DataGeneral

Customer Documentation

Using the Hardware Format Utility:

ECLIPSE MV/1400™ DC, ECLIPSE MV/2000™ DC, and DS/7500-Series Systems

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Notice

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and DS/7500-Series Systems

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Using This Manual

This book explains what the MLTX_FMTR Hardware Format Utility (Format utility) does, what software you need to run it, how to install that software from SCP System Media diskettes or tape, and how to start the Format utility. It also provides step-by-step instructions for using each of the various options.

The person responsible for maintaining reliable cartridge tapes and/or diskettes for your system should read this book before running the MLTX_FMTR Hardware Format Utility. Where appropriate, it divides information and instructions into separate sections addressing each of three Data General operating systems: AOS/VS, DG/RDOS, and DG/UX™.

Before beginning any of the procedures described in this manual, you should be familiar with the material on handling and formatting tapes and diskettes in the Starting and Operating manual that came with your computer. This book further assumes your computer has an AOS/VS, DG/RDOS, or DG/UX operating system installed on disk.

The Organization of This Manual

This manual contains both reference and procedural information, and includes tabbed dividers to help you locate the specific material you want. The outline below provides a suggested reading path and a summary of each chapter.

Chapter 1 – Hardware Formatting Tapes and Diskettes

Lists the computers and options that support the Format utility. Describes hardware formatting and servo writing, how a bad block table works, finding tape and diskette defects, and maintaining tension between cartridge tape reels. Guides you to the appropriate Format utility option for what you want to do.

Read Chapter 1 for background information on functions performed by the Format utility.

Chapter 2 – Preparing Your System to Run the Format Utility

Lists the SCP System Media needed for AOS/VS, DG/RDOS, and DG/UX systems. Identifies the correct ADESL file needed for your operating system, and provides instructions for installing ADESL in your system root directory.

Before starting the Format utility for the first time, refer to Chapter 2 for hardware and software requirements.

Chapter 3 – Starting the Format Utility

Provides step–by–step instructions for entering the Format utility on computers running AOS/VS, DG/RDOS, and DG/UX.

Follow the appropriate instructions in Chapter 3 to start the Format utility.

Chapter 4 – Using the Format Utility Options

Includes step–by–step instructions for executing each Format utility option. Explains how to format diskettes, format tapes, read tapes for defects, view and update a tape bad block table, and renew tape tension.

Refer to the descriptions in Chapter 4 for specific instructions on running each Format utility option.

Appendix A – Installing Power–Up Diagnostics on Disk from SCP System Media

Describes what you need to install power–up diagnostics, and provides step–by–step instructions for installing from tape or diskette media to disks containing AOS/VS, DG/RDOS, or DG/UX systems.

Follow the instructions in Appendix A if power–up diagnostics do not yet reside on your system disk.

Related Documentation

This book assumes you are familiar with the operation and maintenance information in the books listed below for your system.

Starting ECLIPSE MV/1400™ DC Computer Systems (014-0001348)

Setting Up and Maintaining the ECLIPSE MV/1400™ DC System (014-0001347)

Setting Up and Starting Your ECLIPSE MV/2000™ DC or DS/7500-Series System (014-0001213)

You may also need to refer to one or more of the following:

Installing and Operating Coresident Diagnostics on The ECLIPSE MV/2000™ DC Computer and DS/7500 Series Workstations (015-000257). This book also covers installing and operating ADEX diagnostics on ECLIPSE MV/1400™ DC systems.

Starting and Running AOS/VS on ECLIPSE MV/1400™ DC, ECLIPSE MV/2000™ DC and DS/7500-Series Systems (069-000129)

How to Generate and Run AOS/VS (093-000243)

How to Generate and Run DG/RDOS (093-000470)

DG/UX System Administrator Guide (093-701016)

Please Note:

Throughout this book, the MLTX_FMTR Hardware Format Utility is commonly abbreviated to the Format utility.

The ↵ symbol means press the New Line or Carriage Return (CR) key on your system console's keyboard.

The examples in this book use

This typeface to show your entry.

This typeface for system queries and responses.

Contacting Data General

If you have comments on this manual, please use the prepaid Remarks Form that appears after the Index. We want to know what you like and dislike about this manual.

If you need additional manuals, please use the enclosed TIPS order form (USA only) or contact your Data General sales representative.

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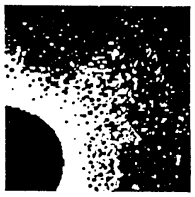


1

Hardware Formatting Tapes and Diskettes

Data General supplies the MLTX_FMTR Hardware Format Utility (Format utility) on all ECLIPSE MV/1400™ DC, ECLIPSE MV/2000™ DC, and DS/7500-Series computer systems. The programs that make up the Format utility occupy reserved diagnostics space on your system disk, and support the following data storage devices:

- 5-1/4 in. 737-Kbyte diskette drive, Model Number 6309
- 21-Mbyte cartridge tape drive, Model Number 6351

NOTE: Some Data General documentation refers to 21-Mbyte cartridge tape as "22-Mbyte cartridge tape," or "floppy tape."

Your computer system cannot use unformatted tapes or diskettes. Unless you purchase tapes and diskettes directly from Data General, you *must* hardware format them before using them.

Depending on how you intend to use your diskettes, you might also need to *software* format them after you complete hardware formatting. Unless you plan to use the DG/RDOS BURST utility, you do not need to software format diskettes used only to store or back up information. However, since software formatting allows you to put a file system on a diskette, it does allow your operating system to load data from the diskette directly into main memory. You can software format diskettes using the following disk formatters supplied with your operating system:

- For AOS/VS systems, use DFMTR
- For DG/RDOS systems, use DKINIT
- For DG/UX™ systems, run **badblock** and **mkfs**

Refer to your operating system manual for more information on software formatting diskettes.

This chapter briefly outlines what hardware formatting does to blank tapes and diskettes, and then describes each of the following Format utility options:

- Format and verify cartridge tape
- Format diskette
- Read and verify cartridge tape
- Display and update cartridge tape bad block table
- Retension cartridge tape

Step-by-step instructions on how to use these options follow in Chapter 4, Using the Format Utility Options.

Hardware Formatting

Hardware formatting prepares tapes and diskettes to accept data by laying down a pattern of reference marks that define the tape or diskette's data storage areas. By also identifying and "mapping out" faulty areas on the medium, formatting prevents data from being written to the "bad" areas, and thus being lost or corrupted. The MLTX_FMTR Hardware Format Utility (Format utility) performs this function on 21-Mbyte cartridge tapes and 5-1/4 in. 737-Kbyte diskettes.

When you execute one of this utility's formatting options, a program writes information to every area of the tape or diskette (the separate options are described in more detail later in this chapter). This writing process destroys any data that existed on the medium before the formatting began. Since formatting destroys any data on a tape or diskette, you should *save any data you do not want to lose on a separate medium before reformatting a tape or diskette.*

As the Format utility writes the format pattern to a cartridge tape, it also reads the data to determine all the areas on the tape that can store information and return it correctly. When the Format utility finds an area that cannot do this, it records the address of the flawed area, called a *bad block*, in a table, and denies your operating system access to that part of the tape. When you use a properly formatted tape, your operating system cannot recognize any flaws. Still, it only writes to or reads from the tested, or "verified," parts of the formatted medium.

Since a block is a relatively small portion of a tape's total storage capacity, the size and content of the bad block table has no visible effect on the speed at which your system reads or writes the media. However, a block specified in the bad block table cannot be used by any program. When a program addresses such a block, the table redirects the program to a "good" block elsewhere on the tape. Thus, any data already written to a block subsequently entered in the bad block table is irretrievably lost.

The Format utility includes options to display and/or add to a cartridge tape's bad block table. Since you cannot retrieve any data stored in a block entered in the bad block table, you should *save any data you do not want to lose on a separate medium before adding blocks to a tape's bad block table.*

Prolonged use, lack of use, or climate variations can cause a cartridge tape to lose the tension between its reels. When this happens, your computer hardware cannot properly read from or write to the tape. To avoid this problem, you should periodically adjust the tension on your cartridge tapes. When you hardware format a tape, the formatting process automatically establishes the proper tape tension. The Format utility also includes an option that renews your cartridge tape's tension without reformatting.

Cartridge tapes require a special identification pattern, called a *servo pattern*, written on them before they can accept *any* other information. Since most cartridge tapes are shipped completely blank (*bulk erased*) from the manufacturer, they require servo writing before you can use them. Even hardware and software formatting information cannot be written to a tape that has not been servo written. If your tape needs the servo pattern written to it, the Format utility automatically invokes a servo-write routine prior to running the utility's format and verify programs.

Format Utility Options

The rest of this chapter describes the Format utility options and how they work. The first two options perform all tasks automatically, and destroy any data on your tape or diskette. The other options perform many of the same tasks, but under your explicit control. Table 1-1 at the end of this chapter summarizes the major functions and properties of the Format utility options.

Format and Verify Cartridge Tape

Depending on the condition of your cartridge tape, it takes 20 to 45 minutes for the "Format and verify cartridge tape" option to perform the following functions:

- Write the servo pattern, if necessary
- Verify the servo pattern
- Write the format pattern and test data
- Verify the format pattern and test data
- Automatically renew cartridge tape tension
- Automatically create a new, updated bad block table

The "Format and verify cartridge tape" option performs all of these functions without your input. Since it begins destroying any pre-existing data on the tape immediately, you should save any data you do not want to lose on a separate medium *before* selecting this option.

You should run this option on all new blank tapes to write the servo pattern and format the tape for use. You should periodically reformat all of your tapes, especially older ones, to ensure their reliability.

You cannot view or alter the bad block table with this option. To display the bad block table created by the Format utility, you need to run the "Display and update the cartridge tape bad block table" option, covered later in this chapter.

If you only need to verify the formatting on your cartridge tape, or if you want to identify bad blocks without destroying data, you might prefer to use the "Read and verify cartridge tape" option covered later in this chapter. Unlike reformatting, reading and verifying your cartridge tape does not automatically destroy any recorded data. It also takes less time than reformatting.

If you only need to renew the tension on your tape, you should use the "Retension cartridge tape" option, which performs that function without destroying any data on your tape.

Format Diskette

The "Format diskette" option is the only choice for diskettes in the Format utility. This option takes about 2 minutes to write a new format on a diskette. You should use the "Format diskette" option if you have any reason to suspect the integrity of a used diskette, such as a series of error messages attributed to device code 64, prolonged non-use, or frequent handling. Since formatting a diskette destroys any pre-existing data on the diskette, you should save any data you do not want to lose on a separate medium *before* selecting this option.

Read and Verify Cartridge Tape

It takes the "Read and verify cartridge tape" option about 10 minutes to check a cartridge tape for defects. When you run this Format utility option, a program attempts to read test data throughout the tape. Since the program cannot read an unformatted tape, it displays an error message if you need to run the "Format and Verify Cartridge Tape" option first.

Unlike the option to completely format tapes, the "Read and verify cartridge tape" option does not write any data to your tape. The program reads what it can *nondestructively* (without overwriting — and destroying — existing data) and then displays a list of defects on your system console. This list provides the physical address of each block that the program had difficulty reading. You have the choice of ignoring a reported defect, entering its address in the bad block table, or using the "Format and verify cartridge tape" option to completely reformat the tape and create a new bad block table.

You should run the "Read and verify cartridge tape" option periodically on older tapes to ensure their reliability. Also, if you have any reason to suspect a tape's performance (such as an increasing number of errors during an operation), this option can confirm or dispel your suspicions without destroying any data. Most new blank tapes require a servo pattern written to them, and thus require you to use the "Format and verify cartridge tape" option in place of "Read and verify cartridge tape."

The list of "defects" reported by this option makes no distinction between marginal errors (which may well be intermittent and harmless) and serious hardware defects. You might want to run this option a second time to confirm a defective area, or copy whatever data you want saved to another medium and run a complete format using the "Format and verify cartridge tape" option. The "Format and verify cartridge tape" option does a more thorough test of your tape's surface area than the "Read and verify cartridge tape" option before declaring a block defective and automatically placing it in the bad block table.

If you decide to place all of the listed addresses in the bad block table, the "Read and verify cartridge tape" option allows you to do so. If you want to place only specific blocks in the table and ignore the other listed blocks, you must use the "Display and Update the Cartridge Tape Bad Block Table" option described later in this chapter. Before you make any new entries in the bad block table, consider that once a block resides in the bad block table, it cannot be retrieved for subsequent use without completely reformatting the tape, and thus any data previously written to that block is irretrievably lost.

The defect list produced by the "Read and verify cartridge tape" option is a full list of those flawed areas discovered while running the option. This list includes all blocks the program found defective, including those that were already entered in the bad block table. However, the defect list produced by this option does not distinguish between blocks previously entered into the bad block table and other flawed blocks found by the program. Since the bad block table might include addresses of blocks this option did *not* find defective (such as erroneous entries or entries of marginal flaws that report only intermittent errors), you cannot assume that the defect list displayed by the "Read and verify cartridge tape" option corresponds exactly to bad block table maintained by your system. You should compare this option's defect list with the "defect list" (the actual bad block table) produced by the "Display and update cartridge tape bad block table" option.

Display and Update the Cartridge Tape Bad Block Table

It takes the Format utility less than 2 minutes to display the current contents of a tape's bad block table. The "Display and update cartridge tape bad block table" option also allows you to enter new addresses into the cartridge tape's bad block table. If you want only to view the bad block table, you can use this option to do so without destroying any data on the tape. If you want to specify new entries into the bad block table, you should save any data you do not want to lose on a separate medium *before* updating the bad block table.

In most cases, you use this option after using the "Read and verify cartridge tape" option, as in the following typical sequence.

1. You suspect a hardware problem on a cartridge tape, and select the "Read and verify cartridge tape" option (described earlier), following the instructions in Chapter 4, Using the Format Utility Options.

2. The "Read and verify cartridge tape" option reports a small number of defects on the cartridge tape (three, for example).

3. You record the track and block addresses from the "Read and verify cartridge tape" option's defect list rather than add them to the bad block table; then make sure you have a reliable copy of any data on the tape you want saved.

4. After returning to the Format Utility Main Menu, you select the "Display and update cartridge tape bad block table" option. This option reveals that two of the three defects reported by the "Read and verify cartridge tape" option already reside in the bad block table.

5. You add the third block address to the bad block table using the "Display and update the cartridge tape bad block table" option. (See the instructions in Chapter 4, Using the Format Utility Options.) You then write new data or rewrite the old data to the tape.

Ideally, the list of defects displayed by the "Read and verify cartridge tape" option and the bad block table displayed by the "Display and update cartridge tape bad block table" option coincide exactly. If the two "defect lists" are the same, any data written to the tape since the last update of the table will not have been corrupted or destroyed due to a faulty tape.

You can also use the option to display and update a tape's bad block table, in conjunction with the "Format and verify cartridge tape" option, to see how many bad blocks the Format utility found on your tape. If, for example, the "Format and verify cartridge tape" option took significantly longer than 20 minutes to format a tape that wasn't completely blank, you should suspect a large number of tape defects. Remember that placing a block in the bad block table does not repair the defect, but merely makes it inaccessible to any program. If the "Display and update the cartridge tape bad block table" option reports that the Format utility automatically placed close to 30 blocks in the table, you should consider the tape unreliable and discard it.

Unless the "Format and verify cartridge tape" option simply cannot servo write or format your tape, individual circumstances and requirements determine the tape's reliability. Each cartridge tape's bad block table can hold a maximum of 30 entries. A large bad block table need not indicate an unreliable tape if subsequent runs of the "Read and verify cartridge tape" option show the same number and location of defects. However, an unstable or growing defect list, regardless of size, may indicate that the tape is deteriorating.

Retension Cartridge Tape

It takes less than 2 minutes for the "Retension cartridge tape" option to run a tape from reel to reel. This simple process has no effect on the tape's contents, but maintains or re-establishes the proper level of tape tension between the reels.

For the tape drive to read data from the tape accurately, you should renew the tension of all new tapes, tapes subjected to climate variations, or those that have not been used for some time (2 months as a general rule).

If you plan to format a tape before using it, you do not need to adjust the tension first, since the "Format and verify cartridge tape" option adjusts the tape automatically.

Summary of Format Utility Options

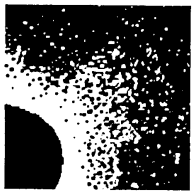
Figure 1–1 summarizes the the major functions and properties of the Format utility options as described in this chapter.

```
Format Utility Main Menu

1       Exit the Format Utility
2       Format and verify cartridge tape
3       Format diskette
4       Read and verify cartridge tape
5       Display and update cartridge tape bad block table
6       Retension cartridge tape

Enter choice:
```

Menu Option	Functions	Runtime
1 – Exit the Format Utility	Exits Format Utility Preserves data	—
2 – Format and verify cartridge tape	Writes tape format pattern Writes tape servo pattern Creates tape bad block table Identifies tape defect areas Adjusts tape tension Destroys data automatically	20 to 45 minutes
3 – Format diskette	Hardware formats diskette Destroys data automatically	3 minutes
4 – Read and verify cartridge tape	Identifies tape defect areas Displays tape defect areas Adds to tape bad block table Destroys data optionally	10 minutes
5 – Display and update cartridge tape bad block table	Displays tape bad block table Adds to tape bad block table Destroys data optionally	1 minute
6 – Retension cartridge tape	Adjusts tape tension Preserves data	2 minutes

Figure 1–1 Summary of Format Utility Options

End of Chapter



2

Preparing Your System to Run the Format Utility

This chapter describes what you need to load and run the MLTX_FMTR Hardware Format Utility (Format utility) on AOS/VS, DG/RDOS, or DG/UX™ systems. It also tells you how to load the necessary files on your system. The first section lists the conditions and files you need, and describes how to identify those files included in your SCP System Media tape or diskettes. The second section consists of step-by-step instructions for installing one of the required files, named *ADESL*, in your operating system's root directory.

Format Utility Prerequisites

Your current SCP System Media tape or diskettes contain the Format utility and all the files you need to run it. Most of these files come already installed on your computer unit's AOS/VS system disk. If you purchased the optional Advanced Diagnostic EXecutive (ADEX), the Format utility resides within the ADEX diagnostics, and is automatically included when you install that option (see *Installing and Operating Coresident Diagnostics on the ECLIPSE MV/2000™ DC Computer and DS/7000 Series Workstations.*)

You must install the file ADESL in the root directory of your system disk regardless of the options or operating system you have on your system. ADESL is the only file required to run the Format utility that is *not* already installed on AOS/VS systems. If you are preparing to run the Format utility from an AOS/VS system disk, you can turn now to the next section of this chapter, "Installing ADESL in Your System Root Directory." Then identify the appropriate tape or diskette containing ADESL shown in Figure 2-1, and follow the instructions to install ADESL in your AOS/VS root directory.

If you are preparing a DG/RDOS system disk, a DG/UX system disk, an AOS/VS system disk other than the one originally shipped with the system, or if you are rebuilding an AOS/VS system disk, you need all of the following before attempting to run the Format utility:

1. A fully formatted hard disk with coresident diagnostics area reserved

2. Your operating system completely installed on the above disk

3. The file ADESL installed in your operating system root directory

4. The contents of the current SCP System Media, including power-up diagnostics and microcode, installed on the system disk

If your system does not meet requirements 1 and 2 yet, refer to your operating system manual for instructions on building a new system disk.

To avoid complications later on, you should install the ADESL file before installing power-up diagnostics from the SCP System Media tape or diskette on the system disk. Your root directory must contain the ADESL file before you can install the optional ADEX diagnostic system.

Figure 2-1, at the end of this chapter, identifies the SCP System Media tape or diskette containing the ADESL file compatible with your computer and operating system. Note that SCP System Media cartridge tapes contain ADESL files for more than one operating system. You receive only one ADESL diskette, the one for the operating system you ordered.

The power-up diagnostics contained on your current SCP System Media include the Format utility and, with the exception of the ADESL file, all the files your system needs to run the utility from your system disk. For the Format utility to work, these files must be installed on your system disk in the area reserved for diagnostics. The file ADESL provides access to the utility by linking these *coresident diagnostics* (since they reside on the same disk as your operating system) to your operating system.

The AOS/VS system disk shipped with your computer unit from Data General already includes the contents of your SCP System Media on the correct part of the disk. On *all other* system disks, you must install the power-up diagnostics from the SCP System Media tape or diskette on the disk yourself before you can run the Format utility. (Figure A-1 in Appendix A of this manual describes the labels identifying the correct SCP System Media for the different computers. Appendix A also provides step-by-step instructions for installing power-up diagnostics from SCP System Media on AOS/VS, DG/RDOS, and DG/UX system disks.)

NOTE: If your system completes power-up testing when you power it up without the SCP System Media in its tape or diskette drive, your power-up diagnostics are already installed on the hard disk.

Once you have identified the proper tape or diskette for your system, you should read the Release Notice that came with the SCP System Media. Then, if necessary, you can install the ADESL file and/or power-up diagnostics on your system disk.

The rest of this chapter tells you how to install the ADESL file in the root directory of your operating system. Instructions on how to install the contents of your SCP System Media on disk appear in Appendix A.

When the ADESL file and the proper power-up diagnostics both reside on disk, you can run the Format utility. Chapter 3, Starting the Format Utility, tells you how to enter the Format utility. Chapter 4, Using the Format Utility Options, explains how to perform the various functions.

Installing the ADESL File in Your System Root Directory

The Format Utility cannot work unless the file ADESL resides in your operating system's root directory. You received a tape or diskette containing this file with the SCP System Media accompanying your computer.

Whether you use AOS/VS, DG/RDOS or DG/UX, you should install ADESL in your root directory as soon as possible. If you are building a new system disk, you should install ADESL *before* installing the contents of your SCP System Media tape or diskette on the hard disk. In any case, check your system for ADESL before attempting to install or use the Format utility.

You can easily check your system for the ADESL file. From your operating system command line, simply move into your root (master) directory and view the files it contains, as shown below:

AOS/VS Systems	DG/RDOS Systems	DG/UX Systems
)SUPERUSER ON ↵	R	$ cd / ↵
*)DIR : ↵	DIR %MDIR% ↵	$ ls ↵
*)F/S ↵	R	
	LIST/S ↵	

If the list displayed on your screen includes the ADESL file, you do not need to continue with the procedures in this section unless specifically directed to do so by the Release Notice accompanying a new ADESL revision.

If the ADESL file does *not* currently reside in your system's root directory, follow the steps in the subsection below that apply to your operating system and the type of medium you want to use.

Installing ADESL on AOS/VS Systems

You install the file ADESL much as you would any other system software file. The following procedure assumes AOS/VS is currently running on your system, and that you are located on the CLI command line.

1. Find the tape or diskette containing the ADESL file for your operating system as defined in Figure 2–1 at the end of this chapter, or in the Release Notice issued with your SCP System Media.

2. Insert the tape or diskette containing the ADESL file in the appropriate drive.

3. Move into the AOS/VS root directory, as shown below:

)DIR : ↵

4. Enter the command below that corresponds to your ADESL medium.

   For diskette enter

   load/v/del/nacl @DPJ10 ↵

   For cartridge tape enter

   load/v/del/nacl/Buff=8192 @MTJ0:1 ↵

   When it's finished, your system displays the following message:

   dd–mmm–yy hh:mm:ss
   ADESL

5. Remove the ADESL tape or diskette from its drive.

If you just added the ADESL file to the original AOS/VS system disk shipped with your system, your computer system is now fully prepared to run the Format utility.

If your system disk does not yet contain the power–up diagnostics included on your SCP System Media, follow the directions in Appendix A for installing power–up diagnostics on your system disk.

If you are building a new AOS/VS system disk from SCP System Media labeled MV/1400DC REV 2.00 or later, or MV/2000 and DS/7500 system media rev 3.00 or later, and have already installed those power-up diagnostics on the system disk, your system is now fully prepared to run the Format utility.

If you installed power-up diagnostics from an earlier version of SCP System Media, perform the steps that follow *before* attempting to use the Format utility or ADEX diagnostics.

1. Locate already hardware-formatted scratch media for each of your machine's cartridge tape or diskette drives. (Scratch media can be any spare or unimportant tapes or diskettes; media purchased directly from Data General is always hardware-formatted.)

2. Shut down your system completely, turning power *off,* and then *on* again.

3. Proceed through the normal power-up sequence to the Operating System Load Menu.

4. From the Operating System Load Menu, select option 2, "Enter the Technical Maintenance Menu."

5. Insert hardware-formatted scratch media into the tape and diskette drive(s).

6. From the Technical Maintenance Menu, select option 5, "Run Diagnostics."

7. Answer the question

   Are you sure you want to boot diagnostics?[N]

   by pressing **Y** and New Line.

Your system brings up the ADESL file for the first time, creating a diagnostics equipment table. When this process finishes, either the the Format Utility Main Menu or the ADEX Inventory List appears on your system console. From the Format utility menu, you can use the options as described in Chapter 4 or exit into the normal power-up sequence. From the ADEX Inventory List, you can proceed to start the Format utility as described in Chapter 3.

Installing the ADESL File on DG/RDOS Systems

You install the file ADESL much as you would any other system software file. The following procedure assumes DG/RDOS is currently running on your system, and that you are located on the CLI command line.

1. Find the tape or diskette containing the ADESL file for your operating system as defined in Figure 2–1 at the end of this chapter, or in the Release Notice issued with your SCP System Media.

2. Insert the tape or diskette containing the ADESL file in the appropriate drive.

3. Move into the DG/RDOS root directory, as shown below:

   R
   DIR %MDIR% ↵

4. Enter the command below that corresponds to your ADESL medium.

   For diskette enter

   imove/a/f/v floppy1/f da4 adesl.sv ↵

   For cartridge tape enter

   imove/t/v/f ut0:2 ↵

   When it's finished, your system verifies that it entered your file.

5. Remove the ADESL tape or diskette from its drive.

If your system disk does not yet contain the power-up diagnostics included on your SCP System Media, follow the directions in Appendix A for installing power-up diagnostics on your system disk.

If power-up diagnostics from SCP System Media labeled MV/1400DC REV 2.00 or later, or MV/2000 and DS/7500 system media rev 3.00 or later have already been installed on your system disk, your computer system is now fully prepared to run the Format utility.

If you installed power-up diagnostics from an earlier version of SCP System Media, perform the steps that follow *before* attempting to use the Format utility or ADEX diagnostics.

1. Locate already hardware-formatted scratch media for each of your system's cartridge tape or diskette drives. (Scratch media can be any spare or unimportant tapes or diskettes; media purchased directly from Data General is always hardware-formatted.)

2. Insert the hardware-formatted scratch media into your tape and diskette drive(s).

3. From the CLI command line, enter the command to boot ADESL, as shown below:

```
R
boot ADESL ⤶
```

Your system brings up the ADESL file for the first time, creating a diagnostics equipment table. When this process finishes, either the the Format Utility Main Menu or the ADEX Inventory List appears on your system console. From the Format utility menu you can use the options as described in Chapter 4 or exit into the normal power-up sequence. From the ADEX Inventory List, you can proceed to start the Format utility as described in Chapter 3.

Installing the ADESL File on DG/UX Systems

You install the file ADESL much as you would any other system software file. The following procedure assumes DG/UX is currently running on your system, and that you are located on the DG/UX command line.

1. Find the tape or diskette containing the ADESL file for your operating system as defined in Table 2-1 at the end of this chapter, or in the Release Notice issued with your SCP System Media.

2. Insert the tape or diskette containing the ADESL file in the appropriate drive.

3. Move into the DG/UX root directory, as shown below:

```
$ cd / ↵
```

4. Enter the command below that corresponds to your ADESL medium.

   For diskette enter

```
$ cpio -iuv </dev/dsk/c64d0s7 ↵
```

   For cartridge tape enter

```
$ for i in 0 1 2 ↵
> do ↵
> cat </dev/rmt/0n >/dev/null ↵
> done ↵
$ cpio -iuv </dev/rmt/0 ↵
```

5. To ensure that your system retains the ADESL file after a system shut down, enter the sync command, as shown below:

```
$ sync ↵
```

5. Remove the ADESL tape or diskette from its drive.

If your system disk does not yet contain the power-up diagnostics included on your SCP System Media, follow the directions in Appendix A for installing power-up diagnostics on your system disk.

If power-up diagnostics from SCP System Media labeled MV/1400DC REV 2.00 or later, or MV/2000 and DS/7500 system media rev 3.00 or later have already been installed on your system disk, your computer system is now fully prepared to run the Format utility.

If you installed power-up diagnostics from an earlier version of SCP System Media, perform the steps that follow *before* attempting to use the Format utility or ADEX diagnostics.

1. Locate already hardware-formatted scratch media for each of your machine's cartridge tape or diskette drives. (Scratch media can be any spare or unimportant tapes or diskettes; media purchased directly from Data General is always hardware-formatted.)

2. Shut down your system completely, turning power *off,* and then *on* again.

3. Proceed through the normal power-up sequence to the question

   DO YOU WANT TO LOAD DIAGNOSTICS?:[N]

4. Insert hardware-formatted scratch media into the tape and diskette drive(s).

5. To answer the *DO YOU WANT TO LOAD DIAGNOSTICS?* question,

   press **Y** and then New Line.

6. Your system then asks you to verify the default diagnostics file before loading. To answer the question

   DIAGNOSTICS FILE [dpj@24(0,0)/ADESL]?

   press New Line.

Your system brings up the ADESL file for the first time, creating a diagnostics equipment table. When this process finishes, either the the Format Utility Main Menu or the ADEX Inventory List appears on your system console. From the Format utility menu, you can use the options as described in Chapter 4 or exit into the normal power-up sequence. From the ADEX Inventory List, you can proceed to start the Format utility as described in Chapter 3.

Figure 2-1 identifies the SCP System Media tape or diskette containing the correct ADESL file for your machine and operating system.

ECLIPSE MV/1400 DC

Cartridge Tape — all operating Systems

```
060000152-xx    REV. x.xx
MV1400DC SCP  SYSTEM  MEDIA
31478B    MICROCODE REV. x.x
(c) Data General Corporation)
```

AOS/VS Diskette

```
091000252-xx
MV1400DC SCP  SYSTEM  MEDIA
31478G    MICROCODE REV. x.x
(c) Data General Corporation
ADESL  (AOS FORMAT)
```

DG/RDOS Diskette

```
091000253-xx
MV1400DC SCP  SYSTEM  MEDIA
31478G    MICROCODE REV. x.x
(c) Data General Corporation
ADESL.SV  (RDOS FORMAT)
```

DG/UX Diskette

```
091000254-xx
MV1400DC SCP  SYSTEM  MEDIA
31478G    MICROCODE REV. x.x
(c) Data General Corporation
ADESL (DG/UX  FORMAT)
```

ECLIPSE MV/2000 DC and DS/7500 Series (Yellow)

Cartridge Tape — all operating Systems

```
060000154-xx    REV. x.xx
MV2DC_II & DS7500_II SCP SYSTEM MEDIA
31462B    MICROCODE REV. x.x
(c) Data General Corporation
```

AOS/VS Diskette

```
091000248-xx
MV2DC_II & DS7500_II SCP SYSTEM MEDIA
31462G    MICROCODE REV. x.x
(c) Data General Corporation
ADESL  (AOS FORMAT)
```

DG/RDOS Diskette

```
091000249-xx
MV2DC_II & DS7500_II SCP SYSTEM MEDIA
31462G    MICROCODE REV. x.x
(c) Data General Corporation
ADESL.SV  (RDOS FORMAT)
```

DG/UX Diskette

```
091000251-xx
MV2DC_II & DS7500_II SCP SYSTEM MEDIA
31462G    MICROCODE REV. x.x
(c) Data General Corporation
ADESL  (DG/UX FORMAT)
```

Figure 2-1 ADESL Media Labels (continued)

ECLIPSE MV/2000 DC (Tan)

Cartridge Tape — all operating Systems

```
060000136-xx
MV2000DC SCP REV. x.xx LEVEL A
31138B
(c) Data General Corporation
```

AOS/VS Diskette

```
091000226-xx                                GF2
MV2000DC SCP REV. x.xx LEVEL A
31138G
(c) Data General Corporation
```

DG/RDOS Diskette

```
091000228-xx                                GF3
MV2000DC SCP  LEVEL A
31138G
(c) Data General Corporation
```

DG/UX Diskette

```
091000227-xx                                GF4
MV2000DC SCP REV. x.xx LEVEL A
31138G
(c) Data General Corporation
```

DS/7500 Series (Tan)

AOS/VS Diskette

```
091000229-xx                                GF2
DS/7500   SCP REV. x.xx LEVEL A
31190G
(c) Data General Corporation
```

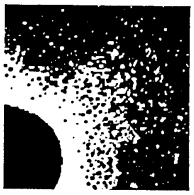
DG/UX Diskette

```
091000227-xx                                GF4
DS/7500   SCP REV. x.xx LEVEL A
31190G
(c) Data General Corporation
```

(*Tan* and *Yellow* refer to the color of the model name lettering on the front of your computer unit.)

Figure 2-1 ADESL Media Labels (concluded)

End of Chapter



3

Starting the Format Utility

In most cases, you enter the MLTX_FMTR Hardware Format Utility (Format utility) during the power-up sequence *before* loading your operating system into main memory. This chapter describes how to bring up the Format utility on computers using AOS/VS, DG/RDOS, or DG/UX operating systems, and assumes the following:

- The appropriate ADESL file for your operating system resides in the system's root (master) directory.
- The power-up diagnostics and microcode from your current SCP System Media reside on the hard disk containing your operating system.

And/or

- The power-up diagnostics and microcode from your current SCP System Media reside on your system disk with the optional Advanced Diagnostic EXecutive (ADEX).

If you have an AOS/VS system, all but the ADESL file came already installed on the AOS/VS system disk. If you have any other operating system, none of the prerequisite files came installed on your system disk. To check your system's ability to run the Format utility, refer to Chapter 2, Preparing Your System to Run the Format Utility.

The next section describes how to start the Format utility on computers using the AOS/VS operating system with and without the ADEX option. The two subsequent sections describe the same procedure for computers using DG/RDOS and DG/UX. You need to read only the section about your particular operating system.

Figure 3–1 at the end of this chapter summarizes the procedures described in the following sections.

Starting the Format Utility on AOS/VS Systems

To enter the Format Utility on systems using AOS/VS, follow the steps below.

1. Shut down your system completely, removing any cartridge tape or diskette from its drive.

2. Turn the computer *off,* and then *on* again.

3. Monitor your system console through the power–up testing and the first menu, Automatic Program Load.

4. From the Automatic Program Load Menu, you can either wait through the normal system time–out, or select option 1, "Continue immediately with preset values."

5. When the Operating System Load Menu appears, select option 2, "Enter the Technical Maintenance Menu."

6. From the Technical Maintenance Menu, select option 5, "Run diagnostics."

7. Your system console displays the question;

   Are you sure you want to boot diagnostics?: [N]

   Press **Y** and New Line to load diagnostics from disk to main memory.

8. What you do next depends on whether or not your system includes the ADEX diagnostics option installed on the system disk. Follow the procedure below for your system.

Systems Without ADEX

If your system does not include ADEX, your system console now displays the Format Utility Main Menu, shown below. You can select and execute the option of your choice as described in Chapter 4, Using the Format Utility Options.

```
Format Utility Main Menu

1       Exit the Format Utility
2       Format and verify cartridge tape
3       Format diskette
4       Read and verify cartridge tape
5       Display and update cartridge tape bad block table
6       Retension cartridge tape

Enter choice:
```

Once started, the Format Utility operates as described in Chapter 4 regardless of your computer's options or operating system.

Systems With ADEX

If your system does include ADEX, your system console now displays the Current Inventory List, an example of which is shown below.

```
Copyright @ Data General Corporation
All rights reserved.  Licensed material.
Property of Data General.

 Amount of mernory xxMB
 Current Inventory List
 MV/2000 DC CPU with Hardware Floating Point
 xMB of memory
 Parallel Printer Port Device: Model xxxx
 1 Diskette Drive (737 KB)
Disk Drive 1 capacity (71 MB)
Disk Drive 2 capacity (71KB)
 1 Cartridge Tape Device
 Graphics Interface
 4 Communications Interfaces

 The system will not test properly unless the inventory
 list is correct and amount of memory found equals the
 amount in list.

 Is this inventory list correct (Yes or No)?
```

Follow the steps below to enter the Format utility from the ADEX Current Inventory List.

1. Review the Inventory List to make sure it is correct for your system. Check to ensure the cartridge tape and/or diskette drives are listed correctly. (See *Installing and Operating Coresident Diagnostics on the ECLIPSE MV/2000™ DC Computer and DS/7000 Series Workstations* for more information about the Inventory List.)

2. Press **Y** and New Line to view the Communications Inventory List, shown below.

```
Communications Inventory List

4 Communications Interfaces
Interface 1 is the Integral Async Port in slot A
Interface 2 is an Async card in slot B
Interface 3 is a LAN card in slot C
Interface 4 is a Sync board in slot D

Is this inventory list correct (Yes or No)?
```

3. Review the Communications Inventory list. Refer to *Installing and Operating Coresident Diagnostics on the ECLIPSE MV/2000™ DC Computer and DS/7000 Series Workstations* for more information.

4. Press **Y** and New Line to view the ADEX Main Menu, shown below.

```
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Material, Property of Data General.

Main Menu

      1 - Exit the diagnostic system
      2 - Specify system configuration
      3 - Run system tests
      4 - Head cleaning utility
      5 - Diskette and tape formatting utility
      6 - Exit to change preset values

      Enter choice:
```

5. Select option 5, "Diskette and tape formatting utility" from the ADEX Main Menu. Your system console now displays the Format Utility Main Menu, as shown below. You can select and execute the option of your choice as described in Chapter 4, Using the Format Utility Options.

```
Format Utility Main Menu


1       Exit the Format Utility
2       Format and verify cartridge tape
3       Format diskette
4       Read and verify cartridge tape
5       Display and update cartridge tape bad block table
6       Retension cartridge tape

Enter choice:
```

Once started, the Format Utility operates as described in Chapter 4 regardless of your computer's options or operating system.

Starting the Format Utility on DG/RDOS Systems

You can use either of two ways to enter the Format utility on systems using DG/RDOS. This section describes both methods:

- Starting the Format utility from the DG/RDOS command line
- Starting the Format utility during system power up.

Starting the Format Utility from the DG/RDOS Command Line

To start the Format utility while DG/RDOS is already running on your system, enter the command to boot ADESL at the DG/RDOS system prompt, as shown below.

```
R
boot ADESL ↵
```

This command transfers control of your computer system from DG/RDOS to the coresident diagnostics on your system disk. What you do next depends on whether or not your system includes the ADEX diagnostics option installed on the system disk. Perform the procedure that follows for your system.

Systems Without ADEX

If your system does not include ADEX, your system console now displays the Format Utility Main Menu, shown below. You can select and execute the option of your choice as described in Chapter 4, Using the Format Utility Options.

```
Format Utility Main Menu


1       Exit the Format Utility
2       Format and verify cartridge tape
3       Format diskette
4       Read and verify cartridge tape
5       Display and update cartridge tape bad block table
6       Retension cartridge tape

Enter choice:
```

Once started, the Format Utility operates as described in Chapter 4 regardless of your computer's options or operating system.

Systems With ADEX

If your system does include ADEX, your system console now displays the Current Inventory List, an example of which is shown below.

```
Copyright @ Data General Corporation
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Property of Data General.

 Amount of memory xxMB
 Current Inventory List
 MV/2000 DC CPU with Hardware Floating Point
 xMB of memory
 Parallel Printer Port Device: Model xxxx
 1 Diskette Drive (737 KB)
Disk Drive 1 capacity (71 MB)
Disk Drive 2 capacity (71KB)
 1 Cartridge Tape Device
 Graphics Interface
 4 Communications Interfaces

The system will not test properly unless the inventory
list is correct and amount of memory found equals the
amount in list.

Is this inventory list correct (Yes or No)?
```

Follow the steps below to enter the Format utility from the ADEX Current Inventory List.

1. Review the Inventory List to make sure it is correct for your system. Check to ensure the cartridge tape and/or diskette drives are listed correctly. (See *Installing and Operating Coresident Diagnostics on the ECLIPSE MV/2000™ DC Computer and DS/7000 Series Workstations* for more information about the Inventory List.)

2. Press **Y** and New Line to view the Communications Inventory List, shown below.

```
Communications Inventory List

4 Communications Interfaces
Interface 1 is the Integral Async Port in slot A
Interface 2 is an Async card in slot B
Interface 3 is a LAN card in slot C
Interface 4 is a Sync board in slot D

Is this inventory list correct (Yes or No)?
```

3. Review the Communications Inventory list. Refer to *Installing and Operating Coresident Diagnostics on the ECLIPSE MV/2000™ DC Computer and DS/7000 Series Workstations* for more information.

4. Press **Y** and New Line to view the ADEX Main Menu, shown below.

```
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Main Menu

      1 - Exit the diagnostic system
      2 - Specify system configuration
      3 - Run system tests
      4 - Head cleaning utility
      5 - Diskette and tape formatting utility
      6 - Exit to change preset values

      Enter choice:
```

5. Select option 5, "Diskette and tape formatting utility" from the ADEX Main Menu. Your system console now displays the Format Utility Main Menu, as shown below. You can select and execute the option of your choice as described in Chapter 4, Using the Format Utility Options.

```
Format Utility Main Menu


1       Exit the Format Utility
2       Format and verify cartridge tape
3       Format diskette
4       Read and verify cartridge tape
5       Display and update cartridge tape bad block table
6       Retension cartridge tape

Enter choice:
```

Once started, the Format utility operates as described in Chapter 4 regardless of your computer's options or operating system.

Starting the Format Utility During DG/RDOS System Power Up

To enter the Format utility by interrupting the normal power-up sequence for DG/RDOS systems, follow the steps below.

1. Shut down your system completely, removing any cartridge tape or diskette from its drive.

2. Turn the computer *off,* and then *on* again.

3. Monitor your system console through the power-up testing and the first menu, the Automatic Program Load Menu.

4. From the Automatic Program Load Menu, you can either wait through the normal system time-out, or select option 1, "Continue immediately with preset values."

5. Your system console displays the following question:

   Filename?

   Type **ADESL** and press New Line to bring up the diagnostics from your system disk into main memory.

6. What you do next depends on whether or not your system includes the ADEX diagnostics option installed on the system disk. Follow the procedure outlined in the previous section, "Starting the Format Utility from the DG/RDOS Command Line," for your ADEX or non-ADEX system.

Starting the Format Utility on DG/UX Systems

To enter the Format Utility on systems using DG/UX, follow the steps below.

1. Shut down your system completely, removing any cartridge tape or diskette from its drive.

2. Turn the computer *off,* and then *on* again.

3. Monitor your system console through the power-up testing and the first menu, the Automatic Program Load Menu.

4. From the Automatic Program Load Menu, you can either wait through the normal system time-out, or select option 1, "Continue immediately with preset values."

5. Your screen displays the question

   DO YOU WANT TO LOAD DIAGNOSTICS?: [N]

   Type **Y** and press New Line. Your screen responds with a display that asks you to verify the files about to be loaded:

   DIAGNOSTICS FILE [dpj@24(0,0)/ADESL]?

6. Press New Line to begin the loading process. Your system responds with a message that it is bringing up the diagnostics from your system disk into main memory.

   dpj@24(0,0)/ADESL loading...

7. What you do next depends on whether or not your system includes the ADEX diagnostics option installed on the system disk. Follow the procedure that follows for your system.

Systems Without ADEX

If your system does not include ADEX, your system console now displays the Format Utility Main Menu, shown below. You can select and execute the option of your choice as described in Chapter 4, Using the Format Utility Options.

```
Format Utility Main Menu


1       Exit the Format Utility
2       Format and verify cartridge tape
3       Format diskette
4       Read and verify cartridge tape
5       Display and update cartridge tape bad block table
6       Retension cartridge tape

Enter choice:
```

Once started, the Format Utility operates as described in Chapter 4 regardless of your computer's options or operating system.

Systems With ADEX

If your system does include ADEX, your system console now displays the Current Inventory List, an example of which is shown below.

```
Copyright @ Data General Corporation
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Property of Data General.

 Amount of memory xxMB
 Current Inventory List
 MV/2000 DC CPU with Hardware Floating Point
 xMB of memory
 Parallel Printer Port Device: Model xxxx
 1 Diskette Drive (737 KB)
Disk Drive 1 capacity (71 MB)
Disk Drive 2 capacity (71KB)
 1 Cartridge Tape Device
 Graphics Interface
 4 Communications Interfaces

The system will not test properly unless the inventory
list is correct and amount of memory found equals the
amount in list.

Is this inventory list correct (Yes or No)?
```

Follow the steps below to enter the Format utility from the ADEX Current Inventory List.

1. Review the Inventory List to make sure it is correct for your system. Check to ensure the cartridge tape and/or diskette drives are listed correctly. (See *Installing and Operating Coresident Diagnostics on the ECLIPSE MV/2000™ Computer and DS/7000 Series Workstations* for more information about the Inventory List.)

2. Press **Y** and New Line to view the Communications Inventory List, shown below.

```
Communications Inventory List

4 Communications Interfaces
Interface 1 is the Integral Async Port in slot A
Interface 2 is an Async card in slot B
Interface 3 is a LAN card in slot C
Interface 4 is a Sync board in slot D

Is this inventory list correct (Yes or No)?
```

3. Review the Communications Inventory list. Refer to *Installing and Operating Coresident Diagnostics on the ECLIPSE MV/2000™ DC Computer and DS/7000 Series Workstations* for more information.

4. Press **Y** and New Line to view the ADEX Main Menu, shown below.

```
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Material, Property of Data General.

Main Menu

    1 - Exit the diagnostic system
    2 - Specify system configuration
    3 - Run system tests
    4 - Head cleaning utility
    5 - Diskette and tape formatting utility
    6 - Exit to change preset values

    Enter choice:
```

5. Select option 5, "Diskette and tape formatting utility" from the ADEX Main Menu. Your system console now displays the Format Utility Main Menu, as shown below. You can select and execute the option of your choice as described in Chapter 4, Using the Format Utility Options.

```
Format Utility Main Menu


1       Exit the Format Utility
2       Format and verify cartridge tape
3       Format diskette
4       Read and verify cartridge tape
5       Display and update cartridge tape bad block table
6       Retension cartridge tape

Enter choice:
```

Once started, the Format utility operates as described in Chapter 4 regardless of your computer's options or operating system.

Figure 3–1 summarizes how to enter the Format utility during the AOS/VS, DG/RDOS, and DG/UX power–up sequences. (Refer to the preceding section for instructions on entering the utility from the DG/RDOS command line).

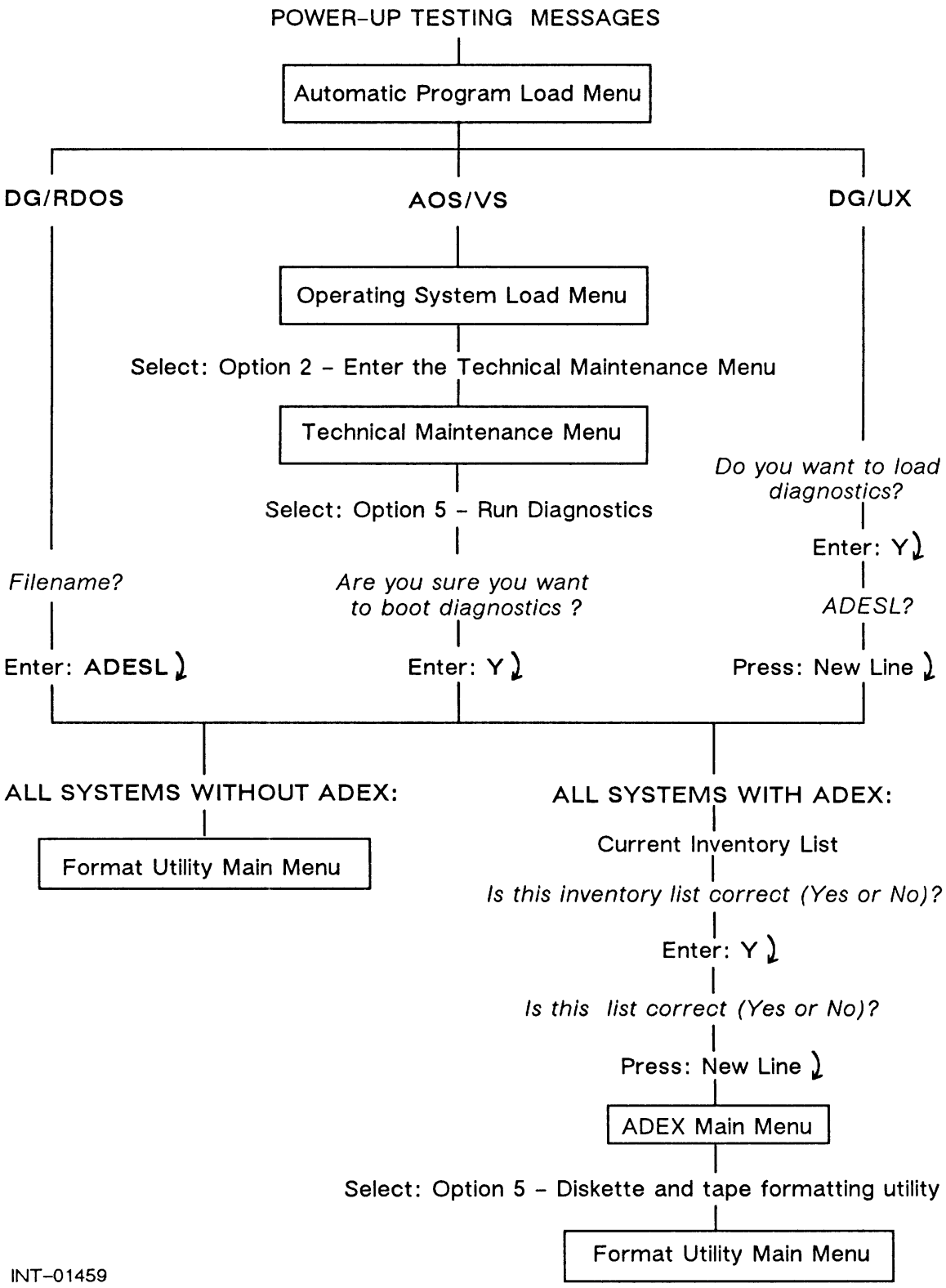


Figure 3-1 Starting The Format Utility During System Power Up

End of Chapter

4

Using the Format Utility Options

This chapter provides step-by-step instructions for using each option of the MLTX_FMTR Hardware Format Utility (Format utility). These instructions assume you are already familiar with the function of each option, and that your system is completely prepared to run the Format utility. If you are unsure about system prerequisites or what each option does, refer to Chapters 1 and 2.

The following list reviews the function of the control sequence and special keys most commonly used when running the Format utility.

- The Esc key allows you to exit an option when a program is not executing, and returns you to the Main Menu. If you choose option 5, you can use the Esc key to terminate an input line and display the new bad block table.
- The Del key erases the last character you typed.
- The New Line key terminates a line and moves the cursor to the next position. Input examples in this manual indicate this key with the ↵ symbol.
- The Ctrl–R sequence of keys aborts the current program. Use this sequence only as a last resort.

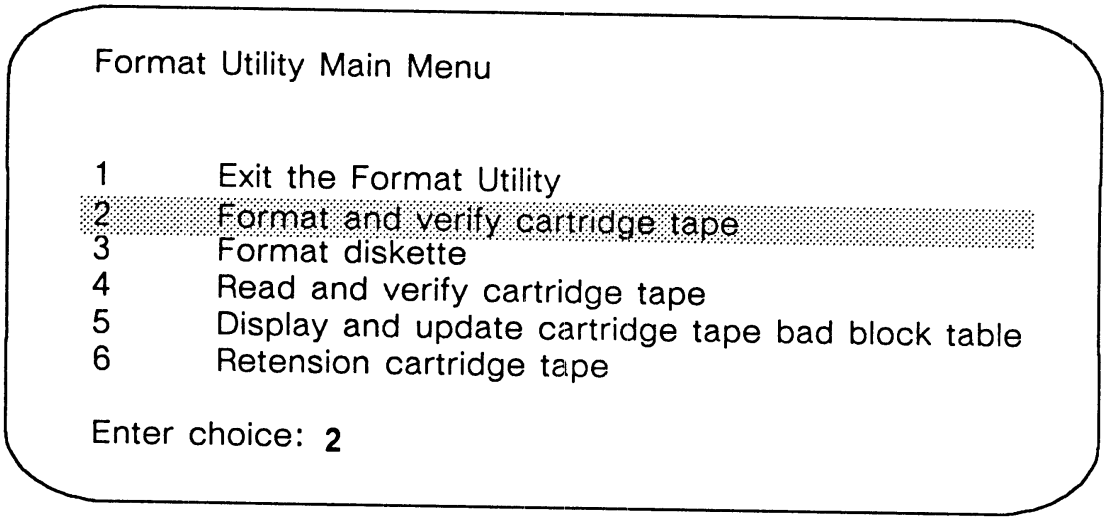
An illustration of the Format Utility Main Menu precedes each description in this chapter. In this sample menu, the Format utility option described in the text below it appears highlighted. For example, the Main Menu shown in the next section indicates that instructions for exiting the Format utility follow immediately:

Exiting the Format Utility

```
Format Utility Main Menu

1       Exit the Format Utility
2       Format and verify cartridge tape
3       Format diskette
4       Read and verify cartridge tape
5       Display and update cartridge tape bad block table
6       Retension cartridge tape

Enter choice: 1
```

Select option 1 to exit the Format Utility and continue with the normal power–up sequence from the Automatic Program Load Menu.

Formatting and Verifying Cartridge Tape



CAUTION: Option 2 destroys any data on your cartridge tape. Back up any data you want to save on disk before running the Format utility. (Refer to your operating system manual for information on how to copy tape contents to your disk.)

Before continuing with the procedures in this section, you should review Chapter 1, Hardware Formatting Tapes and Diskettes. Some combination of Format utility options 4, 5, and/or 6 might prove faster and more appropriate for your immediate tape-maintenance needs.

To verify and write servo and format patterns, automatically renew the tension between reels, and automatically update the bad block table on a cartridge tape, follow the steps below.

1. Make sure your system disk meets all the requirements listed in Chapter 2, Preparing Your System to Run the Format Utility.

2. Bring up the Format Utility Main Menu. (For instructions, refer to Chapter 3, Starting the Format Utility.)

3. Slide the tape's write-protect switch to the RECORD position.

4. Insert the cartridge tape into its drive.

5. Select menu option 2, "Format and verify cartridge tape" as shown in the sample menu at the beginning of this section.

After you enter the format option, your system console displays the following message:

Format and Verify Cartridge Tape

Cartridge tape MV/1400 DC, MV/2000 DC or DS/7500: use device code 23, unit 0.
For other systems: device code depends on configuration.

Formatting/verifying will take at least 45 minutes.

CAUTION: This program destroys data on cartridge tape.
Press Esc at this time to return to the menu.

Enter device code [23]:

Depending on the condition of your cartridge tape, formatting and verifying might actually take as little as 20 minutes. Blank or erased tapes that require servo writing take around 45 minutes. Running this program *will always* destroy any data on the tape. If, for example, you remember at this time that you have no copy of the data on the tape you are about to format, or you change your mind about formatting for any other reason, you can return to the Format Utility Main Menu now by pressing Esc. From the Main Menu you can continue loading your operating system by exiting the Format utility, or you can select another formatting option.

If you want to continue with the "Format and verify cartridge tape" option, accept the [23] default value (your cartridge tape device code is always 23) by pressing New Line. The following message appears:

Enter unit number [0]:

Press New Line again. A *time line* appears on your system console. As the program executes, your cursor moves along the time line, indicating the time elapsed since the program began. Depending on the condition of your tape, this option takes 20 to 45 minutes to run; in the following example, the format and verify process has run for 11 minutes.

---------|---------|---------|---------|---------|---------|*60 minutes*
.....

When the program finishes, it reports the total time spent formatting and verifying your tape, and reminds you how to return to the Format Utility Main Menu.

Figure 4–1 shows a completed Format and Verify Cartridge Tape screen.

```
                    Format And Verify Cartridge Tape

Cartridge tape MV/1400 DC, MV/2000 DC or DS/7500: use device code 23, unit 0.
For other systems: device code depends on configuration.

Formatting/verifying will take at least 45 minutes.

CAUTION: This program destroys data on cartridge tape.
         Press Esc at this time to return to the menu.

Enter device code [23]: )

Enter unit number [0]: )

---------|---------|---------|---------|---------|----------|60   minutes
.......... ..........
Elapsed Time = 0:46:21

Finished.

To return to menu, press Cancel/Exit key (F11) or Esc.
```

Figure 4–1 Format and Verify Cartridge Tape Screen

Extraordinary Circumstances

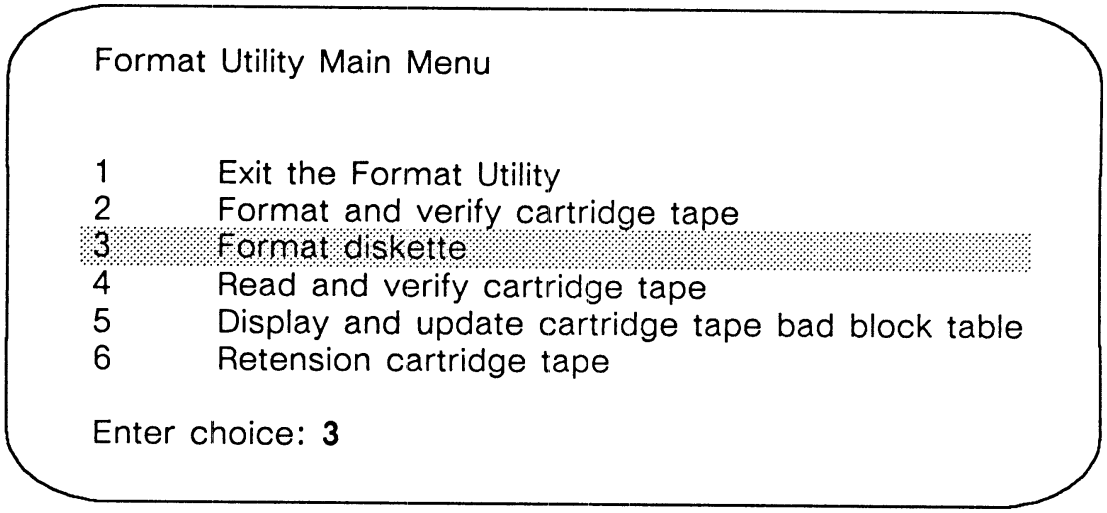
The "Format and verify cartridge tape" option cannot overwrite an existing servo pattern. If your cartridge tape contains a faulty or incomplete servo pattern that the Format and Verify program cannot use, the following error message appears on your system console.

Media not erased. Please bulk erase the tape.

Bulk erasing completely demagnetizes your cartridge tape, destroying servo, format, and any other existing data. The procedure requires an AC tape erasing device with a minimum field strength rating of 1000 gauss to properly erase a 21-Mbyte cartridge tape. A recommended 2300 gauss hand-held bulk eraser, with specific instructions for erasing model 6351 cartridge tapes, is available through DG/DIRECT.

If a cartridge tape has too many defects for the format and verify cartridge tape process to prepare it for reliable use, *the program will run for an hour and a half before stopping and displaying an error message*. It shouldn't take much longer than 45 minutes to servo write, format, and verify a tape. You might want to abort the Format and Verify program after that point by entering the Ctrl-R sequence or, if necessary, the Cmd-Break sequence three times. You should discard a faulty cartridge tape like this before valuable data is accidentally written to it and then lost.

Hardware Formatting Diskettes



CAUTION: Option 3 destroys any data on your diskette. Store any data you want to save on disk before running the Format utility. (Refer to your operating system manual for information on how to copy diskette contents to your disk.)

To hardware format a diskette using option 3, follow the steps below.

1. Make sure your system disk meets all the requirements listed in Chapter 2, Preparing Your System to Run the Format Utility.

2. Bring up the Format Utility Main Menu. (For instructions, refer to Chapter 3, Starting the Format Utility.)

3. Make sure the write-protect notch on the diskette you want to format is uncovered.

4. Insert the diskette into its drive.

5. Select menu option 3, "Format diskette" as shown above.

After you select option 3, your system console displays the following message:

Format Diskette

Diskette in MV/1400 DC, MV/2000 DC or DS/7500 use device code 64, unit 0.
For other systems: device code depends on configuration.

Formatting will take up to 2 minutes.

CAUTION: This program destroys data on diskette.
Press Esc at this time to return to the menu.

Enter device code [64]:

If, for example, you remember at this time that you have no copy of the data on the diskette you are about to format, or change your mind about formatting the diskette for any other reason, you can return to the Format Utility Main Menu now by pressing Esc. From the Main Menu you can continue loading your operating system by exiting the Format utility, or select another formatting option.

Accept the [64] default value (your diskette device code is always 64) by pressing New Line. The following message appears:

Enter unit number [0]:

Press New Line again. A *time line* appears on your screen. As the program formats your diskette, the cursor moves along the time line indicating the time elapsed since the program began.

---------|---------|---------|---------|---------|---------|*60 minutes*

It takes less than 2 minutes to hardware format your diskette. When the program finishes formatting, it reports the total time spent formatting, and reminds you how to return to the Format Utility Main Menu.

Figure 4–2 shows a completed Format Diskette screen.

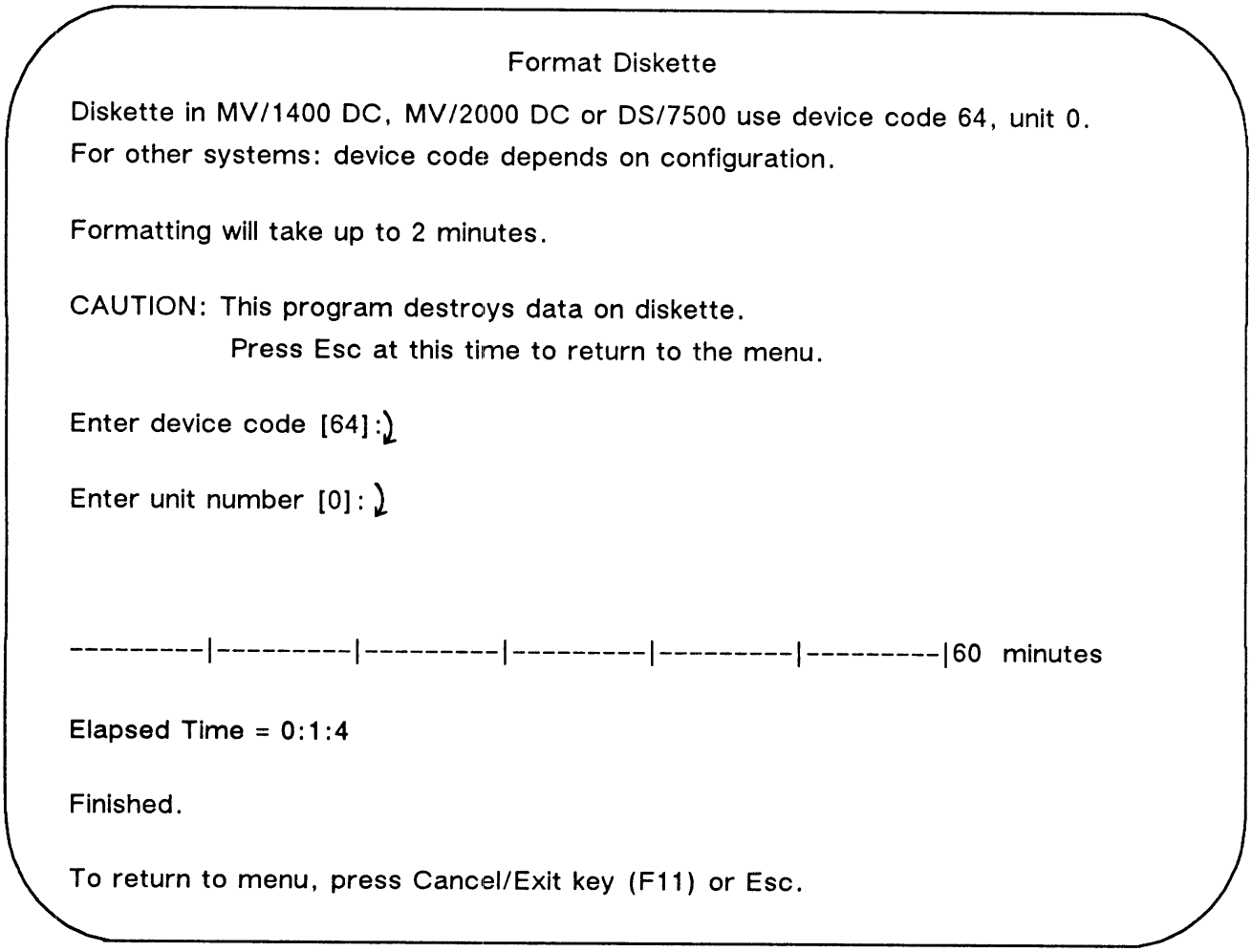
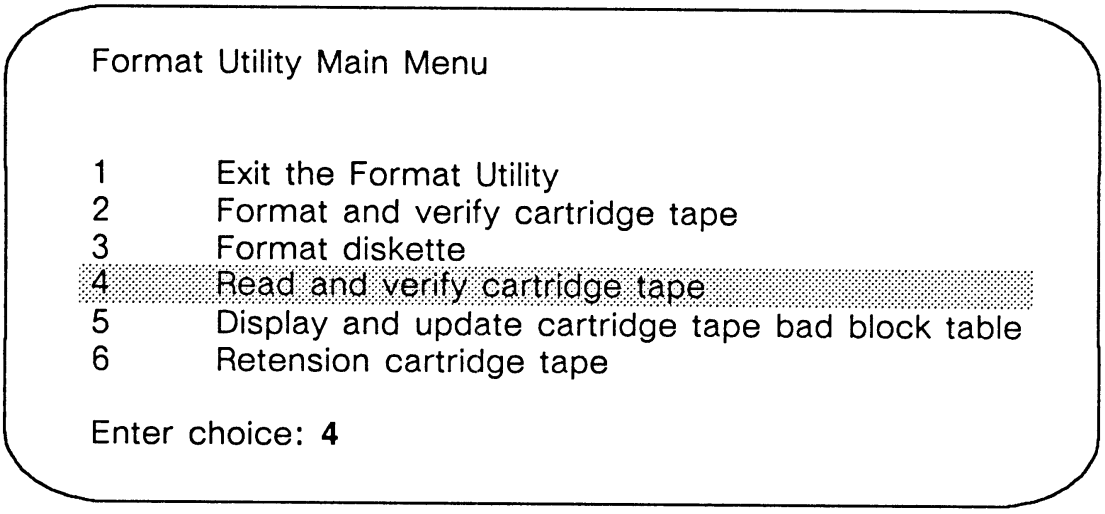


Figure 4–2 Format Diskette Screen

Reading and Verifying Cartridge Tape



CAUTION: Option 4 contains an optional feature that can destroy data on your tape. Store any data you want to save on disk before adding defects to the bad block table. (Refer to your operating system manual for information on how to copy tape contents to your disk.)

To certify a tape for reliable further use, copy any data you want to save on another medium. Then run option 2, "Format and verify cartridge tape."

To critically check a cartridge tape for all marginal spots and possible defects, follow the steps below.

1. Make sure your system disk meets all the requirements listed in Chapter 2, Preparing Your System to Run the Format Utility.

2. Bring up the Format Utility Main Menu. (For instructions, refer to Chapter 3, Starting the Format Utility.)

3. If you plan to enter any defects identified by this option into the bad block table, slide the tape's write-protect switch to RECORD.

4. Insert the cartridge tape you want read and verified into its drive.

5. Select menu option 4, "Read and verify cartridge tape" as shown above.

After you select option 4, your system console displays the following message:

Read And Verify Cartridge Tape

Cartridge tape MV/1400 DC, MV/2000 DC or DS/7500: use device code 23, unit 0.
For other systems: device code depends on configuration.

Verifying will take at least 10 minutes.

This program reports defects on the tape. It does not destroy data. You may add new defects to the bad block table. Use option 5.

Press Esc to return to menu. Press New Line to accept a default value or terminate a line.

Enter device code [23]:

The program takes up to 10 minutes to scan your tape for defects, verify the problem areas, and display both marginal and serious defects. You can return to the Format Utility Main Menu without starting the read and verify process at this time by pressing Esc. From the Main Menu you can continue loading your operating system by exiting the Format Utility, or you can select another formatting option.

If you want to continue with the "Read and verify cartridge tape" option, accept the [23] default value (your cartridge tape device code is always 23) by pressing New Line. The following message appears:

Enter unit number [0]:

Press New Line again. A *time line* appears on your screen. As the program executes, the cursor moves along the time line to indicate the time elapsed since the read and verify process began. For example, the display below shows the cursor position after the Read and Verify Cartridge Tape program has run for 7 minutes.

```
---------|---------|---------|---------|---------|---------|60 minutes
.......*
```

(* represents your cursor symbol in this example.)

When the program finishes reading and verifying your tape, it displays the time spent completing the operation and the address of any defects found. The list of defects includes those already entered to the bad block table by previous updates. After the list, the program also displays the total number of flawed areas on the tape and asks if you want to display the defect list a second time. In the example below, the read and verify process took less than 10 minutes to run, and discovered 3 flawed blocks.

```
---------|---------|---------|---------|---------|---------|60 minutes
.........
Elapsed Time = 0:9:22

        Defects in DECIMAL

          TRACK   BLOCK

            0       55
            0       79
            6       94
3 defects reported.

Reprint the defect list [N]?
```

Unless you want the defect list repeated on your screen, press New Line.

A new message asks if you want to add the reported defects to the tape's bad block table, as follows:

```
Add these defects to the bad block table on the tape [N]?
```

Before answering this question, remember that by adding a block that contains data to the bad block table, you effectively destroy the data in that block. Unless you know and can duplicate the specific contents of the block you are about to enter, you will have to restore all the data on the entire tape before using it. Also, the read and verify cartridge tape process does not distinguish between weak areas that might cause only intermittent errors and actual tape flaws when reporting defects. Once you enter a block to the bad block table, you cannot remove it without completely reformatting and destroying all the data on the tape. You should consider, however, that even a marginal flaw threatens the integrity of your data. (For more information, see Chapter 1, Hardware Formatting Tapes and Diskettes.)

If you want to enter only some of the listed defects into the bad block table, record the track and block addresses of the defects you want to enter. Then accept the [N] default by pressing New Line, and enter the selected blocks into the bad block table using option 5, "Display and update cartridge tape bad block table." (Refer to the next section, "Displaying and Updating the Cartridge Tape Bad Block Table," for instructions on using option 5.)

If you do not have a copy of data you want to save from your cartridge tape, accept the [N] default, but record the track and block addresses of the defects you want to add to the bad block table. Then, refer to your operating system manual for information on how to copy the contents of your tape to another medium. Once you have a reliable copy, you can enter the defective block to the bad block table using option 5, "Display and update cartridge tape bad block table," as described in the next section.

If you decide to enter the new defects to the bad block table, answer the system query by pressing **Y** and New Line as shown:

Add these defects to the bad block table on the tape [N]? **Y** ↵

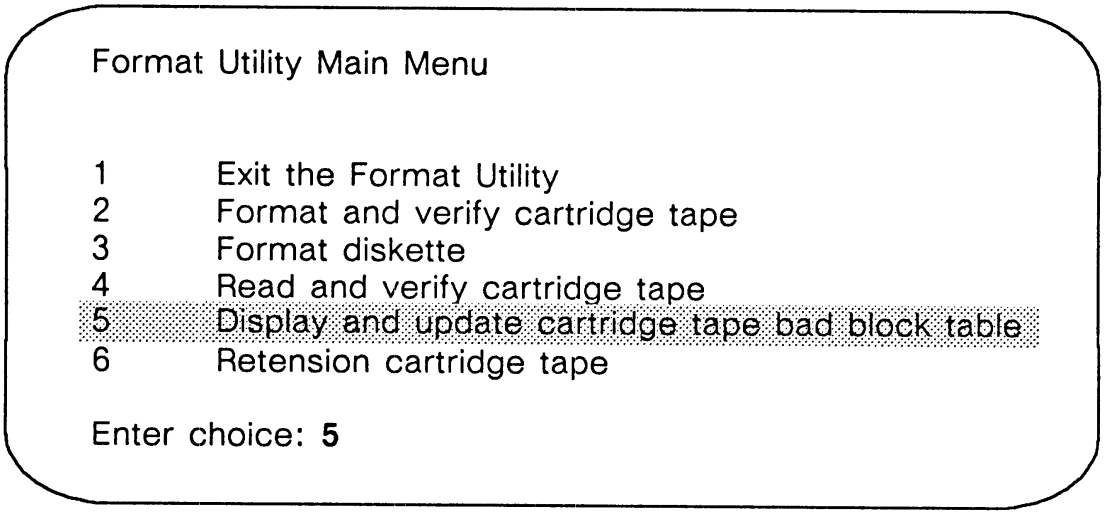
Your screen display does not change while the program makes entries to the bad block table. It does tell you when the program has finished, and reminds you how to return to the Format Utility Main Menu.

Figure 4–3 shows a completed Read and Verify Cartridge Tape screen. In this example, the operator chose *not* to enter all listed defects onto the bad block table.

```
                    Read and Verify Cartridge Tape

Cartridge tape MV/1400 DC, MV/2000 DC or DS/7500: use device code 23, unit 0.
For other systems: device code depends on configuration.

Verifying will take at least 10 minutes.

This program reports defects on the tape.  It does not destroy data.
You may add new defects to the bad block table.  Use option 5.

Press Esc to return to menu.
Press New Line to accept a default value or terminate a line.

Enter device code [23]: ↵
Enter unit number[0]: ↵

---------|---------|---------|---------|---------|---------|60 minutes
.........
Elapsed Time = 0:9:22

      Defects in DECIMAL

            TRACK   BLOCK

              0       55
              0       79
              6       94
3 defects reported.

Reprint the defect list [N]? ↵
Add these defects to the bad block table on the tape? [N]? ↵

Finished.

To return to menu, press Cancel/Exit key (F11) or Esc.
```

Figure 4-3 Read and Verify Cartridge Tape Screen

Displaying and Updating the Cartridge Tape Bad Block Table



CAUTION: Option 5 contains an optional feature that can destroy data on your tape. Store any data you want to save on disk before adding defects to the bad block table. (Refer to your operating system manual for information on how to copy tape contents to your disk.)

To view or make additions to a tape's bad block table, follow the steps below.

1. Make sure your system disk meets all the requirements listed in Chapter 2, Preparing Your System to Run the Format Utility.

2. Bring up the Format Utility Main Menu. (For instructions, refer to Chapter 3, Starting the Format Utility.)

3. If you plan to update the bad block table, slide the write-protect switch on your cartridge tape to the RECORD position.

4. Insert the cartridge tape into its drive.

5. Select menu option 5, "Display and update cartridge tape bad block table" as shown above.

After you select this option, your system console displays the following message:

Display and Update the Cartridge Tape Bad Block Table

Cartridge tape MV/1400 DC, MV/2000 DC or DS/7500: use device code 23, unit 0.
For other systems: device code depends on configuration.

Use this option to update the bad block table. The bad block table allows thirty (30) defects maximum.

Press Esc to return to menu.
Press New Line to accept a default value or terminate a line.

Enter device code [23]:

If you change your mind for any reason and want to exit the Display and Update program, you can return to the Format Utility Main Menu *at this time* by pressing the Esc key. (The Esc key changes properties later in the display and update process.) From the Main Menu you can continue loading your operating system by exiting the Format utility, or you can select another formatting option. If, for example, you are not sure of the track and block address you want added to the bad block table, press Esc. From the Format Utility Main Menu, you can run option 4, "Read and verify cartridge tape," which (unlike the display and update process) lists defects not already included in the bad block table.

To continue with the display and update process, accept the [23] default value (your cartridge tape device code is always 23) by pressing New Line. The following message appears:

Enter unit number [0]:

Press New Line again.

In 1 minute or less a bad block table like the one shown below will appear on your screen.

Defects in DECIMAL

TRACK	*BLOCK*
0	*55*
0	*79*

2 defects reported.

Reprint the defect list [N]?

Unless you want the bad block table display repeated on your screen, press New Line. A new message, shown below, then tells you how to add addresses into the table and verify your entries.

Enter new tracks and blocks in the bad block table. Press Esc instead of a value to display data for the new bad block table.

CAUTION: This program destroys data on cartridge tape.

Track number in decimal:

Type the track number for the defect you want eliminated. After you press New Line to execute your entry, the display asks for the block number of the defect area. Type the number and press New Line. You probably received these values from the Format utility's "Read and verify cartridge tape" option. If not, make sure the addresses you enter are *decimal* values.

Your display continues to ask for track and block numbers until you press Esc instead of entering a numerical value. The display then shows the updated defect list, as in the example below.

Track number in decimal: **6** ↵
Block number in decimal: **94** ↵

Track number in decimal: **Esc**

Defects in DECIMAL

TRACK	*BLOCK*
0	*55*
0	*79*
6	*94*

3 defects reported.

Reprint the defect list [N]?

Unless you want the new defect list again, accept the [N] default by pressing New Line. The next message asks you to reconsider your decision to add blocks to the bad block table. You can still change your mind at this point, and end the program without destroying any data. To do this, accept the [N] default to the following question by pressing New Line.

Do you really want to enter data into the new bad block table? [N]

If you answer *No*, your cartridge tape and its bad block table remain as they were before you selected the "Display and update cartridge tape bad block table" option. (In our example, a subsequent running of this program would display only blocks 0/55 and 0/79 in the list of defects.) A message tells you the program is finished, and reminds you how to return to the Format Utility Main Menu.

If you answer *Yes*, the program adds the addresses you specified to the tape's bad block table. *You cannot retrieve any data contained in "bad" blocks, or take a block off the bad block table.* Only by completely reformatting a cartridge tape can you create a new bad block table. For more information, see Chapter 1, Hardware Formatting Tapes and Diskettes.

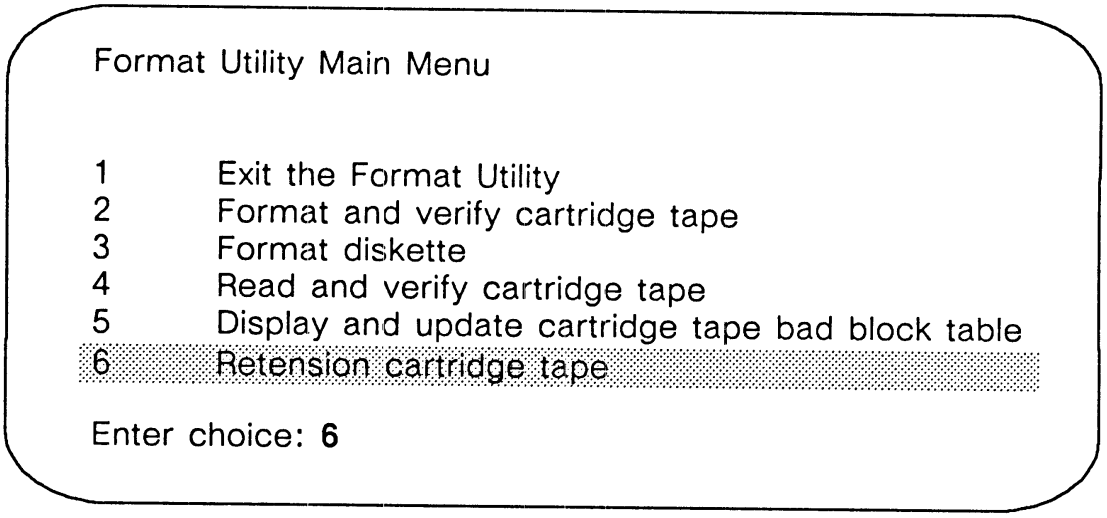
After you answer *Yes*, the cursor on your screen waits on the next line until the program completes your update to the bad block table. A message tells you when the updating is finished, and reminds you how to return to the Format Utility Main Menu.

Figure 4–4 shows a completed Display and Update Cartridge Tape Bad Block Table screen. In this example, the operator chose to enter block 94, on track 6, to the tape's bad block table. (Figure 4–4 completes the process of identifying bad blocks and then entering them into the bad block table begun in the preceding section on "Reading and Verifying Cartridge Tape.")

```
Display and Update the Cartridge Tape Bad Block Table

Cartridge tape MV/1400 DC, MV/2000 DC or DS/7500: use device code 23, unit 0.
For other systems: device code depends on configuration.

Use this option to update the bad block table.  The bad block table
allows thirty (30) defects maximum.

Press Esc to return to menu.
Press New Line to accept a default value or terminate a line.

Enter device code [23]: ↵
Enter unit number [0]: ↵

        Defects in DECIMAL

            TRACK    BLOCK

              0        55
              0        79
2 defects reported.

Reprint the defect list [N]?↵

Enter new tracks and blocks in the bad block table.  Press Esc instead
of a value to display data for the new bad block table.

CAUTION: This program destroys data on cartridge tape.

Track number in decimal: 6 ↵
Block number in decimal: 94 ↵

Track number in decimal: Esc

        Defects in DECIMAL

            TRACK    BLOCK

              0        55
              0        79
              6        94
3 defects reported.

Reprint the defect list [N]?↵

Do you really want to enter data into the new bad block table? [N]: Y↵

Finished.

To return to menu, press Cancel/Exit key (F11) or Esc
```

Figure 4-4 Display and Update the Cartridge Tape Bad Block Table Screen

Adjusting Cartridge Tape Tension



To adjust a cartridge tape's tension using this option, follow the steps below.

1. Make sure your system contains all the prerequisite files listed in Chapter 2, Preparing Your System to Run the Format Utility.

2. Bring up the Format Utility Main Menu. (Refer to Chapter 3, Starting the Format Utility, for instructions.)

3. Insert the cartridge tape into its drive.

4. Select menu option 6, "Retension cartridge tape" as shown above.

After you select this option, your system console displays the following message:

Retension Cartridge Tape

Cartridge tape MV/1400 DC, MV/2000 DC or DS/7500: use device code 23, unit 0.
For other systems: device code depends on configuration.

Retensioning will take up to 2 minutes.

Press Esc to return to menu.
Press New Line to accept a default value or terminate a line.

Enter device code [23]:

Accept the [23] default value (your cartridge tape device code is always 23) by pressing New Line. The following message appears:

Enter unit number [0]:

Press New Line again. The cursor moves to the next line and stays there while the tape passes between the cartridge reels.

When the operation is finished, the program displays the time spent adjusting the tape tension, and reminds you how to return to the Format Utility Main Menu.

A completed Retension Cartridge Tape screen is shown in Figure 4–5.

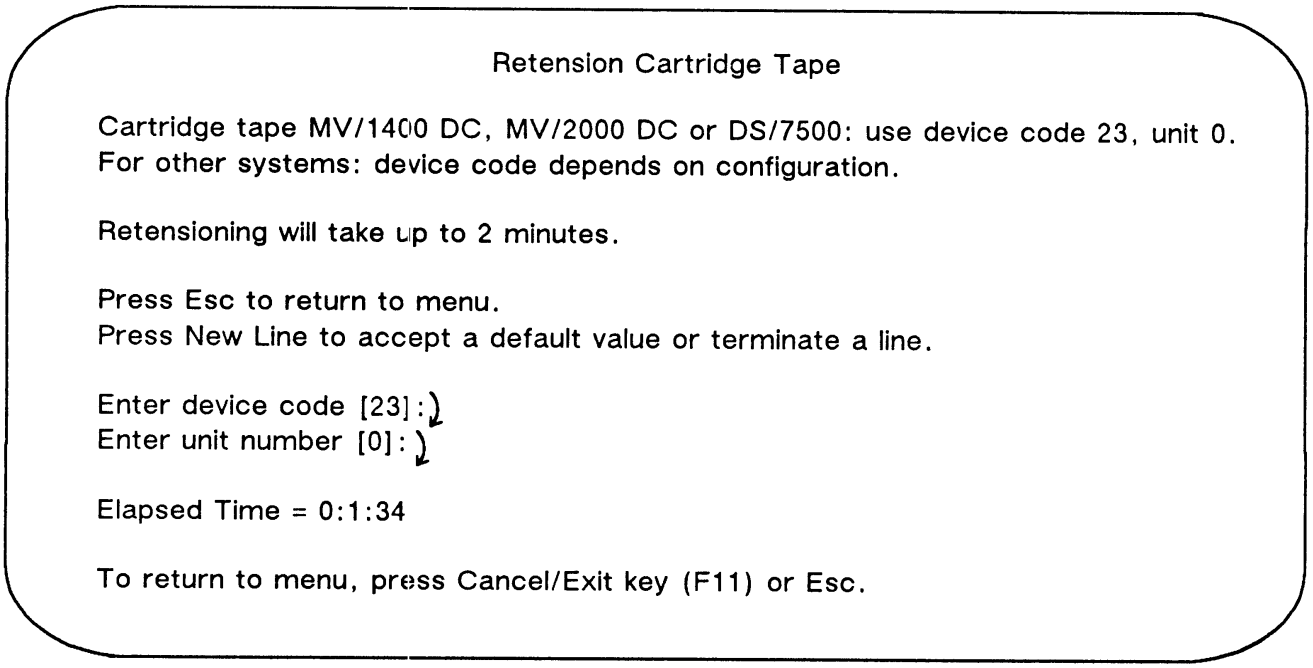
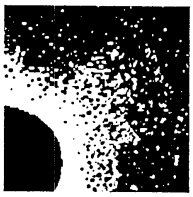


Figure 4–5 Retension Cartridge Tape Screen

End of Chapter



A

Installing Power-Up Diagnostics on Your System Disk From SCP System Media

The MLTX_FMTR Hardware Format Utility (Format utility) is included in the power-up diagnostics contained on your SCP System Media. If you ordered AOS/VS with your ECLIPSE MV/1400™ DC, ECLIPSE MV/2000™ DC, or DS/7500-Series computer system, it comes with the power-up diagnostics already installed on the system disk. If you ordered DG/RDOS or DG/UX with your system, you need to install power-up diagnostics. Since a system disk that is software formatted properly contains an area reserved exclusively for diagnostics, you lose no memory space by installing the diagnostics as soon as possible. Not installing the contents of your SCP System Media on disk will not harm your system. However, you must put the SCP System Media tape or diskette in its drive every time you power up your computer until these programs reside on the system disk. In addition to this inconvenience, *the Format utility cannot work unless it resides on your system disk.*

New revisions to your operating system, even those updating software formatting utilities (such as DFMTR), do not require you to reinstall power-up diagnostics unless specifically noted in the Release Notice accompanying the revision.

In summary, you should install power-up diagnostics *only* if you are

- Installing power-up diagnostics on the system disk for the first time (DG/RDOS or DG/UX systems)
- Installing a new revision of SCP System Media
- Building a new disk to use as your system disk

Before proceeding further, make sure you have the appropriate SCP System Media, as listed in the Figure A-1, and the Release Notice issued with it. You might also need scratch media that is already hardware formatted. (Scratch media can be any spare or unimportant tapes or diskettes; media purchased directly from Data General is always hardware-formatted.) The procedure that follows assumes you have already installed the ADESL file on your system disk in your operating system's root directory. Since ADESL is not included in the power-up diagnostics, it must be installed on your system disk independently. *You should check your root directory for the ADESL file before continuing with this procedure.* If your operating system does not include the ADESL file in its root directory, install ADESL now according to the instructions in the section, "Installing ADESL in Your System Root Directory" in Chapter 2 of this manual.

Figure A-1 shows the labels that identify the SCP System Media tape or diskette you should use for your computer. Instructions for installing power-up diagnostics from cartridge tape follow in the next section; the last section of this appendix has instructions for installing power-up diagnostics from diskette.

Cartridge Tape

ECLIPSE MV/1400 DC	060000152-xx REV. x.xx MV1400DC SCP SYSTEM MEDIA 31478B MICROCODE REV. x.x (c) Data General Corporation
ECLIPSE MV/2000 DC and DS7500 Series (Yellow)	060000154-xx REV. x.xx MV2DC_II & DS7500_II SCP SYSTEM MEDIA 31462B MICROCODE REV. x.x (c) Data General Corporation
ECLIPSE MV/2000 DC (Tan)	060000136-xx MV2000DC SCP REV. x.xx LEVEL A 31138B (c) Data General Corporation

Diskette

ECLIPSE MV/1400 DC	091000244- xx MV1400DC SCP SYSTEM MEDIA 31478G MICROCODE REV. x.x (c) Data General Corporation ADEX FORMAT
ECLIPSE MV/2000 DC and DS7500 Series (Yellow)	091000246-xx MV2DC_II & DS7500_II SCP SYSTEM MEDIA 31462G MICROCODE REV. x.x (c) Data General Corporation ADEX FORMAT
ECLIPSE MV/2000 DC (Tan)	09100017 GF1 MV2000DC SCP REV. x.xx LEVEL A 31138G (c) Data General Corporation
DS/7500 Series (Tan)	091000173-xx GF1 DS/7500 SCP REV. x.xx LEVEL A 31190G (c) Data General Corporation

(*Tan* and *Yellow* refer to the color of the model name lettering on the front of your computer unit.)

Figure A-1 SCP System Media Labels

Installing Power-Up Diagnostics From 21-Megabyte Cartridge Tape

The Format utility and ADEX diagnostics create their own *equipment table* (an internal list of hardware devices) the *first* time you bring up these utilities from your system disk. Your computer unit's diskette and/or cartridge tape drives *must* contain hardware-formatted scratch media during this process if you have installed power-up diagnostics from an SCP System Media revision earlier than rev 2.00 (MV/1400 systems) or rev 3.00 (MV/2000 and DS/7500 systems.) Later revisions of SCP System Media do not require you to insert any scratch media, but create the equipment table automatically. The instructions that follow for installing power-up diagnostics on your hard disk include creating the equipment table as part of the installation procedure. To prepare for this step, if necessary, be certain you have hardware-formatted scratch media available before you begin installing the contents of your SCP System Media on the disk.

Follow these steps to install power-up diagnostics on your system disk from cartridge tape.

1. Insert your current SCP System Media cartridge tape in its drive.

2. Turn system power *on*. If the system is already powered up, shut down the operating system, and turn system power *off*, and then *on again*.

3. Proceed through the normal power-up messages described in *Starting ECLIPSE MV/1400™ DC Computer Systems* or in *Setting Up and Starting Your ECLIPSE MV/2000™ DC or DS/7500 Series System* until you see the following message on your screen (usually about 15 minutes after turning power *on*.)

   Do you want to install power-up diagnostics on your hard disk? If these diagnostics are not installed on the hard disk, you will need to insert this media each time you power up. For the diagnostics to work, the disk on which they will be installed must have a diagnostic area reserved by the operating system's software formatter.

   Install power-up diagnostics (Y or N)? Y

4. Since you do want to install, choose the default, Y, and press New Line. The following message appears on your screen:

   Beginning Files Transfer

   If you want to view a listing of the files as they are installed on disk, press the 2 key on your alpha-numeric keypad. It takes about 15 minutes to copy power-up diagnostics from cartridge tape to the reserved area on the hard disk. When finished, the following message appears:

   Files Transfer Completed

5. When the Automatic Program Load Menu appears, you can either wait for the preset pause (originally set at 45 seconds) or press New Line to continue immediately.

6. Remove the SCP System Media tape from the drive.

If you are merely installing a new revision of SCP System Media, or power-up diagnostics from SCP System Media rev 2.00 (MV/1400 systems) or 3.00 (MV/2000 and DS/7500 systems) or later, you are now finished, and can continue loading your operating system. If for any reason the file ADESL does not yet reside in your operating system's root directory, install it immediately after bringing up your operating system. For instructions on installing the ADESL file, refer to the section "Installing the ADESL File in Your System Root Directory" in Chapter 2 of this manual.

If you are installing power-up diagnostics for the first time from an SCP System Media revision earlier than rev 2.00 (MV/1400 systems) or rev 3.00 (MV/2000 and DS/7500 systems,) continue with Step 7 to create the Format utility's equipment table. If for any reason the file ADESL does not yet reside in your operating system's root directory, continue bringing up your operating system. Then, follow the directions in the section "Installing the ADESL File in Your System Root Directory" in Chapter 2 of this manual before continuing with Step 7.

7. To create a diagnostics equipment table, follow the instructions below that are appropriate for your operating system.

AOS/VS

a. At the Operating System Load Menu, select option 2, "Enter the Technical Maintenance Menu."

b. Insert hardware-formatted scratch media into each tape and/or diskette drive.

c. From the Technical Maintenance Menu, select option 5, "Run Diagnostics."

d. Answer the question,

Are you sure you want to boot diagnostics?

by pressing **Y** and New Line.

DG/RDOS

a. Insert hardware-formatted scratch media into each tape and/or diskette drive.

b. Answer the query,

Filename?

by typing **ADESL** and pressing New Line.

DG/UX

a. Insert hardware-formatted scratch media into each tape and/or diskette drive.

b. Answer the question,

DO YOU WANT TO LOAD DIAGNOSTICS?:

by pressing **Y** and New Line.

c. Answer the query

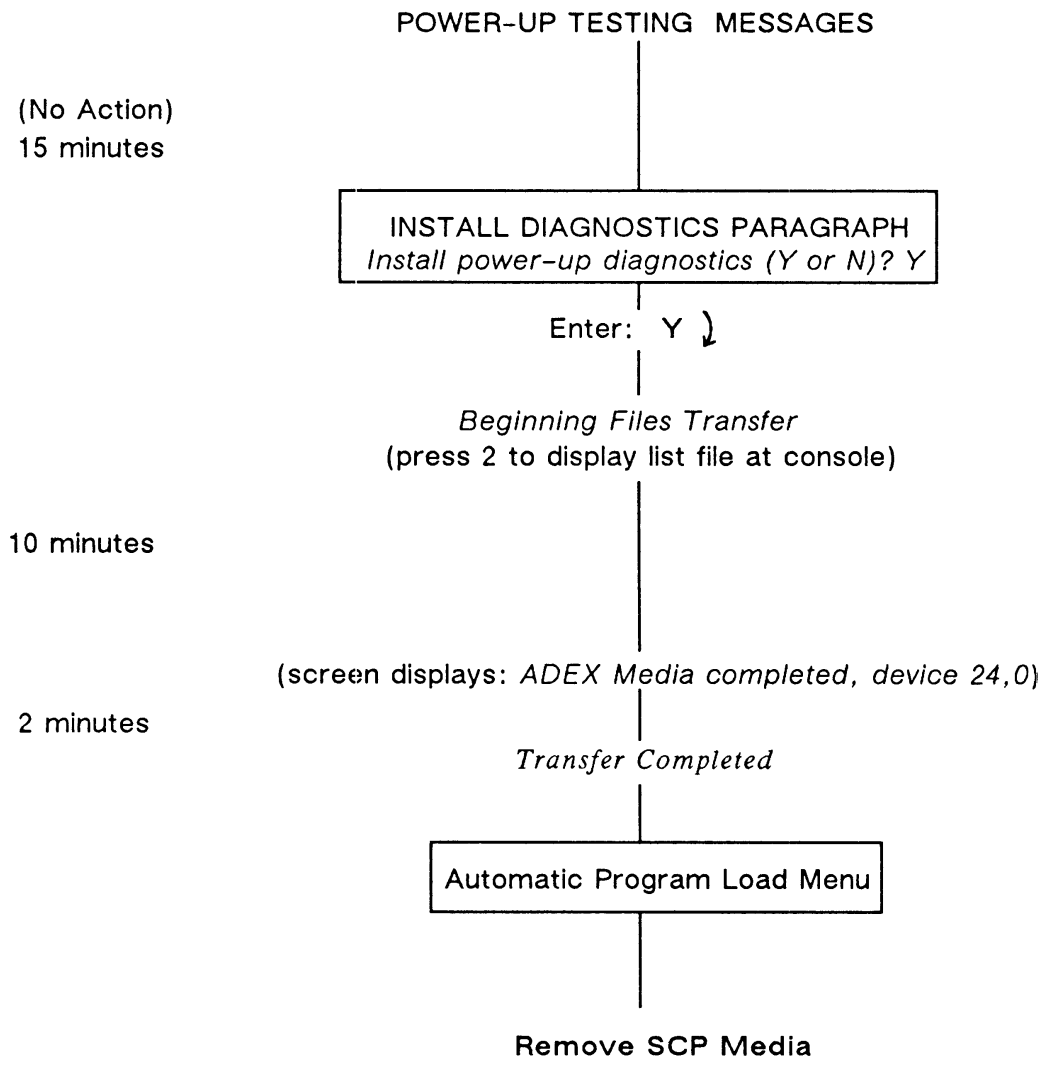
DIAGNOSTICS FILE [dpj@24(0,0)/ADESL]?

by pressing New Line.

8. It takes less than 2 minutes for your system to load diagnostics from disk to memory and create a diagnostics equipment table. When this process finishes, the Format Utility Main Menu or the ADEX Inventory list appears on your system console. When either the list or the menu appears, remove the scratch media from the drives.

9. From the Format Utility Main Menu, you can use the options as described in Chapter 4 or exit into the normal power-up sequence. From the ADEX Inventory List, you can proceed to start the Format utility as described in Chapter 3. (For information on the ADEX Inventory List, refer to *Installing and Operating Coresident Diagnostics on the ECLIPSE MV/2000™ DC Computer and DS/7000 Series Workstations.)*

Figure A-2 on the next page summarizes the procedure for installing power-up diagnostics onto your system disk from cartridge tape SCP System Media.



This summary continues on the following page, which outlines how to create a diagnostics equipment table THE FIRST TIME YOU INSTALL DIAGNOSTICS ON A NEW SYSTEM DISK.

Figure A-2 Installing Power-Up Diagnostics from Cartridge Tape

(continued)

Creating a Diagnostics Equipment Table

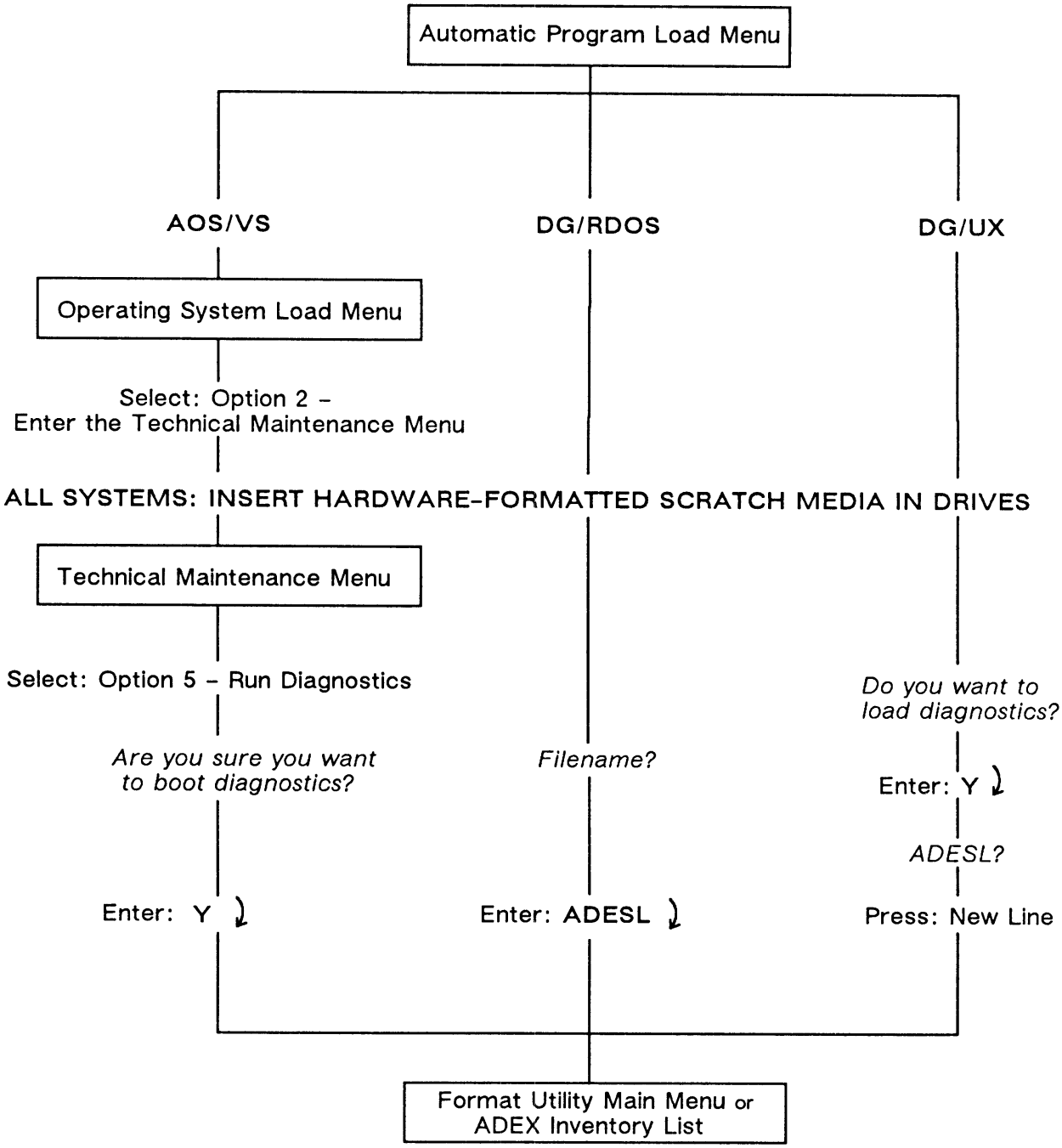


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Figure A-2 Installing Power-Up Diagnostics from Cartridge Tape

(concluded)

Installing Power-Up Diagnostics from 737-Kilobyte Diskette

The Format utility and ADEX diagnostics create their own *equipment table* (an internal list of hardware devices) the *first* time you bring up these utilities from your system disk. Your computer unit's diskette and/or cartridge tape drives *must* contain hardware-formatted scratch media during this process if you have installed power-up diagnostics from an SCP System Media revision earlier than rev 2.00 (MV/1400 systems) or rev 3.00 (MV/2000 and DS/7500 systems.) Later revisions of SCP System Media do not require you to insert any scratch media, but create the equipment table automatically. The instructions that follow for installing power-up diagnostics on your hard disk include creating the equipment table as part of the installation procedure. To prepare for this step, if necessary, be certain you have hardware-formatted scratch media available before you begin installing the contents of your SCP System Media on the disk.

Follow these steps to install power-up diagnostics on your system disk from diskette.

1. Insert your current SCP System Media diskette, labeled "ADEX FORMAT," into its drive.

2. Turn system power *on*. If the system is already powered up, shut down the operating system, and turn system power *off*, and then *on* again.

3. Proceed through the normal power-up messages described in *Starting ECLIPSE MV/1400™ DC Computer Systems* or *Setting Up and Starting Your ECLIPSE MV/2000™ DC or DS/7500 Series System* until your system console displays the Automatic Program Load Menu (usually about 3 minutes after turning power *on*).

4. From the Automatic Program Load Menu, select option 2, "Change preset values."

5. From the Change Preset Values Menu, select option 3, "Start from a different device."

6. At the "Start From a Different Device" screen, answer the following question,

   Start from which device? [1]:

   by typing **2**, for diskette, and pressing New Line.

7. If you have not inserted your System Media diskette into its drive (as requested in step 1, above), do so now. Press the space bar once to continue.

8. Your cursor moves to the lower left of your screen. After about 30 seconds, the following message appears:

   Do you want to install power-up diagnostics on your hard disk? If these diagnostics are not installed on the hard disk, you will need to insert this media each time you power up. For the diagnostics to work, the disk on which they will be installed must have a diagnostic area reserved by the operating system's software formatter.

   Install power-up diagnostics (Y or N)? Y

9. Since you do want to install, choose the [Y] default by pressing New Line. The following message appears on your screen:

   Beginning Files Transfer

   If you want to view a listing of the files as they are installed on disk, press the 2 key on your alpha-numeric keypad. It usually takes less than 2 minutes to copy power-up diagnostics from diskette to the reserved area on the system disk. When finished, the following message appears:

   Files Transfer Completed

   After briefly verifying the files' transfer to system disk, the system displays the Automatic Program Load Menu.

10. When the Automatic Program Load Menu appears, you can either wait for the preset pause (originally set at 45 seconds) or press New Line to continue immediately.

11. Remove the SCP System Media diskette from the drive.

If you are merely installing a new revision of SCP System Media, or power-up diagnostics from SCP System Media rev 2.00 (MV/1400 systems) or 3.00 (MV/2000 and DS/7500 systems) or later, you are now finished, and can continue loading your operating system. If for any reason the file ADESL does not yet reside in your operating system's root directory, install it immediately after bringing up your operating system. For instructions on installing the ADESL file, refer to the section "Installing the ADESL File in Your System Root Directory" in Chapter 2 of this manual.

If you are installing power-up diagnostics for the first time from an SCP System Media revision earlier than rev 2.00 (MV/1400 systems) or rev 3.00 (MV/2000 and DS/7500 systems,) continue with Step 12 to create the Format utility's equipment table. If for any reason the file ADESL does not yet reside in your operating system's root directory, continue bringing up your operating system. Then, follow the directions in the section "Installing the ADESL File in Your System Root Directory" in Chapter 2 of this manual before continuing with Step 12.

12. To create a diagnostics equipment table, follow the instructions below that are appropriate for your operating system.

AOS/VS

a. At the Operating System Load Menu, select option 2, "Enter the Technical Maintenance Menu."

b. Insert hardware-formatted scratch media into each tape and/or diskette drive.

c. From the Technical Maintenance Menu, select option 5, "Run Diagnostics."

d. Answer the question

Are you sure you want to boot diagnostics?

by pressing **Y** and New Line.

DG/RDOS

a. Insert hardware-formatted scratch media into each tape and/or diskette drive.

b. Answer the query,

Filename?

by typing **ADESL** and pressing New Line.

DG/UX

a. Insert hardware-formatted scratch media into each tape and/or diskette drive.

b. Answer the question

DO YOU WANT TO LOAD DIAGNOSTICS?:

by pressing **Y** and New Line.

c. Answer the query

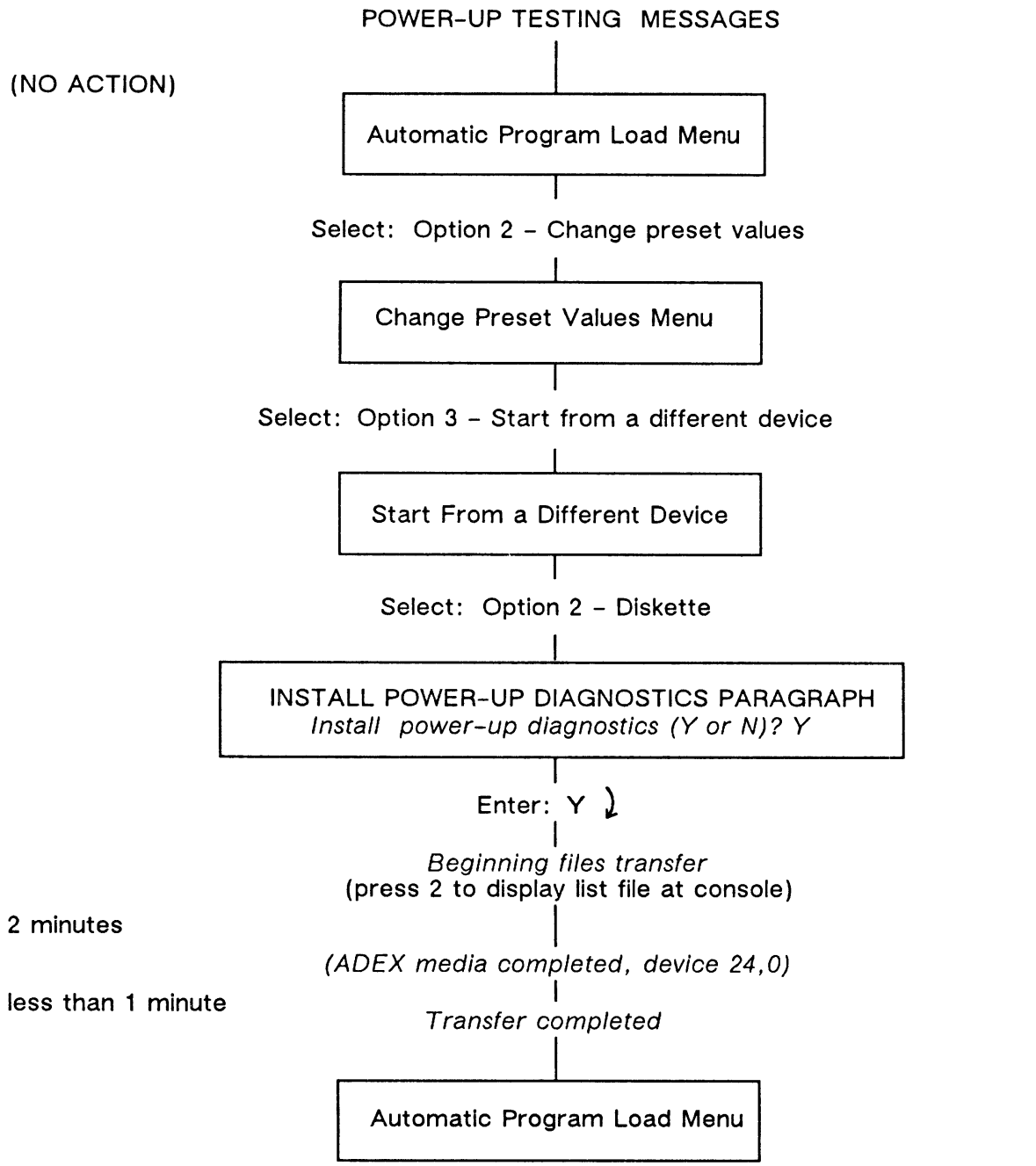
DIAGNOSTICS FILE [dpj@24(0,0)/ADESL]?

by pressing New Line.

13. It takes less than 2 minutes for your system to load diagnostics from disk to memory and create a diagnostics equipment table. When this process finishes, the Format Utility Main Menu or the ADEX Inventory List appears on your system console. When either the menu or the list appears, remove the scratch media from the drives.

14. From the Format utility menu, you can use the options as described in Chapter 4 or exit into the normal power-up sequence. From the ADEX Inventory List, you can proceed to start the Format utility as described in Chapter 3. (For information on the ADEX Inventory List, refer to *Installing and Operating Coresident Diagnostics on the ECLIPSE MV/2000™ DC Computer and DS/7000 Series Workstations.)*

Figure A-3 on the following page summarizes the procedure for installing power-up diagnostics on your system disk from SCP System Media diskette.



This summary continues on the next page, which outlines how to create a diagnostics equipment table THE FIRST TIME YOU INSTALL DIAGNOSTICS ON A NEW SYSTEM DISK.

Figure A-3 Installing Power-Up Diagnostics from Diskette
(continued)

Creating a Diagnostics Equipment Table

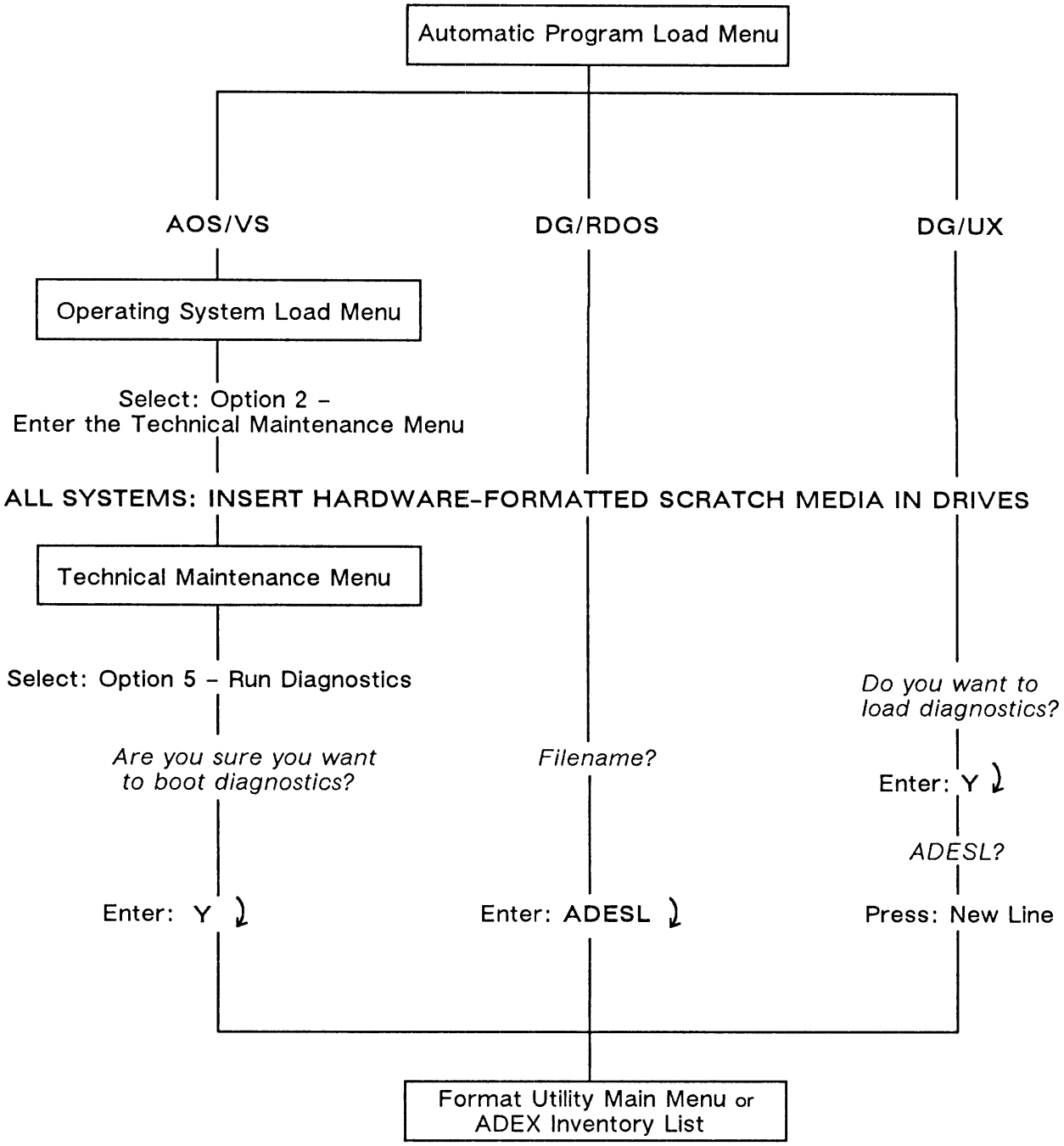


Figure A-3 Installing Power-Up Diagnostics from Diskette

(concluded)

End of Appendix

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Format Utility Main Menu

1 Exit the Format Utility
2 Format and verify cartridge tape
3 Format diskette
4 Read and verify cartridge tape
5 Display and update cartridge tape bad block table
6 Retension cartridge tape

Enter choice:

Menu Option	Functions	Runtime
1 – Exit the Format Utility	Exits Format Utility Preserves data	—
2 – Format and verify cartridge tape	Writes tape format pattern Writes tape servo pattern Creates tape bad block table Identifies tape defect areas Adjusts tape tension Destroys data automatically	20 to 45 minutes
3 – Format diskette	Hardware formats diskette Destroys data automatically	3 minutes
4 – Read and verify cartridge tape	Identifies tape defect areas Displays tape defect areas Adds to tape bad block table Destroys data optionally	10 minutes
5 – Display and update cartridge tape bad block table	Displays tape bad block table Adds to tape bad block table Destroys data optionally	1 minute
6 – Retension cartridge tape	Adjusts tape tension Preserves data	2 minutes

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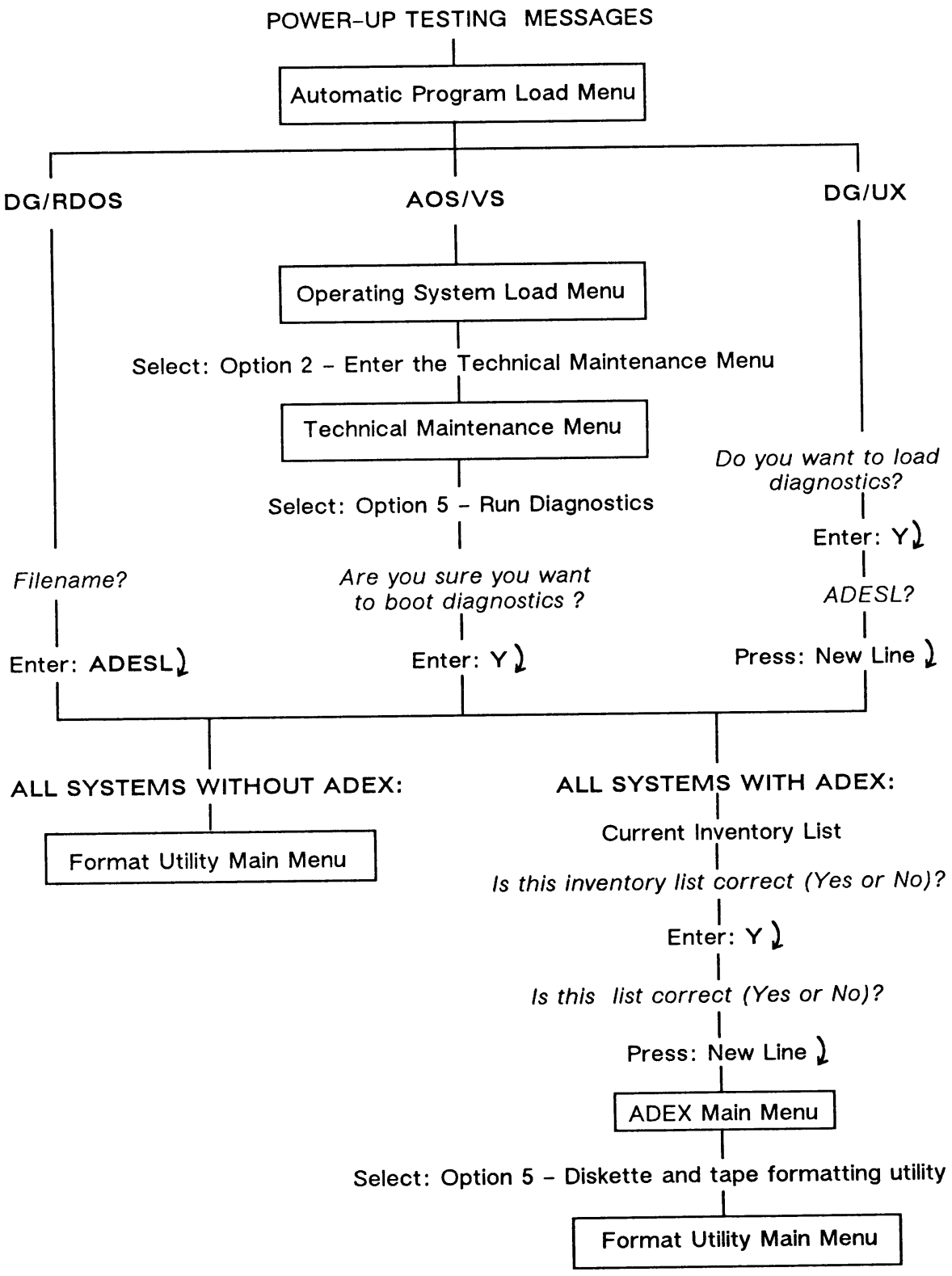
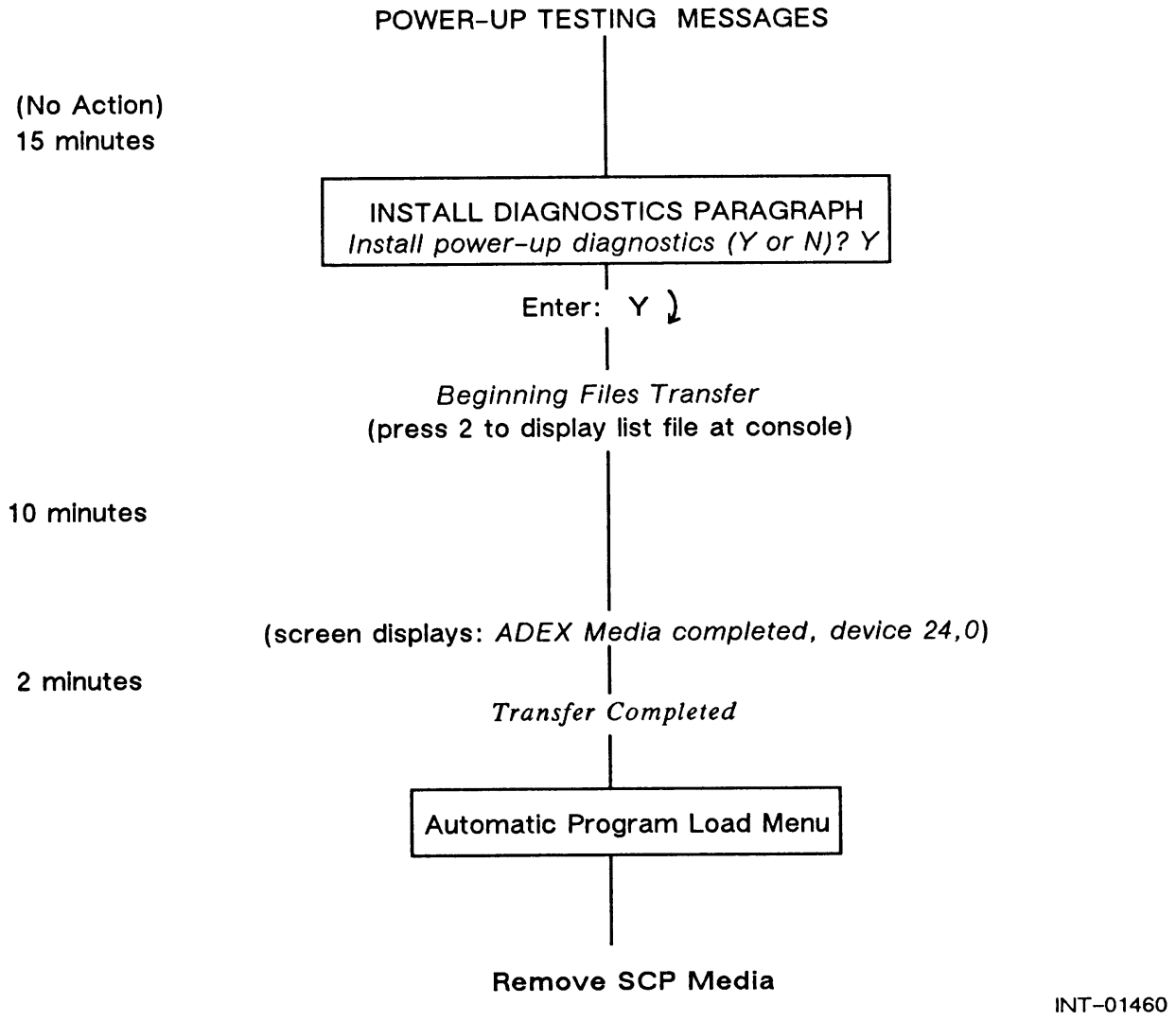
Summary of Format Utility Options



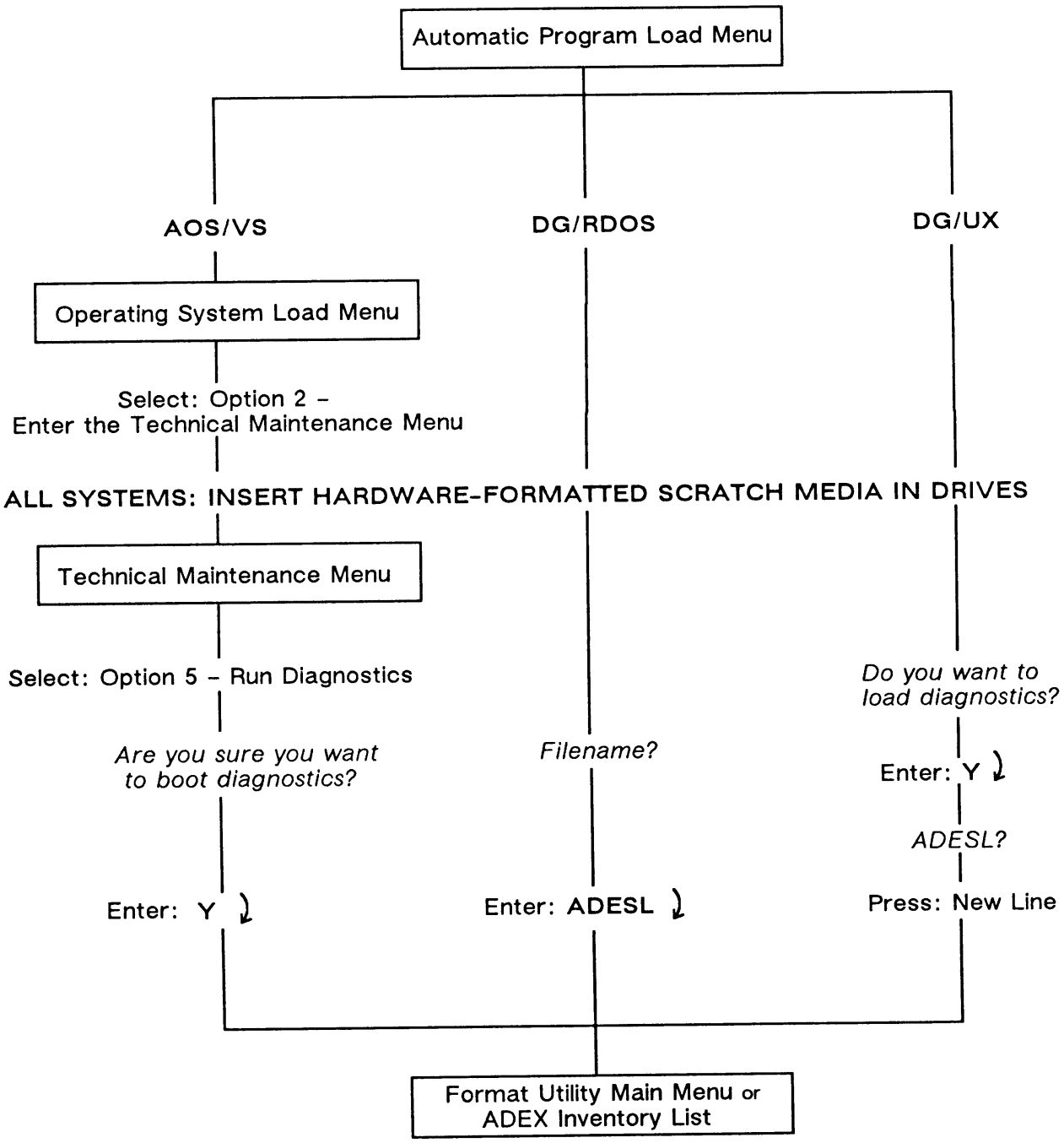
Starting The Format Utility During System Power Up



This summary continues on the following page, which outlines how to create a diagnostics equipment table THE FIRST TIME YOU INSTALL DIAGNOSTICS ON A NEW SYSTEM DISK.

Installing Power-Up Diagnostics from Cartridge Tape (continued)

Creating a Diagnostics Equipment Table



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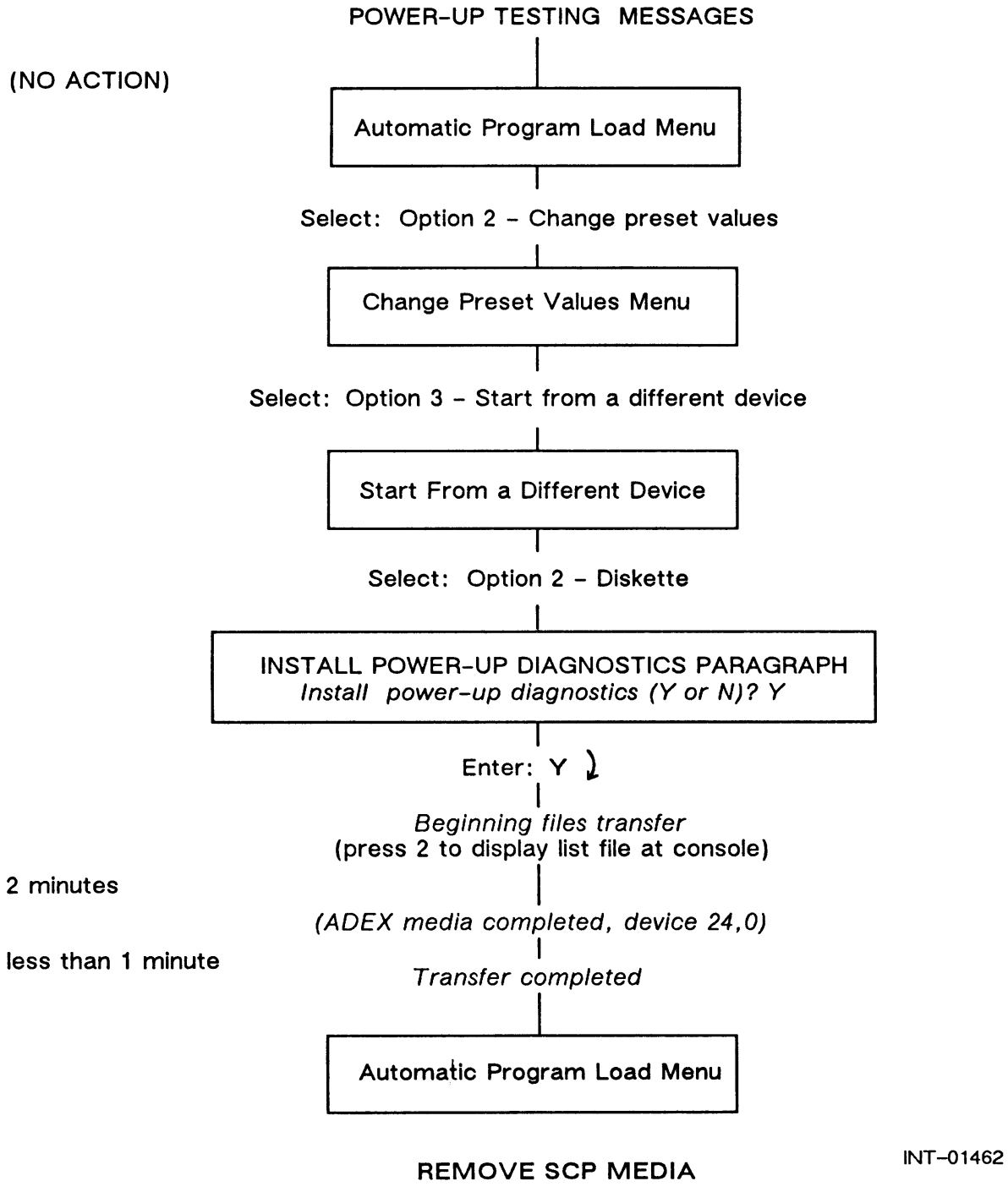
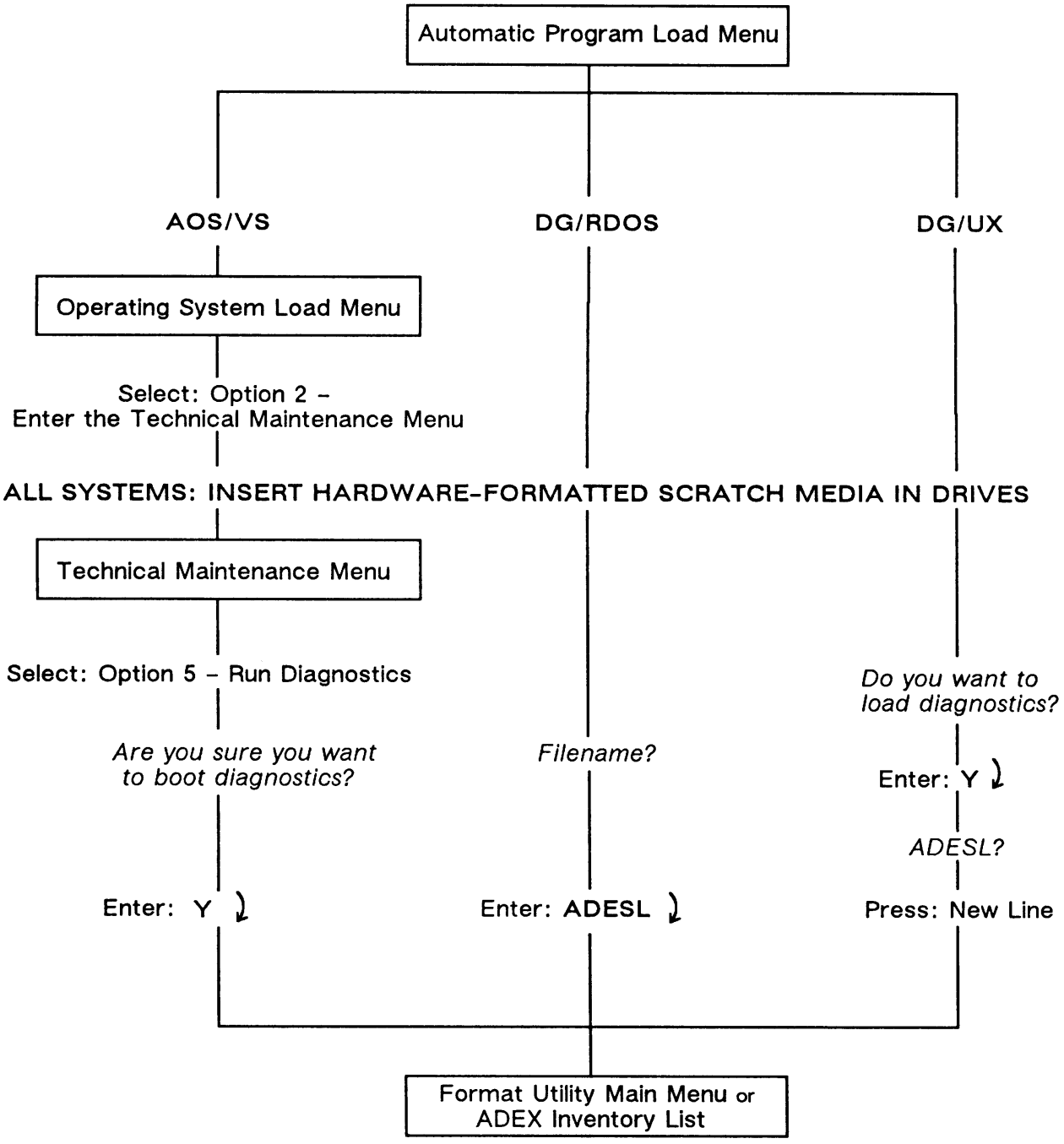
Installing Power-Up Diagnostics from Cartridge Tape (concluded)



This summary continues on the next page, which outlines how to create a diagnostics equipment table THE FIRST TIME YOU INSTALL DIAGNOSTICS ON A NEW SYSTEM DISK.

Installing Power-Up Diagnostics from Diskette (continued)

Creating a Diagnostics Equipment Table



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Installing Power-Up Diagnostics from Diskette (concluded)

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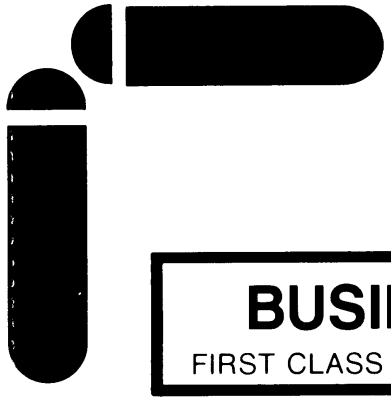

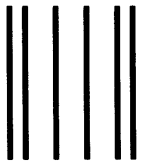

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