insert the diskette for copying appears on the message line near the bottom of your screen. Insert the *From* or *To* diskette, close the drive door, and press ENTER. To complete the procedure, follow the prompts as they appear on screen.

If you specified a **fixed disk drive** as the *From* drive, the Subdirectory Selection panel appears. (see Figure 4-4 on page 4-11).

Notes:

a. The Utility and Control diskettes must be at or greater than Configuration Support A or S Release 4. To learn how to identify diskette microcode and maintenance levels, go to "How to Determine Maintenance and Microcode Levels" on page 4-8.

b. The DSL subdirectory on a fixed disk can contain microcode for up to four of the following: 3290, 3179-G, 3192-G, 3193, and 3174 Feature 3020 - AEA.

c. Single drive copy is supported. (The user is prompted to interchange diskettes by on-screen messages.)

d. If you are using central site change management, see "CSCM Fixed Disk 3174 Setup" in the *Central Site Customizing User's Guide*, for recommendations on copying the Control disk.

e. Although an RPQ diskette cannot be copied to the fixed disk, individual RPQs can be merged to the UTL00001 subdirectory and then transferred to the CTL00001 subdirectory.

Remember

When both the Utility and the Limited Function Utility diskettes are copied to the fixed disk, the controller IMLs from the one most recently copied. For example, if you copy the Limited Function Utility diskette to the fixed disk first, and then copy the Utility diskette to the fixed disk, the Utility disk is used for the IML. You can override by performing the procedure for selecting the IML source in Chapter 6, "How to Perform Media Management."

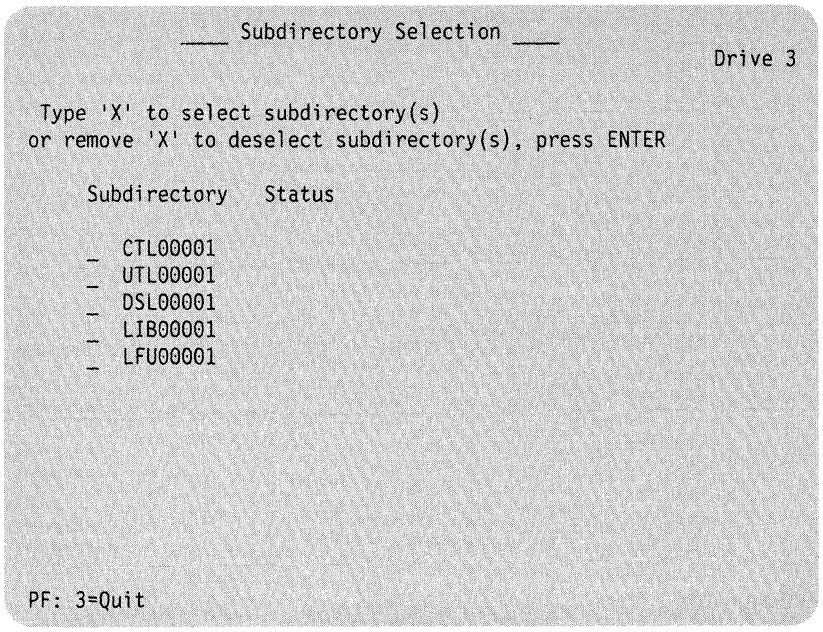


Figure 4-4. Subdirectory Selection Panel

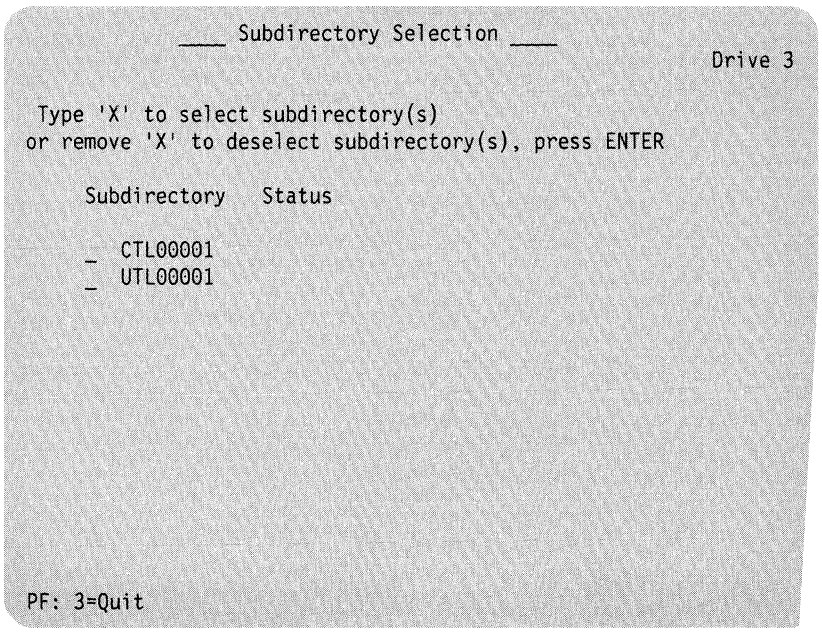


Figure 4-5. Subdirectory Selection for CTL/UTL Patch Panel

Step 6 Type an uppercase **X** next to the subdirectory name that you want t copied (remove the **X** to deselect), and press ENTER. (You may choose more than one subdirectory at a time.)

- If you are performing a Library Full Copy (LIB00001), go to Ste on page 4-12.
- If you are performing a Modify and Copy, go to Step 8 on page 4-15.

- If you are performing other Full Copy Subdirectories (CTL00001, UTL00001, DSL00001, or LFU00001), or other Copy Menu options besides Modify and Copy, follow the instructions as they appear on the screen. Upon completion, go to "What's Next?" on page 4-16.

Step 7 For Full Copy Library Members Only

The Copy Library Members Panel appears. (You have typed an uppercase X next to *LIB00001* and pressed ENTER.)

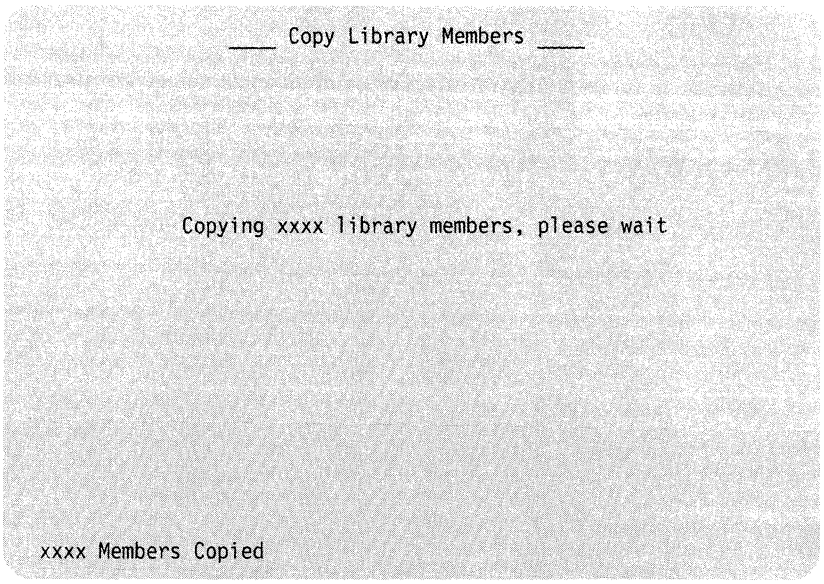


Figure 4-6. The Copy Library Members Panel.

If all library members are copied successfully, the Copy Library Members Panel will have the following message:

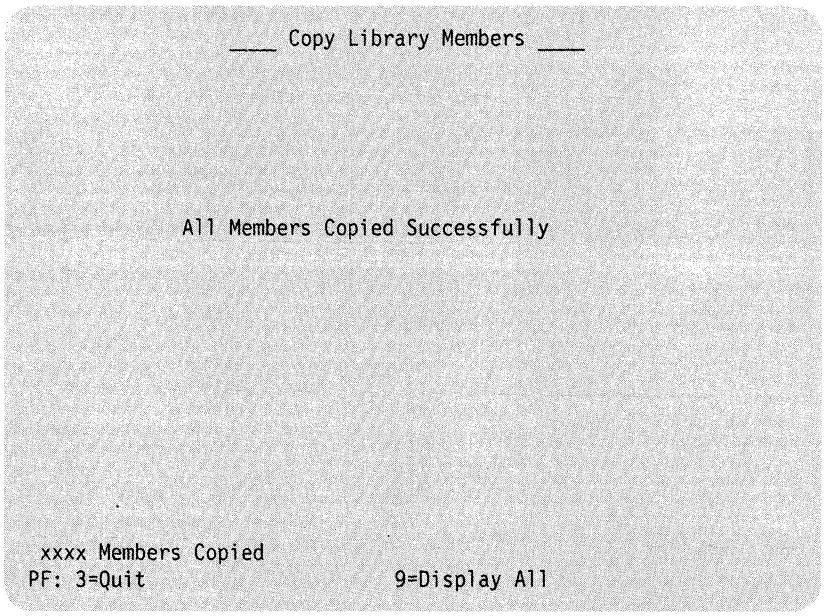


Figure 4-7. The Copy Library Members Panel.

Note: Pressing PF9 produces the Copy Library Members Summary Panel displaying a summmary of the members copied. Press PF11 to page through the panels to view all of the copied members.

If all library members are *not* copied successfully, the Copy Library Members Summary Panel will appear, similar to the following example. This panel contains information on members which experienced errors during the copy library members process.

```
                ___ Copy Library Members ___
                      Summary

 Member       Level      Status
-------       -----      ------
Member06      A4.1       Media Error on Source
Member15      A4.1       Member Already Exists
Membe100      A4.1       Member Already Exists
Membe200      A4.1       Media Error on Source
Membe555      A5.1       Microcode levels exceed limit of 10
Membe666      B1.0       Microcode levels exceed limit of 10
Membe700      B1.0       Microcode levels exceed limit of 10
Memb1000      B1.0       Media Error on Source
Memb1100      B2.0       Member Already Exists
Memb1500      B2.0       Member Already Exists
Memb1666      B2.0       Library Subdirectory Full
Memb1997      B3.0       Library Subdirectory Full
Memb1998      B3.0       Library Subdirectory Full
Memb1999      B3.0       Library Subdirectory Full
Memb2000      B3.0       Library Subdirectory Full

1985 Members Copied;     15 Members Not Copied
PF: 3=Quit                9=Display All
```

Figure 4-8. The Copy Library Members Summary Panel. Summary Panel displaying copy fail members only.

Note: Pressing PF9 displays all library members (including those copied and those not copied). By toggling PF9, you can alternate between displaying all library members and only those library members experiencing copy failures.

There are corrective actions available for the copy errors listed in the *Status* column of the Summary Panel. The following list (in alphabetical order) matches the type of failure with a corresponding corrective action or explanation.

Copy Terminated by the User: You have pressed PF3 to quit, this member was not copied.

Library Subdirectory Full: Copy the remaining diskettes to another hardfile. If that option is not available, refer to Chapter 2 of the *Central Site Customizing User's Guide* for information on how to delete target hardfile members. After choosing Option 6 from the Master Menu, go to the topic, "Deleting a Member," within that chapter.

Media Error on Source: If you have a backup diskette (backup diskettes are routinely recommended), use the backup diskette for the Source in the copy procedure. If you do not have a backup diskette, delete the library member using CSCU and then recreate the member. (To delete a member, choose Option 6 from the Master Menu. Then turn to the *Central Site Customizing User's Guide*, Chapter 2. Look under the heading "Deleting a Member." To recreate the member, look under the heading "Updating a Library Member.")

Note: You may need to consult the worksheet planner to successfully recreate a library member. During a recreation, you will be required to change configuration question responses on appropriate panels.

Member Already Exists: If this error exists repeatedly, delete these members from the target disk and return to the copy procedure. (Do this by choosing Option 6 from the Master Menu. Then turn to the *Central Site Customizing User's Guide*, Chapter 2. Look under the heading "Deleting a Member.") If this error occurs only occasionally on the Summary Panel, you may wish to employ the CSCU "Get Put Function." (Do this by choosing Option 6 from the Master Menu. Then turn to the *Central Site Customizing User's Guide*, Chapter 2. Look under the heading "Creating a Library Member.")

Note: The "Get Put Function" will cause an upgrade.

Member not copied due to Error: This error is presented with a SSC number. Use your copy of the *3174 Status Codes* to determine the corrective action.

Microcode Levels Exceed Limit of 10: Use CSCU to delete all of the members associated with one or more of the undesirable microcode levels on the target disk. (Do this by choosing Option 6 from the Master Menu. Then turn to the *Central Site Customizing User's Guide*, Chapter 2. Look under the heading "Deleting a Member.")

Step 8 For Modify and Copy Only

After you verify your *From* and *To* drives for the Modify and Copy procedure, another panel appears On this Modify and Copy panel, you can modify the responses entered on the *From* disk.

```
                ____ Modify and Copy ____

'From' drive (n) responses:

  099 - XXXXXXXXXXXXXXXXXXXXX
  104 - XXXXX
  105 - XXXX
  108 - XXXXXXX
  215 - XXXXX

'To' drive (n) responses:

  099 - XXXXXXXXXXXXXXXXXXXXX
  104 - XXXXX
  105 - XXXX
  108 - XXXXXXX
  215 - XXXXX


PF:  3=Quit
```

Figure 4-9. The Modify and Copy Panel. On this example panel, you can modify responses to five configuration questions. Here the Xs represent the responses from the *From* disk, which appear on the panel. The *n* represents the number of the drive, which appears on the panel.

In the top half of the panel, the responses previously entered on the *From* disk are displayed. In the bottom half of the panel, you enter only the responses you want to change.

1. In the *To* drive fields, type over the responses you want to modify. If you wish, you can leave a response unchanged.
2. Press ENTER.

   A message appears on the message line while the copying is being performed. It indicates the processing of the Copy procedure. You will receive a message when copying is completed.
3. After the Copy is completed, a message prompts you to make another copy.

- If you are copying to a **fixed disk drive**, press PF3 to quit. (The Copy Menu appears on your screen.)
- If you are copying to a **diskette drive**, insert a *To* diskette for each additional copy you want to make, and press ENTER.

When you do not want to make any more copies of this *From* disk, the Copy Menu appears on your screen.

What's Next?

The Copy Menu is on your screen.

You can:

- Select a different Copy procedure from the Copy Menu.

  Note: Be sure to refer to the description of the type of copy you wish to perform, and review the items you will need before starting.

- Remove any diskettes from the drives if you have completed performing all the copy procedures you wished to perform.

  Note: Identify any diskettes copied by writing a unique designation on the label. You must include the **Configuration and Release level information** on the label, and you may want to identify the specific controller in which the diskette is to be used.

- Return to the Master Menu by pressing the PF3 key and choose another customizing procedure. See the "Worksheet and Task Tables" on page 1-4 to locate the information for the procedure you have chosen or to determine the next procedure to perform.

- If this is the last customizing procedure you are performing and you are ready to put the controller online, proceed to the IML procedure in the *3174 User's Guide* for the controller model you are using.

Chapter 5. How to Upgrade Microcode

Getting Ready to Upgrade Microcode

Before you start, you will need:

- The identity of the customizing keyboard. If you do not have this information, see Chapter 7, "How to Identify Customizing Keyboards."
- *From* disk: a customized Control disk. This disk is referred to as the *Old* disk. The customizing data on the Old disk will be transferred to the New disk.
- *To* disk: a Control disk that is referred to as the *New* disk. This disk must have the same or higher release, suffix, and maintenance levels as the Old disk.
- A Utility disk. This disk must have the same 3174 microcode level as the New (To) disk.

If the suffix levels of the Old and New disks are equal, the maintenance level of the New disk must be equal to or higher than the maintenance level of the Old disk. (See "How to Determine Maintenance and Microcode Levels" on page 4-7.)

If you have a new unused controller with a fixed disk or a controller with a new unused fixed disk you must initialize it. (See page F-2 for the procedure.)

An Overview of the Microcode Upgrade Procedure

Periodically, IBM may issue upgraded Utility and Control diskettes. An upgraded diskette may incorporate new maintenance enhancements and/or new function for the 3174 Establishment Controller. The Microcode Upgrade procedure transfers the customizing data (configuration responses, Device Definition data on a previously customized Control disk (*Old* disk) to the New, higher-microcode-level disk, and copies the existing RPQs. The transferred customizing data replaces the corresponding responses on the New disk. The RPQs replace corresponding responses on the New disk, **but it is not upgraded**. Refer to Table 5-1 on page 5-3 for information on which procedures may have to be performed **after** the Microcode Upgrade procedure. (For example, you would need to perform the Merge RPQ procedure after the Microcode Upgrade if Merged RPQs were present on the *Old* Control Disk.)

You can do a microcode upgrade of the following:

From Configuration Support / Release	To Configuration Support / Release
A1 through A5	A5 and higher
A3 through A5	B1 and higher
S4	S5
S4, S5	B1 and higher
B1, B2	B2 and higher

When performing a microcode upgrade, you may wish to consider the following information.

- To migrate *from* microcode release levels lower than A3 or S4 *to* microcode release B or higher, you must first perform a microcode upgrade from an old Configuration Support A to A3, A4, or A5, or from an old Configuration Support S to S4, or S5. Then you can perform a second microcode upgrade to release B1.0 or higher. Keep in mind that you cannot migrate from a higher release to a lower release, for example, you cannot go from B2 to B1.

- Patches are **not** moved during the Microcode Upgrade procedure. Patches on the New (*To*) disk remain intact.
- In an Upgrade, Modify Keyboards (KDU) is copied for Release 4 (A and S) and above.

If you have RPQ or Modifying Keyboard data on your disk, you will need to perform those procedures after you have performed the microcode upgrade. See the following table.

Table 5-1. Procedures Performed after Microcode Upgrade

Customizing Data Type	Procedure	Refer To
RPQ	Merge RPQs	"Merging RPQs" on page 2-38
Modify Keyboard tables (For Releases less than A4)	Modify Keyboards	"Modifying Keyboards" on page 2-46

PF Keys for Microcode Upgrade

You call up a specific function of the customizing program by pressing a PF key. A PF key is operational only if it appears on the panel you are using.

Use the following table to reference Upgrade Microcode PF key functions.

PF Keys:	Function:
PF3	PF3 (Quit) quits the procedure without saving any responses since the last ENTER key was pressed. Then the Master Menu appears on your screen.
PF12	PF12 (Process) processes the options specified during this procedure. **Note:** If you are using a keyboard without PF12, use PA2.

Note: PF13 through PF24 on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

Microcode Upgrade Procedure

If you are not familiar with Microcode Upgrade, you may wish to review the Microcode Upgrade introductory material and PF Key functions. This material begins on page 5-2.

Step 1 If you have not previously displayed the Master Menu (Chapter 1), do so now by performing the procedure in "How to Display the Master Menu" on page 1-2. Use a Utility disk that has the same microcode level as the New (*To*) disk. See "How to Determine Maintenance and Microcode Levels" on page 4-7 for help in determining the microcode level).

Step 2 On the Master Menu, type 5 after `Select ===>`.

```
Select ===> 5
```

Step 3 Press ENTER on the keyboard.

Step 4 Verify drives.

The Microcode Upgrade panel is on your screen.

```
                    ____ Microcode Upgrade ____


OLD disk      (Previous Level):       NEW disk     (Latest Level):

  Configuration Level  - A              Configuration Level  - B
  Release Level        - 05             Release Level        - 01
  Suffix Level         - 00             Suffix Level         - 00
  Maintenance Level    - 89178          Maintenance Level    - 89272









Available drives: 1  2  3  4      OLD ===>  1  NEW ===>  2

PF: 3=Quit                          12=Process
```

Figure 5-1. Microcode Upgrade Panel for Selecting Drives. The configuration, release, suffix, and maintenance levels of the disks are displayed. (If you select a diskette drive, the diskette must be inserted before any information will be displayed.) This example shows a four-drive controller.

The available drives field on the panel identifies the drives available in the controller and the default drive selections for the *Old* and the *New* disk. If you do not want to use the default drive selections:

- After `Old ===>` , type the number for the Old drive.
- After `New ===>` , type the number for the New drive.

a. Press ENTER. The *Old* and *New* drives that you selected are highlighted on your screen.

b. If you specified a **diskette drive** for the *Old* and/or *New*, a message to insert the diskette(s) for upgrading appears on the message line near the bottom of your screen. Insert the Old and/or New diskette(s), close the drive(s), and press ENTER.

   This procedure checks to ensure that the disk is valid. If so, the product level information appears on the panel under the appropriate fields.

Step 5 Upgrade the microcode.

- Press PF12 to initiate the upgrade of the microcode.

A message appears near the bottom of the screen, indicating when the upgrading is completed.

Step 6 Make multiple upgrades of Control disks.

If upgrading to a fixed disk drive, a message informs you that upgrading is complete.

- Press PF3 to quit. The Master Menu appears on your screen.

If upgrading to a diskette drive, after upgrading is complete, a message prompts you to continue to upgrade.

a. Insert another Old or New diskette for each upgrade you want to make.

   Note: If the microcode level and maintenance levels of the multiple Control diskettes are the same, use the copy configure capability of the Copy procedure. See Chapter 4, "How to Copy Files," for more information on the copy procedures.

b. Press ENTER. The configuration, release, suffix, and maintenance levels of the diskette you inserted are displayed.
c. Press PF12 to initiate the upgrade of the microcode. A message appears near the bottom of the screen, indicating when the upgrading is completed.

When you do not want to upgrade any more diskettes:

a. Remove any diskettes.
b. Ensure that the **original** Utility disk is in the drive used to IML.
c. Press PF3. The Master Menu appears on your screen.
d. Go to "What's Next?"

What's Next?

The Master Menu is on your screen.

You can:

- Review the table on page 5-3 for a list of the procedures performed after a Microcode Upgrade.
- Select a different customizing procedure from the Master Menu. See the "Worksheet and Task Tables" on page 1-4 to locate the information for the procedure you have chosen or to determine the next procedure to perform.
- Exit customizing. Remove any diskettes used for the Upgrade procedure from the drives.
- Identify any diskettes by writing a unique designation on the label; for example, you could identify the configuration of the diskette and the 3174 controller in which it is to be used.
- To put the 3174 online, IML with the Control disk that you use for normal operations (perhaps the one you just upgraded).

Chapter 6. How to Perform Media Management

Getting Ready to Perform Media Management

Before you start, you will need:

- A copy of the 3174 Establishment Controller Utility and Control diskettes on a fixed disk.
- The identity of the customizing keyboard. If you do not have this information, see Chapter 7, "How to Identify Customizing Keyboards."
- You may need a copy of *3174 Status Codes*, GA27-3832.

If you have a new unused controller with a fixed disk or a controller with a new unused fixed disk you must first initialize it. (See page F-2 for the procedure.) If you need to perform a copy to the fixed disk, see Chapter 4, "How to Copy Files." (Choose the full copy option.)

Performing Media Management

The Media Management procedure provides you with a tool for managing the data on your fixed disk(s). It allows you to select, deselect, or delete subdirectories, Each subdirectory holds the contents of a 3174 diskette. The subdirectories are used for the different IMLs from a fixed disk. For example, the Control subdirectory would be used for an IML, and the Utility subdirectory would be used for an ALT 1 IML. Media Management allows you to display information about the diskettes and subdirectories in your controller, such as microcode levels and maintenance levels. Media Management also allows you to create dump and/or trace diskettes. Only certain 3174 diskettes can be copied onto a fixed disk drive and only one of each diskette type can reside on the fixed disk at a time. For example, two Utility diskettes cannot be copied to the fixed disk. The second copy overwrites the first copy. The diskettes that can be copied to the fixed disk include:

3174 Utility (UTL) diskette
3174 Control (CTL) diskette
3174 Limited Function Utility (LFU) diskette
3174 Library (LIB) diskette
3174 Down Stream Load (DSL) diskette.

Notes:

1. The Utility and Control diskettes must be at or greater than microcode level A.4.
2. The DSL diskette can contain microcode for up to four of the following: 3290, 3179-G, 3192-G, 3193, and 3174 feature 3020 - AEA (for Asychronous Emulation Adapter microcode, the product name is 3020).

Remember

When both the Utility and the Limited Function Utility diskettes are copied to the fixed disk, the 3174 IMLs from the one most recently copied. For example, if you copy the Limited Function Utility diskette to the fixed disk first and then copy the Utility diskette to the fixed disk, the Utility disk is used for the IML. This can be overridden by performing the procedure under "IML Source Selection/Deselection Procedure" on page 6-5.

Media Management Options

The Media Management Menu provides you with four options:

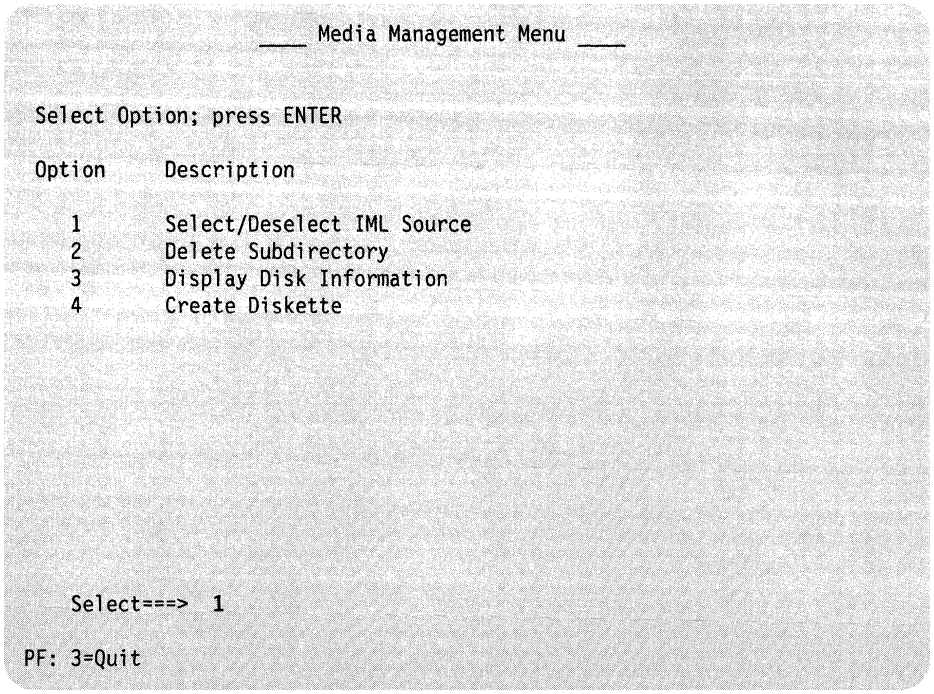


Figure 6-1. Media Management Menu Displayed

Select/Deselect IML Source:
Allows you to choose the subdirectories to be included or not included when an IML of the 3174 is executed. Selecting option 1, "Select/Deselect IML Source," presents the IML Source Selection panel.

Delete Subdirectory:
Allows you to delete a subdirectory that is no longer needed. Selecting option 2, "Delete Subdirectory," presents the Subdirectory Deletion panel.

Display Disk Information:
Allows you to display information about the diskettes and subdirectories in the controller, such as microcode levels and release levels. Selecting option 3, "Display Disk Information", presents the Display Disk Information panel which contains information about the 3174 microcode on a specified drive.

Create Diskette:
Allows you to create dump and trace diskettes from the controller.

PF Keys for Media Management

You call up a specific function of the customizing program by pressing a PF key. A PF key is operational only if it appears on the panel you are using.

Use the following table to reference Media Management PF key functions.

PF Keys:	Function:
PF3	PF3 (Quit) quits the procedure without saving any responses since the last ENTER key was pressed. Then the Master Menu appears on your screen.
PF12	PF12 (Process) processes the options specified during this procedure. **Note:** If you are using a keyboard without PF12, use PA2.

Note: PF13 through 24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

Now you are ready to perform Media Management. Use the following table to locate the procedure for the option you want.

If you want to:	Go to page:
Select or Deselect the IML Source	6-5
Delete Subdirectories	6-8
Display Disk Information	6-10
Create Diskette	6-12

IML Source Selection/Deselection Procedure

If you are not familiar with Media Management, you may wish to review introductory material and PF key functions. This material begins on page 6-2.

Step 1 If you have not previously displayed the Master Menu (Chapter 1), do so now. (If you have the Media Management Menu displayed, go to Step 4.) To display the Master Menu, see "How to Display the Master Menu" on page 1-2 for instructions.

Step 2 On the Master Menu, type 7 after Select ===>.

```
Select===> 7
```

Step 3 Press ENTER on the keyboard. The Media Management Menu appears on your screen.

```
                ____ Media Management Menu ____

Select Option; press ENTER

Option     Description

   1       Select/Deselect IML Source
   2       Delete Subdirectory
   3       Display Disk Information
   4       Create Diskette

   Select===> 1

PF: 3=Quit
```

Figure 6-2. Media Management Menu Displayed

Step 4 Type 1 after Select===> and press ENTER.

Step **5** Verify drives.

The following prompt appears on your screen.

```
Available drives: 3 4    Select Drive ===>
```

`Select drive ===>` is defaulted to the first available fixed disk drive installed. A message prompts you to verify the default drive selection.

a. If you do not want to use the default drive selection, type the number of the fixed disk drive that you want to use after `Select drive ===>`.

b. Press ENTER.

Step **6** Select or deselect the IML source.

The IML Source Selection panel appears on your screen (see Figure 6-3) along with the selectable subdirectories on the drive you specified.

```
                     ____ IML Source Selection ____
                                                              Drive 3

           1 - Select
           2 - Deselect


          Subdirectories                         IML Selection   Subdirectory
       CONTROL        UTILITY                      Parameter         Name

    _  CTL00001    _  UTL00001                       w340          ........
                   _  LFU00001                       w341          CTL00001









  PF: 3=Quit                         12=Process
```

Figure 6-3. IML Source Selection Panel

- Type a **1** (Select) in the space provided before each subdirectory you want used during an IML.

  Note: If the UTL and LFU subdirectories are both present, select only one to be the subdirectory used during an IML.

- Type a **2** (Deselect) in the space provided before each subdirectory you do not want used during an IML.

Step 7 Press ENTER.

- If the responses are valid, a message indicates that all responses are correct and you are prompted to press PF12.
- If a response is invalid, the response is highlighted. A four-digit status code and message displayed on the message line explain why the response is invalid. (See *3174 Status Codes*, GA27-3832, for an explanation of the status codes.)

  a. Correct the highlighted response.

  b. Press ENTER. The status code changes to explain any other invalid responses.

  c. Continue correcting responses until none are highlighted. A message indicates that all responses are correct after the ENTER key is pressed.

Step 8 Press PF12 to process.

The responses are saved and the selected subdirectory names appear under the Subdirectory Selection Name section on the right side of your screen. A series of eight periods will appear in the subdirectory name fields not selected for IML.

What's Next?

You can:

- Change your selections.
- Press PF3 to return to the Media Management Menu and select an option.
- Press PF3 twice to return to the Master Menu. See the "Worksheet and Task Tables" on page 1-4 to locate the information for the procedure you have chosen or to determine the next procedure to perform.

Subdirectory Deletion Procedure

If you are not familiar with Media Management, you may wish to review introductory material and PF keys. This material begins on page 6-2.

Step 1 If you have not previously displayed the Master Menu (Chapter 1), do so now. (If you have the Media Management Menu displayed, go to Step 4.) To display the Master Menu, see "How to Display the Master Menu" on page 1-2 for instructions.

Step 2 On the Master Menu, type 7 after Select ===>.

```
Select===> 7
```

Step 3 Press ENTER.

The Media Management Menu appears on the screen.

```
                    ___ Media Management Menu ___

Select Option; press ENTER

Option     Description

   1       Select/Deselect IML Source
   2       Delete Subdirectory
   3       Display Disk Information
   4       Create Diskette

   Select===> 2

PF: 3=Quit
```

Figure 6-4. Media Management Menu

Step 4 Type 2 after Select ===> and press ENTER.

Step 5 Verify drives.

The following prompt appears on your screen.

```
Available drives: 3 4   Select Drive ===> 3
```

Select drive ===> is defaulted to the first available fixed disk drive installed. A message prompts you to verify the default drive selection.

a. If you do not want to use the default drive selection, type the fixed disk drive number that you want to use after Select drive ===>.

b. Press ENTER.

Step 6 The Subdirectory Deletion panel appears. It lists the subdirectories on the drive you specified.

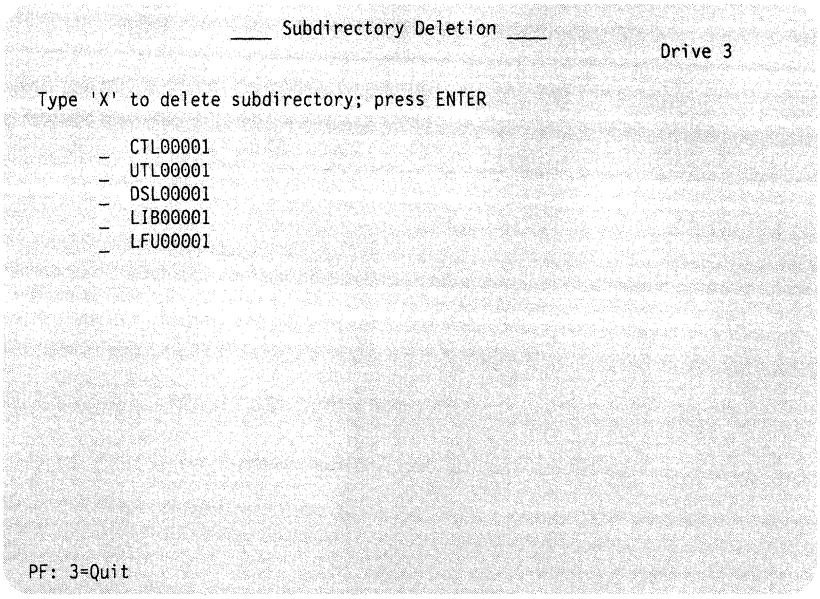


Figure 6-5. Subdirectory Deletion Panel

a. Type an uppercase **X** in the space provided before each subdirectory name you want deleted from the fixed disk.

b. Press ENTER.

   A message displaying the number of subdirectories to be deleted and a request for you to press ENTER appear on the message line near the bottom of your screen. Verify that these are the subdirectories you want deleted.

c. Press ENTER.

   The subdirectories you marked with an **X** are deleted and replaced with a series of eight periods. A message appears on the message line near the bottom of the screen informing you that the deletion is complete.

What's Next?

You can:

- Delete more subdirectories.
- Press PF3 to return to the Media Management Menu and select an option.
- Press PF3 twice to return to the Master Menu. See the "Worksheet and Task Tables" on page 1-4 to locate the information for the procedure you have chosen or to determine the next procedure to perform.

Display Disk Information Procedure

If you are not familiar with Media Management, you may wish to review introductory material and PF key functions. This material begins on page 6-2.

Step 1 If you have not previously displayed the Master Menu (Chapter 1), do so now. (If you have the Media Management Menu displayed, go to Step 4.) To display the Master Menu, see "How to Display the Master Menu" on page 1-2 for instructions.

Step 2 On the Master Menu, type **7** after `Select ===>`.

```
Select===> 7
```

Step 3 Press ENTER.

The Media Management Menu appears on the screen.

```
                ____ Media Management Menu ____

Select Option; press ENTER

Option     Description

   1       Select/Deselect IML Source
   2       Delete Subdirectory
   3       Display Disk Information
   4       Create Diskette

   Select===>  3

PF: 3=Quit
```

Figure 6-6. Media Management Menu

Step 4 Type **3** after `Select ===>` and press ENTER. The Media Management Menu appears on the screen with the available drives prompt displayed.

```
Available drives: 1 2 3 4   Select Drive ===>
```

Step 5 Type in the number of the diskette drive or fixed disk drive after `Select Drive ===>` and press ENTER.

- If you selected diskette drive 1 or 2, the panel shown in Figure 6-7 on page 6-11 is displayed.
- If you selected fixed disk drive 3 or 4, the panel shown in Figure 6-8 on page 6-11 is displayed.

The panels shown here are examples.

Step **6** After viewing the panel, press PF3 to return to the Media Management panel. See "What's Next" on page 6-13.

```
                    ____ Display Disk Information ____
                                                            Drive 2

 Disk        Microcode    Maintenance    Product       Comments
             Level        Level          Name


 UTILITY     A05.00       89200          3174       .......................











PF: 3=Quit
```

Figure 6-7. Example Diskette Information Panel

```
                    ____ Display Disk Information ____
                                                            Drive 3

 Disk        Microcode    Maintenance    Product       Comments
             Level        Level        Name

 LIB00001    ......       .....          3174       Use CSC Utility to view
 CTL00001    B2.00        89200          3174       .......................
 UTL00001    ......       .....          ....       .......................
 LFU00001    B2.00        89200          3174       .......................
 DSL00001    A03.00       .....          3020       .......................
             002.00       .....          3290       .......................
             002.00       .....          3179       .......................
             002.00       .....          3193       .......................







PF: 3=Quit
```

Figure 6-8. Example Fixed Disk Information Panel

Create Diskette Procedure

If you are not familiar with Media Management, you may wish to review introductory material and PF key functions. This material begins on page 6-2.

Step 1 If you have not previously displayed the Master Menu (Chapter 1), do so now. (If the Media Management Menu is displayed, go to Step 4.) To display the Master Menu, see "How to Display the Master Menu" on page 1-2 for instructions.

Step 2 On the Master Menu, type **7** after `Select ===>`.

```
Select===> 7
```

Step 3 Press ENTER.

The Media Management Menu appears on the screen.

```
                ____ Media Management Menu ____

Select Option; press ENTER

Option     Description

   1       Select/Deselect IML Source
   2       Delete Subdirectory
   3       Display Disk Information
   4       Create Diskette

   Select===> 4

PF: 3=Quit
```

Figure 6-9. Media Management Menu

Step 4 Type **4** after `Select ===>` and press ENTER.

The available drives prompt appears at the bottom of the screen.

```
Available drives: Utility ===>   Target ===>
```

If the Target = = = > field is not already completed, choose the drive you wish to be the target.

Step 5 Press ENTER.

The insert diskette prompt appears at the bottom of the screen.

Step 6 Insert the *Target* diskette into the chosen drive, close the drive door, and press ENTER.

The Create Diskette Panel appears.

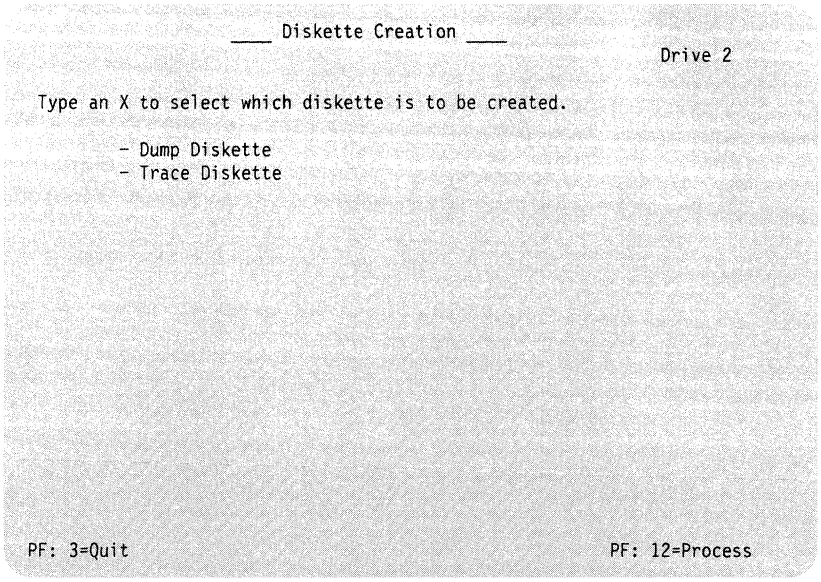


Figure 6-10. Create Diskette Panel

Step 7 Type an X to select the diskette to be created.

Step 8 Press ENTER.

- If there are no errors, a message indicates that responses are correct.
- If there are errors, the highlighted error message is presented in the message area of the screen. Correct any errors according to the displayed error messages. You may need a copy of *3174 Status Codes*, GA27-3832.

Step 9 Press PF12. A message appears at the bottom of the screen when processing is completed.

What's Next?

You can:

- Select another option from the Media Management Menu.
- Press PF3 again to return to the Master Menu. See the "Worksheet and Task Tables" on page 1-4 to locate the information for the procedure you have chosen or to determine the next procedure to perform.

Chapter 7. How to Identify Customizing Keyboards

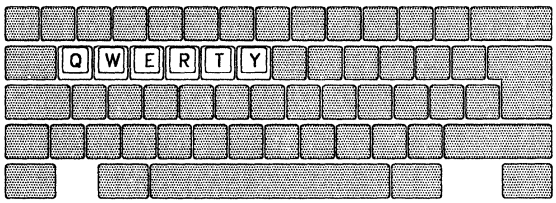
Identifying the Customizing Keyboard

If your keyboard has the QWERTY layout (see the figure), you do not need to select this procedure. If you do not have the QWERTY layout, you need to identify the customizing keyboard when you first customize with a Utility disk and when you recustomize with a Utility disk.

When you first customize with a Utility disk: If the keyboard of the display station being used for customizing is in one of these languages, you must identify it *before* you begin any other customizing procedure:

- Austrian/German
- Belgian
- French, AZERTY
- Italian
- Japanese English
- Japanese Katakana.

The default is a QWERTY keyboard layout, which is available in many languages. On a QWERTY layout, the first six characters on the left side of the top row of alphabetic characters are Q-W-E-R-T-Y. The same naming scheme is also used for other types of layouts, for example, the AZERTY layout.



After you complete the Identify Customizing Keyboard procedure, the customizing keyboard you specify will be supported on that Utility disk for all the other customizing procedures.

When you recustomize with a Utility disk: If you want to change keyboards, or if you do not know what keyboard was used when the Utility disk was previously customized, select the Identify Customizing Keyboard procedure. On the Customizing Keyboard panel, the keyboard layout that is currently identified on the Utility disk is highlighted and the cursor is next to it. If you want, you can select a different type of keyboard layout.

The following terminals can be used as the customizing display station:

- 3178
- 3179 Model 1 operating in native or 3279-emulation mode
- 3180 operating in native or 3278-emulation mode
- 3191
- 3192
- 3194 operating in control unit terminal (CUT) mode
- 3270 Personal Computer with 3278/3279 emulation, operating in CUT mode
- 3278 (except Model 1)
- 3279
- 5550 family operating in CUT mode
- 5578 operating in CUT mode
- 6150 RT Personal Computer
- 6151 RT Personal Computer.

PF Keys for Identify Customizing Keyboard

You call up a specific function of the customizing program by pressing a PF key.

These two PF keys appear on the panel you use during the Identify Customizing Keyboard procedure:

Use the following table to reference Customizing Keyboard PF key functions.

PF Keys:	Function:
PF3	PF3 (Quit) quits the procedure without saving any responses since the last ENTER key was pressed. Then the Master Menu appears on your screen.
PF12	PF12 (Process) processes the options specified during this procedure. **Note:** If you are using a keyboard without PF12, use PA2.

Note: PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

Identify the Customizing Keyboard Procedure

If you have not already done so, you may wish to review the introductory material beginning on page 7-2.

Step 1 Display the Master Menu. (See "How to Display the Master Menu" on page 1-2 for directions.)

Step 2 Type **K** after `Select ===>` and press Enter.

```
Select ===> K
```

The Customize Keyboard panel appears on your screen.

```
                ____ Customizing Keyboard Type ____

Move cursor to desired keyboard type; Press ENTER

    _ Austrian/German

    _ Belgian

    _ French AZERTY

    _ Italian

    _ Japanese English

    _ Japanese Katakana

    _ QWERTY




PF: 3=Quit                              12=Done
```

Figure 7-1. Identify Customizing Keyboard Panel

The cursor is in front of the current keyboard choice, which is highlighted. If no other keyboard type has been specified, the cursor is in front of `QWERTY`, the default selection.

Step 3 Put the cursor in front of the selection you wish to use and press ENTER.

Your selection is highlighted on the screen.

Step 4 Press PF12 to save your input and to return to the Master Menu.

Now that the customizing keyboard has been identified, you can select any customizing procedure on the Master Menu. If you have a customizing utility worksheet, see "The Worksheet Table" on page 1-5. If you have a support utility to perform, see "The Task Table" on page 1-7.

Appendix A. 3174 Controller Overview

Introducing the Utilities

The 3174 utilities provided with the 3174 Establishment Controller allow you to customize and manage the controller microcode. The 3174 microcode must be customized before you can operate the controller. You start all 3174 utilities by loading the 3174 Utility diskette and then selecting the utility you wish to perform from a menu called the Master Menu.

Two types of utilities are available: customizing utilities and support utilities.

Customizing utilities consist of the following:

- Customize the Control Disk
- Central Site Customizing
- Identify Customizing Keyboard.

Support utilities consist of the following:

- Merge DSL
- Copy Files
- Diagnostics
- Microcode Upgrade
- Media Management.

Customizing Utilities

Customize the Control Disk is a utility that you must perform before you can use your 3174 controller. This utility tailors the microcode for each controller and its attached devices and consists of the following procedures:

- Configure
- Define Devices
- Merge RPQs
- Modify Keyboards
- Define AEA.

Central Site Customizing is a utility that allows you to control the customization data for all of your controllers from one central point. Using this utility is described in the *3174 Central Site Customizing User's Guide*, GA27-3868.

Identify Customizing Keyboard allows you to use keyboards with layouts other than QWERTY when you are doing customization utilities.

A detailed description of these utilities is provided in Appendix C, "Customizing Utilities" on page C-1.

Support Utilities

Merge DSL

If your controller has an Asynchronous Emulation Adapter or distributed function terminals attached, Downstream Load (DSL) microcode is required. The adapter and each type of distributed function terminal need their own unique microcode. DSL Merge allows you to merge up to four DSL diskettes onto one DSL diskette or onto a fixed disk. This allows the 3174 to support the Asynchronous Emulation Adapter and multiple types of distributed function terminals. See Chapter 3, "How to Merge DSL Code," for the procedure and a detailed description.

Copy Files
Copy Files allows you to copy complete diskettes or specific files from diskettes onto another diskette or onto a fixed disk. This utility also allows you to copy a complete diskette image from a fixed disk or specific files of a diskette image onto a diskette or another fixed disk.

For new controllers with fixed disks or if a fixed disk feature has just been installed in an existing controller, you must perform this utility before you can use the fixed disk. Copy options include:

- Full Copy
- Modify and Copy
- Copy Customizing Data
- Copy Device Definition
- Copy Patches
- Copy Modified Keyboards
- Copy RPQs.

See Chapter 4, "How to Copy Files," for the procedure and a detailed description.

Diagnostics
This utility allows you to verify the proper operation of the 3174 controller hardware. Diagnostics are used when the controller is first set up. After the controller becomes operational, diagnostics are used to help isolate a problem when controller failures occur. Using the diagnostics is described in *3174 Customer Problem Determination*, GA23-0217.

Microcode Upgrade
Microcode Upgrade allows you to migrate from your current release of 3174 microcode to a newer release. New releases of 3174 microcode are created to support new function, such as a new feature or when improvements to existing microcode releases occur. See "How to Determine Maintenance and Microcode Levels" on page 4-7 for more information.

Media Management
This utility allows you to manage the data on fixed disks after the 3174 diskettes required for your controller have been copied onto a fixed disk.

For new controllers with fixed disks or if a fixed disk feature has just been installed in an existing controller, you must perform this utility before you can use the fixed disk. You may also create dump and trace diskettes from your controller. Media Management Options include:

- Select/Deselect IML Source
- Delete Subdirectory
- Display Disk Information
- Create Diskette.

See Chapter 6, "How to Perform Media Management," for the procedure and a detailed description.

What Microcode Will You Use?

Microcode is a set of instructions the controller uses to operate and perform the utilities. Initially, operational microcode for the 3174 Establishment Controller is supplied or purchased on a diskette. This microcode can be copied from a diskette onto a fixed disk (with the exception of RPQ microcode) as separate diskette images. Diskettes and fixed disks are used to load and store the operational microcode and customization data.

The word "disk" is used as the generic term for the media on which the microcode is stored. A disk can be either a diskette or a fixed disk. You can use several different disks.

3174 Utility Disk: The UTL disk contains the microcode necessary to run various utilities, such as customizing and copying disks for a backup. A diskette containing this microcode arrives with the controller.

3174 Control Disk: Once the CTL disk is customized, it contains the microcode necessary to make the 3174 Establishment Controller operational. After the Control disk has been customized, it contains the 3174 cluster parameters and, if applicable, RPQs, merged with the code. A diskette with this microcode arrives with the controller.

3174 Limited Function Utility Disk: The LFU disk contains the microcode to run diagnostics, copy files, and identify the customizing keyboard. It is used in networks that are under central site control to limit the number of options that can be performed and prevent unauthorized reconfiguration of the controller. A diskette with this microcode arrives with network controllers that are ordered under specify code 9005. (See Appendix E, "Limited Function Utility Disk," for more information.)

RPQ Diskettes: An RPQ (request for price quotation) is an alteration or addition to the functional capabilities the controller provides. An RPQ diskette is requested by a customer and contains the microcode for up to 30 RPQs. You can choose RPQs from the RPQ diskette to merge onto the Control disk for use during operation. You can also delete RPQs from the Control disk. A maximum of 10 RPQs will fit on the Control disk. Some installations may choose to use a number of RPQs; others may not use any.

DSL Disks: The DSL (Downstream Load) disk contains the diagnostics, system bringup code, and microcode for a display station that needs the controller to downstream-load this code to it—for example, the 3290 Information Panel. The DSL disk is also used to load the microcode necessary to support the Asynchronous Emulation Adapter (AEA). You can merge the code from one DSL disk onto another DSL disk. You can have the DSL code for as many as four types of devices, or three types of devices and the AEA, on each DSL disk. If there are no DSL displays in the cluster and you are not configuring for the AEA, you will not need to use a DSL disk.

Library Disk: The LIB disk is used to store customization data for all controllers in a network. This disk is created by using the Central Site Customizing Utility. See the *Central Site Customizing User's Guide* for details.

What Are Microcode Releases?

Periodically, IBM makes available upgraded versions of the Utility and Control diskettes that include new functions, such as the ability to handle a new type of display station. Each upgrade is assigned a microcode release level, for example, Configuration Support B Release 1. A diskette label identifies the microcode release level. You may have to know the microcode level of a diskette when you are using some of the customizing procedures, for example, the Copy and Microcode Upgrade procedures. This information is provided on page 4-7.

Which Display Stations Can You Use?

The following terminals can be used as the customizing display station:

- 3178
- 3179 Model 1 operating in native or 3279-emulation mode
- 3180 operating in native or 3278-emulation mode
- 3191
- 3192
- 3194 operating in control unit terminal (CUT) mode
- 3270 Personal Computer with 3278/3279 emulation, operating in CUT mode
- 3278 (except Model 1)
- 3279
- 5550 family operating in CUT mode
- 5578 operating in CUT mode
- 6150 RT Personal Computer
- 6151 RT Personal Computer.

Front Panel Layout and Diskette Insertion

This section shows the locations of switches, pushbuttons, and diskette drives. It also contains the procedure for inserting diskettes.

Controller Front Panel Layout

Notice the location of the switches and pushbuttons on the front panel of the controller. See Figure A-1, Figure A-2, Figure A-3, Figure A-4 and Figure A-5.

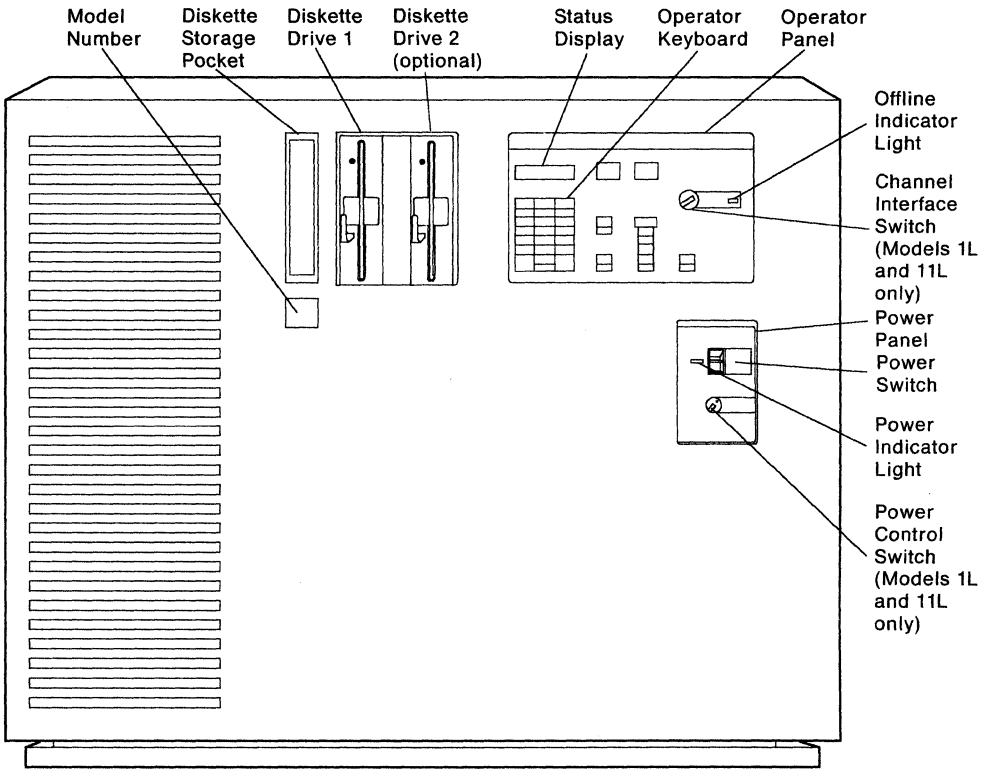


Figure A-1. 3174 Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, and 13R

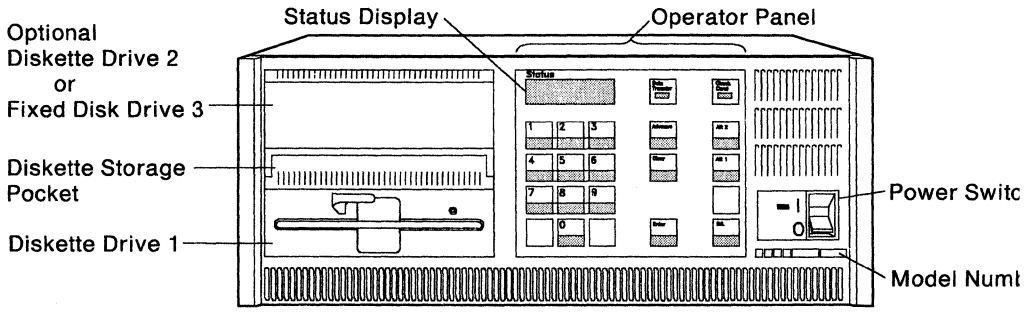


Figure A-2. 3174 Models 51R, 53R, 61R, 62R, and 63R

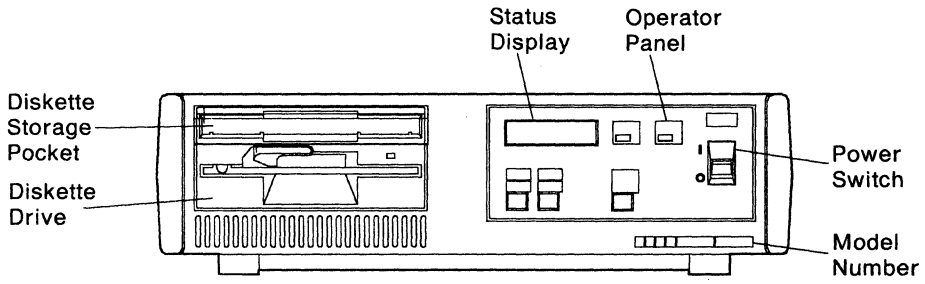


Figure A-3. 3174 Models 91R and 92R

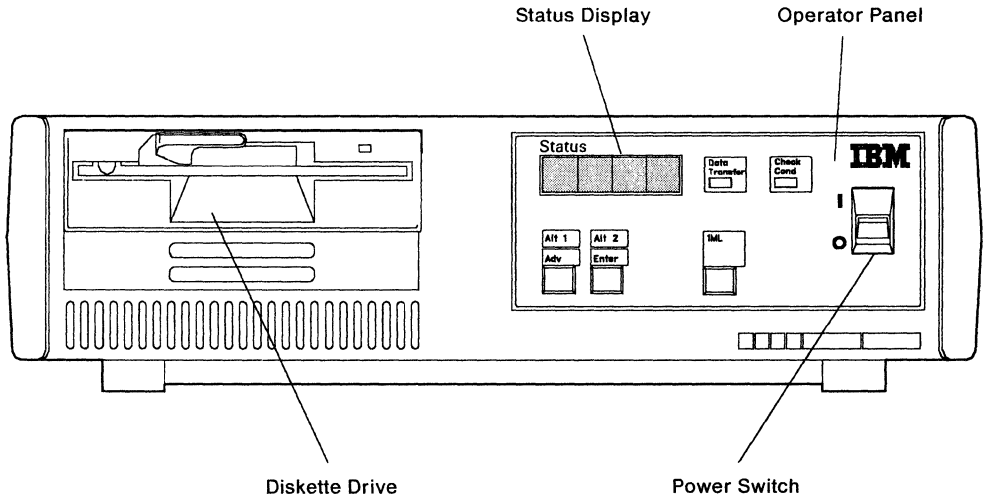


Figure A-4. 3174 Model 90R

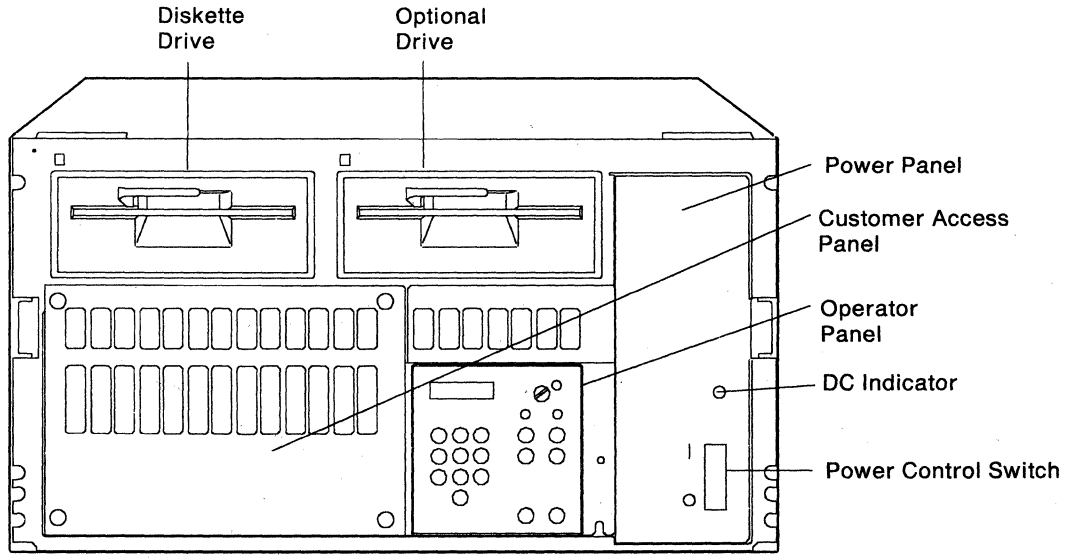
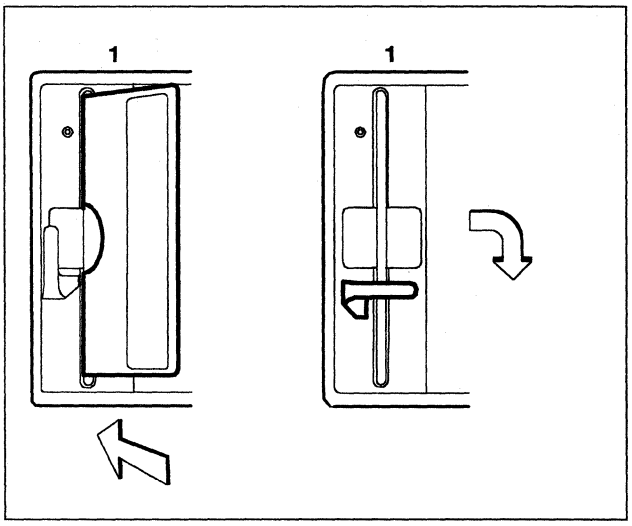


Figure A-5. 3174 Models 21R and 21L

How to Insert Diskettes – Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, 13R, 21L and 21R

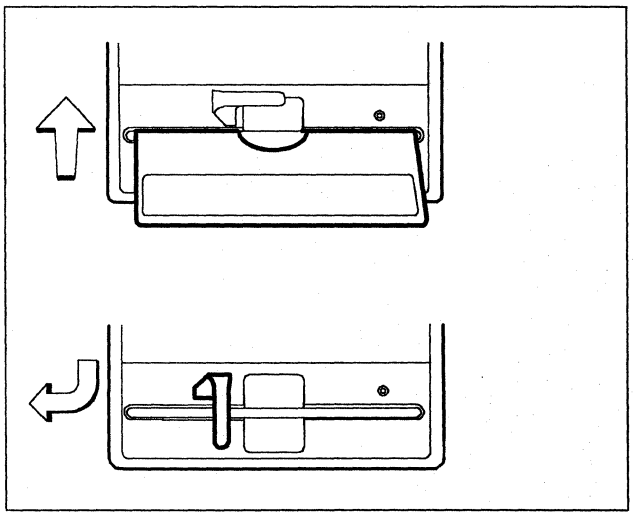
Diskettes for the controller are kept in the storage pocket next to the diskette drive(s).

1. Remove the diskette from its envelope.
2. Turn the drive lever to the up position.
3. Hold the diskette by the label with the label facing to the *left*.
4. Insert the diskette into a drive.
5. Close the drive by turning the lever down.



How to Insert Diskettes – Models 51R, 53R, 61R, 62R, 63R, 90R, 91R, and 92R

1. Remove the diskette from its envelope.
2. Turn the drive lever to the up position.
3. Hold the diskette by the label with the label facing *up*.
4. Insert the diskette into a drive.
5. Close the drive by turning the lever down.



Fixed-Disk Head Park Procedure

Always perform this procedure before you move a 3174. It is used to secure or "park" the fixed-disk head to avoid possible damage to the fixed disk. This should be the last procedure that is done before you turn off the controller.

Step 1 Turn on the controller power switch.

Step 2 Insert a Utility diskette into diskette drive 1.

Step 3 Press and hold Alt 1.

Step 4 Press and release IML.

Step 5 Release Alt 1.

Step 6 When 40 is displayed, type in **80** and press Enter.

Step 7 When 4001 is displayed, type in one of the following:

03 to park the heads on fixed disk 03
04 to park the heads on fixed disk 04.

Step 8 When 2003 or 2004 is displayed, the heads on the fixed disk are parked in a safe area.

Step 9 For any other status code, see the *3174 Status Codes* manual.

Step 10 Turn off the controller power switch.

Appendix B. Keeping Records

Methods of Record-Keeping

There are several methods of record-keeping, including duplicating disks, making local copies of the customizing panels, and making copies of the customizing worksheets. Setting up a record-keeping system now can save you time later. If you do the customizing for dozens—or hundreds—of controllers, it is recommended that you keep several records of the controller customizations, including using the Central Site Customizing procedure. The *Central Site Customizing User's Guide*, GA27-3868, describes that procedure. This chapter explains other 3174 functions designed to assist you with record-keeping.

When there is a problem with the controller, the operator or IBM service representative looks in the controller for a record of the customization. You can store a set of your local copy customization records in your controller. In Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, and 13R, you can store the records in a pocket in the controller door. On the face of Models 51R, 53R, 61R, 62R, and 63R, a diskette storage drawer just above Diskette Drive 1 enables you to store your customization records. For Models 91R, and 92R, store your customization records near the controller.

Local Copy

The local copy function is an easy-to-use tool for keeping records. You can print a copy of each customization panel on your display screen as soon as you have entered your responses and verified them. Then you can organize a set of these customization records in controller serial-number order and keep them together in a binder or in a file drawer. Perform the Local Copy procedure as follows.

Note: Only non-ASCII printers can be used for local copy at customization time.

Step 1 Turn on the printer

You can turn on the printer that you plan to use for local copy either before or after you turn on the controller. For local copy, a default Printer Authorization Matrix (PAM) is in operation and authorizes all printer ports for all displays. Therefore, the first authorized available printer you turn on before or during a customization session can be used for local copies, but only during that session. This printer can be attached to any port other than 26-00.

On the screen of the customizing display station, the printer assignment indicator (Figure B-1 on page B-3) appears in the lower right corner of the screen; *nn* is the printer authorized for local copy. When *nn* is 70, the default PAM selects the printer. You can specify a different printer by using the Print Ident key. (See the documentation that describes the display station you are using to find the Print Ident Key.) The local copy goes to the printer at the port with the lowest number.

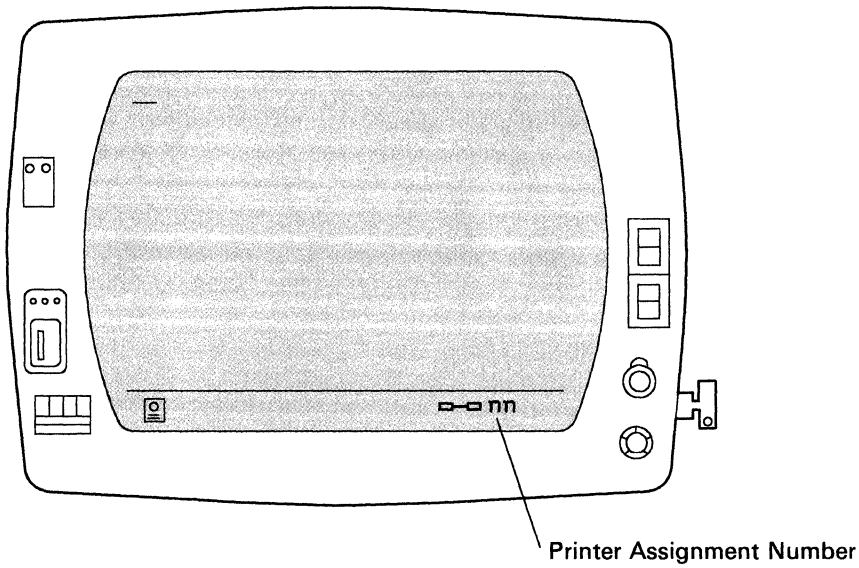


Figure B-1. The Printer Assignment Indicator

Step 2 Request a Local Copy

After you complete a customization panel:

a. Press ENTER to verify your responses.
b. Press the Print key to make a copy of the customization panel that is on the screen.

If you request a second copy while the printer is still busy with your first request, the second copy is queued. If a third copy request is made while the printer is still busy with the first, the Operator Retry indicator is displayed in the operator information area. You will have to wait and then retry the third local copy request.

If you want to stop a local copy after it has been sent but not yet printed, press the Device Cancel key. (See the documentation that describes the display station you are using for this key.)

Step 3 Attach labels to the Printed Copies

Attach labels to the printed copies of the customization panels giving:

- The serial number of the controller. If you use the controller serial number as your response to configuration question 108 (Unique Machine Identifier), you already have a printed record of the serial number.
- The location of the controller.
- The date of the customization.
- The microcode release level.

Using the Copy Procedure to Manage Customization Data

You can manage your customization data or microcode in several ways: by the suggested method of electronic distribution (requires the NetView DM software package), by using the Central Site Customizing Utility (see the *Central Site Customizing User's Guide*, GA27-3868, for more information), or by using the Copy utility and mailing the diskettes. If you use the Copy utility, the 3174 Controller used at the central site requires two disk drives.

If you distribute your customization data on diskettes, there are several situations when you will be concerned with the management of the diskettes in your network. Among these are:

- When controllers are initially installed.

  You have to provide a customized Control diskette for each of the controllers in your network. This means that you perform the procedures described in Chapter 2, "How to Customize the Control Disk."

- When diskettes containing upgraded microcode are received.

  You may need to perform the procedure in Chapter 5, "How to Upgrade Microcode." If you want to provide new enhancements as well, you also have to perform procedures described in Chapter 2, "How to Customize the Control Disk."

- When changes are made to existing configurations.

  You have to perform the Configure procedure in Chapter 2, "How to Customize the Control Disk."

The following method is suggested if you have one or more of the above situations and wish to use the Copy procedure to manage customization data:

Step 1 Prepare a master Control diskette at the central site. If possible, test the master Control diskette by performing a successful IML.

Step 2 Use the Copy utility to make copies for the other 3174 controllers in your network.

Step 3 Use a reusable shipping container to send the customized diskettes to the controller for which they were made. You should enclose a note to the location personnel telling them to insert the diskette, close the diskette drive, and perform an IML on their controller. Also instruct them to return the reusable shipping container, with the old diskettes, to the central site machine location.

Step 4 Maintain a record of the diskettes in your network to show the diskette type and release level, and the date that the diskette was installed.

For additional information on the Copy Files procedures, see Chapter 4, "How to Copy Files."

Duplicate Diskettes

Making a duplicate of each Utility and Control disk is highly recommended. The duplicate disk can be used as a backup for the original disk.

To make a duplicate Utility or Control disk, use the Full Copy or Copy Customizing Data option. The planning and procedural information for these copy options is in Chapter 4, "How to Copy Files."

You should identify any diskette that you duplicate. Affix a label to the upper portion of the diskette. The label identifies the diskette type by name. In addition, you may wish to write a unique designation of your own on the label. For example, you could specifically identify the configuration and 3174 Establishment Controller in which the diskette is to be customized and used.

Appendix C. Customizing Utilities

What Is Customizing?

Customizing consists of tailoring the controller microcode to support the various types of display stations and printers. Customizing identifies the method(s) and protocol(s) of host attachment that a particular controller will provide.

Normally, two diskettes arrive with the 3174 Establishment Controller: a Control diskette and a Utility diskette. (The exception to this is when a controller is ordered using specify code 9005; in this case only a Limited Function Utility diskette accompanies the controller. See Appendix E for a description of the Limited Function Utility disk.) These diskettes contain the microcode necessary to perform routine diagnostic tests before the controller goes into operation and then to direct controller operations. These diskettes can be copied to a fixed disk if they are at a microcode level of B1.0 or higher.

During customizing, you tailor the microcode as required for your particular controller's operations. After the Control disk (diskette or fixed disk) has been customized, you can use it to IML (initial microcode load) the controller, enabling it to communicate with the display stations, printers, and host.

Whenever you customize a Control disk, you need to perform the Configure procedure. In addition, you may need to perform one or more of these optional customizing procedures:

- Merge DSL
- Copy Files
- Microcode Upgrade
- Media Management
- Identify Customizing Keyboard
- Define PAM
- Merge RPQ
- Modify Keyboards
- Define AEA.

How Do You Customize a Control Disk?

To customize the Control disk, you should be familiar with working at a 3270-type display station. You should also have previously prepared configuration worksheets.

Chapter 1, "Getting Started," illustrates how to turn on the controller, perform the Alt 1 IML procedure, and display the Master Menu. Tables help you to determine which of the procedures to choose and where to find them.

To customize the controller, you must load the **Utility** microcode by issuing an Alt 1 IML to the controller. The microcode is loaded from either a diskette or fixed disk. If the controller is to be IMLed from a new unused fixed disk, you must first set up or initialize the fixed disk by performing the procedure in Appendix F, "Initializing the Fixed Disk."

When you turn on the controller and perform the Alt 1 IML procedure, you customize at a "customizing display station" attached to port 26-00 of the controller (see Figure C-1 on page C-3).

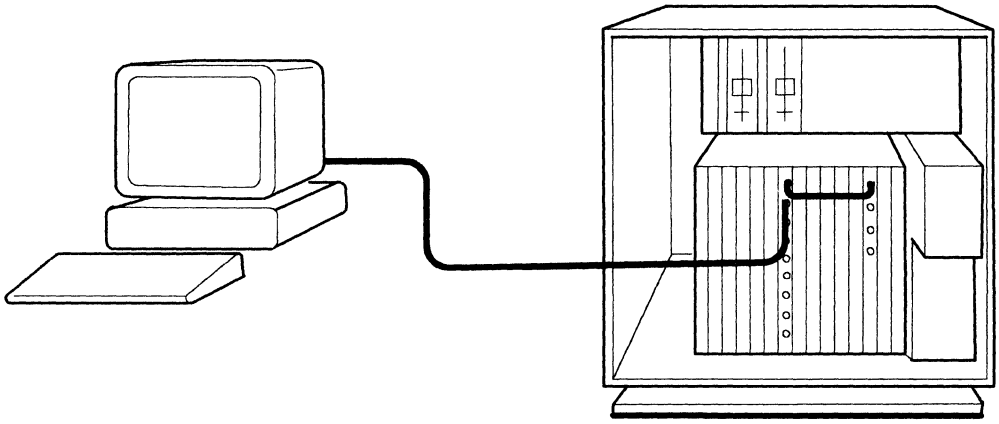


Figure C-1. An Example of a "Customizing Display Station"

As you work, a series of panels appearing on the screen ask you a number of questions. You type in responses to those questions from the Configuration Worksheets. These responses are written onto the Control disk. In Chapters 2 through 7 of this manual, the customizing procedures are described in detail. After a Control disk has been customized, you can reconfigure it if you change the hardware or software configuration.

Only the following display stations can be used as customizing display stations:

- 3178
- 3179 Model 1 operating in native or 3279-emulation mode
- 3180 operating in native or 3278-emulation mode
- 3191
- 3192
- 3194 operating in controller terminal (CUT) mode
- 3270 Personal Computer with 3278/3279 emulation, operating in CUT mode
- 3278 (except Model 1)
- 3279
- 5550 family operating in CUT mode
- 5578 operating in CUT mode
- 6150 RT Personal Computer
- 6151 RT Personal Computer.

The Customizing Panels

After you select a customizing procedure from the Master Menu, various panels for that procedure will appear on the screen of your display station. The panels guide you through the procedure. Though each panel is unique, they all share a common design. The standard panel layout is illustrated in Figure C-2, although all the features illustrated here do not appear on every panel. For example, not all panels display PF keys.

Note: The size of the screen you are using determines how much information you will see. For example, a 3278 Model 2 shows only 24 lines of information, while a 3278 Model 4 displays 43 lines of information.

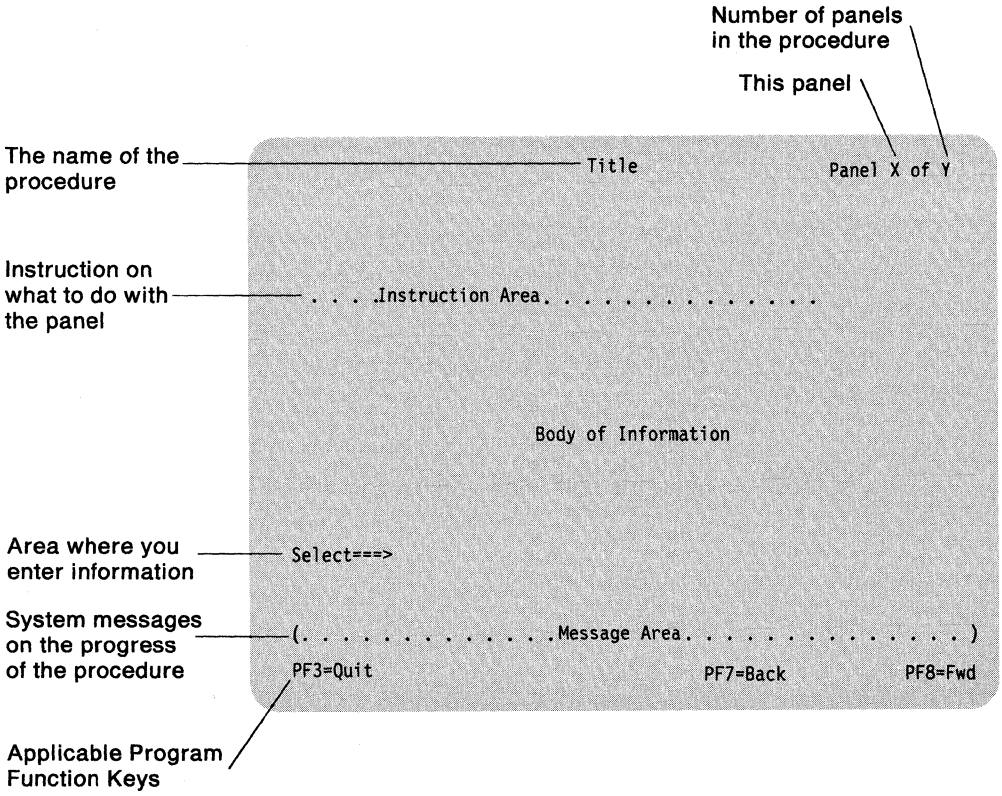


Figure C-2. Standard Panel Layout

Customizing Utility Options

The Customizing Utilities are shown in **bold** type in the following Master Menu (Figure C-3).

```
                    ____ Master Menu ____

          3174 MICROCODE © COPYRIGHT IBM CORP 1986, 1987 1988 1990
Licensed Internal Code

  Select option; press ENTER

   Option   Description
     1      Customize the Control Disk
     2      Merge DSL
     3      Copy Files
     4      Diagnostics
     5      Microcode Upgrade
     6      Central Site Customizing
     7      Media Management
     K      Identify Customizing Keyboard


   Select ===> __
```

Figure C-3. The Master Menu

Option 1: Customize the Control Disk

The Customize the Control Disk (disk or diskette) option allows you to tailor the instructional microcode required for your particular controller's operation.

Some customizing requires that hardware and software configuration information be either specified or modified on the Control disk that will be used to make a 3174 operational; for example, defining host, device, and printer attachments, modifiable-keyboard types, and RPQs.

If you select option 1 on the Master Menu, a panel containing the following customizing options is displayed:

- Option 1: Configure
- Option 2: Define Devices
- Option 3: Merge RPQs
- Option 4: Modify Keyboards
- Option 5: Define AEA.

See "The Customize Control Disk Menu" on page C-7 for a detailed explanation.
See Chapter 2 for the procedures.

Option 7: Central Site Customizing

Central Site Customizing allows you to tailor the controller microcode for each controller in a network at a central location. The tailored microcode can then be sent electronically (if you are using the NetView Distribution Manager software package) or physically (on a diskette) to the various controllers in the network, while a copy of the customization is stored at the central site for future reference. See the *Central Site Customizing User's Guide* for more information.

Option K: Identify Customizing Keyboard

If you need to select this procedure, select it before any other customizing procedure.

During this procedure, you identify on a Utility disk the keyboard of the display you are using to customize. The keyboard you specify is supported on that disk for *all* other customizing procedures *and* any time you recustomize using that disk. Select this procedure if you do not know what keyboard type was used during previous customizing or if you want to change the keyboard type.

If you do not select this procedure the first time a disk is used, you will get the default. The default is a QWERTY[1] layout in one of these keyboards: Typewriter, Data Entry, APL (with APL off), or Text (with Text off). (See the *Character Set Reference* for examples of these QWERTY keyboard layouts.)

If the keyboard is in one of the following languages, you *must* select the Identify Customizing Keyboard procedure the first time that a disk is customized:

- Austrian/German
- Belgian
- French, AZERTY layout
- Italian
- Japanese English
- Japanese Katakana.

See Chapter 7, "How to Identify Customizing Keyboards," for the procedure.

---

1 "QWERTY" keyboards get their name from the first six characters on the top row of alphabetic keys: Q-W-E-R-T-Y. Other types of keyboards get their names in a similar way. On AZERTY keyboards, for instance, the first six characters are A-Z-E-R-T-Y.

The Customize Control Disk Menu

If you select option 1 from the Master Menu, the Customize Control Disk Menu (Figure C-4) is displayed. From it, you can select several customizing utilities. The definitions of the options are described in the following paragraphs.

```
                ____ Customize Control Disk Menu ____

  Select option; press ENTER

Option    Description

  1       Configure

  2       Define Devices

  3       Merge RPQs

  4       Modify Keyboards

  5       Define AEA



  Select ===>

  PF:  3=Quit                                12=File
```

Figure C-4. Customize Control Disk Menu

Option 1: Configure

During this procedure, you type in responses to the numbered questions that describe the configuration of hardware and software. This is the one customizing procedure that *must* be selected whenever you initially customize a Control disk. You also select this procedure when you want to reconfigure or modify some of the responses you entered when you first followed the Configure procedure. Chapter 2, "How to Customize the Control Disk," describes the procedure for configuring and reconfiguring.

Configuration Option Overview

When you select Configure from the Customize Control Disk Menu, a series of panels are displayed, each of which is filled with numbers representing configuration questions. You type in your responses to these questions by referring to the previously prepared Configuration Worksheets. These worksheets are prepared during the *planning* process by a designated planner or yourself using the *3174 Planning Guide* GA27-3862.

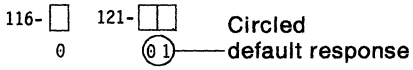
If the worksheets have not been carefully filled out, the function(s) you want may not operate properly. In addition, the controllers must be customized in the offline mode; having to make decisions about customizing at this time could cause the controller to be unavailable for a longer period of time.

When you reconfigure, you also need completed worksheets. Reconfiguring means modifying some of the responses that you entered when you initially configured the

Control disk. The planning information for reconfiguring is in the *3174 Planning Guide* GA27-3862. The procedure used for configuring and reconfiguring is described in this book in Chapter 2, "How to Customize the Control Disk."

Typing in Responses to the Configuration Questions: Many of the configuration questions have default responses displayed in the response field. (The area where you type a response is called the *response field*.) A default response is one that is supplied for you, which you can change or leave unchanged. To enter or change a response, use the tab or cursor movement keys to move your cursor to the question and type over the previous response.

On the worksheet, many response boxes have a default response printed beneath them. The default responses printed on the worksheets match the default responses displayed on your screen.



If a response box is left empty and the default response is circled, leave that default response unchanged on the screen. Some questions on the worksheets have Xs displayed in the response field. For the panel to be valid, you *must* type a response to these questions. (You will receive an error message if you do not.)

Correcting Invalid Responses: Once responses are entered on the customization panels, the customizing program checks the responses before allowing you to continue to the next panel.

If a response is invalid, the question number and the response are highlighted. A four-digit status code and message displayed on the message line explain why the response is invalid. (See *3174 Status Codes*, GA27-3832, for more information.)

If several questions are highlighted, the status code refers to the questions in numeric order, from higher to lower number. In the case of the 117: Port Assignment panel, all invalid responses of the same type (for example, duplicate addresses) are highlighted at once. After you correct one type of response, another type of invalid response is highlighted.

Use the following procedure to correct any invalid responses.

1. Contact the planner or see the *3174 Planning Guide* GA27-3862, for response information.
2. Correct the invalid response to the highest-numbered question or type that is highlighted.
3. Press the ENTER key.

   The status code changes to explain the next invalid response. Continue correcting the responses until none are highlighted.
4. After the ENTER key is pressed, a message indicates when all responses are valid.

Option 2: Define Devices

On the Define Devices panel you define the Printer Authorization Matrix (PAM) and the Logical Terminal Assignment (LTA) data, as well as Extended VPD.

PAM matches (define) the displays to printers for local copy, host copy, or shared copy operations. Select this procedure to define the PAM initially or to change an existing one.

The LTA defines the host address for each host session that is configured for your attached terminals. The *3174 Planning Guide* GA27-3862 contains the necessary planning information. In this book, Chapter 2, "How to Customize the Control Disk," provides instructions for the procedure.

Prompts for Extended VPD present panels with information relating to the controller and each attached device.

Option 3: RPQs

During this procedure, you can select RPQs to be included in the operational IML. This procedure also allows you to delete RPQs. For this procedure, see Chapter 2, "How to Customize the Control Disk."

Option 4: Modify Keyboards

Some display stations have modifiable keyboards that allow you to create keyboard layouts for specific user applications. During this procedure, you define the unique keyboard layouts for these modifiable keyboards. The *3174 Planning Guide* GA27-3862. contains the planning information and Chapter 2, "How to Customize the Control Disk," describes the procedure for modifying keyboards.

Option 5: Define AEA

During this procedure, you enter responses in the input fields of several panels, as well as responding to questions that describe the configuration of hardware and software for both 3270 and ASCII devices. This procedure *must* be selected when you initially customize a Control disk for ASCII devices, but should be performed after the regular configure procedure. You also select this procedure when you want to reconfigure or to modify some of the responses you entered when you first followed the AEA Configure procedure. The *3174 Planning Guide* GA27-3862. contains the planning information you need to read before configuring for the AEA or reconfiguring for it. The *3174 Planning Guide* also contains information on Port Assignment and PAM requirements that must be considered when configuring for the AEA.

Define AEA provides you with three options.

Configure AEA: Select Configure AEA if you want to type in the responses to the numbered questions on the AEA Configure Worksheets 17 through 21.

Define UDT: Define UDT allows you to create a User-defined Terminal definition for an ASCII Terminal Type being attached to the controller. Use worksheets 22 through 24.

Define UDX: Define UDX allows you to create or modify one or more User-Defined Translate Table definitions based on an FPC Translate Table definition.

Appendix D. Interutility and Interconfigure Checking

Overview

During Interutility and Interconfigure Checking you need the completed configuration worksheets. You may also need a copy of *3174 Status Codes*, GA27-3832.

The **Interutility Checking** panel displays the errors that occur because of conflicting responses between the customizing procedures. It informs the customizer of any errors or added procedures that need to be performed by Microcode Upgrade, Customize Control Disk, and Central Site Customizing procedures. For information on the panels displayed and the method used to correct the interutility errors or each of these procedures, see one of the following:

- "Correcting Microcode Upgrade Errors" on page D-4
- "Correcting Customize Control Disk Errors" on page D-6
- For interutility checking of the Central Site Customizing procedure, see the *Central Site Customizing User's Guide*.

The **Interconfigure Error Checking** panel displays the errors made during host configuration. For information on the panels displayed and the method used to correct the **interconfigure errors**, see "Correcting Interconfigure Errors" on page D-8.

PF Keys

The PF keys for the checking programs differ slightly from the PF keys used for the Microcode Upgrade and the Customize Control Disk procedures.

Use the following table to reference Interutility Checking PF key functions.

PF Keys:	Function:
PF7	Pressed during the interutility checking program while the Microcode Upgrade procedure is performed, PF7 (Back) returns the display to the Microcode Upgrade panel, from which the upgrade may be continued or ended. Pressed during the interutility checking program while the Customize Control Disk procedure is performed, this key returns the display to the Customize Control Disk Menu.
PF10	PF10 (Page Back) pages back to the previous interutility checking panel. **Note:** If you are using a keyboard without a PF10 key, use the Cursor Select Key.
PF11	PF11 (Page Forward) pages forward to the next interutility checking panel. **Note:** If you are using a keyboard without a PF11 key, use the PA1 key.
PF12	Pressed during the interutility checking program while the Customize Control Disk procedure is being performed, PF12 (File) files the customizing responses to the Control disk. **Note:** If you are using a keyboard without a PF12, use the PA2 key.

Note: PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

Panel Informational Areas

Each of the panels for the checking programs has areas that provide information: instructions, operational information, and error information. See Figure D-1 for a description of these panel areas.

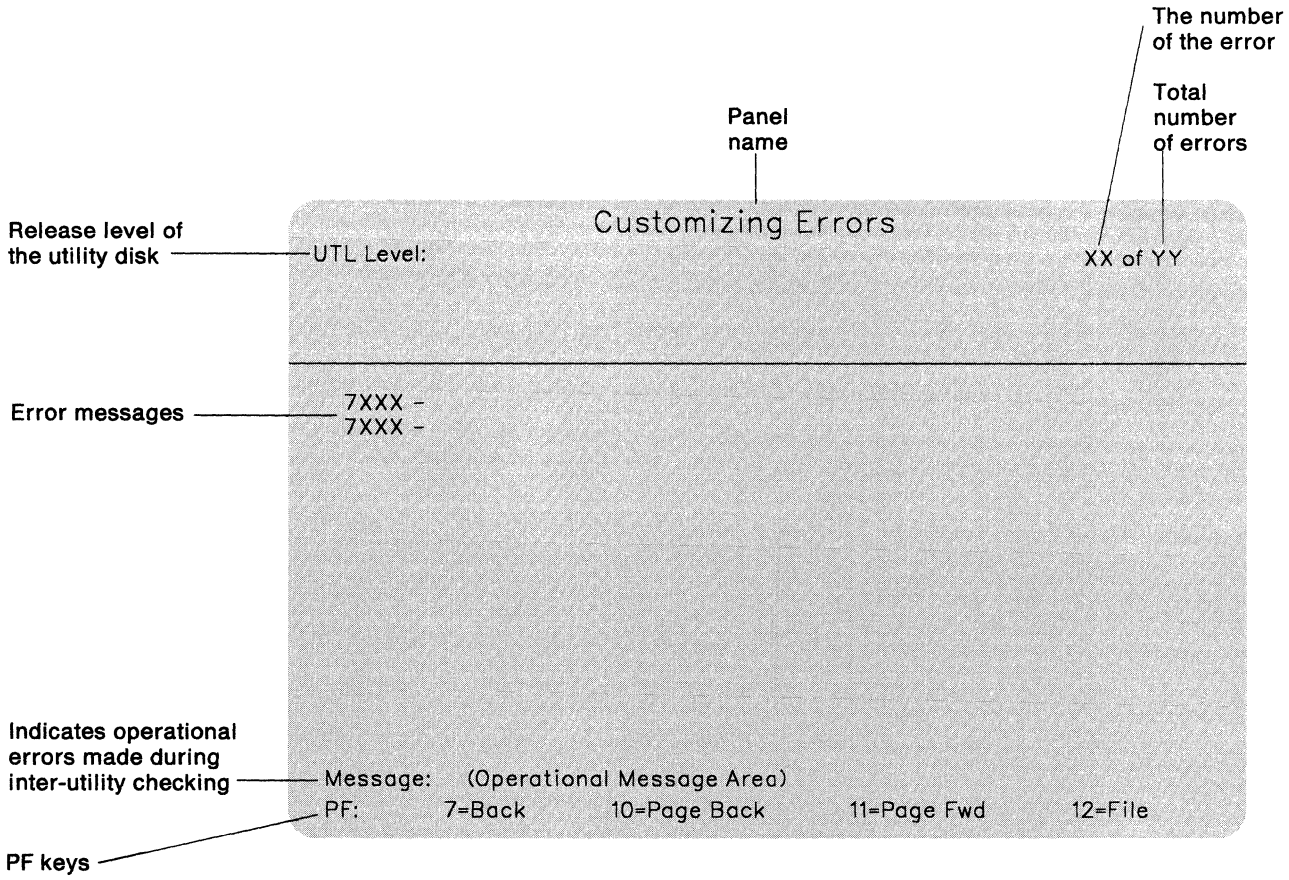


Figure D-1. The Interutility Checking Panel Information Areas

Correcting Microcode Upgrade Errors

After processing of the old disk has started, the interutility checking panel (Figure D-2) may appear with one or more messages displayed if errors occurred or if additional procedures need to be performed. Figure D-1 on page D-3 shows the different informational areas found on the interutility checking panels.

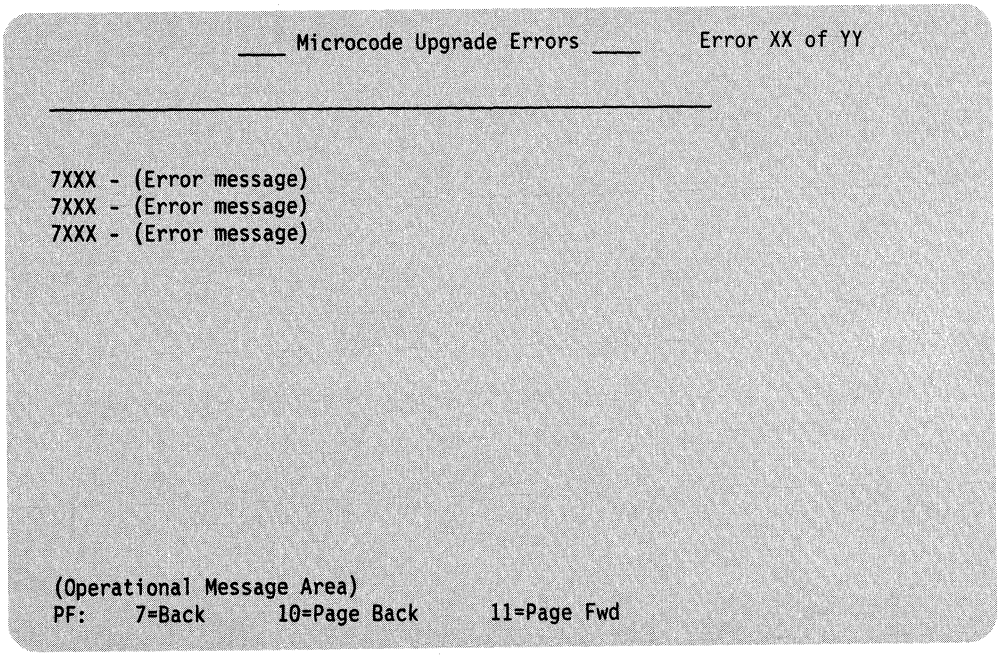


Figure D-2. Microcode Upgrade Errors Panel

Printing a Local Copy of Each Interutility Checking Panel

The errors discovered during the microcode upgrade and informational messages are displayed on the Interutility checking panels. It may be useful to print a local copy of these panels.

Note: Only non-ASCII printers can be used for the local copy at customization time.

Step 1 Turn on a printer attached to the controller.

Step 2 Press the PRINT key.

Step 3 Press the PF11 key to display the next panel, and repeat Step 2 until all the interutility checking panels have been printed.

Completing the Microcode Upgrade

Step 1 Press PF7. The Microcode Upgrade panel is displayed.

Step 2 If you are using a ***diskette drive***, insert the New (or *To*) diskette into the drive and press ENTER. (A message is displayed when the upgrade is complete.)

If you are using a ***fixed disk drive***, press ENTER. (A message is displayed when the upgrade is complete.)

Step 3 Referring to the local copy of the interutility checking panel, correct the errors and perform any additional procedures on the New disk.

Correcting Customize Control Disk Errors

When either PF9 or PF12 is pressed from the Customize the Control Disk Menu, the interutility checking panel (Figure D-3) may appear if errors were made during customizing. Figure D-1 on page D-3 shows the different informational areas found on the interutility checking panels.

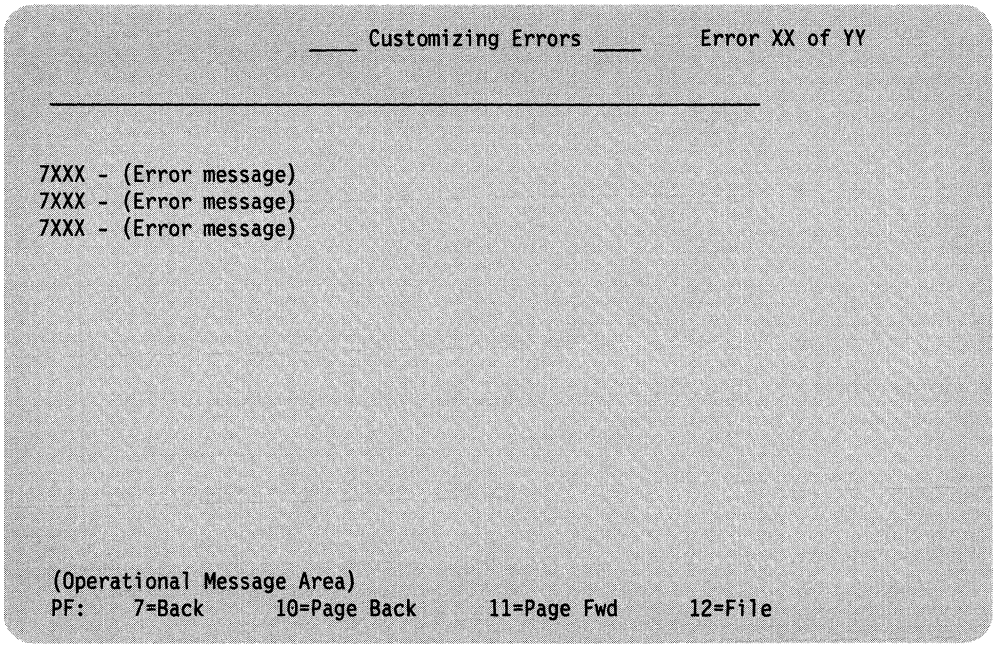


Figure D-3. Customizing Errors Panel

The errors listed may involve one or more procedures. For each procedure, perform the following steps to correct the errors.

Note: If you file the errors on the Control disk, certain controller functions may not work the way that you intend them to.

Printing a Local Copy of Each Interutility Checking Panel

All of the errors discovered during Customizing are displayed on the Interutility checking panels. It may be useful to print a local copy of these panels.

Note: Only non-ASCII printers can be used for the local copy at customization time.

Step 1 Turn on a printer attached to the controller.

Step 2 Press the PRINT key.

Step 3 Press the PF11 key to display the next panel, and repeat Step 2 until all the Interutility checking panels have been printed.

Step 4 Return to the customizing procedure that contains errors.

Step 5 Press PF7. The Customize the Control Disk Menu is displayed.

Step 6 Select the proper procedure from the menu and press ENTER.

Step 7 Referring to the local copy of the interutility checking panel, correct the invalid responses and press ENTER. The interutility checking errors indicate the invalid response(s).

Step 8 If there are more panels in the procedure, press PF11 to advance to the next panel and correct any invalid responses. Press ENTER. (A message indicates whether the changed responses are valid.)

Step 9 When all the errors have been corrected on the panels, press PF12 to file the responses. You will be returned to the Customize the Control Disk Menu. (You may want to press PF9 at this time, to ensure that your responses are valid.)

Step 10 Perform steps 1 through 5 for each procedure listed on the local copy of the interutility checking panel.

Step 11 Press PF12 (Done) to file the responses. If you have corrected all interutility checking errors, pressing PF12 will file the responses on the Control disk. If the interutility checking panel appears again, errors have been detected. Return to Step 1, or file the responses by pressing PF12 again. (You may want to file responses now and recustomize later to correct the errors.)

Correcting Interconfigure Errors

When PF12 is pressed from the Multi-Host Configuration Panel, the interconfigure checking panel (Figure D-4) appears if errors were made during host configuration. Figure D-4 shows the different informational areas found on the interconfigure checking panels.

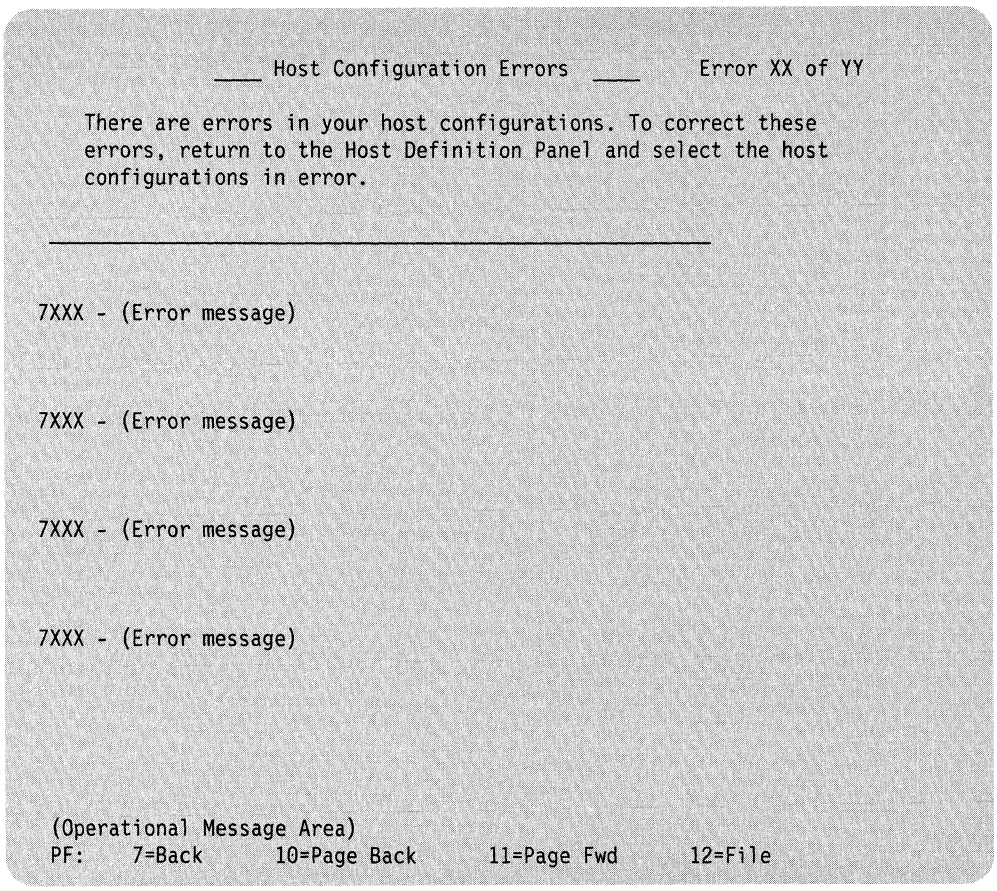


Figure D-4. Customizing Errors Panel

Printing a Local Copy of the Interconfigure Error Panel

All of the errors discovered during Configuring are displayed on the Interconfigure error panels. It may be useful to print a local copy of these panels.

Note: Only non-ASCII printers can be used for the local copy at customization time.

Step 1 Turn on a printer attached to the controller.

Step 2 Press the PRINT key.

Step 3 Press the PF11 key to display the next panel, and repeat Step 2 until all the Interconfigure error panels have been printed.

Step 4 Return to the customizing procedure that contains errors.

Step 5 Press PF7. The Customize the Control Disk Menu is displayed.

Step 6 Select the proper procedure from the menu and press ENTER.

Step 7 Referring to the local copy of the interconfigure error panel, correct the invalid responses and press ENTER. The interconfigure errors indicate the invalid response(s).

Step 8 If there are more panels in the procedure, press PF11 to advance to the next panel and correct any invalid responses. Press ENTER. (A message indicates whether the changed responses are valid.)

Step 9 When all the errors have been corrected on the panel, press PF12 to file the responses. You will be returned to the Customize the Control Disk Menu. (You may want to press PF9 at this time, to ensure that your responses are valid.)

Step 10 Perform steps 1 through 5 for each procedure listed on the local copy of the interutility checking panel.

Step 11 Press PF12 (Done) to file the responses. If you have corrected all interconfigure errors, pressing PF12 will file the responses on the Control disk. If the interconfigure error panel appears again, errors have been detected. Return to Step 1, or file the responses by pressing PF12 again. (You may want to file responses now and recustomize later to correct the errors.)

Appendix E. Limited Function Utility Disk

Limited Function Utility Disk

The Limited Function Utility Disk is used in networks that are under central site control. It is shipped with all of the controllers that are ordered using specify code 9005 (called an *Inhibit Microcode Shipment*). It limits the options that can be performed and prevents the unauthorized reconfiguration of a controller in the network. In a network that uses the Limited Function Utility Disk, all the controllers are configured by the Central Site Controller.

Specify code 9005 would not be used in the order for the Central Site Controller, because that controller will need the Utility and Control disk to perform all of the functions. Instead, the Central Site Controller can be ordered using specify code 9006, which is called the *Central Site Diskette Distribution Aid*.

If you do have the Limited Function Utility disk, the Master Menu will look like the one shown in Figure E-1.

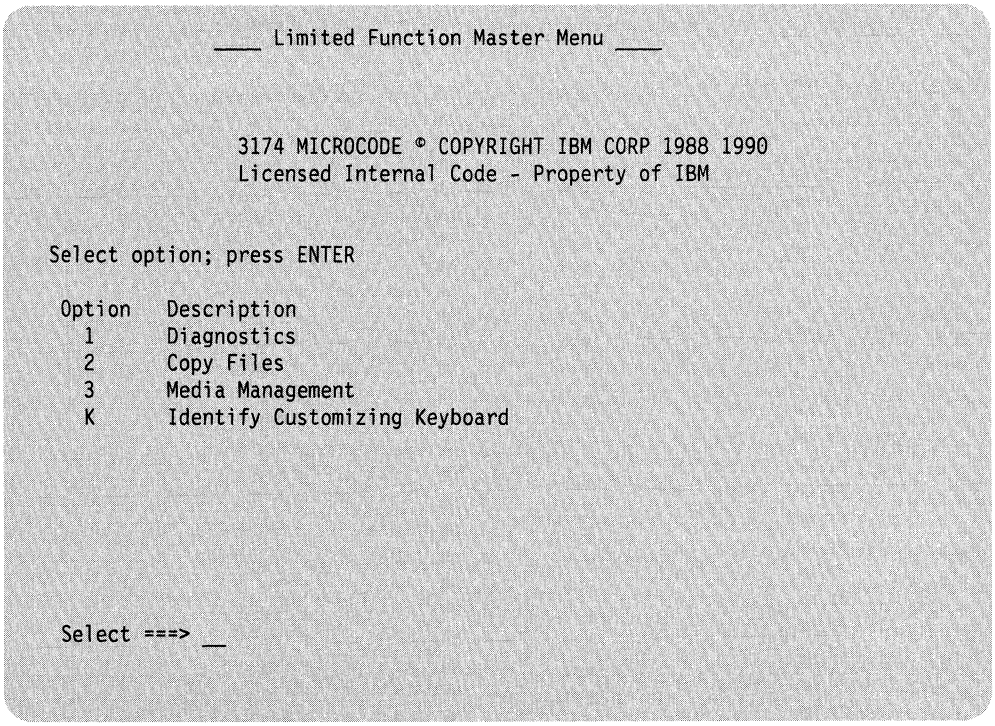


Figure E-1. The Limited Function Utility Master Menu

From it, any of the following can be performed:

- Diagnostics
- Copy Files
- Media Management
- Identify Customizing Keyboard.

With the exception of the Copy option and the option numbers, the procedures are performed in the same way as they would be if you chose them from the Utility Disk Master Menu. The difference that you see when you perform the Copy option is on the Copy Menu. See Figure E-2.

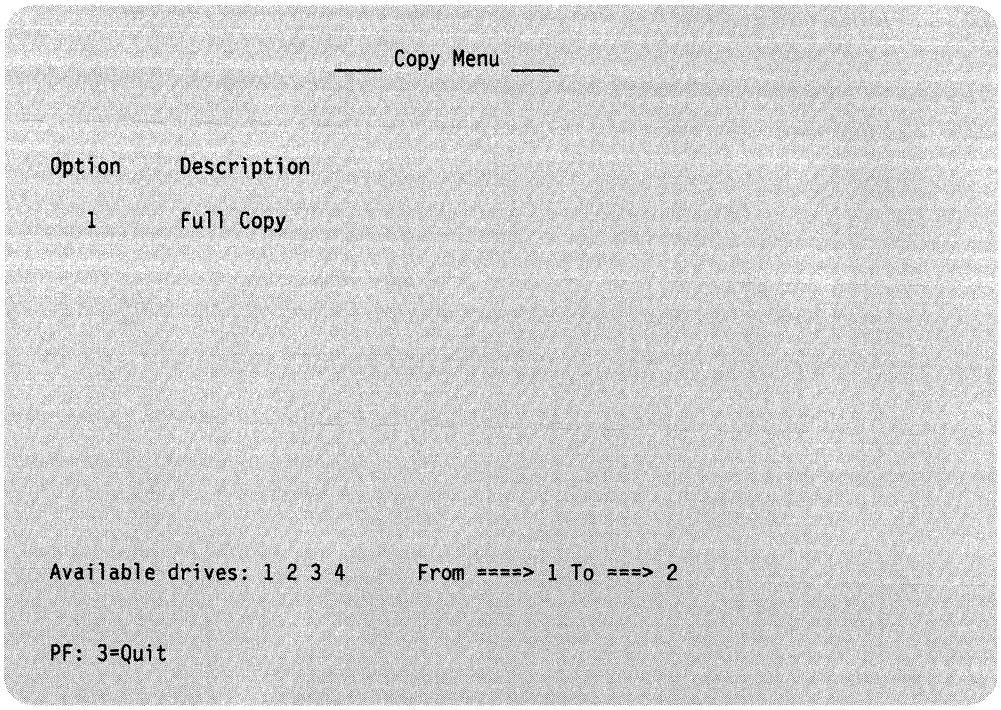


Figure E-2. Limited Function Utility Copy Menu after Option Selection

You are limited to the Full Copy option. However, you will still use the procedure discussed in Chapter 4, "How to Copy Files," to perform this option.

Appendix F. Initializing the Fixed Disk

Initializing the Fixed Disk

In the initializing procedure you:

- Enable the fixed disk
- Copy diskettes to a fixed disk
- Select Source Subdirectories for an Operational IML and an Alternate IML.

Before You Begin

You should have:

- An uninitialized fixed disk
- A Utility Diskette **or** a Limited Function Utility (LFU) diskette
- A Control diskette.

If you also have DSL, or LIB diskettes, it is advisable to copy these diskettes to your fixed disk while in this procedure.

Initializing Procedure

Step 1 If you have not already displayed the Master Menu, do so now. See "How to Display the Master Menu" on page 1-2 for instructions. Use the Utility Diskette path. After you have displayed the Master Menu, return to this procedure and go to Step 2.

Step 2 On the Master Menu, type 4 (Diagnostics) after `Select ===>`.

```
Select ===> 4
```

Step 3 Press ENTER on the keyboard. The Diagnostic Test Menu appears on your screen.

```
                Diagnostic Test Menu

TYPE HG: Press PF8

HG      Description             HG      Description

01      Diskette 1 - 1.2MB      09      Operators Panel
02      Diskette 2 - 1.2MB      16      Channel Adpt
03      Fixed Disk 1 - 20MB     26      Terminal Adpt
04      Fixed Disk 2 - 20MB     31      Token Ring - 4MB
08      Timer
                                80      Test Monitor Functions
                                81      Test All - Setup Mode
                                82      Test All - Installed Mode


Select ===>_
4001

PF:3=Master Menu   8=Fwd
```

Figure F-1. Test Menu

Step 4 Enabling the fixed disk you wish to initialize:

- To enable fixed disk 1, type **0351** after `Select ===>`.
- To enable fixed disk 2, type **0451** after `Select ===>`.

Step 5 Press ENTER. 23xx (xx = a number that decrements to 0) is displayed as the test runs.

- For fixed disk 1, 2003 - Test Passed .... is displayed upon completion.
- For fixed disk 2, 2004 - Test Passed .... is displayed upon completion.

(If another code is displayed, see the *Status Codes* manual.)

Step 6 Press PF3 to return to the Master Menu (this takes a few moments).

You have completed the disk enable section of the procedure. You are ready to begin the copy files section.

Step 7 On the Master Menu, type 3 (Copy Files) after Select ===>.

```
Select ===> 3
```

Step 8 Press ENTER on the keyboard. The Copy Menu appears on your screen.

```
                ____ Copy Menu ____

Option     Description

  1        Full Copy
  2        Modify and Copy
  3        Copy Customizing Data
  4        Copy Define Devices
  5        Copy Patches
  6        Copy Modified Keyboards
  7        Copy RPQs


Select===>

(Message..  Select option; press ENTER)
PF: 3=Quit
```

Figure F-2. Copy Menu (Utility Diskette).

Note: The LFU Copy Menu shows only the Full Copy Option.

Step 9 Type **1** after Select ===>.

Step 10 Press ENTER.

The prompt Available drives appears at the bottom of the screen with the Full Copy option highlighted. Available drives appears in place of Select ===>. What happens next depends on the number of drives available to the controller.

```
Available drives: 1 2 3 4   From ===> 1      To ===> 2
```

The ***available drives*** listed are 1 through 4. The responses for the *From* and *To* drives contain default drive selections. In this example, the default drive selections are 1 and 2 respectively.

If you do not want to use the default drive selections, type in the number(s) of the drive(s) you want to use.

Note: The *From* drive must be a diskette drive (drive 1 or 2). The *To* drive must be a fixed disk drive (drive 3 or 4).

Step 11 Press ENTER. The drives that you selected are highlighted on your screen.

A message to insert the diskette for copying appears on the message line near the bottom of your screen.

Note: If you have a new uninitialized fixed disk, first copy the Control diskette. After you have completed the copy procedure for the Control diskette, perform the procedure for the Utility diskette or the LFU diskette.

Step 12 Insert the *From* diskette you have chosen, close the drive door, and press ENTER.

A message appears at the bottom of the screen.

```
Copying to CTL00001
```

Note: If you are copying the Utility, *Copying to UTL00001* appears.

Upon completion, the following message appears,

```
"Copy Done. Another? Insert Diskette; Press ENTER."
```

Step 13 To copy the Utility Diskette (or LFU Diskette), DSL Diskette, or LIB Diskette to fixed disk insert the chosen diskette into the *From* drive and press ENTER.

Upon each completion, the familiar following message appears,

```
"Copy Done. Another? Insert Diskette; Press ENTER."
```

When you have completed copying the diskettes, continue with Step 14.

Step 14 Press PF3 twice. You will be returned to the Master Menu.

You have completed the copy section of this procedure. You are now ready to begin the third part of the initializing procedure, the IML Source Subdirectory section. In this section you will select two subdirectories, the Control (CTL00001) subdirectory for operational IMLs, and either the Utility (UTL00001) subdirectory **or** the LFU (LFU00001) subdirectory for Alternate IMLs.

Step 15 On the Master Menu, type 7 (Media Management) after Select ===>.

```
Select===> 7
```

Step 16 Press ENTER on the keyboard.

The Media Management Menu appears on your screen.

```
                ____ Media Management Menu ____

Select Option; press ENTER

Option     Description

  1        Select/Deselect IML Source
  2        Delete Subdirectory
  3        Display Disk Information
  4        Create Dump/Trace Diskette

  Select===>

PF: 3=Quit
```

Figure F-3. Media Management Menu displayed

Step 17 Type 1 after Select===>.

Step 18 Press ENTER.

Step 19 Verify drives.

A message on your screen prompts you to verify the default drive selection.. The Select drive ===> value is defaulted to the first available fixed disk drive installed.

```
Available drives:  3  4        Select Drive ===> 3
```

a. If you do not want to use the default drive selection, type the number of the fixed disk drive you want to use after Select drive ===>.

b. Press ENTER.

Step 20 Selecting the IML Source.

The IML Source Selection panel appears on your screen (see Figure F-4) along with the selectable subdirectories on the drive you specified.

Note: If you have a new uninitialized fixed disk, first select the Control subdirectory from the IML Source Selection Panel and complete the steps. Then select the Utility subdirectory or select the LFU subdirectory and complete the steps.

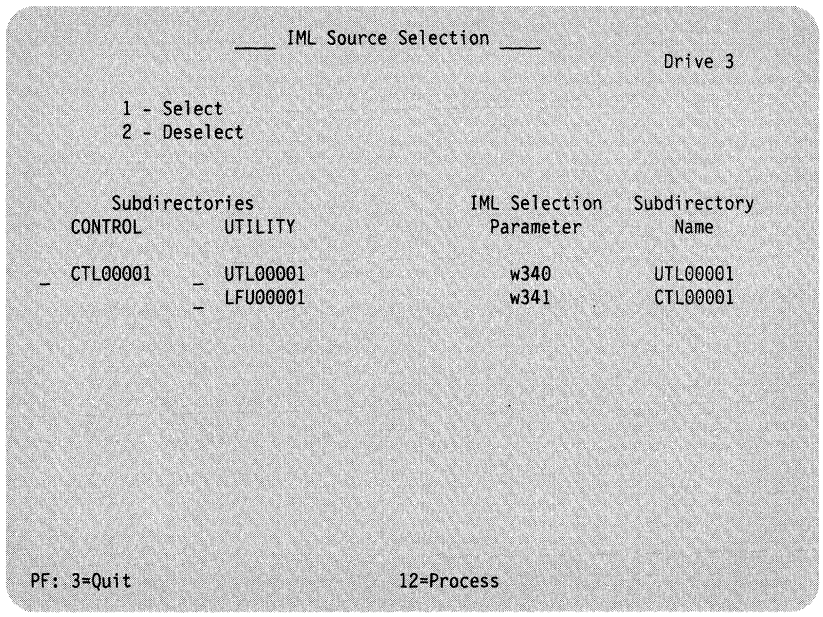


Figure F-4. IML Source Selection Panel

- Type **1** (Select) in the space provided before the subdirectory you want used during an IML.

  Note: Only one subdirectory can be selected at a time. To select the remaining subdirectory, repeat the steps of this procedure.

Step 21 Press ENTER.

- If the responses are valid, a message indicates that all responses are correct and you will be prompted to press PF12.
- If a response is invalid, the response is highlighted. A four-digit status code and message displayed on the message line explain why the response is invalid. (See *3174 Status Codes*, GA27-3832, for a description of the status codes.)

  a. Correct the highlighted response.

  b. Press ENTER. The status code changes to explain any other invalid responses.

  c. Continue correcting responses until none are highlighted. A message indicates that all responses are correct after the ENTER key is pressed.

Step 22 Press PF12 to process.

The responses are saved and the selected subdirectory names appear under the Subdirectory Selection Name section on the right side of your screen. A series of eight periods appears in the subdirectory name fields not selected for IML.

Step 23 To select the remaining subdirectory:

- Press PF3 to return to the Media Management Menu.
- Repeat Step 14 through Step 19.

What's Next?

You have completed Initializing the Fixed Disk. Press PF3 twice to return to the Master Menu.

Chapter 1

If you were directed to this procedure from Chapter 1, return to the "Worksheet and Task Tables" on page 1-4.

List of Abbreviations

A

A. (1) Ampere. (2) Attention.

AEA. Asynchronous Emulation Adapter.

AID. Attention identifier.

Alt. Alternate.

APA. All points addressable.

APL. A Programming Language.

ASCII. American National Standard Code for Information Interchange.

ATTN. Attention.

B

B. Busy.

bps. Bits per second.

BSC. Binary synchronous communication.

C

C. Celsius.

C&D. Cause and diagnostic (codes).

CC. Control check, Chain Command (flag).

CCC. Copy control character.

CCITT. International Telegraph and Telephone Consultative Committee.

CD. (1) Compact disk. (2) Change direction.

CE. (1) IBM Customer Engineer. (2) Correctable error. (3) Channel-end.

CECP. Country extended code page.

CR. (1) Command Reject. (2) Carriage return.

CSCM. Central Site Change Management.

CSCU. Central Site Customizing Utility.

CTL. Control.

CTS. Clear to Send.

CU. Control unit.

CUG. Closed user group.

CUT. Control unit terminal.

D

D. Display.

dec. Decimal.

dev. Device.

DFT. (1) Distributed function terminal.
(2) Diagnostic function test.

DM. (1) Disconnect mode. (2) Distribution Manager

Dsk. Diskette.

DSL. (1) Downstream load. (2) Data set label.

DSR. Data set ready.

DTE. Data terminal equipment.

DTR. Data terminal ready.

E

EBCDIC. Extended binary-coded decimal interchange code.

EOF. End of field.

EOT. End-of-transmission character.

ETX. End of Text.

EX. Exception (response).

F

F. Fahrenheit.

H

hex. Hexadecimal.

I

I. Information (format).

ID. Identification, identifier.

Ident. Identification.

IML. Initial microcode load.

in. Inch (or inches).

I/O. Input/output.

K

k. 1000.

K. 1024.

KB. Kilobyte; 1024 bytes.

L

L. Left.

LFU. Limited Function Utility

LIB. Library

LT. Logical terminal.

LU. Logical unit.

M

m. Meter (or meters).

MAP. Maintenance analysis procedure.

MLT. Multiple Logical Terminals.

modem. Modulator-demodulator.

N

No. Number.

NRZ. Nonreturn to zero.

NRZI. Nonreturn to zero inverted.

NUM. Numeric.

O

OIA. Operator information area.

P

P. Printer, protected.

PA. (1) Program access. (2) Program attention.

PAM. Printer authorization matrix.

PC. Personal Computer.

pF. Picofarad.

PF. Program function.

PS. Programmed symbols.

PU. Physical unit

PVC. Permanent virtual circuit.

R

R. Rear, row, riser.

ROS. Read-only storage.

RPOA. Recognized private operating agency.

RPQ. Request for price quotation.

rt. Right.

RTM. Response Time Monitor.

RTS. Request to send.

S

S. Sequenced (format), side.

SAP. Service access point.

SCS. SNA character string.

SDLC. Synchronous Data Link Control.

SI. Suppress Index.

SNA. Systems Network Architecture.

SNBU. Switched network backup.

SVC. Switched virtual circuit.

T

TA. Terminal adapter.

U

U. Unprotected.

UKPSS. United Kingdom Packet Switched Service.

U.S. United States.

US. Unit separator.

W

WT. World Trade.

X

XOFF. Transmitter off.

XON. Transmitter on.

3270 Information Display System.

Glossary

A

active logical terminal (LT). In MLT, the currently displayed logical terminal. Synonymous with *foreground logical terminal.* Contrast with *background logical terminal.*

adapter. (1) A general term for a device that provides some transitional function between two or more devices. (2) In a local area network, within a communicating device, a circuit card with its associated software that enables the device to communicate over the network.

address. (1) A value that identifies a register, a particular part of storage, a data source, or a data sink. The value is represented by one or more characters. (2) To refer to a device or an item of data by its address. (3) In word processing, the location, identified by an address code, of a specific section of the recording medium or storage. (4) The location in the storage of a computer where data is stored. (5) In data communication, the unique code assigned to each device or work station connected to a network.

AEA port. A communication connector on the Asynchronous Emulation Adapter (AEA).

AEA port set. (1) One or more 3174 ports that support individual AEA station sets; they must have the same port (connection) type and modem type, but different station types. (2) One or more 3174 station sets that have different station types, but the same port type, modem type, and number of default destinations.

AEA station. A 3270 or ASCII display station, printer, or host that communicates through the Asynchronous Emulation Adapter.

AEA station set. (1) One or more AEA stations that have the same attributes, for example, line speed and parity. (2) One or more AEA stations that share the same characteristics of station type, port type, modem type, and default destination.

alert. (1) In the IBM Token-Ring Network Manager, a notification appearing on the bottom line of any panel to indicate an interruption or a potential interruption in the flow of data around the ring. (2) In NetView, a notification about a high-priority event that warrants immediate attention. This data-base record is generated for certain event types that are defined by user-constructed filters.

alternate 1 initial microcode load (Alt 1 IML). The initiating procedure for running specific adapter tests, starting customizing, or doing a normal IML.

American National Standard Code for Information Interchange (ASCII). A standard code, using a coded character set consisting of 7-bit coded characters (8 bits including parity check), used for information interchange among data processing systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphic characters.

asynchronous. (1) Without regular time relationship; unexpected or unpredictable with respect to the execution of program instructions. (2) In asynchronous data transmissions, data characters may be sent or received at any time; no modem clocking is used to establish bit timing.

Asynchronous Emulation Adapter (AEA). In the 3174 Establishment Controller, an adapter that enables an ASCII terminal to communicate with a 3270 host using the 3270 data stream, an ASCII terminal to communicate with an ASCII host through the 3174, and a 3270 terminal to communicate with an ASCII host using data streams, such as the DEC VT100, DEC VT220, Data General D210, or IBM 3101 data streams.

attach. To connect a device logically to a 3174 adapter, so that it can communicate over the network.

attention (ATTN). An occurrence external to an operation that could cause an interruption of the operation.

attention identifier (AID). (1) A code in the inbound 3270 data stream that identifies the source or type of data that follows. (2) A character in a data stream indicating that the user has pressed a key, such as Enter, that requests an action by the system.

attribute. (1) A characteristic. (2) A terminal display language or transformation definition language (TDL) keyword that specifies a particular quality for the TDL object with which it is associated.

autobaud. In the 3174 AEA feature, the process of determining the line speed and parity settings of a connecting display station from a specific sequence of characters (CR . CR) entered from the keyboard. ASCII hosts may also support automatic speed and parity detection, but the character sequence they require may differ.

B

backbone. In a multiple-ring local area network, a high-speed link to which the rings are connected by means of bridges. A backbone may be configured as a bus or as a ring.

background logical terminal (LT). In MLT, any logical terminal that is not currently displayed. Contrast with *active logical terminal (LT)*.

binary synchronous communications (BSC). Data transmission in which character synchronism is controlled by timing signals generated at the sending and receiving stations.

bracket. In SNA, one or more chains of request units (RUs) and their responses, which are exchanged between two LU-LU half-sessions and represent a transaction between them. A bracket must be completed before another bracket can be started. Examples of brackets are data base inquiries/replies, update transactions, and remote job entry output sequences to work stations.

bridge. (1) A functional unit that connects two local area networks (LANs) that use the same logical link control (LLC) procedure but may use different medium access control (MAC) procedures. (2) See also *backbone* and *gateway*.

Note: A bridge connects networks or systems of the same or similar architectures, whereas a gateway connects networks or systems of different architectures.

burst. (1) In data communication, a sequence of signals counted as one unit in accordance with some specific criterion or measure. (2) To separate continuous-form paper into discrete sheets.

C

Central site change management (CSCM). A function of the 3174 microcode that tracks the microcode for each controller in a network and, in conjunction with NetView DM, electronically distributes and retrieves microcode changes for each controller.

Central Site Controller. The controller that contains the central site library for all of the controllers in a network.

central site customizing. The process of tailoring control unit microcode for each controller in a network, at the central site.

central site library. One or more Library disks that contain customizing data and label information for the controllers in a network.

channel-attached. Pertaining to attachment of devices directly by data channels (I/O channels) to a computer. Synonym for *local*. Contrast with *telecommunication-attached*.

character set. (1) A defined collection of characters. (2) A group of characters used for a specific reason, for example, the set of characters a printer can print. (3) The collection of graphic characters required to support a specific language.

Clear to Send (CTS) flow control. A procedure for a communicating device to signal its readiness to receive data by raising the CTS lead on an EIA 232D interface.

cluster. A station that consists of a control unit (a cluster controller) and the terminals attached to it.

code page. An assignment of graphic characters and control function meanings to all code points.

command. An instruction that directs a control unit or device to perform an operation or a set of operations.

command retry. A channel and control unit procedure that causes a command to be retried without requiring an I/O interruption.

communication adapter. (1) A circuit card with associated software that enables a processor, controller, or other device to be connected to a network. (2) See *EIA communication adapter*, *V.35 communication adapter*, and *X.21 communication adapter*.

Concurrent Communication Adapter (CCA). In the 3174 Establishment Controller, a communication adapter that, along with the necessary microcode, provides terminals attached to the 3174 the ability to concurrently access an additional 3270 host.

configuration. The arrangement of a computer system or network as defined by the nature, number, and chief characteristics of its functional units. More specifically, the term *configuration* may refer to a hardware configuration or a software configuration. See also *system configuration*.

Connection Menu. A menu on the screen of a display station attached to the 3174 Establishment Controller, from which a user can select an available host.

Control (CTL) disk. A customized diskette or fixed disk containing the microcode that describes a particular controller's attached terminals, and its method of attachment to the host.

Control (CTL) diskette. A customized diskette containing the microcode that describes a particular controller's attached terminals, and its method of attachment to the host.

controller. A unit that controls input/output operations for one or more devices.

control unit. A general term for any device that provides common functions for other devices or mechanisms. Synonym for controller.

control unit terminal (CUT). A terminal that relies on the 3174 to interpret the data stream. Examples are the 3178, 3179, 3278 Model 2, and 3279 Model S2A.

control unit terminal (CUT) mode. A host-interactive mode that enables an IBM 3270 Personal Computer customized in this mode to run only one session emulating a 3178, 3179, 3278 Model 2, or 3279 Model S2A.

conversion. (1) In programming languages, the transformation between values that represent the same data item but belong to different data types. Information may be lost as a result of conversion because accuracy of data representation varies among different data types. (2) The process of changing from one method of data processing to another or from one data processing system to another. (3) The process of changing from one form of representation to another, for example, to change from decimal representation to binary representation.

copy control character (CCC). A character used in conjunction with the Copy command to specify the type of data to be copied.

country extended code page (CECP). A function of the 3174 microcode that provides for a code page containing additional code points beyond those available with Table 5A code pages. CECP is supported by a universal character set, Character Set 697, which contains 190 characters.

create. In 3174 central site customizing, to create a library member for a network controller, and store the customizing data for that library member on a Library diskette.

cursor. (1) A movable, visible mark used to indicate the position at which the next operation will occur on a display surface. (2) A unique symbol that identifies a character position in a screen display, usually the character position at which the next character to be entered from the keyboard will be displayed.

customization. Procedures that tailor the control unit microcode to fit the various types of display stations and printers and the method of host attachment that a particular control unit will handle.

customizing display station. A display station used to perform the customizing procedures; this display station must be attached to port 26-00 of the controller. Only these display stations can be used for customizing: a 3178, a 3179 Model 1 operating in native or 3279-emulation mode, a 3180 operating in native or 3278-emulation mode, a 3191, a 3192, a 3194 operating in control unit terminal (CUT) mode, a 3270 Personal Computer with 3278/3279 emulation, operating in CUT mode, a 3278 (except Model 1), a 3279, a 5550 family operating in CUT mode, a 6150 RT Personal Computer, and a 6151 RT Personal Computer.

customizing keyboard. A keyboard used to type in the customizing responses; this keyboard must be a Typewriter, Data Entry, APL (with APL off), or Text (with Text off) keyboard with a QWERTY layout. (On a QWERTY layout, the first six characters on the left side of the top row of alphabetic characters are Q, W, E, R, T, Y.)

D

Data Entry keyboard. A keyboard layout designed for data entry applications.

data stream. (1) All data transmitted through a data channel in a single read or write operation. (2) A continuous stream of data elements being transmitted, or intended for transmission, in character or binary-digit form, using a defined format. See also *data stream format*.

data stream format. In SNA, the format of the data elements (end-user data) in the request unit (RU). See also *3270 data stream* and *SNA character string (SCS)*.

data terminal equipment (DTE). That part of a data station that serves as a data source, data sink, or both.

Data Terminal Ready (DTR) flow control. A procedure for a communicating device to signal its readiness to receive data by raising the DTR lead on an EIA 232D interface.

data transfer. The movement, or copying, of data from one location and the storage of the data at another location.

default destination. A destination for display stations and printers that is defined in AEA customization.

default response. A response supplied by the customizing program if a different response is not specified during customization.

destination. Any point or location, such as a node, station, or a particular terminal, to which information is to be sent.

device. A mechanical, electrical, or electronic contrivance with a specific purpose.

diagnostics. Modules or tests used by computer users and service personnel to diagnose hardware problems.

disk. A direct-access data storage medium, which may be either flexible (diskette) or hard (fixed disk).

diskette. A flexible magnetic disk enclosed in a protective container.

diskette drive. The mechanism used to seek, read, and write data on diskettes.

display field. (1) An area in the display buffer that contains a set of characters that can be manipulated or operated upon as a unit. (2) A group of consecutive characters (in the buffer) that starts with an attribute character (defining the characteristics of the field) and contains one or more alphanumeric characters. The field continues to, but does not include, the next attribute character.

display frame. (1) In computer graphics, an area in storage in which a display image can be recorded. (2) In computer micrographics, an area on a microform in which a display image can be recorded.

display station. An input/output device containing a display screen and an attached keyboard that allows a user to send information to or receive information from the system.

distributed function terminal (DFT). A programmable terminal that can perform operations previously performed by the control unit. These terminals can interpret the 3270 data stream themselves. Examples are the IBM 3270 Personal Computer and the 3290 Information Panel.

distributed function terminal (DFT) mode. A host-interactive mode that enables an IBM 3270 Information Display System customized in this mode to run as many as four host sessions. The sessions can emulate a 3178, 3179, 3278 Model 2, or 3279 Model S2A.

downstream. (1) In the direction of data flow or toward the destination of transmission. (2) From the processor toward an attached unit or end user. (3) Contrast with *upstream*.

downstream load (DSL). The capability of a distributed function terminal to receive its control program from the control unit to which it is attached. A diskette containing the terminal's control program is loaded into the control unit.

duplex. Pertaining to communication in which data can be sent and received at the same time. Synonymous with *full duplex*.

E

EIA communication adapter. A communication adapter conforming to EIA standards that can combine and send information on two lines at speeds up to 19.2 kbps.

emulation. (1) The imitation of all or part of one system by another, primarily by hardware, so that the imitating system accepts the same data, executes the same programs, and achieves the same results as the imitated computer system. (2) The use of programming techniques and special machine features to permit a computing system to execute programs written for another system. (3) Imitation; for example, imitation of a computer or device. (4) See *terminal emulation*. (5) Contrast with *simulation*.

enabled. On a local area network, pertaining to an adapter or device that is active, operational, and able to receive frames from the network.

extended binary-coded decimal interchange code (EBCDIC). A coded character set of 256 eight-bit characters.

F

fiber. See *optical fiber*.

fiber optics. The branch of optical technology concerned with the transmission of radiant power through fibers made of transparent materials such as glass, fused silica, and plastic.

Notes:

1. Telecommunication applications of fiber optics use optical fibers. Either a single discrete fiber or a nonspatially aligned fiber bundle may be used for each information channel. Such fibers are often called *optical fibers* to differentiate them from fibers used in noncommunication applications.
2. Various industrial and medical applications use (typically high-loss) flexible fiber bundles in which individual fibers are spatially aligned, permitting optical relay of an image.
3. Some specialized industrial applications use rigid (fused) aligned fiber bundles for image transfer.

Fiber Optic Terminal Adapter (FTA). This adapter allows a 3299 Model 032 to be attached to the 3174 using optical fiber cable.

field. See *display field*.

file. A named set of records stored or processed as a unit.

fixed disk. A rigid magnetic disk used in a fixed disk drive.

fixed disk drive. A disk storage device that reads and writes on rigid magnetic disks.

flow control. (1) In data communication, control of the data transfer rate. (2) In SNA, the process of managing the rate at which data traffic passes between components of the network. The purpose of flow control is to

optimize the rate of flow of message units with minimum congestion in the network, that is, neither to overflow the buffers at the receiver or at intermediate routing nodes nor to leave the receiver waiting for more message units. (3) The methods used to control the flow of information across a network.

foreground logical terminal (LT). Synonym for *active logical terminal (LT).*

frame. (1) The portion of a tape, on a line perpendicular to the reference edge, on which binary characters can be written or read simultaneously. (2) A housing for machine elements. (3) The hardware support structure, covers, and all electrical parts mounted therein that are packaged as one entity for shipping. (4) A formatted display. See *display frame.* (5) The unit of transmission in some local area networks, including the IBM Token-Ring Network and the IBM PC Network. It includes delimiters, control characters, information, and checking characters. On a token-ring network, a frame is created from a token when the token has data appended to it.

from diskette. The diskette that provides the data to be transferred.

from drive. The drive that provides the data to be transferred.

full duplex. Synonym for *duplex.*

function. In NetView DM, a function is the specification of a transmission activity on a resource or group of resources. Functions are grouped into phases. In CSCM, resources are known as data objects.

G

gateway. (1) A functional unit that connects two computer networks of different network architectures.

Note: A gateway connects networks or systems of different architectures. A bridge interconnects networks or systems with the same or similar architectures.

generate. In 3174 central site customizing, to write a Control diskette containing the customizing data for a particular controller. Also, to print a mailing address label and a diskette label for a particular control unit.

get. In 3174 central site customizing, to select the type of data you want and store it in working copy.

H

half-duplex. In data communication, pertaining to transmission in only one direction at a time. Contrast with *duplex.*

hexadecimal. (1) Pertaining to a selection, choice, or condition that has 16 possible values or states. (2) Pertaining to a fixed-radix numeration system, with radix of 16. (3) Pertaining to a numbering system with base of 16; valid numbers use the digits 0 through 9 and characters A through F, where A represents 10 and F represents 15.

host attachment. A mode of SNA communication in which the processor acts as a secondary SNA device.

host logical unit (LU). An SNA logical unit (LU) located in a host processor, for example, an ACF/VTAM application program.

I

initial microcode load (IML). The action of loading the operational microcode.

input/output (I/O). (1) Pertaining to a device whose parts can perform an input process and an output process at the same time. (2) Pertaining to a functional unit or channel involved in an input process, output process, or both, concurrently or not, and to the data involved in such a process. (3) Pertaining to input, output, or both.

interface. (1) A shared boundary between two functional units, defined by functional characteristics, common physical interconnection characteristics, signal characteristics, and other characteristics as appropriate. (2) A shared boundary. An interface may be a hardware component to link two devices or a portion of storage or registers accessed by two or more computer programs. (3) Hardware, software, or both, that links systems, programs, or devices.

K

keyboard definition. A customizing procedure for defining a maximum of four modified keyboard layouts for modifiable keyboards only. Most characters, symbols, and functions can be relocated, duplicated, or deleted from almost any keyboard position.

L

Library disk. A diskette or fixed disk that contains customizing data for some or all of the controllers in a network.

Library (LIB) diskette. A diskette that contains customizing data for some or all of the controllers in a network.

library member. A file located on a Library disk that contains customizing information for a controller in a network.

Limited Function Utility (LFU) diskette. A diskette that contains the microcode to run only a limited number of utilities. These are: Diagnostics, Copy Files, Encrypt/Decrypt Master Key, Identify Customizing Keyboard, and Media Management. The Limited Function Utility diskette is used mainly in networks that are under central site control.

line speed. (1) The rate at which data is transmitted from one point to another over a telecommunication line. (2) The number of binary digits that can be sent over a telecommunication line in 1 second, expressed in bits per second (bps).

link. The logical connection between nodes including the end-to-end link control procedures.

local. Pertaining to a device accessed directly without use of a telecommunication line. Synonym for *channel-attached*. Contrast with *remote*.

location. With reference to a 3174, a place within the 3174 chassis where a particular card or adapter is inserted.

logical terminal (LT). In MLT, one of five sessions available to share one display station.

logical unit (LU). In SNA, a port through which an end user accesses the SNA network in order to communicate with another end user and through which the end user accesses the functions provided by system services control points (SSCPs). An LU can support at least two sessions, one with an SSCP and one with another LU, and may be capable of supporting many sessions with other logical units.

M

main storage. Program-addressable storage from which instructions and other data can be loaded directly into registers for subsequent processing.

maintenance analysis procedure (MAP). A maintenance document that gives an IBM service representative a step-by-step procedure for tracing a symptom to the cause of a failure.

mark. A symbol or symbols that indicate the beginning or the end of a field, a word, an item of data or a set of data such as a file, record, or block.

Master Control diskette. A diskette that contains the base microcode, any necessary patches, RPQs, and modified keyboard tables.

memory. Program-addressable storage from which instructions and other data can be loaded directly into registers for subsequent execution or processing. Synonymous with *main storage*.

microcode. (1) One or more microinstructions. (2) A code, representing the instructions of an instruction set, that is implemented in a part of storage that is not program-addressable. (3) To design, write, and also to test one or more microinstructions.

modem (modulator/demodulator). A device that converts digital data from a computer to an analog signal that can be transmitted on a telecommunication line, and converts the analog signal received to data for the computer.

multidrop (network). A network configuration in which there are one or more intermediate nodes on the path between a central node and an endpoint node.

multi-host support. In the 3174 Establishment Controller, the ability of a terminal to access more than one host at a time.

multiple logical terminal (MLT). In the 3174, a function that provides a CUT-attached, fixed-function display station with the ability to interact with as many as five host sessions. Each session is processed as though it were a separate display station.

N

NetView. A comprehensive network management product that is the basis for central control of both systems for network operations. It supersedes NCCF, NPDA, NLDM, and NPM.

network. (1) An arrangement of nodes and connecting branches. Connections are made between data stations. (2) A configuration of data processing devices and software connected for information interchange.

Network Site Controller. Any SNA-configured controller in a network that is also configured to support central site change management.

O

online test. A diagnostic test or data collection program that is run without interrupting the normal operation of the 3174 and its associated terminals.

operator information area (OIA). The area below the line near the bottom of the display area where graphics and alphanumeric characters are displayed to define the status of the terminal or the system to the operator.

optical fiber. Any filament made of dielectric materials that guides light, regardless of its ability to send signals. See also *fiber optics*.

P

parallel. (1) Pertaining to a process in which all events occur within the same interval of time, each handled by a separate but similar functional unit; for example, the parallel transmission of the bits of a computer word along the lines of an internal bus. (2) Pertaining to concurrent or simultaneous operation of two or more devices or to concurrent performance of two or more activities in a single device. (3) Pertaining to concurrent or simultaneous occurrence of two or more related activities in multiple devices or channels. (4) Pertaining to the simultaneity of two or more processes. (5) Pertaining to the simultaneous processing of the individual parts of a whole, such as the bits of a character and the characters of a word, using separate facilities for the various parts. (6) Contrast with *serial*.

parameter. (1) A variable that is given a constant value for a specified application and that may denote the application. (2) An item in a menu for which the user specifies a value or for which the system provides a value when the menu is interpreted. (3) Data passed between programs or procedures.

parity. (1) A transmission error-checking scheme in which an extra bit is added to some unit of data, usually a byte, in order to make the total number of one bits even or odd. For the AEA feature, odd, even, mark, space, or no-parity coding is supported. No-parity means that no parity bit is sent or expected. Mark and space mean that the parity position is always set to one or zero, respectively, and that received parity is not checked. (2) The state of being either even-numbered or odd-numbered.

password. In computer security, a string of characters known to the computer system and a user, who must specify it to gain full or limited access to a system and to the data stored within it.

path. In a network, a route between any two nodes.

patch panel. A terminating enclosure for connecting cables. See Distribution Panel.

physical unit (PU). In SNA, the component that manages and monitors the resources (such as attached links and adjacent link stations) of a node, as requested by an SSCP through an SSCP-SSCP session.

port. (1) An access point for data entry or exit. (2) A connector on a device to which cables for other devices such as display stations and printers are attached.

printer authorization matrix (PAM). A matrix stored in the controller that establishes printer assignment and classification.

program access (PA) key. On a display device keyboard, a key that produces a call to a program that performs display operations. See also *program function (PF) key*.

program function (PF) key. On a display device keyboard, a key that passes a signal to a program to call for a particular display operation. See also *program access (PA) key*.

programmable symbols (PS). Customer-defined symbols. There are a maximum of 190 symbols in a programmed symbol set.

programmed symbols (PS). In the 3270 Information Display System, an optional feature that stores up to six user-definable, program-loadable character sets of 190 characters each in terminal read/write storage for display or printing by the terminal.

protocol. (1) A set of semantic and syntactic rules that determine the behavior of functional units in achieving communication. (2) In SNA, the meanings of and the sequencing rules for requests and responses used for managing the network, transferring data, and synchronizing the states of network components.

put. In 3174 central site customizing, to store data from the working copy into a library member.

R

remote. Pertaining to a system, program, or device that is accessed through a telecommunication line.

remove. (1) To take an attaching device off a network. (2) To stop an adapter from participating in passing data on a network.

request for price quotation (RPQ). An alteration or addition to the functional capabilities that the controller provides.

response field. On a display device, a specified area on the display space where the user can enter, modify, or erase response data.

Response Time Monitor (RTM). A network management tool that measures and records the transaction times of inbound host attention (AID) operations from display stations that communicate with the host.

ring network. A network configuration where a series of attaching devices are connected by unidirectional transmission links to form a closed path.

S

serial. (1) Pertaining to a process in which all events occur one after the other; for example, serial transmission of the bits of a character according to V24 CCITT protocol. (2) Pertaining to the sequential or consecutive occurrence of two or more related activities in a single device or channel. (3) Pertaining to the sequential processing of the individual parts of a whole, such as the bits of a character or the characters of a word, using the same facilities for successive parts. (4) Contrast with *parallel*.

Service Access Point (SAP). A logical point made available by an adapter where information can be received and transmitted. A single SAP can have many links terminating in it.

session. (1) In network architecture, an association of facilities necessary for establishing, maintaining, and releasing connections for communication between stations. (2) In MLT, synonymous with logical terminal (LT). (3) In SNA, a logical connection between two network addressable units that can be activated, tailored to provide various protocols, and deactivated as requested.

session limit. In 3174, the total number of logical terminals or defined AEA default destinations for an AEA port set.

simulation. (1) The representation of selected characteristics of the behavior of one physical or abstract system by another system. In a digital computer system, simulation is done by software; for example, (a) the representation of physical phenomena by means of operations performed by a computer system, and (b) the representation of operations of a computer system by those of another computer system. (2) Contrast with *emulation*.

SNA character string (SCS). A character string composed of EBCDIC controls, optionally intermixed with end-user data, that is carried within a request/response unit.

station. (1) An input or output point of a system that uses telecommunication facilities; for example, one or more systems, computers, terminals, devices, and associated programs at a particular location that can send or receive data over a telecommunication line. (2) A location in a device at which an operation is performed, for example, a read station. (3) In SNA, a link station.

stop bit. Synonym for *stop signal*.

stop signal. In start-stop transmission, a signal at the end of a character that prepares the receiving device for reception of a subsequent character. Synonymous with *stop bit*.

storage. A unit into which recorded text can be entered, in which it can be retained and processed, and from which it can be retrieved. See also *memory*.

subsystem. A secondary or subordinate system, or programming support, usually capable of operating independently of or asynchronously with a controlling system. The 3174 and its attached terminals are an example of a subsystem.

Suppress Index (SI) order. An order that generates the suppress index character, valid only for the 3288 Model 2 printer. This character inhibits a line index to allow overprinting.

switched line. A telecommunication line in which the connection is established by dialing. Contrast with *nonswitched* line.

Synchronous Data Link Control (SDLC). A discipline conforming to subsets of the Advance Data Communication Control Procedures (ADCCP) of the American National Standards Institute (ANSI) and High-level Data Link Control (HDLC) of the International Organization for Standardization, for managing synchronous, code-transparent, serial-by-bit information transfer over a link connection. Transmission exchanges may be duplex or half-duplex over switched or nonswitched links. The configuration of the link connection may be point-to-point, multipoint, or loop. See also *binary synchronous communication (BSC)*.

system configuration. A process that specifies the devices and programs that form a particular data processing system.

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through, and controlling the configuration and operation of, networks.

T

telecommunication-attached. Pertaining to the attachment of devices by teleprocessing lines to a host processor. Synonym for *remote*. Contrast with *channel-attached*.

terminal. In data communication, a display station or printer capable of sending or receiving information.

terminal adapter (TA). An adapter that provides control for a maximum of 32 terminals; each DPC connector (four in all) on the terminal adapter can control either one terminal that is directly attached or as many as eight terminals that are attached through a terminal multiplexer adapter (located in the 3174) or a 3299 Terminal Multiplexer (located outside the 3174). A 3299 model 032 can also be connect to TA port 0 to control up to 32 terminals.

terminal emulation. The capability of a microcomputer, personal computer, 3270 CUT mode display station, 3270 printer, ASCII display station, or ASCII printer to operate as if it were a particular type of terminal linked to a processing unit and to access data.

terminal multiplexer. A device, such as the 3299 Terminal Multiplexer, for interleaving the signals for many devices onto a single cable.

terminal multiplexer adapter (TMA). This adapter is connected to the terminal adapter in the 3174 and provides control for a maximum of eight terminals.

to diskette. The diskette that receives the transferred data.

to drive. The drive that receives the transferred data.

token. In a local area network, the symbol of authority passed among data stations to indicate the station temporarily in control of the transmission medium.

Note: A token is a particular message or bit pattern that signifies permission to transmit.

token-ring network. (1) A ring network that allows unidirectional data transmission between data stations by a token-passing procedure over one transmission medium so that the transmitted data returns to the transmitting station. (2) A network that uses a ring topology, in which tokens are passed in a circuit from node to node. A node that is ready to send can capture the token and insert data for transmission.

translate table. A table that defines the translation of ASCII to EBCDIC and EBCDIC to ASCII and that allows the use of special characters and nonstandard codes.

type. In the 3174 Establishment Controller, the identifying number of a card. For example, 9150 is the type number of the terminal adapter in the 3174.

U

update. In 3174 central site customizing, to tailor a library member's customizing data, in working copy, and put it back to the library diskette.

upgrade. In 3174 central site customizing, to select a library member and upgrade its data to the microcode level of the Central Site Customizing Procedure diskette.

upstream. (1) In the direction opposite to data flow or toward the source of transmission. (2) Toward the processor from an attached unit or end user. (3) Contrast with *downstream*.

Utility disk. A diskette or fixed disk that contains the microcode necessary to run various utilities, for example, to copy portions of a diskette for a backup diskette.

Utility (UTL) diskette. A diskette that contains the microcode necessary to run various utilities, for example, to copy portions of a diskette for a backup diskette.

V

V.35 communication adapter. A communication adapter that can combine and send information on one line at speeds up to 64 kbps, and conforms to the CCITT V.35 standard.

W

wraparound. The continuation of an operation (for example, a read operation or a cursor movement operation) from the last character position in a buffer to the first character position in the buffer.

write. To make a permanent or transient recording of data in a storage device or on a data medium.

X

X.21. In data communication, a recommendation of the International Telegraph and Telephone Consultative Committee (CCITT) that defines the interface between data terminal equipment and public data networks for digital leases and circuit switched synchronous services.

X.21 communication adapter. A communication adapter that can combine and send information on one line at speeds up to 64 kbps, and that conforms to CCITT X.21 standards.

X.25. In data communication, a recommendation of the CCITT that defines the interface between data terminal equipment and packet switching networks.

3

3270 data stream. (1) The commands, control codes, orders, attributes, and data or structured fields for 3270 devices, that are transmitted inbound to an application program or outbound to a terminal. (2) Data being transferred from or to an allocated primary or tertiary device, or to the host system, as a continuous stream of data and 3270 Information Display System control elements in character form.

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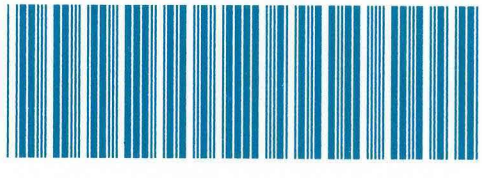

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