

SCSI Works!™



Complete ASPI-Compatible Device Support For:

- **CD-ROMs**
- **Photo CDs**
- **Tape Drives**
- **Bernoulli Drives**
- **SyQuest Drives**
- **Magneto-Optical Drives**
- **Floptical Drives**
- **HP ScanJet Scanners**
- **Hard Disks**

Users Guide

Trantor
► An Adaptec Company

SCSI Works!™

ASPI Software & Utilities

Including:

**Magic
Lantern™**
Photo CD Viewer


**CD-ROM Audio-Control
Software**

**Tape
Mate II**
SCSI Tape Backup
Software

User Guide

Copyright

Copyright © 1993 Trantor Systems Limited. All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of Trantor Systems Limited 5415 Randall Place Fremont, CA 94538 USA.

Trademarks

MiniSCSI, SCSIworks!, Trantor, the Music Box logo, the Tape Mate logo, and the Trantor logo are trademarks of Trantor Systems Limited which may be registered in some jurisdictions.

Bernoulli is a trademark of Iomega Corporation which may be registered in some jurisdictions.

SyQuest is a trademark of SyQuest Technology, Inc. which may be registered in some jurisdictions.

Floptical is a trademark of Insite Peripherals, Inc. which may be registered in some jurisdictions.

Magic Lantern and the Magic Lantern logo are trademarks of Incat System srl which may be registered in some jurisdictions.

Hewlett-Packard, HP, and ScanJet are trademarks of Hewlett-Packard Corporation which may be registered in some jurisdictions.

IBM, AT, OS/2, and PS/2 are trademarks of International Business Machines Corporation which may be registered in some jurisdictions.

Microsoft and MS-DOS are trademarks of Microsoft Corporation which may be registered in some jurisdictions.

Novell and NetWare are trademarks of Novell, Inc. which may be registered in some jurisdictions.

QEMM is a trademark of Quarterdeck Office Systems which may be registered in some jurisdictions.

386Max is a trademark from Qualitas, Inc. which may be registered in some jurisdictions.

Kodak is a trademark of Eastman Kodak Company which may be registered in some jurisdictions.

DeskLink and LapLink are trademarks of Traveling Software which may be registered in some jurisdictions.

Hercules is a trademark of Hercules Computer Technology which may be registered in some jurisdictions.

Sharp is a trademark of Sharp Kabushiki Kaisha (Sharp Corporation) which may be registered in some jurisdictions.

Changes

The material in this manual is for information only and is subject to change without notice.

Trantor reserves the right to make changes in the product design without reservation and without notification to its users.

Technical Support

Trantor software has been specifically developed for easy installation and use. We hope that our manuals and the on-screen instructions and help are complete and clear enough to meet your needs. If you need further help, please contact us.

The Adaptec/Trantor Electronic Bulletin Board Service (BBS) provides information on software upgrades, new releases, technical advice, and other topics. You can reach the BBS 23 hours a day at 408-945-7727; 1200/2400/9600 baud, 8 data bits, 1 stop bit, no parity.

To contact the Technical Support Hot Line, call 800-959-SCSI (7274) or 408-945-2550, M-Th: 6:00 a.m. to 5:00 p.m., F: 6:00 a.m. to 3:00 p.m., Pacific time.

Interactive FAX Service

The Adaptec Interactive FAX Service, which provides the latest on-line information about Adaptec/Trantor products and services, is available 23 hours a day, 7 days a week. To reach the Adaptec Interactive FAX Service, call 408-957-7150.

Ordering Software

To order Trantor software, call 800-TRANTOR (872-6867), M-F: 8:00 a.m. to 5:00 p.m., Pacific time.

Literature Hotline

To request additional documentation for Trantor products, call 800-TRANTOR (872-6867), M-F: 8:00 a.m. to 5:00 p.m., Pacific time.

NOTE

If you're like many users, you'll want to get started using your new equipment as soon as possible. *Chapter 3* of this manual gives a quick overview of the installation process. It will save you time in the long run, and make you aware of many options you might otherwise miss. Remember, you can always change your system configuration at a later time.

For technical support of this product, please see your dealer first for assistance, as he/she is most likely to understand your specific needs and equipment setup. To be eligible for any Trantor factory technical support which may be necessary, your Product Registration Card must be on file with us. Please fill out and mail in your Product Registration Card within 10 days of purchase!

Notice (applicable to Music Box TSR Application only)

This product uses the TesSeRact Ram-Resident Library and supports the TesSeRact Standard for Ram-Resident Program Communication. For information about TesSeRact, contact the TesSeRact Development Team at:

TesSeRact Development Team
c/o Chip Rabinowitz
2084 Woodlawn Ave.
Glenside, PA 19038
(215) 443-9705
Compuserve: 70731,20 MCIMAIL: 315-5415

Table of Contents

1	SCSIworks! Introduction	1
1.1	The SCSIworks! Package	1
1.1.1	Checklist	3
1.1.2	SCSIworks! Files	3
1.1.3	Requirements	4
1.2	Manual Conventions	4

I Drivers & Utilities

2	Drivers & Utilities Overview	9
2.1	Software Features	9
2.2	Software Overview	9
3	Installation Overview	13
4	Software Installation	15
4.1	Installation Steps	15
4.1.1	Running the INSTALL Program	16
4.1.2	Checking the Installation	20
4.1.3	Testing the SCSI Hardware	21
5	Hard Disk Software Operation	25
5.1	TFORMAT (Formats Storage Media)	25
5.2	TSPAN (Span One Partition Over Several Drives)	29
5.3	TSTATUS (Checks Status of Your System)	30
6	CD-ROM Software Operation	33
6.1	MSCDEX, the DOS CD-ROM Extensions	33
6.2	CHKCD	35
6.3	TLOCK	35
6.4	TUNLOCK	36
6.5	TEJECT	36
7	Scanner Operation	37
7.1	Scanner Files	37
7.2	How Your Scanner Functions	37
7.3	Scanner Diagnostics	38
8	Device Driver Options	39
8.1	How to Identify Software Versions	39
8.2	Driver Support	39
8.3	Driver Command Line Switches	39
9	OS/2 Software Installation	43
9.1	Installing OS/2 2.1 Device Drivers	44
9.2	Removable Media (Magneto-Optical, SyQuest, Bernoulli, etc.)	44
9.3	Setting Up a Hard Drive for OS/2 Software Use	45

9.4	OS/2 Software Error Messages	45
10	Windows NT Software Installation	47
10.1	Trantor NT SCSI Miniport Installation	48
11	NLM Software Installation	49
11.1	NLM Introduction	49
11.1.1	Checklist	49
11.1.2	NLM Files	50
11.2	NLM Installation	50
11.3	Warning and Error Messages	53
12	Troubleshooting Notes	55
12.1	All Host Adapters	55
12.1.1	Parallel-to-SCSI Adapters	55
12.2	Technical Support	56

II Magic Lantern Software

13	Magic Lantern Operation	61
13.1	Magic Lantern Overview	61
13.1.1	Magic Lantern Files	61
13.2	Magic Lantern Installation	61
13.3	Operation	62
13.3.1	Mouse Control	63
13.3.2	Keyboard Control	63
13.4	Magic Lantern Troubleshooting	64

III Music Box Software

14	Music Box Operation	69
14.1	Music Box Files	69
14.2	Requirements	70
14.2.1	Hardware	70
14.2.2	Software	70
14.3	Music Box Installation	70
14.4	Running Music Box Software	71
14.4.1	From the DOS Command Line	71
14.4.2	Running Music Box Software with Microsoft Windows	72
14.5	Learning Music Box Software	73
14.5.1	Mouse Control	74
14.5.2	Keyboard Control	74
14.5.3	Music Box Control Functions	74
14.5.4	Using the Windows 3 Version	75
14.5.5	Running Music Box Software in Memory-Resident Mode	78

Table of Contents

14.5.6 Music Box TSR Software Commands and Audio Interface	80
14.5.7 Unloading Music Box TSR Software	81
14.5.8 Reloading Music Box TSR Software	81
14.6 Music Box Troubleshooting	81

IV Tape Mate II Software

15 Introduction to Tape Mate II Software	85
15.1 Hardware Support	85
15.2 Tape Mate II Features	85
15.3 Using the Tape Mate II Section of this Manual	85
16 Installation and Configuration	87
16.1 Before You Begin	87
16.2 Installing Tape Mate II Software	87
16.3 Configuring Tape Mate II Software for Your Device	88
17 Getting Started	91
17.1 Terms You Should Know	91
17.2 Concepts	91
17.3 Starting Tape Mate II Software	92
17.4 The Main Screen	92
17.5 Selecting Items	92
17.6 Entering Information in Dialog Boxes	93
17.7 Keyboard Keys	93
17.8 Using the Mouse	93
17.9 Getting Help	94
17.10 Quitting Tape Mate II Software	94
17.11 Do's and Don'ts in Tape Mate II Software	94
18 Backup Operation	95
18.1 Overview	95
18.2 Performing a Backup	96
18.3 Selecting Run Time Options	100
18.4 Specifying Session Parameters	101
18.5 Selecting Drives, Directories, and Files	102
18.5.1 Setting Default Parameters	102
18.5.2 Setting Different Parameters for Different Drives ..	106
19 Restore Operation	109
19.1 Restoring Data	109
19.2 Restoring a Multiple-Volume Session	111
19.3 Setting the Restoration Parameters	111
19.3.1 Destination Drive	112
19.3.2 Destination Path	112
19.3.3 Run Time Options	112
19.3.4 Source Session	113

19.3.5	Since Date and Before Date	114
20	Verify Operation	115
21	Unattended Operations	119
21.1	Immediate Unattended Operations	119
21.2	Delayed Unattended Operations	119
21.2.1	Scheduling the Start Time	120
21.2.2	Activating the Tape Mate II Scheduler	121
21.2.3	Enabling the Log History Option	121
22	Script Files	123
22.1	Creating a Script File	123
22.2	Editing a Script File	124
22.3	Deleting a Script File	125
22.4	Script Language Commands	125
22.4.1	Command Format	126
22.4.2	Command Descriptions	126
22.5	Script File Format	129
22.5.1	Attended Script Files	129
22.5.2	Unattended Script Files	130
22.6	Validating a Script File	132
23	Database Resources	133
23.1	Volume Database Maintenance	134
23.2	Session Database Maintenance	135
23.3	Adding a New Volume	136
23.4	Purging the Database	136
23.5	Exiting the Menu	136
24	Utility Menu	137
24.1	Initializing Media	137
24.2	Retensioning Media	138
24.3	Ejecting Media	139
24.4	Printing a Log	139
24.4.1	Viewing and Printing a Log History File	139
24.4.2	Deleting a Log History File	139
24.5	Obtaining General Information	140
24.6	Exiting the Utility Menu	140
25	Configuration Menu	141
25.1	Local Configuration Parameters	141
25.2	Global Configuration Parameters	143
25.3	Exiting the Configuration Menu	145

Table of Contents

26	Tape Mate II Upgrade Options	147
----	------------------------------------	-----

V Appendices

A	System Requirements	153
B	Introduction to ASPI	155

1 SCSIworks! Introduction

This manual describes Trantor's **SCSIworks!** ASPI software and utilities package. This manual also includes a detailed explanation of its features, installation, and operation.

1.1 The SCSIworks! Package

SCSIworks! software is a unique comprehensive ASPI (Advanced SCSI Programming Interface) software package including device drivers, applications, and operating system support. The software described in this manual is supplied standard with Trantor™ host adapters and functions similarly on each.

The ASPI Solution

SCSIworks! software makes SCSI easy to use and eliminates compatibility problems by acting as the mediator for ASPI hardware and DOS/Windows operating environments as well as ASPI applications. See *Figure 1*.

Essentially, there are two parts to an ASPI implementation, the ASPI manager, a device driver supplied by the hardware manufacturer, and the ASPI software application. The manager creates the standard ASPI-compatibility layer between the SCSI host adapter hardware and the ASPI-compatible application. The manager is very hardware-specific and is almost always supplied by the manufacturer of your SCSI host adapter.

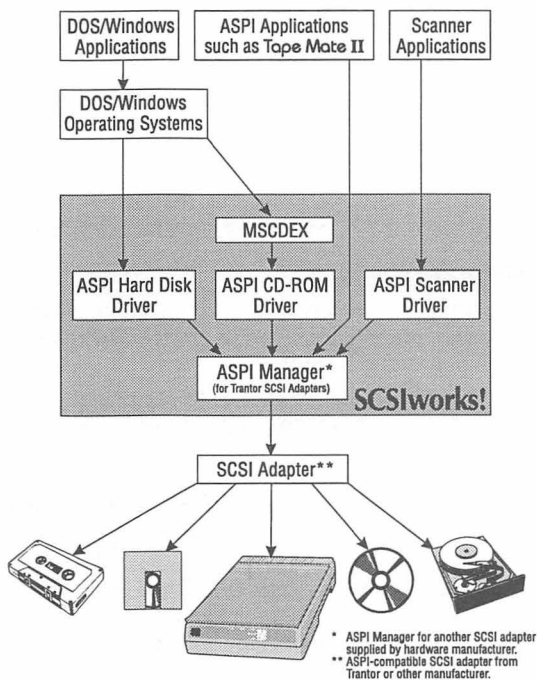


Figure 1 SCSIworks! Software ASPI Diagram


Referring to *Figure 1*, you can see that the ASPI hard disk, CD-ROM, and scanner drivers actually work through the ASPI manager to perform their functions. Also, DOS & Windows applications which access SCSI devices work through both the drivers and the manager. ASPI applications (such as tape backup software) usually access the ASPI manager directly. See *Appendix B* for more ASPI details.

Since **SCSIworks!** software is ASPI-compliant, it may be used with other manufacturer's ASPI-compatible hardware. And since Trantor's SCSI hardware provides the ASPI manager, you may interface with other manufacturers' ASPI-compatible applications.

Device Support

SCSIworks! software provides CD-ROM, hard disk, removeable-media, tape, and scanner device drivers for any ASPI-compatible SCSI host adapter. **SCSIworks!** driver support includes:


- CD-ROMs (including single and multisession Kodak® Photo CD)
- hard disks
- magneto-optical drives
- SyQuest® drives
- Bernoulli® drives
- Floptical® drives
- Hewlett-Packard® ScanJet® II scanners
- SCSI floppy drives
- SCSI tape drives

 To use your tape drive, install the **Tape Mate II** software (see *Chapter 15*) for use with DOS or use any other ASPI tape backup application.

Applications Included

SCSIworks! package offers three applications. These applications allow you to view photo CDs, listen to music CDs, and use your tape drive. These applications include:

- *Magic Lantern*™ Photo CD Viewer
- *Music Box* CD-ROM audio control software
- **Tape Mate II** SCSI tape backup and restore software

 *Magic Lantern* software requires Windows and a photo CD compatible CD-ROM drive (see *Chapter 13*), and *Music Box* software requires Microsoft® CD-ROM Extensions (MSCDEX) and an audio-compatible CD-ROM drive (see *Chapter 14*). **Tape Mate II** software provides support for SCSI tape drives and is certified to function under DOS (see *Chapter 15*). See *Appendix A* for other hardware and software requirements.

Support for Trantor Adapters

SCSIworks! software offers additional support for all Trantor host adapters by providing:

- ASPI managers
- OS/2® drivers
- Windows NT drivers
- Novell® NetWare® v3.11 or later Loadable Modules

To use your devices under OS/2, Windows NT, or Novell NetWare operating systems, use the appropriate operating system device drivers and applications.

1.1.1 Checklist

You should have received the following items in your software package:

- ☐ 3½-inch, 1.44-MB SCSIworks! distribution diskette #1
- ☐ 3½-inch, 1.44-MB SCSIworks! distribution diskette #2
- ☐ SCSIworks! User Guide (this document)
- ☐ Product registration card
- ☐ Microsoft® registration card (for MSCDEX)

If anything is missing, please contact your dealer immediately. Be sure to fill out and return your product registration cards to be eligible for warranty support and technical assistance.

1.1.2 SCSIworks! Files

Your SCSIworks! diskettes contain directories and files as outlined in this table. Details of these files can be found in the chapters listed.

Files	Disk #	Directories	Details In
Drivers & Utilities, Installation	1	Root	Chapter 2
Old	1	\OLD	Chapter 2
Scanner	1	\SCANNER	Chapter 2
OS/2	2	\OS2	Chapter 9
Windows NT	2	\WINNT	Chapter 10
NLM	2	\NLM	Chapter 11
Magic Lantern	2	\LANTERN	Chapter 13
Music Box	1	\MUSICBOX	Chapter 14
Tape Mate II	2	\TAPEMATE	Chapter 15


1.1.3 Requirements

The following is a list of the requirements for SCSIworks! drivers. See *Appendix A* for additional *Magic Lantern*, *Music Box*, and **Tape Mate II** hardware and software requirements.

- IBM® or compatible AT®, PS/2®, or similar computer.
- MS-DOS®, PC-DOS 3.1, or above. DOS 3.3 or above is required to format and use partitions larger than 32 MB.
- A 100% IBM-compatible BIOS. Operation with some incompatible BIOSs may be possible but is not guaranteed.
- At least 640 KB of system memory.

1.2 Manual Conventions

Since SCSIworks! software provides ASPI interfacing, any references to “host adapter” or “adapter” in this *User Guide* refers to Trantor’s as well as any other manufacturer’s SCSI host adapter that is ASPI-compatible, having the appropriate ASPI manager.

 This manual assumes that your host adapter has been successfully installed in your computer system following the instructions in the Trantor *Hardware Installation Guide* or other manufacturer’s installation documents. If you have not performed this installation, please do so before attempting to install and run the software described in this document.

This manual is divided into four sections—*Part I Drivers & Utilities*, *Part II Magic Lantern Software*, *Part III Music Box Software*, *Part IV Tape Mate II Software*, and *Part V Appendices*.

Typeface and Writing Conventions

There are several typeface conventions used in this manual. These conventions represent different things and are used to make reading this manual easier.

Bold Print	Represents text to be selected or messages that appear in a dialog box, on a menu, or on screen.
Courier Bold	Text or commands to be entered from the keyboard.
EUROSTILE BOLD	On screen <i>Music Box</i> buttons to be pressed using the mouse.
<i>Italic Print</i>	Indicates chapter, section, appendix, and figures, and references. <i>Magic Lantern</i> and <i>Music Box</i> software are also represented by italic type.

- [Brackets] Identifies control and function keys on the keyboard. For example, the notation [Enter] means to press the [Enter] key on the keyboard. When two or more notations in brackets are connected with a hyphen, as in [Ctrl]-[Alt]-[Del], press the indicated keys simultaneously.
- CAPS Designates directories, subdirectories, and file names in your computer system like AUTOEXEC.BAT and CONFIG.SYS. They are also used to designate on-line or **Tape Mate II** script language commands.

SCSI Works!

Drivers & Utilities

2 Drivers & Utilities Overview

Drivers & Utilities details installation, configuration, and use of the **SCSIworks!** ASPI CD-ROM, hard disk, and scanner drivers and utilities. These drivers support CD-ROMs; hard disk, magneto-optical, SyQuest, Bernoulli, Floptical, SCSI floppy, and SCSI tape drives; and HP® ScanJet II scanners. This chapter is an introduction to the *Drivers & Utilities* section.

- ☞ Software for all devices (except CD-ROMs and scanners) refers to “hard disk” software, since these devices all share the same hard disk device driver and utilities.

2.1 Software Features

The software has several important features which include:

- Simple installation and configuration, including automatic updating of your AUTOEXEC.BAT and CONFIG.SYS files.
- Support for the ASPI specification, permitting use of ASPI software. See *Appendix B* for more information.
- Spanning capability, which allows you to treat two or more erasable SCSI devices (either fixed or removable media) as a single large device.
- Formatting routines which automatically identify all connected devices and media, allowing partitioning and verification.
- Media format compatibility, so that you may interchangeably connect your SCSI devices to any Trantor SCSI host adapter installed in other IBM-compatible computers.
- Simple installation menus which allow you to easily call SCSI device media format routines, set spanning selections, and test your SCSI interface and devices.

2.2 Software Overview

The software distribution diskettes contains a number of important files. The following is a brief summary of the files contained in the root directory of disk #1:

INSTALL.EXE—The main setup and installation program which provides a “shell” to

- Copy all software files to your system
- Format SCSI device storage media (fixed and removable)
- Configure SCSI device spanning
- Test all SCSI devices connected to the adapter

Separate programs (below) perform some of these functions.

CDINSTALL.EXE—The CD-ROM installation routines, initially run via the main INSTALL program. Use CDINSTALL.EXE to change CD-ROM operation options at a later time.

HDINSTALL.EXE—The hard disk installation routines, initially run via the main INSTALL program. Use HDINSTALL.EXE to change hard disk operation options at a later time.

SCINSTALL.EXE—The scanner installation routines, initially run via the main INSTALL program. Use SCINSTALL.EXE to change scanner operation options at a later time.

MAxxx.SYS—ASPI manager files (see *Appendix B* for ASPI details) for various Trantor SCSI host adapters. Only one of these is copied to your system during the installation process.

TSCSI.SYS—The hard disk device driver file which links the hardware to your computer's operating system. It must be loaded through your system's CONFIG.SYS file; INSTALL.EXE modifies your CONFIG.SYS file automatically. This driver is not needed for CD-ROM or scanner operation.

TSTATUS.EXE—A status utility which informs you of

- The revision level of the TSCSI.SYS driver.
- How much memory is used by TSCSI.SYS.
- The SCSI drives connected to your adapter and their capacities.

Note that this program does NOT work with CD-ROMs, scanners, or tape drives.

SCSITEST.EXE—A test utility to search for all SCSI adapters and devices connected to your computer and report the results. This driver is used to confirm that your SCSI adapter and all SCSI devices are properly connected and configured.

TFORMAT.EXE—A SCSI formatting utility used to format and partition the storage media of your SCSI drives. Works with both fixed (hard disk) and removable (cartridge or floppy) drives. Options include the ability to define more than one logical partition (drive letter) per drive and to verify the reliability of the media after formatting. The ASPI manager (MAxxx.SYS) must be loaded in order for TFORMAT to function.

TPSPAN.EXE—Allows you to create one large logical drive (C, D, E, etc.) from two or more SCSI devices by "spanning" them via software control. Note that the spanned devices must either be all fixed or all removable; spanning fixed and removable devices together is not permitted. It is possible, however, to use more than one spanned set of

2 Drivers & Utilities Overview

devices simultaneously; for instance, a spanned set of hard disks may be used along with a different spanned set of removable cartridges. The ASPI manager (MAxxx.SYS) must be loaded in order for TSPAN to function.

- TSLCDR.SYS**—The CD-ROM device driver file which links the hardware to the operating system. It must be loaded through your system's CONFIG.SYS file; INSTALL.EXE modifies your CONFIG.SYS file automatically. TSLCDR.SYS, TSCSI.SYS, and TSJII.SYS must be loaded to support CD-ROMs, hard disks, and scanners simultaneously.
- MSCDEX.EXE**—Microsoft's CD-ROM extensions to MS-DOS, licensed by Trantor. It is generally loaded from AUTOEXEC.BAT. See *Section 6.1*. Be sure to register your MSCDEX driver with Microsoft Corporation using the registration card packaged with your distribution software.
- CHKCD.EXE**—A utility, similar to the CHKDSK program supplied with DOS, to display status information about a CD-ROM.
- TLOCK.EXE**—A utility designed to prevent ejecting a disc from a CD-ROM or other removable-media drive by pushing the drive's front panel button.
- TUNLOCK.EXE**—A utility which is the opposite of TLOCK; it "unlocks" a CD-ROM or other removable-media drive, permitting the disc to eject by pushing the drive's front panel button.
- TEJECT.EXE**—When executed from the DOS command line, ejects the currently loaded disc(s) from a CD-ROM or other removable-media drive.
- READ.ME**—A text file which may be included, containing up-to-date information since this manual was printed. It is important that you look for this file and, if it exists, read it carefully.

Auxiliary Files

- *.OVL—Overlay files used during installation only. There are several versions supplied, only one of which is used for any particular Trantor SCSI interface product.
- *.INF—Text information files used during installation only. There are several versions supplied, only one of which is used for any particular Trantor SCSI interface product. Note that you must not modify these files in any way; if you do, the installation process halts.
- *.MSG—Messages that appear on screen during the installation process.

Old Files




Your distribution diskette #1 has an \OLD subdirectory, containing a number of old drivers and utilities files. These are only important if you have an old Trantor host adapter.

Scanner Files

Your distribution diskette #1 has a \SCANNER subdirectory, containing a number of scanner files (see *Chapter 7* for more details).

3 Installation Overview

This quick overview is intended to summarize the various steps involved with installation and configuration of your hardware and software. New users should thoroughly read the remainder of this manual before proceeding with installation and configuration!

- 1 Referring to your *Hardware Installation Guide* or other installation instructions supplied with your hardware, install the SCSI host adapter in your computer system. It's important that the hardware be carefully and completely installed prior to using the software described in this manual.
 - 2 Connect the SCSI device(s) to be used with the host adapter. The last (or only) SCSI device connected to the host adapter should be properly "terminated," per the device manufacturer's specifications. See your dealer for termination assistance if necessary; a terminator is often an optional accessory.
 - 3 Set the device address between 0 and 6 (see your device manual for details). If you are using more than one SCSI device, make sure that each device is set to a different address.
 - 4 Power up the computer system and allow it to boot. Place the software distribution diskette # 1 in a floppy disk drive and log onto that drive.
-  If you plan to use your Trantor SCSI adapter under OS/2 2.0 or later, skip to *Chapter 9* now for installation information. Skip steps 5-7 below. Note that only the .ADD files supplied by Trantor are applicable under OS/2—all other Trantor drivers and utilities are not used with OS/2.
-  If you plan to use your Trantor SCSI adapter under Windows NT, skip to *Chapter 10* now for installation information. Skip steps 5-7 below. Note that only the Windows NT files supplied by Trantor are applicable under Windows NT—all other Trantor drivers and utilities are not used with Windows NT operating system.
-  If you plan to use your Trantor SCSI adapter under Novell NetWare v3.11 or later, skip to *Chapter 11* now for installation information. Skip steps 5-7 below. Note that only the NLM files supplied by Trantor are applicable under Novell NetWare v3.11 or later operating system—all other Trantor drivers and utilities are not used with NetWare.

- 5 Install CD-ROM, hard disk, and/or scanner software by typing **INSTALL** at the DOS prompt. Follow the on-screen instructions. After the installation process is complete reboot your computer to activate the SCSI software driver(s) and utility software.
- 6 Run the SCSITEST program to test the installation and run the INSTALL program again, if necessary, to reconfigure system options.
- 7 Install the appropriate ASPI-compatible scanner application for your HP ScanJet scanner; install the **Tape Mate II** software (see *Chapter 15*) or use any other ASPI tape backup application.

4 Software Installation

An automatic software installation program (called INSTALL) is included on the software distribution diskette #1 and allows you to install and configure hard disk, CD-ROM, and scanner support software. You must install your software onto a bootable hard disk. The original distribution diskette is not copy-protected, and we encourage you to make one (1) backup copy of the original diskette (using the DOS command DISKCOPY or any other suitable utility) to protect against loss of or damage to your original software.

If there is a READ.ME text file on your Trantor distribution diskette #1, please read it now with any word processor or text editor. It may contain corrections or updates to the software or this manual. Please see *Chapter 12* for troubleshooting assistance.

4.1 Installation Steps

Prior to installing your software, the hardware installation should have been completed following instructions contained in the *Hardware Installation Guide* or other instructions supplied with your host adapter. Make sure that you have:

- ☐ Installed the SCSI host adapter.
- ☐ Attached the SCSI device(s) you intend to use.
- ☐ Checked that the last (or only) SCSI device is properly terminated, per manufacturer's instructions.
- ☐ Checked that the device addresses of multiple SCSI devices are unique.
- ☐ Turned on the SCSI device(s) and your computer.

The automatic installation program, INSTALL, performs the following tasks:

- Creates a subdirectory (\TSCSI), if necessary, on the hard drive specified by you during installation.
- Copies all the hard disk, CD-ROM, and/or scanner files to the new subdirectory; for Trantor adapters, copies the appropriate ASPI manager.
- Adds the lines DEVICE=C:\TSCSI\TSCSI.SYS for hard disks, DEVICE=C:\TSCSI\TSLCDR.SYS for CD-ROMs, and DEVICE=C:\TSCSI\TSJIL.SYS for scanners to your CONFIG.SYS file. Adds C:\TSCSI to the PATH statement in your AUTOEXEC.BAT file. This assumes that you specified drive C for the installation. CONFIG.SYS, AUTOEXEC.BAT, and the PATH statement are created if they do not already exist.

SCSIworks! User Guide

4.1.1 Running the INSTALL Program

To run the automatic installation program, place the distribution diskette #1 (or, preferably, a copy of it) into floppy disk drive A or B. Log onto the floppy drive and enter the command **INSTALL**. Here's an example of this sequence:

B:
INSTALL

The INSTALL program is described here in consecutive order. Since the hard disk, CD-ROM, and scanner driver installations are very similar, the installation is described once, identifying where differences are in screens and options. The following is a basic outline of the process:

- Selecting the Driver
- Selecting the Host Adapter
- Selecting the Boot Drive
- Completing the Installation

Selecting the Driver

INSTALL's main menu should appear (*Figure 2*). You may select any of the three options by using the [Spacebar] or [Arrow] keys to move the highlight cursor.



Figure 2 SCSIworks! Install Main Menu

Choose **Install Hard Disk Driver**, **Install CD-ROM Driver**, or **Install Scanner Driver** to proceed.

For hard disk installation—after selecting the hard disk driver a screen appears allowing you to choose from a number of options. Select **Install Distribution Software** as shown in *Figure 3*. (The remaining options on this screen are discussed in *Chapter 5*.)

Selecting the Host Adapter

The next screen that appears in any of the three installations is the Host Adapter Options Screen that allows you to manually or automatically set your host adapter (see *Figure 4*).

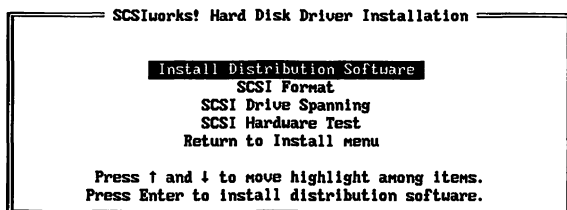


Figure 3 Hard Disk Driver Installation Menu

In most cases, you should select **Automatic Search for Host Adapter** and press [Enter]. INSTALL scans the system, identifies the adapter, and sets the adapter settings. Once the host adapter option has been set, move the cursor to **Continue Installation** and press [Enter].

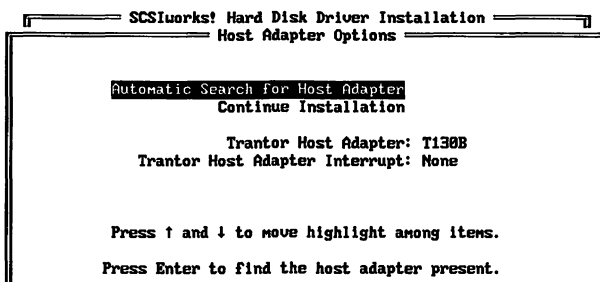


Figure 4 Host Adapter Options Screen

- ☞ The only reason you might want to set the adapter manually (with the [Left Arrow] and [Right Arrow] keys) is if you do not have your adapter installed and connected to a SCSI device at this time, or if you already have another adapter installed in your computer—INSTALL only automatically identifies the first adapter it finds. The INSTALL program displays a help line at the bottom of the screen to assist you in selecting the driver for your device.
- ☞ When selecting the host adapter manually, an additional help line may appear at the bottom of the screen to assist you in selecting the your host adapter.

NOTE

For adapters not listed, choose **NONE**, or let the automatic install option choose it for you. The INSTALL program does not install an ASPI manager for non-Trantor adapters, since one should be already supplied by your hardware manufacturer; but it does install the device driver(s) as the last lines in your CONFIG.SYS file.

For CD-ROM installation—once you have selected the host adapter, the MSCDEX Options Screen appears as shown in see *Figure 5*. The various options on this screen relate to operation of the MSCDEX extensions software for CD-ROM drives. For a full explanation of each of these options, please refer to *Section 6.1* which discusses MSCDEX in detail.

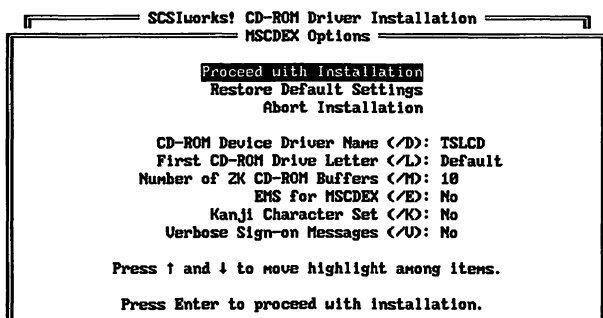


Figure 5 MSCDEX Options Menu

You may point to any of the menu options with the [Up Arrow] and [Down Arrow] keys; the help line at the bottom of the screen explains how to change each option. In most cases, accepting the default installation options is appropriate. Once you have set all the options, select **Proceed with Installation** and press [Enter] to continue.

For scanner installation—once you have selected the host adapter, the Scanner Options menu appears. The only scanner selection on this screen is HPSCANNER, select **Continue Installation** and press [Enter] as shown in *Figure 6*.

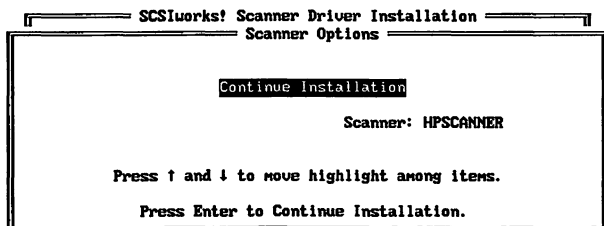


Figure 6 Scanner Options

Selecting the Boot Drive

At the next screen (when installing hard disk, CD-ROM, or scanner drivers), INSTALL prompts you for the drive letter of your boot disk as shown in *Figure 7*. Specify your boot drive and press [Enter].

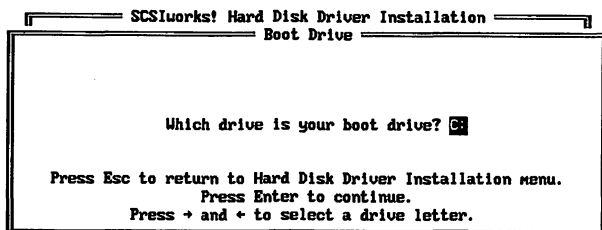


Figure 7 Boot Drive Selection Screen

Completing the Installation

INSTALL then presents a summary Installation Options Confirmation Screen showing you exactly what will occur during installation (*Figure 8*).

Check this screen very carefully to understand what INSTALL will do; you have the option at this point of backing up to change any of the option settings by pressing [Escape].

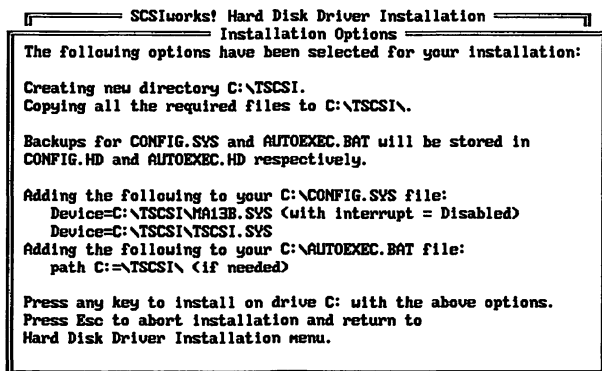


Figure 8 Installation Options Screen

Press any key to proceed with the installation. If you proceed, you should see a screen similar to *Figure 9* as INSTALL creates (if necessary) the \TSCSI subdirectory on your boot disk and copies the device distribution files into it. In addition, your CONFIG.SYS and AUTOEXEC.BAT files are modified (or created, if necessary) to load the device software.

When INSTALL has completed the installation, the statement "Installation Completed" appears at the bottom of the screen, as shown in *Figure 9*.

```

SCSIworks! Hard Disk Driver Installation
Installing Software
Copying b:\TODOS4.EXE -> C:\TSCSI\TODOS4.EXE.
Copying b:\TSPAN.EXE -> C:\TSCSI\TSPAN.EXE.
Copying b:\TSTATUS.EXE -> C:\TSCSI\TSTATUS.EXE.
Copying b:\TUNLOCK.EXE -> C:\TSCSI\TUNLOCK.EXE.
Copying C:\CONFIG.SYS -> C:\CONFIG.HD.
Copying C:\AUTOEXEC.BAT -> C:\AUTOEXEC.HD.
Opening C:\CONFIG.SYS file.
Old driver MA13B.SYS updated.
Old driver TSCSI.SYS updated.
Copying b:\TSCSI.SYS -> C:\TSCSI\TSCSI.SYS.
Checking Lastdrive statement in CONFIG.SYS file.
Adding Lastdrive=F command in CONFIG.SYS file.
Closing C:\CONFIG.SYS file.
Opening C:\AUTOEXEC.BAT file.
Checking Path=c:\tscsi in C:\AUTOEXEC.BAT.
Closing C:\AUTOEXEC.BAT file.

Installation Completed.
Please reboot the computer for the installation to take effect.
Press any key to return to Hard Disk Driver Installation menu.

```

Figure 9 Installation Complete Screen

Press any key to return to the INSTALL main menu. At the main menu you may choose to install other device software or return to DOS. When you are finished installing the software, reboot your computer (by pressing the [Ctrl]-[Alt]-[Del] keys simultaneously) to activate the software.

NOTE

Once you have configured and installed your software, the main INSTALL program is no longer used. You may reconfigure your CD-ROM, hard disk, and/or scanner software at any time by running the appropriate installation program (HDINSTALL, CDINSTALL, or SCINSTALL) from the directory containing your installed hard disk, CD-ROM, and/or scanner software.

4.1.2 *Checking the Installation*

If the installation process was completed correctly, your computer should operate as before, except that the software (MAxxx.SYS, TSLCDR.SYS, TSJIL.SYS, and/or TSCSI.SYS—all loaded via your CONFIG.SYS file) should now recognize and use the host adapter and any SCSI device(s) attached to it. (Full DOS access to hard disk type devices may require formatting first, see *Chapter 5* for details.)

During bootup, you should see information appear on your screen as the software searches for and recognizes the host adapter and your SCSI device(s).

4 Software Installation

As each device is found, information about the device appears on screen. If MA_{xxx}.SYS, TSLCDR.SYS, TSCSI.SYS, TSJII.SYS, and/or MSCDEX report any problems, check the following:

- Make sure the hardware is installed and cabled correctly (see hardware documentation).
- Make sure the SCSI software has been installed properly (*Section 4.1.1*). Run SCSITEST (see the next section) to make sure the system can recognize the SCSI device(s).
- Make sure your SCSI device(s) is plugged in and turned ON!

4.1.3 Testing the SCSI Hardware

If there appears to be a problem accessing the SCSI device(s) attached to your computer, or if you simply want to verify proper operation of your SCSI hardware, you can use the test software (called SCSITEST). There are two ways to run SCSITEST, either within the INSTALL menu system (by selecting SCSI Hardware Test), or in a “stand-alone” mode directly from DOS. The program’s operation are the same in either case—the choice is yours.

Starting the Test Software in Stand-Alone Mode

To invoke the test software (SCSITEST), from the DOS prompt log onto the \TSCSI subdirectory and type **SCSITEST**. For example:

```
C:
CD\TSCSI
SCSITEST
```

After running SCSITEST, you should see the opening screen (*Figure 10*). Select Test Hardware and press [Enter]. After a moment, SCSITEST should confirm that an adapter is connected to the system.

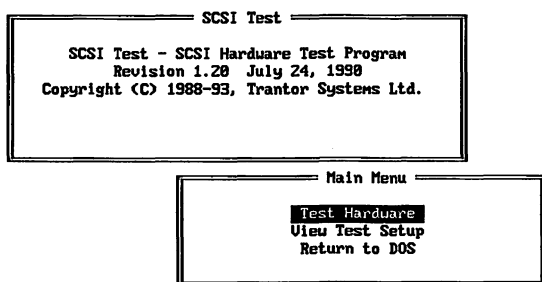


Figure 10 SCSITEST Opening Screen

If SCSITEST Indicates an Error

If SCSITEST reports a problem identifying an adapter, turn your computer off and recheck your installation of the host adapter. Make sure it is securely seated in your computer and that all connections to the adapter are secure. After retesting the installation, if SCSITEST still shows a problem identifying the adapter, contact your dealer for assistance.

If SCSITEST Indicates a SCSI Adapter Was Found

In most cases, SCSITEST indicates that one adapter was found and asks for confirmation (*Figure 11*). If all seems to be working properly, confirm this by answering **Y** to the question. SCSITEST then proceeds to an informational screen, telling you that a scan for SCSI devices will now take place.

NOTE

The ASPI manager must be loaded before SCSITEST can function. Be sure you have installed the appropriate driver(s) and rebooted your system. When the system is rebooting watch the screen to see if the ASPI manager has successfully installed.

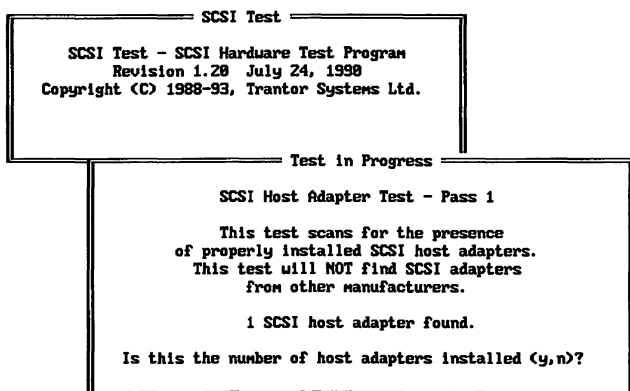


Figure 11 SCSITEST Adapter Board Count

After reading the information presented, press [Enter] to begin the scan ("polling") for devices. Polling begins with device 0 and proceeds through device 6. If you have more than one SCSI device connected (such as a hard disk, removable-cartridge, CD-ROM, or scanner drive), make certain that their device addresses are different (see your hardware documentation). As each device is found, SCSITEST pauses to identify the device and its address. After making sure the information provided is correct, press [Enter] to continue.

4 Software Installation

If No Devices Are Found

If SCSITEST cannot identify any devices connected to the adapter, it stops and informs you of this problem. In most cases, the reason for a device not being found is one of the following:

- The device is not connected to the adapter correctly. Double-check that the cable between the adapter and the SCSI device(s) is correctly attached.
- The device is not receiving power. Check that a power cable is properly attached to the SCSI device.
- The device address is not set properly. Check that the device address is set between 0 and 6 (see your device manual for details) and, if you are using more than one SCSI device, that each device is set to a different address.
- The ASPI manager (MAxxx.SYS or another name for other hardware manufacturers) is not loaded.

After checking the above conditions, re-run SCSITEST. If SCSITEST still indicates that it cannot identify any devices, contact your dealer for assistance. If SCSITEST correctly detects the presence of the adapter and cannot identify any devices, the most likely remaining problem is either a bad connecting cable or failure of the SCSI device.

Test Summary

After testing for the presence of the host adapter(s) and SCSI device(s), you may select View Test Setup from the SCSITEST menu. This short summary screen (*Figure 12*) indicates whether an adapter was found during the test and, if so, its address.

SCSI Test

SCSI Test - SCSI Hardware Test Program
Revision 1.20 July 24, 1990
Copyright (C) 1988-92, Trantor Systems Ltd.

Test Setup

Adapter #	Address	Status
1	0h	OK
2	1h	Failed
3	2h	Failed
4	3h	Failed

Press any key to continue.

Figure 12 SCSITEST Hardware Summary

Normally, you'll see three "Failed" indications and one "OK" indication; the OK denotes the adapter. This summary screen does not report anything about the device(s) connected to the adapter; it is designed to summarize the condition of the adapter only.

If everything seems to be working properly, exit SCSITEST. You should be able to "see" the CD-ROM(s) and hard disk drive(s) by logging to their drive letter in DOS. For example, if your first SCSI device has been assigned a drive letter D, you should be able to type **D:** followed by [Enter]. At this point, DOS recognizes the drive as it would any other drive, assuming it has been properly formatted (see *Chapter 5*).

Note that you cannot log onto a scanner or tape device. These devices can only be accessed through the appropriate scanner or tape drive application software.

Assuming that the hardware and software tests indicate proper operation of your system, proceed to *Chapter 5* of this manual for a summary of the hard disk utilities, *Chapter 6* for a summary of the CD-ROM utilities, or *Chapter 7* for a summary of the scanner operations.

5 Hard Disk Software Operation

This section describes the function and operation of each of the TSCSI hard disk software utilities (which also apply to most removable-media devices, such as SyQuest, Bernoulli, Floptical, and magneto-optical drives). Although you might need some of these programs only infrequently, it is suggested that you familiarize yourself with them now so that you will understand their capabilities when needed.

This manual does not address any of the standard DOS commands, such as DIR, DEL, COPY, etc. Your software and hardware in most cases permits the use of these DOS commands with your SCSI hard disk device(s) in exactly the same way as with your other hardware (except CD-ROM drives; see *Chapter 6*). If you are unfamiliar with these, consult your DOS documentation or dealer for assistance.


5.1 TFORMAT (*Formats Storage Media*)

TFORMAT is designed to format or prepare the storage media of your SCSI hard disk devices in the same manner as the FORMAT command used by DOS. It works with any erasable SCSI device compatible with the host adapter including hard disks, SCSI floppy drives, magneto-optical, and removable-media cartridge drives (such as the Bernoulli drive). Note that the ASPI manager (MAXXX.SYS) must be installed and loaded before TFORMAT works; this is normally set up automatically during software installation (*Chapter 4*).

In all cases, the operation of TFORMAT is the same; just run TFORMAT from DOS, but do not specify a drive letter to format (as you normally would with the DOS FORMAT command). (You may also run this program from the Hard Disk Driver Installation menu by selecting SCSI Format, see *Figure 8*). For example, to "poll" your adapter and the SCSI device(s) in your system and present you the option of which device to format in SCSI address number order, enter:

TFORMAT

Figure 13, for example, illustrates the case of a single device (SCSI address 4) being found; a SyQuest 44-MB removable-cartridge drive.

 If you are formatting a cartridge in a dual-drive Bernoulli drive, you must perform the format operation in the first (usually the left) drive.

TFORMAT asks you to confirm whether you wish to format this device; you must type **YES** (upper or lower case), followed by [Enter] to proceed with the formatting. Type anything else to abort the formatting operation. When more than one drive is daisy-chained to the adapter, the format

TFORMAT: Generic SCSI Format Program. Version 1.32
 Copyright (C) 1988-89, Tranter Systems Ltd.

Card Address: 328H, SCSI Device Address: 4

Device vendor: SyQuest
 Device name: S9555

Is this the drive you would like to format?
 Type 'yes' to confirm or anything else to abort:

Polling (328,4) SyQuest S9555

Figure 13 Opening TFORMAT Screen

program shows you the SCSI address and the vendor information of the next drive and allows you to either select the drive by typing **YES** or proceed to the next one.

- ☞ Care must be taken when more than one device from the same vendor is connected to the adapter as the same vendor name appears on screen but with a different SCSI device address.

After confirming that you wish to proceed with the format, TFORMAT displays the technical characteristics of the drive and pauses to wait for a key to be pressed.

- ☞ At this time, if you typed **TFORMAT /L** or if your drive has not been low-level formatted, the following will happen: TFORMAT asks if you wish to do a low-level format. A low-level format is a complete total erasure of the entire disk surface and usually must be done once on brand-new media. This format is in contrast to a high-level format which only erases the drive's subdirectory and file directory information. In most cases, a high-level format is sufficient to clear out all data from the drive and is much faster than a low-level format.

If you elect to perform a low-level format, TFORMAT asks you to supply an interleave value (enter 0 to use the drive's default interleave value, unless otherwise instructed by your dealer) and to confirm that you really want to destroy all data on the device. It then proceeds with the low-level format.

5 Hard Disk Software Operation

WARNING

If you do not want anyone to retrieve your data, you should perform a low-level format on the media. A DEL command issued from DOS, or a high-level format, is no guarantee that data is irretrievably erased. Given a moderate level of knowledge, it is possible to "unerase" data under these circumstances. A low-level format erases data for good and should be used in sensitive circumstances. For government-classified data, even this is probably not sufficient; seek assistance if you have any doubts. This potential for unerasure is true of any DOS device, not just SCSI devices.

TFORMAT asks if you wish to do a high-level format. At this point, you will "partition" the drive (assignment of one or more drive letters to one device). For instance, with a large hard disk, you might wish to assign both a D drive and an E drive to divide up the large capacity; these are considered multiple "partitions" of a device. TFORMAT gives you the option of using one or more partitions (up to four partitions per physical device) in the high-level format routine.

If you choose to perform a high-level format, you'll see a screen similar to that in *Figure 14*.

TFORMAT: Generic SCSI Format Program. Version 1.38
Copyright (C) 1988, Trantor Systems Ltd.

				Total Partitions	1				
	SCYL	ECYL	BOOT	TYPE		SCYL	ECYL	BOOT	TYPE
1.	8	349	N	FAT12	2.				
3.					4.				

Options:

S(single) Partition.

T(two) Partitions (A small one for booting and the remainder)

C(custom) Partitioning.

Q(uit).

Selection -

Polling (328,4) SyQuest S9555

Figure 14 TFORMAT High-Level Format Options

Here you have the option of setting up single or multiple partitions. In general, for floppy drives or hard/cartridge drives smaller than 32 MB, a single partition should be used for convenience. For large drives, you may create multiple partitions of any size you wish, except that if you wish to

make a drive bootable, the first partition should be no larger than 512 MB to conform with DOS 4 or later restrictions (except under DOS version 3, the first bootable partition must be no larger than 32 MB).

NOTE

In order to create a partition larger than 32 MB, your system must be running DOS version 3.3 or later. Earlier versions of DOS limit you to a maximum of four partitions per physical disk drive, with each partition a maximum of 32 MB. Under DOS 3.3, the SCSI device sector size begins at 512 bytes for up to a 32-MB partition and doubles with each doubling of partition size, due to the requirements of DOS. For instance, a 64-MB partition would use 1-KB sectors, a 128-MB partition would use 2-KB sectors, etc. Therefore, if you wish to store a large number of small files, keeping each partition size (and therefore, the sector size) small would be the best arrangement. DOS versions 4 and 5 have no such limitation: sector size is always 512 bytes.

One of the options which are presented for drives larger than 32 MB is “T(wo)” partitions, which on a hard disk creates a small partition for bootup and another large partition with the rest of the drive’s capacity. This offers a couple of advantages: it protects your data by keeping the bootup information in a separate partition (away from your data partition) in the event of a problem with the drive, and it allows you to have all the advantages of one very large drive (which exceeds DOS 3.x’s normal capabilities) while tying up only the minimum amount of disk space necessary for booting.

Another option is a custom partitioning which allows you to specify exactly how many (up to four) partitions you wish to have and how large they should be. The size is specified in cylinders, which is a measure of the drive’s capacity. For instance, if a drive has 430 cylinders (TFORMAT tells you this information), and you wish to have two equal-sized partitions, you would specify the first partition to be from cylinders 0-215 and the second partition from 216-429 (cylinder counts start from 0). You may use any combination of cylinders you wish to define your partitions.

After you choose the type of partitioning you wish to use, TFORMAT asks if you wish to verify the partitions. Verification is the process of examining each storage sector on the drive to make sure that it reliably stores data. It is a good idea, especially if the media is new, to run the verification process (which “locks out” any bad areas), but it does take time to perform this operation. If you are just repartitioning the drive, and you are sure the media is in good shape, verification may not be necessary.

After you finish specifying your choices, TFORMAT reminds you that repartitioning destroys all data on the drive. After confirming this, TFORMAT proceeds with the partitioning (and verification, if requested),

5 Hard Disk Software Operation

informing you of its progress. Upon completion, TFORMAT reminds you that a reboot of your computer (and possible installation of the software) may be necessary. This completes TFORMAT's operation.

5.2 TSPAN (*Span One Partition Over Several Drives*)

TSPAN allows you to create a single large logical drive from two or more erasable SCSI devices by combining or "spanning" them under software control. These devices do not need to be identical, however, they must be either all fixed or all removable devices. It is possible to span, for instance, two 40 MB cartridge drives to create a single 80 MB removable 'drive.' Note that the ASPI manager (MAxxx.SYS) must be installed and loaded before TSPAN works; this is normally set up automatically during software installation (see *Chapter 4*).

TSPAN uses the entire SCSI device, no matter how many partitions you have previously created on it. Partitions are eliminated and the whole drive becomes part of the newly spanned logical drive. Prior to running TSPAN, TFORMAT must be run with at least one partition defined in each drive that is going to become part of the spanned set. TSPAN can be run from the HDINSTAL menu by choosing SCSI Drive Spanning option, see *Figure 8*. It can also be run from DOS by typing **TSPAN** at the DOS command line.

For example, to poll all the devices attached to your SCSI card(s) and gives you a menu (*Figure 15*) of available SCSI devices listed by drive #, SCSI address, capacity, and drive type (fixed or removable), enter:

TSPAN

Select in turn the Drive Number of each device you wish to span into a single partition and press [Enter] to continue.

NOTE

Spanning a device erases all the information on the device!

After confirming that spanning the drives destroys all the data on them, you have the option of doing a surface verify of your spanned drive. If you chose to verify, each sector on your drives is evaluated and TSPAN "locks out" any bad areas on your disk to prevent data from being written there. This process takes some time, especially on large drives. This step must be done even if the drives had been verified after they were formatted with TFORMAT, just to make sure that the spanned partitions are correctly established. Therefore, to speed up the installation, skip the verify step in TFORMAT for those drives that you intend to combine in a spanned volume.

TSPAN: Build Spanned Volume Record. Version 1.00
 Copyright (C) 1988-89, Tranter Systems Ltd.

Drv#	SCSI ADRS	Capacity	DrvType	Drv#	SCSI ADRS	Capacity	DrvType
1.	328H,0	10.2MB	Removable	2.	328H,4	42.3MB	Removable

Select Drv# to combine or press return to terminate:


Figure 15 TSPAN List of Available Drives

TSPAN notifies you that it is initializing the Spanned Drive, clearing the FATs (File Allocation Tables) and Directory and then either proceeding to verify the data or exiting the program. You must reboot your system to make the new spanned drive available.

5.3 TSTATUS (Checks Status of Your System)

If you have installed the hard disk driver, TSTATUS gives you a simple summary screen (Figure 16) of the version of TSCSI.SYS loaded in memory, how many bytes of memory it uses, and the drive letters and capacity of SCSI devices currently active on your system.

TSTATUS is a useful utility to run anytime, but it is a good idea to run it immediately after installing or changing any of your hardware or software configuration settings, just to make sure that your SCSI equipment is operating as you expect.

 TSTATUS does not apply for CD-ROM, scanner, or tape drive installations.

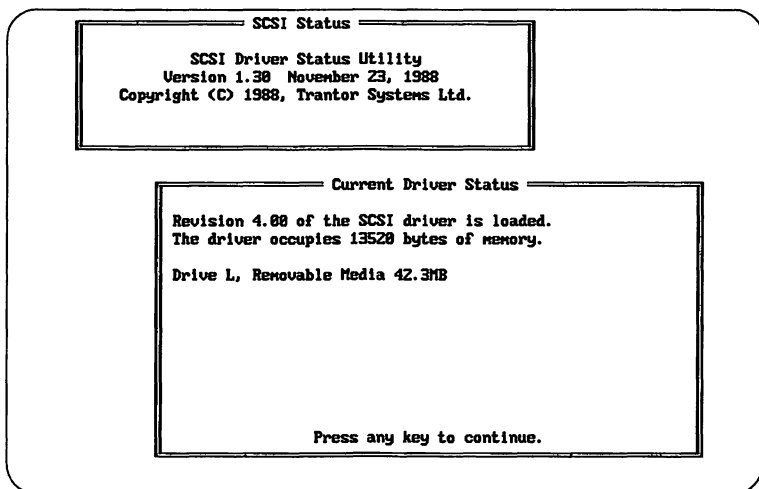


Figure 16 TSTATUS Summary Screen

6 CD-ROM Software Operation

This chapter describes the function and operation of the CD-ROM software utilities. Although you might need these programs only infrequently, it is suggested that you familiarize yourself with them now, so that you will understand their capabilities when needed.

This manual does not address any of the standard DOS commands, such as DIR, DEL, COPY, etc. Your software and hardware, in most cases, permits the use of these DOS commands with your SCSI device(s) in exactly the same way as with your other hardware (CD-ROM drives do not permit you to delete files from or copy files to the CD-ROM disc). If you are unfamiliar with these, consult your DOS documentation or dealer for assistance.

6.1 MSCDEX, the DOS CD-ROM Extensions

Your DOS operating system by itself does not know how to access a CD-ROM drive. There are many differences between a CD-ROM and either hard or floppy drives. For example:

- CD-ROMs are read-only media; data cannot be added to or deleted from a CD-ROM disc.
- CD-ROM drives can hold up to 680 MB of data—many DOS versions (prior to 4.x) cannot handle partitions greater than 32 MB.
- CD-ROM drives use the High Sierra or ISO 9660 file formats—DOS drives use the MS-DOS format.
- CD-ROM drives do not include a FAT (File Allocation Table).
- CD-ROM drive sector size is 2048 bytes. IBM PC/XT/AT-type floppy and hard disks typically use a sector size of 512 bytes.

Due to these differences, CHKDSK, FORMAT, and some other DOS file utilities do not work on a CD-ROM drive.

The MSCDEX program is a memory-resident extension to DOS which interfaces your operating system to your SCSI CD-ROM device driver (TSLCDR.SYS) and your CD-ROM drive.

MSCDEX is provided by Trantor under license from Microsoft. Please complete and return your Microsoft MSCDEX registration card!

After the TSLCDR.SYS device driver is successfully loaded (via your CONFIG.SYS file), MSCDEX must be executed. It is common to load it through your AUTOEXEC.BAT file. You could also run it only when you

first need access to your CD-ROM drive during a work session. The INSTALL program normally sets up your AUTOEXEC.BAT file to automatically load MSCDEX.


The format of the MSCDEX program in the AUTOEXEC.BAT file is as follows:

```
MSCDEX [/V /K /E] /D:[DriverName]  
/L:[DriveLetter] /M:[Value]
```

Where:

/D:[DriverName]—is a required parameter and gives MSCDEX the name of the device driver it uses to “talk to” the CD-ROM drive. The internal name of TSLCDR.SYS is TSLCD and should be substituted for [DriverName].

/L:[DriveLetter]—tells MSCDEX to assign [DriveLetter] as the logical device drive name to the CD-ROM. When more than one CD-ROM is present, the drive letters are sequentially assigned starting with [DriveLetter]. If no /L: parameter is supplied, MSCDEX assigns the next available drive letter.

 If you have a total of more than five logical drives on your system (drives A–E), you must prepare DOS to support at least the number of devices you have, via the DOS LASTDRIVE statement. In your CONFIG.SYS file, you must insert a line like this:

```
LASTDRIVE=[DriveLetter]
```

Where:

[DriveLetter]—is the alphabetic character (F through Z) that represents the last valid drive letter that DOS may use. For example:

```
LASTDRIVE=H
```

/M:[value]—tells MSCDEX how much memory to allocate as sector buffers for caching CD-ROM information. The higher this value is, the better performance is, though you use additional RAM for each buffer that is allocated. If no /M: parameter is supplied, MSCDEX allocates ten buffers, each of which uses 2048 bytes of RAM memory.

/V—This option results in a verbose listing of additional information, including how much memory is used by buffers, resident data, and resident code.

/K—This option is used only when the CD-ROM media directory is written in Kanji (Japanese).

6 CD-ROM Software Operation

/E—This option tells MSCDEX to use expanded (EMS) memory if your system includes it; this conserves about 16 KB of main DOS memory.

For example, to install MSCDEX with an internal name of TSLCD, use expanded memory, and configure the CD-ROM drive as drive M, enter:

MSCDEX /E /D:TSLCD /L:M

All of the above options may be configured via the CDINSTAL program, either when first installing your CD-ROM software or later, should you decide to change the settings. See *Section 4.1.1* for details of the CD-ROM installation programs.

6.2 CHKCD

Very similar to the CHKDSK utility which is supplied with DOS, CHKCD displays useful information about the capacity and contents of your CD-ROM disc. While not required for normal operation of your SCSI system, it is often useful to have available.

To run, simply type **CHKCD**, optionally followed by the drive letter of your CD-ROM and a colon.

For example, to report information for CD-ROM drive M enter:

CHKCD M:

CHKCD may take a minute or two to report results, please be patient!

6.3 TLOCK

This utility when run from the DOS command line (or within a batch file, if desired) “locks” a CD-ROM disc or removable-media hard disk cartridge in the drive; i.e. it inhibits operation of the front-panel Eject button. This utility is useful on a shared or networked computer system where an inadvertent disc eject might disrupt operations. Some CD-ROMs, such as the NEC CDR-37, have manual-loading mechanisms; TLOCK has no effect on such drives.

Simply type **TLOCK** to lock all removable-media drives currently installed, or follow with the drive letter to lock one drive.

To lock only drive F, which may be any removable-media drive, for example enter:

TLOCK F:

6.4 TUNLOCK

This utility reverses the action of TLOCK, i.e. it permits media to be ejected from a CD-ROM or other removable-media drive, except additional units on multi-drive products (such as dual-drive Bernoulli Boxes and multi-disc CD-ROM changers). You must specify the drive letter for such devices.


Type **TUNLOCK** to unlock all installed removable-media drives, or follow with the drive letter to unlock one drive.

To unlock only drive G, for example, which may be any removable-media drive, enter:

TUNLOCK G:

6.5 TEJECT

This utility ejects a CD-ROM disc or removable-media hard disk cartridge from the drive (except, of course, for those drives which have a purely mechanical eject mechanism).

 **TEJECT** does not work on additional units on multi-drive products (such as dual-drive Bernoulli drives and multi-disc CD-ROM changers). You must specify the drive letter for such devices.

If TLOCK has been run, TEJECT sets the drive to unlocked status prior to ejecting the disc.

Type **TEJECT** to eject all installed removable-media drives, or follow with the drive letter to eject just one drive.

For example, to eject only drive H (which may be any removable-media drive) enter:

TEJECT H:

7 Scanner Operation

This chapter describes how your scanner functions with **SCSIworks!** software and how to use the scanner diagnostics program.

7.1 Scanner Files

The following is a list of scanner files found in the \SCANNER subdirectory on software distribution diskette #1.

TSJII.SYS—The scanner device driver file which links the hardware to the operating system. It must be loaded through your system's CONFIG.SYS file; INSTALL.EXE modifies your CONFIG.SYS file automatically.


TSJDIAG.EXE—The scanner diagnostic program that provides you with information about the installed scanner and driver. It enables you to perform a scanner self test and check communications between the scanner and the driver.

TSJ_READ.ME—A text file which may be included, containing up-to-date scanner information since this manual was printed. It is important that you look for this file and, if it exists, read it carefully.

7.2 How Your Scanner Functions

Since a scanner cannot function as a drive, your operating system by itself does not know how to access it. Your scanner operates only through a compatible scanner software application, see your scanner supplier for details.

Referring to *Figure 17*, you can see that the scanner application works through the scanner driver contained in the **SCSIworks!** software package, and the scanner driver accesses the scanner through the ASPI manager. See *Appendix B* for a complete ASPI explanation.

 When preparing your scanner for use, be sure to install Trantor's scanner driver first (see *Chapter 4*), then install

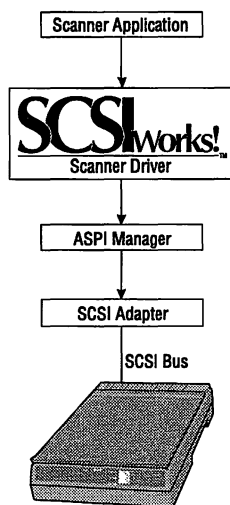


Figure 17 Scanner Interface Diagram

the scanner application software. This way you can insure your scanner functions with your Trantor software.

7.3 Scanner Diagnostics

During bootup, if an initialization error occurs, the scanner driver aborts and removes itself. Initialization fails if TSJIL.SYS cannot access an installed ASPI manager or cannot locate the appropriate scanner on the SCSI bus. Otherwise, TSJIL.SYS displays a status message including the scanner model number and SCSI ID.

Since you cannot use any DOS commands to check your scanner, such as DIR, CHDSK, etc, **SCSIworks!** software includes a scanner diagnostic program. This program enables you to perform a scanner self test and to check communications between the scanner and the driver; it also gives information about the installed scanner and driver. To execute this program, at the DOS command line, type: **TSJDIAG**.

8 Device Driver Options

This chapter describes command-line options (commonly called “switches”) for various **SCSIworks!** files. Normally, the defaults for these switches (as set during installation) work fine; these options are available primarily for fine-tuning and troubleshooting. We recommend that you do not change the default settings unless it is necessary and only if you clearly understand what you are doing.

8.1 How to Identify Software Versions

Occasionally, for technical support or other reasons, you may need to determine the version number of our software drivers. The version is shown on screen as the software loads, but you may also find it by using the **TYPE** command from your DOS command line. This process applies to the **.SYS** driver files and is performed as follows (using the CD-ROM driver as an example):

```
TYPE TSLCDR.SYS
```

8.2 Driver Support

If you use a modem, you may get access to technical support for our drivers via our BBS. See *Chapter 12* and the front of this manual for more information.

8.3 Driver Command Line Switches

The following lists command line parameters or switches. These parameters can be used as startup options shown in the format **/Xn**, where **X** is the command line switch, and **n** is the option passed to it.

These parameters can be listed directly after their appropriate file name in **CONFIG.SYS**. For example, the line in **CONFIG.SYS** for the hard disk driver could read:

```
DEVICE = C:\TSCSI\TSCSI.SYS /I5/W3
```

This sets the driver for **IRQ5** and “no wait” if the driver doesn’t find a device.

ASPI manager (MAxxx.SYS)

/In Sets the interrupt channel; for example, **3**, **5**, or **7**. Be sure to set the jumpers on the adapter to match the interrupt channel.

/IPn Sets the **IRQ** value to be returned to **WINASPI.DLL** by the **ASPI** manager.

- /Wn** Pause (warning) mode
- 0** Pause for a key to be pressed if no SCSI device is detected (default).
 - 2** Pause for a key to be pressed if SCSI device is detected.
 - 3** Do not pause at all; useful if you often boot with no SCSI devices connected.

(MA348.SYS)

please refer to I.O.M.E. (+A)

/Mn Mode configuration switch. Default is 00. Some parallel ports require additional delays to the read and write cycles of the device. The amount of additional time the T358 MiniSCSI™ Plus adapter read and write cycles are delayed is controlled by the value of **n**.

- n** may be set to any value between **0** to **7**.
- 0** (the default) inserts no cycle delays (runs at highest throughput rate).
- .
- .

- 7** adds 875 ns of delay to the MiniSCSI Plus adapter read and write cycles.

(MA358.SYS)

/Mnm Mode configuration switch. Default is 00. Some parallel ports require additional delays to the read and write cycles of the device. You must specify both parameters, i.e. /M02, not /M2.

The amount of additional time the T358 MiniSCSI EPP adapter read and write cycles are delayed is controlled by the value of **n**.

- n** may be set to any value between **0** to **7** as shown below:
- 0** (the default) inserts no cycle delays (runs at highest throughput rate).
- .
- .
- 7** adds 875 ns of delay to the MiniSCSI EPP adapter read and write cycles.

Allowable values for **m**.

- 0** Auto-port detect (default).
- 2** Force unidirectional.
- 4** Force non-EPP; auto detect unidirectional or bidirectional.
- 6** Force non-EPP and force unidirectional.
- 8** Force EPP.

TSCSI.SYS

- /An** Allocates a particular maximum sector size under DOS 3.x. Used with removable media. The default is to recognize standard 32 MB or smaller partitions. Larger partitions can be allocated as follows, where the number **n** indicates the sector size in Kilobytes (KB):
- 1** 32 MB–64 MB partitions.
 - 2** 64 MB–128 MB partitions.
 - 4** 128 MB–256 MB partitions.
 - 8** 256 MB–512 MB partitions.
 - 16** 512 MB–1 GB partitions.
- /Kn** Reserves drives to prevent “phantom” drives. When booting from a non-Trantor SCSI adapter, both the ROM and the Trantor software driver manage the SCSI device, creating a “phantom” drive. This feature forces the ASPI driver to ignore devices managed by the ROM. **n** indicates the number of drives the driver should ignore.
- /R** Sends a RESET command to the SCSI bus before the driver loads.
- /Un** Restrict maximum number of Logical Units (LUNs) available. Useful when a device has multiple logical units that are not all being used. This allows you to select, for instance, only the first three LUNs and ignore the others.
- /Wn** Pause (warning) mode.
- 0** Pause for a key to be pressed if no SCSI device is detected (default).
 - 2** Pause for a key to be pressed if SCSI device is detected.
 - 3** Do not pause at all; useful if you often boot with no SCSI devices connected.

TSLCDR.SYS

- /D:driver_name** Specifies internal driver name for CD-ROM driver in CONFIG.SYS. This parameter must match the name in the MSCDEX command line in AUTOEXEC.BAT.
- /Pn** Allow Prefetch and/or Seek.
- 0** Seek and Prefetch are disabled (default).
 - 1** Allows Prefetch.
 - 2** Allows Seek.
 - 3** Allows both Seek and Prefetch.
- /R** Reset. This sends a RESET command to the SCSI bus before the driver loads.

- /Un** Restrict maximum number of Logical Units (LUNs) available. Useful when a device, such as a Pioneer CD-ROM changer, has multiple logical units that are not all being used. This allows you to select, for instance, only the first three LUNs and ignore the others.
- /Wn** Pause (warning) mode.
 - 0** Pause for a key to be pressed if no SCSI device is detected (default).
 - 2** Pause for a key to be pressed if SCSI device is detected.
 - 3** Do not pause at all; useful if you often boot with no SCSI devices connected.

TS/II.SYS

- /In** Instructs the driver to search for the installed scanner at SCSI ID **n**, where **n** ranges from 0 to 7. Normally the driver polls each device on the SCSI bus searching for the scanner. This parameter overrides the startup search, unless the driver does not find the scanner at this SCSI ID.
- /Wn** Pause (warning) mode.
 - 0** Pause for a key to be pressed if no SCSI device is detected (default).
 - 2** Pause for a key to be pressed if SCSI device is detected.
 - 3** Do not pause at all; useful if you often boot with no SCSI devices connected.

OS/2 .ADD Drivers

- /In** Sets the interrupt channel; for example, **3**, **5**, or **7**. Be sure to set the jumpers on the adapter to match the interrupt channel.
- /O** Enables an optical drive to emulate a hard disk drive. Useful in situations where IBM's OPTICAL.SYS file is not available.
- /U** Restrict maximum number of Logical Units (LUNs) available to one. Default is seven LUNs in the August, 1992 driver.


TFORMAT

- /S60** Formats SCSI drives for compatibility with original T128/T228 Boot ROM release 1.x. If a SCSI drive connected to a T128 or T228 does not boot with a version 1.x ROM because it isn't in the ROM tables, this option should fix it. It is not possible to boot your system through parallel port SCSI adapters or PCMCIA slots.
- /L** Performs a low-level format on the media.

9 OS/2 Software Installation

This chapter documents the OS/2 drivers supplied by Trantor called Adapter Device Drivers (.ADD) for Trantor SCSI adapters. These ADD files provide an interface between the Trantor SCSI hardware and the OS/2 version 2.0 or above operating system.

Support for different SCSI devices is not done by Trantor but by IBM with their OS/2 high-level drivers. CD-ROM, hard disk (both fixed and removable), SyQuest and Bernoulli drives function with Trantor adapters through supported OS/2 drivers. Other Trantor device drivers and utilities described in this manual function under DOS only, not under the OS/2 operating system.

-  *Magic Lantern* software requires Windows and *Music Box* software requires MSCDEX to operate. **Tape Mate II** software is certified to function under DOS.

NOTE

Support for Trantor's OS/2 drivers is available from the Adaptec/Trantor BBS at 408-945-7727. There is no support available by telephone on this product due to the complexity of the CONFIG.SYS. Please leave the following items as a message on the BBS: your questions, a copy of the errors you see, and a copy of your CONFIG.SYS.

OS/2 Files

Your distribution diskette #2 has a \OS2 subdirectory, containing the following files.

OS2_READ.ME—A standard text file explaining how to install and configure your hardware for OS/2. Please note that OS/2 technical support is provided via fax and technical support Bulletin Board (BBS) only—see this file for details.

OS2.FAQ—OS/2 Frequently Asked Questions text file. Please read this before contacting Trantor, IBM, or your dealer for OS/2 technical support.

***.ADD**—OS/2 Adapter Device Driver files. There are several versions supplied for various Trantor host adapters—see the OS2_READ.ME file for details of OS/2 support installation and operation.


***.DDP**—OS/2 installation script files. See OS2_READ.ME for details.

9.1 Installing OS/2 2.1 Device Drivers

In order to use a Trantor SCSI adapter with OS/2 software, you must first install the OS/2 SCSI support, the DASD support for hard disk drives and the CD-ROM support for CD-ROM drives. These drivers are included with OS/2 software, but were probably not installed when you first set up OS/2 software on your computer. DOS support is usually automatically installed in the \OS2\MDOS directory, so you should see the virtual device drivers in that directory (VCDROM.SYS, etc). Do not delete these files if you want to use DOS as well.

To install Trantor OS/2 2.1 software drivers follow the procedures below before you install OS/2 2.1, as explained in the *OS/2 2.1 Installation Guide*. To install OS/2 2.0 software, see the OS2 READ.ME file on the software distribution diskette.

- 1 Make a copy of the OS/2 2.1 software *Diskette 1*.
- 2 Copy the TxxxSCSI.ADD file to the copy of *Diskette 1* (do not copy it into a subdirectory).
- 3 Edit the CONFIG.SYS file (located on the copy of *Diskette 1*) to add the following line to the end of the file (do not specify a path for the .ADD file): **BASEDEV=TxxxSCSI .ADD**
- 4 Begin the installation by inserting the *Installation Diskette* into drive A and restarting the system. When prompted to insert *Diskette 1*, insert the copy that you modified.

 See *Chapter 8* for OS/2 .ADD Drivers Options.

9.2 Removable Media (Magneto-Optical, SyQuest, Bernoulli, etc.)

IBM treats a removable-media drive as though it were a very large floppy which means that you cannot interchange removable media between DOS and OS/2 operating systems.

To format a removable-media drive for OS/2, you first must do a low-level format under MS-DOS with the Trantor TFORMAT utility and select a single partition—the IBM driver cannot handle multiple partitions on removable media.

Boot up your OS/2 system with this formatted cartridge in the drive. From the OS/2 SYSTEM folder, select double click on the Drives icon. Select the removable-media drive (which shows up as a floppy icon) and click the center button. Select **Format Disk** and use any available capacity—2.88 MB works just fine. The removable-media drive is formatted to its correct capacity with an OS/2 partition.

You can now use the drive cartridge under the OS/2 operating system. It is not readable by a DOS system.

9 OS/2 Software Installation

9.3 Setting Up a Hard Drive for OS/2 Software Use

If you have an existing hard disk drive on your Trantor SCSI adapter set up as a single partition under MS-DOS 4.01 or later operating system, you should be able to install it under OS/2 software with no special requirements other than those discussed here.

If you have a disk partitioned under DOS 3.3 larger than 32 MB, you must re-format it under DOS 4.01 or later for OS/2 software, since partition sizes over 32 MB are non-standard.

WARNING

Backup your data before you format your hard disk drive or it will be lost.

To format your hard disk drive, run the DOS-based TFORMAT program supplied with the Trantor SCSI adapter, see *Chapter 5*. There is no OS/2 version of this program, but it runs from a DOS box or VDM on your OS/2 system.

9.4 OS/2 Software Error Messages

The System cannot find the file "C:\OS2\SYSTEM\COUNTRY.SYS" specified in the COUNTRY command. The System is stopped.

This error usually happens if the OS2DASD.DMD driver is not installed in the CONFIG.SYS. Make sure you have BASEDEV=OS2DASD.DMD in the CONFIG.SYS right after the BASEDEV=IBM1FLPY.ADD statement. If you installed the SCSI support on the OS/2 Installation, you should not get this message.

This error can also occur if you install OS/2 software on a second partition of your C drive and add a second SCSI hard drive for OS/2 software. OS/2, like MS-DOS software, always mounts primary partitions on hard drives before extended partitions. OS/2 software assigns the second drive, drive letter D; the second partition on the original C drive becomes E. OS/2 software is not able to load files from the D drive, since it is now re-assigned as E and since OS/2 operating system always tries to load COUNTRY.SYS from D, it errors out at this point. Change the drive that the OS/2 files are loading from to fix this problem.

SYS1718: The System cannot find the file "... "

The file indicated has not been installed. This error most commonly happens when CD-ROM files are not copied to the System subdirectory. Use the OS/2 Selective Install program to install your CD-ROM support files.

SYS1201: The device driver "OS2CDROM.DMD" specified in the DEVICE command on line... was not installed. Line is ignored.

The .ADD driver for the SCSI adapter did not load. There is no SCSI device attached, the SCSI adapter is not installed, or there is a hardware conflict with the SCSI adapter. Make sure you have the IRQ jumper in place (if applicable to your adapter) and the correct /Lxx parameter in the .ADD command line. Check under DOS using SCSITEST to see if the SCSI device is identified.

SYS1201: The device driver "TxxxSCSI.ADD" specified in the BASEDEV=command on line... was not installed. Line is ignored.

The .ADD driver for the SCSI adapter did not load. If you are using a Parallel-to-SCSI adapter, make sure the SCSI device is plugged in and powered up correctly. Check your installation under DOS and with SCSITEST to see if the SCSI device is identified correctly. With a bus-based adapter and an internal drive, check that the ribbon cable is not on backwards and that the SCSI adapter is actually installed in the computer.

10 Windows NT Software Installation

This chapter documents the Windows NT drivers supplied by Trantor for Trantor SCSI adapters and their installation procedures. These files provide an interface between the Trantor SCSI hardware and the Windows NT operating system. Windows NT operating system provides all the necessary device drivers for hard disk, CD-ROM, tape, scanner, etc., see your Windows NT documentation.

- ☞ The Trantor driver interfaces the Trantor SCSI adapter to the Windows NT system, it does NOT support SCSI devices directly! Support for SCSI devices is supplied by Microsoft as part of the Windows NT operating system.
- ☞ *Magic Lantern* software requires Windows to operate, *Music Box* software requires MSCDEX, and **Tape Mate II** software is certified to function under DOS.

NOTE

Support for Trantor's Windows NT drivers is provided via the Adapted/Trantor BBS at 408-945-7727 and the Windows NT Forum on CompuServe. Due to the complexity of the Windows NT operating system, support is available only by electronic means. Please leave the following items as a message on the Trantor BBS: your questions, a copy of the errors you see, and a copy of your CONFIG.SYS. If you have any bug reports, please post them on the Trantor BBS.

Windows NT Files

Your distribution diskette #2 has a \WINNT subdirectory, containing the following files.

T128.SYS—The driver for the Trantor T128 and T228 SCSI adapters.

T13B.SYS—The driver for the Trantor T130 SCSI adapter.

T160.SYS—The driver for the Trantor T160 and T260 SCSI adapter.

T338.SYS—The driver for the Trantor T338 **MiniSCSI** adapter.

T348.SYS—The driver for the Trantor T348 **MiniSCSI Plus** adapter.

T358.SYS—The driver for the Trantor T358 **MiniSCSI EPP** adapter.


NT_READ.ME—The Trantor Windows NT read me file. Please read for the latest information on Trantor drivers.

OEMSETUP.INF, TRANTOR, TXTSETUP.OEM—These files identify the diskette as an OEM diskette to the Windows NT Install program.

Currently, these are the only Trantor SCSI host adapters that are supported under Windows NT. There are no plans to support the older T100 adapter.

10.1 Trantor NT SCSI Miniport Installation

To install Trantor Windows NT drivers, follow these instructions:

- 1 Copy all the files in the /WINNT subdirectory on **SCSIworks!** diskette #2 to a floppy disk. To install T160, T338, T348, and T358 drivers, use this new OEM setup disk.
-  The T128 and T130B drivers are on Windows NT CD. Windows NT operating system always installs these drivers from the CD even though you try to install them from the floppy disk. The T128 and T130B drivers located on the **SCSIworks!** diskette can be copied onto the hard disk after the installation is complete. The path to copy these drivers to is probably C:\WINNT\SYSTEM32\DRIVERS, but may vary depending on the installation path.
- 2 Select the **Custom Install** icon from the Windows NT Setup Program, and insert the setup disk when prompted.

11 NLM Software Installation

This chapter details Trantor's ASPI Manager Modules for the Novell NetWare 386 v3.11 or later platforms. These modules are called NetWare Loadable Modules or NLMs.

11.1 NLM Introduction

An ASPI manager is included in the NetWare 386 drivers. *Figure 18* shows a sample ASPI diagram:

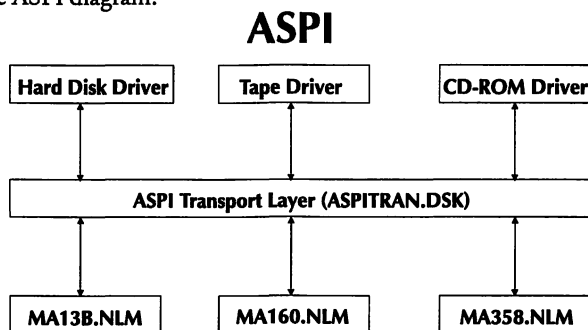


Figure 18 ASPI NLM Diagram

Given the flexibility of ASPI, many companies are currently providing server-based CD-ROM and tape backup solutions through ASPI. There are other ASPI modules already developed or under development.

A programming specification is available from Trantor if you are interested in writing your own NetWare 386 ASPI application module.

11.1.1 Checklist

The following is a check list of what you need to get started:

- ☐ IBM PC AT-compatible system or EISA system
- ☐ Trantor's PC/XT/AT-compatible boards (T130, T160, T358)
- ☐ **SCSIworks!** diskette #2
- ☐ Novell NetWare 386 v3.11 or later
- ☐ One or more Local Area Network (LAN) cards
- ☐ *SCSIworks! Users Guide* (this document)

Other manuals that may help you:

- ☐ Trantor PC/XT/AT-compatible *Hardware Installation Guide*
- ☐ *386 Installation, SFT NetWare Manuals* (provided by Novell)

11.1.2 NLM Files

NetWare Loadable Module files are located in the NLM directory on the SCSIworks! diskette #2. These files include:

ASPITRAN.DSK—The device driver that provides one entry point for any ASPI application.

MA13B.NLM—The NLM for the T130 SCSI host adapter.

MA160.NLM—The NLM for the T160 SCSI host adapter.

MA358.NLM—The NLM for the T358 SCSI host adapter.

11.2 NLM Installation

The following is a quick overview for installing Trantor NLMs:

- 1 Make one (1) backup copy of each Novell and Trantor supplied diskettes using the DOS DISKCOPY command and use these backup copies as your working diskettes.
- 2 Use the NetWare 386 file SERVER.EXE to start the installation process. When you are prompted for a file server name and an IPX internal network number, consult the *NetWare User Manual* for the information.
- 3 Boot your NetWare 386 file server. Consult the *NetWare User Manual* for the information.
- 4 Load the NLM into NetWare 386 using of the LOAD console command. See *Loading the NLM* on page 51 for details.
- 5 Make sure the module ASPITRAN.DSK is in the same [path] or in the SYSTEM directory of SYS: Volume.

Parameters

The following is a list of the parameters available for the Trantor T130, T160 and T358 host adapters. The table identifies the syntax and parameter options.



Command line parameters must be separated by spaces; however, they can be in upper or lower case.

PORT—The I/O port address for the host adapter. This parameter is mandatory, and if a port is not specified at the command line, the software prompts you for a port. The syntax is **PORT=xxx**.

INT—The interrupt setting. This parameter is mandatory, and if an interrupt is not specified at the command line, the software prompts you for an interrupt. The syntax is **INT=y**.

RESET—Performs a SCSI bus reset upon module load. This parameter is optional. The syntax is **RESET**.

11 NLM Software Installation

MODE—The mode configuration switch for the T358 host adapter only. The syntax is **MODE=m n** and the default is 00. Some parallel ports require additional delays to the read and write cycles of the device. You must specify both parameters, i.e. /M02, not /M2. The amount of additional time the T358 read and write cycles are delayed is controlled by the value of **n**.

n may be set to any value between 0 to 7 as shown below:

- 0 (default) inserts no cycle delays (runs at highest throughput rate).
- .
- .
- .
- 7 adds 875 ns of delay to the MiniSCSI EPP adapter read and write cycles.


Allowable values for **m**

- 0 Auto-port detect (default).
- 2 Force unidirectional.
- 4 Force non-EPP; auto detect unidirectional or bidirectional.
- 6 Force non-EPP and force unidirectional.
- 8 Force EPP.

Parameters	Syntax	T130	T160	T358
PORT	PORT=xxx	350, 340, 250, 240	360, 350, 340, 330, 260, 250, 240, 230	3BC, 378, 278
INT	INT=y	3, 5, 7	3, 5, 7, 10, 12, 14, 15	5, 7
RESET	RESET	no options	no options	no options
MODE-- T358 only	MODE=m n	na	na	m=0, 2, 4, 6, 8 n=0, 1, 2, 3, 4, 5, 6, 7

Loading the NLM

The module must be loaded for each host adapter in the system. For example, if you have three host adapters, you need to load the module three times. If installing more than one host adapter, each host adapter should have its own SCSI bus. For example, no two T130s should be connected to the same SCSI cable.

 Note that only one image of the module (MA13B.NLM, MA160.NLM, or MA358.NLM) remains in memory. Consult the *NetWare Installation Manual* for information on installing other NLMs. If an error message appears when attempting to load the driver, consult the end of this section for a description of the error messages.

When you load the driver, you need to tell it which host adapter you are loading the driver for, i.e. **LOAD MA13B**. If you do not specify parameters, you are prompted for those that are mandatory. To avoid NetWare software prompting, type the parameters after the NLM name.

NetWare software determines if loading the driver causes any conflicts (i.e., port or interrupt channel already in use). If there is a possibility of a conflict, the driver does not load.

At the NetWare 386 software prompt (:), use the **LOAD** command to install the driver. The correct syntax to load the driver for the T130B is:

```
LOAD [PATH]MA13B [PARAMETERS]
```

For the T160:

```
LOAD [PATH]MA160 [PARAMETERS]
```

For the T358:

```
LOAD [PATH]MA358 [PARAMETERS]
```

For a T130, assuming the **SCSIworks!** diskette #2 is in drive A and you have a tape backup and CD-ROM drive connected to the T130, the screen looks similar to *Figure 19* (the software prompts you for mandatory parameters when not selected):

```
:load a:\nlm\ma13b [Enter]
Loading module MA13B.NLM
```

```
-----
Trantor ASPI Manager for NetWare, version 1.01
Copyright (C) 1993, Trantor Systems Limited. All rights reserved.
```

```
--- For The T130B SCSI Host Adapter ---
```

```
Supported I/O port values are 350, 340, 250, 240
I/O port: 350 [Enter]
Supported interrupt number values are 3, 5, 7
Interrupt number: 3 [Enter]
```

```
SCSI Host Adapter detected at address 350h.
```

```
Device 0, Sequential Access Device (Removable Media)
Device 1, Read-Only Optical Device (Removable media)
-----
```

```
:
```

Figure 19 Loading MA13B Without Parameters Specified

11 NLM Software Installation

- ☞ Note that the port and IRQ values which would cause a conflict with another device do NOT display.

Figure 20 shows an example of the driver being loaded with command line options used.

```
:load a:\nlm\ma13b port=350 int=3 reset [Enter]
Loading module MA13B.NLM

-----
Trantor ASPI Manager for NetWare, version 1.01
Copyright (C) 1993, Trantor Systems Limited. All rights reserved.

--- For The T130B SCSI Host Adapter ---

SCSI Host Adapter detected at address 350h.

Device 0, Sequential Access Device (Removable Media)
Device 1, Read-Only Optical Device (Removable media)
-----
:
```

Figure 20 Loading MA13B With Parameters Specified

Loading the NLM When Server Boots

To automatically load the NLM when the server boots, you need to add a line to the STARTUP.NCF file. This file is created or modified from the NetWare INSTALL.NLM program. Load INSTALL.NLM and select System Options. Next, select from the Available System Options.

Then, select from the STARTUP.NCF. Add a line in the STARTUP.NCF similar to the one below:

LOAD MA13B PORT 350 INT=3 RESET

- ☞ In order for startup to properly execute, the module ASPITRAN.DSK must be in the same [path] as the module or in the SYSTEM subdirectory of the SYS: Volume.

Unloading the NLM

To unload the NLM, at the prompt enter **UNLOAD MA13B** or other module.

11.3 Warning and Error Messages

This section details any warning and error messages that appear on screen.

Warning Messages

The following is a list of warning messages and the recommended solutions.

Warning: No devices respond on this SCSI host adapter

The device is not connected to the SCSI host adapter, it is not turned on, or not terminated correctly.

Warning: Invalid option 'X' included in command line

The first letter of the option is displayed here. You entered an invalid parameter which has been ignored. You may have to unload and re-load the module, entering the correct parameter.

Error Messages

The following is a list of error messages and the recommended solutions. Note that when an error occurs, the software displays the error and then displays these two lines:

Module initialization failed.

Module XXXXX.NLM NOT loaded.

ERROR: Host adapter not found at XXX.

The software cannot find the host adapter at the port address. Be sure you have specified the correct port selection.

Device X: Unable to read device status.

The device is failing for some unknown reason. Check the device for proper termination.

ERROR: Unable to allocate INTERRUPT resource. or

ERROR: Unable to allocate IOREGISTRATION resource. or

ERROR: Unable to allocate AES resource.

Server would not allow the NLM to allocate resources for operation; possibly too many NLMs were being loaded at the same time. Consult the *NetWare User Manual*.

ERROR: NLM Hardware Registration failed.

Novell would not allow NLM to register hardware selections with server. Consult the *NetWare User Manual*.

ERROR: SetHardwareInterrupt() failure. Retcode = x.

Novell would not allow NLM to register interrupt with server. Consult the *NetWare User Manual*.

ERROR: Unable to register with ASPITRAN module.

Error in the ASPITRAN module. Either the module did not load or it was not in the correct path for automatic load.

12 Troubleshooting Notes

12.1 All Host Adapters

During bootup, the driver recognizes the adapter and the SCSI device(s), then stops with a "No SCSI Functions in Use" message.

- *The software driver is looking for a different device.*
For example, you may have the CD-ROM driver loaded, but you are trying to work with a hard disk drive, or vice versa. Each Trantor software driver recognizes the existence of all SCSI devices attached to the SCSI chain, but only works with the device it is written to communicate with. Install the correct driver, or remove an unwanted driver from your CONFIG.SYS file with a text editor program.

Notes

- MS-DOS (or PC-DOS) 3.1 or higher is required (3.3 or higher to format and use partitions larger than 32 MB). Older laptops with DOS 2.x in ROM have to be booted and operated with DOS 3 on floppy disk, unless the ROM version of DOS is upgraded.
- If an initialization error occurs with scanner devices, the driver aborts installation and remove itself. Initialization fails if TSJII.SYS cannot access an installed ASPI manager or cannot locate the appropriate scanner on the SCSI bus. Otherwise, TSJII.SYS prints a status message including the scanner model number and SCSI ID.

12.1.1 Parallel-to-SCSI Adapters

"No SCSI Host Adapter Detected" message appears during bootup

- *Improper or missing SCSI device termination.*
Your adapter requires SCSI termination power in order to operate. Check to be sure that there is proper termination power available from your SCSI device. You can do this with a voltmeter by measuring the voltage available between pin 38 and ground on the SCSI device's connector (see *Section 5.0* for pinout details). Check this voltage with power to the SCSI device(s) on; it should measure approximately +5 volts. Very low or no voltage at pin 25 indicates a problem with termination power; this condition disables the parallel-to-SCSI adapter.

Try this quick test, plug a printer into the printer pass-through port. If you have correct TERMPower, the printer is able to print.

- *For the T338, check for the proper cable.*
The T338 **MiniSCSI** adapter requires a standard, Macintosh®-compatible 25-to-50 pin SCSI cable—available worldwide. It does not work with the 25-to-50 pin cable commonly supplied with some Future Domain brand SCSI host adapters.

Notes

- Even though you may create a bootable partition with your T338, T348, or T358 adapter using TFORMAT, you **cannot** boot your computer with this partition through your adapter. Your computer does not expect to boot from a device connected to the parallel port. Therefore, your adapter device drivers must be loaded during the boot process from another disk. However, you **can** use a bootable partition created by your adapter when the SCSI drive is connected to any of Trantor's other SCSI host adapters which plug into a conventional expansion slot. If you do not plan to use the drive with any other host adapter, a bootable partition is not necessary.
- If your computer is part of a network installation, your printer port may be "redirected" to a network printer. For instance, Novell NetWare software uses the CAPTURE command for this purpose. If this is the case, the software will not detect the hardware at bootup. The simplest solution is to change your computer's parallel port hardware to LPT2 or LPT3, or change your network redirection to a different port.
- All **MiniSCSI** adapters—some older-model 8086-based Sharp® laptops have a problem with their parallel port and will not work properly with the T348 **MiniSCSI Plus** adapter, or with other programs that use high speed parallel port data transfer such as LapLink® or DeskLink® from Traveling Software. Sharp offers a free hardware upgrade for customers experiencing this problem; contact your Sharp dealer for details.
- For the T358—if your T358 **MiniSCSI EPP** adapter does not function, set the value of *n* to 7 for the /M parameter (see the *Chapter 8*). If your adapter then functions properly, you can continue to test it with other *n* values such as 6, 5, 4, 3, 2, and 1 until it does not work. Select the last value that does work. The idea is to use the lowest value for optimum performance that works with your EPP.

12.2 Technical Support

If you are unable to diagnose and fix your problem after reading this troubleshooting information, contact technical support at 800-959-SCSI (7274) or 408-945-2550, M-Th: 6:00 a.m. to 5:00 p.m., F: 6:00 a.m. to

12 Troubleshooting Notes

3:00 p.m., Pacific time. Or call the BBS 23 hours a day at 408-945-7727; 1200/2400/9600 baud, 8 data bits, 1 stop bit, and no parity. Before you call, be sure you have this information:

- The model number of the Trantor host adapter(s) installed in your system.
- The name and version number of the **SCSIworks!** software product(s) you are using.
- The type and version number of the operating system you are using (e.g., DOS 5.0).
- The contents of your CONFIG.SYS and AUTOEXEC.BAT files.
- Any error messages that appeared on your screen.
- The place from which you purchased your Trantor product(s).

Magic Lantern™

Photo CD Viewer

MagicLantern

13 Magic Lantern Operation

This chapter describes installation and operation of *Magic Lantern* Photo CD viewer for Microsoft Windows operation. If your CD-ROM drive can read single and/or multisession photo CDs, *Magic Lantern* software is the software that brings those images to your screen. *Magic Lantern* software supports any Photo CD-ROM drive which implements Microsoft's MSCDEX extensions to MS-DOS (version 2.1 and above).

13.1 Magic Lantern Overview

This section details *Magic Lantern* files, requirements, and memory configuration options. Please read and understand this section carefully before proceeding with the *Magic Lantern* software installation.

13.1.1 Magic Lantern Files

Your distribution diskette #2 has a \LANTERN subdirectory, containing the following files:

LANTERN.HLP—The help information file for using *Magic Lantern* software.

LANTERN.EXE—The *Magic Lantern* software program which operates from a Windows environment.

LANTERN.INI—The initialization parameters which executes *Magic Lantern* software to work in Windows.

***.DLL**—Dynamic link libraries to link *Magic Lantern* and Windows softwares.

REGISTER.WRI—A Microsoft Write text file which is a registration form. Use this form to register your copy of *Magic Lantern* software. It is important that you fill this form out completely and send it to Incat System srl.

INSTALL.EXE—The *Magic Lantern* installation program execution file for installing into Windows version 3.0 or later.

INSTALL.INF—The *Magic Lantern* installation information file used by the INSTALL.EXE file during installation.

13.2 Magic Lantern Installation

To install *Magic Lantern* software, from the Windows File menu, select Run under the File menu. Then enter **a:\lantern\install.**

Answer the questions as prompted. The default directory name in which all *Magic Lantern* files are stored is C:\LANTERN.

Deinstallation

If for any reason you need to deinstall *Magic Lantern* software, all you need to do is delete the directory where you installed it (the default is C:\LANTERN) and all its files. No files have been written anywhere else, nor have modifications been made to WIN.INI.

First check the *Magic Lantern* directory you are deleting to ensure that you are not going to lose information you want to keep!

13.3 Operation

- 1 From the PhotoCD menu, select **Memory**, or click on the Memory button in the Toolbar (if the Toolbar is not visible, select **Toolbar** from the Windows menu). The Memory dialog box has the following options:

Application—the number at the right of the slider bar in the dialog box which indicates the total amount of available RAM and virtual memory. Move the slider until the number in the MB box indicates the amount of memory you wish to dedicate exclusively to *Magic Lantern* software; the remaining memory is used for Windows and any other programs you wish to run at the same time.

Poster—the number at the right of the slider bar in the dialog box which indicates the maximum size of the image you can load—to the limit of 16 MB imposed by Windows. Move the slider within the bar until the number in the MB box indicates the size of the Poster image you desire. Remember that the amount of time it takes to load the image is proportional to the size (in memory terms) of the image.

Banding—if Banding is checked, the images are loaded in chunks rather than in a continuous stream. This technique is best for slower 386 PCs with up to 8 MB memory, or with computers that do not have an optimized configuration. If, however, you have more than 8 MB of memory, we recommended that you do not select Banding so that your pictures load faster.

- 2 Click on OK to accept the values and close the dialog box.
- 3 Select **Drive** from the PhotoCD menu. In the dialog box select the drive letter corresponding to your CD-ROM drive and click on OK. *Magic Lantern* software can also read a Photo CD image from hard disk, provided the entire file structure of the Photo CD has been copied onto the hard disk.

13 Magic Lantern Operation


If this is not the first time you're running *Magic Lantern* software, and you have not changed the configuration of your PC, you can proceed directly to the next step.

- 4 From the PhotoCD menu, select **Load PhotoCD**. All the images on the CD are loaded into the Thumbnails window.

The number of thumbnails visible depends on the size of the Thumbnails window. They automatically rearrange when you resize the window. If **Exact Size** is checked in the Windows menu, the window always "snaps to" the nearest size which fits whole rows and columns of slides; that is, no slides are shown cut off by the window frame. If it doesn't matter that the slides are cut off, uncheck **Exact Size**.

Once a CD is loaded, the menu bar changes and more menus become available. One of the "slides" in the Thumbnails window is selected (by being outlined in red). You can click on any slide to select it or use the **Go To** command from the Thumbnails menu.

Magic Lantern Program Group—the window is empty if this is the first time you're running *Magic Lantern* software.

-  Any loading operation can be cancelled at any moment either by pressing the [Esc] key or by clicking on the **Cancel** button.

For further instructions, read the on-line help instructions by selecting the **Help** icon and choosing the help information you need.

13.3.1 Mouse Control

If you have a mouse installed, a mouse cursor appears permitting point-and-click interaction with *Magic Lantern* software. Operation is very simple—clicking anywhere inside the perimeter of a button performs the desired function.

13.3.2 Keyboard Control

Whether or not you have a mouse, *Magic Lantern* software can also be controlled from the keyboard. The following table is a quick reference list of the *Magic Lantern* commands, key controls, and hotkey controls.

Commands	Key Controls	Hotkeys	Related Menu
LOAD PHOTO CD	ALT + C + C	CTRL + C	Photo CD
DRIVE	ALT + C + D		Photo CD
UNLOAD	ALT + C + U		Photo CD
MEMORY	ALT + C + M		Photo CD
CD INFO	ALT + C + I		Photo CD

EXIT	ALT + C + X		Photo CD
GO TO	ALT + T + C	CTRL + G	Thumb. & Transform.
LOAD	ALT + T + O	CTRL + L	Thumb. & Transform.
LOAD CURRENT	ALT + T + C		Thumb. & Transform.
LOAD AS WALLET (192x128 pixels)	ALT + T + W		Thumb. & Transform.
LOAD AS SNAPSHOT (384x256 pixels)	ALT + T + P		Thumb. & Transform.
LOAD AS STANDARD (768x512 pixels)	ALT + T + S		Thumb. & Transform.
LOAD AS LARGE (1536x1024 pixels)	ALT + T + L		Thumb. & Transform.
LOAD AS POSTER (3072x2048 pixels)	ALT + T + R		Thumb. & Transform.
LOAD IN 16 COLORS	ALT + T + 1		Thumb. & Transform.
LOAD IN 256 COLORS	ALT + T + 2		Thumb. & Transform.
LOAD IN GREYSCALE	ALT + T + Y		Thumb. & Transform.
LOAD IN TRUE COLOR	ALT + T + T		Thumb. & Transform.
SETUP	ALT + S + S		Slide Show
RUN	ALT + S + R	CTRL + R	Slide Show
TILE HORIZONTAL	ALT + W + H		Windows
TILE VERTICAL	ALT + W + V		Windows
CASCADE	ALT + W + C		Windows
ARRANGE ICONS	ALT + W + I		Windows
CLOSE (ALL) PHOTOS	ALT + W + P		Windows
1, 2, 3, ...	ALT + W, 1, 2, 3, ...		Windows
EXACT SIZE	ALT + W + E		Windows
SLIDE FROM	ALT + W + S		Windows
COPY	ALT + P + C	CTRL + INS	Photo
EXPORT	ALT + P + X		Photo
RIGHTS	ALT + P + R		Photo
FULL SCREEN	ALT + P + T	CTRL + F	Photo
AS STORED	ALT + R + A		Rotation
MIRRORED LEFT TO RIGHT	ALT + R + M		Rotation
MIRRORED & ROTATED 90 COUNTER CLOCKWISE	ALT + R + 9		Rotation
MIRRORED & ROTATED 180	ALT + R + 1		Rotation
MIRRORED & ROTATED 90 CLOCKWISE	ALT + R + 0		Rotation

13.4 Magic Lantern Troubleshooting

Refer to *Chapter 12* for further technical support.

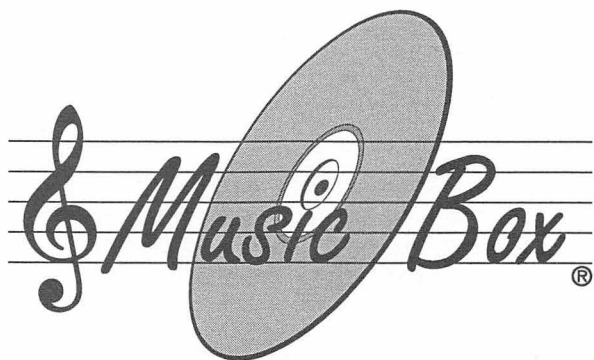
The Windows version of Magic Lantern software doesn't recognize my CD-ROM drive.

- First, make sure that you have a Photo CD-compatible CD-ROM drive and that it is properly installed and configured. Make sure that MSCDEX has been loaded. If the CD-ROM is installed and

13 Magic Lantern Operation

operating properly, you should be able to use the DOS DIR command with the CD-ROM drive when a data disc is loaded; audio discs will give an error; this is normal.

- Make sure you have a photo CD in the CD-ROM drive.



Audio Control Software for CD-ROMs

Music Box

14 Music Box Operation

This chapter describes installation and operation of Trantor's Music Box CD audio disc control software for MS-DOS operation with CD-ROM drives (hereafter referred to as "*Music Box* software"). *Music Box* software gives your CD-ROM drive most of the features of a sophisticated CD player! It supports any CD-ROM drive which implements Microsoft's MSCDEX extensions to MS-DOS for CD-ROM (version 2.1 and above), supports audio functions and has a software driver that implements audio functions. This package includes a standard MS-DOS command-line version with graphical interface (which may optionally be run in memory-resident mode) and a Microsoft Windows 3.x version which also incorporates a disc database feature.

14.1 Music Box Files

Your **SCSIworks!** distribution diskette #1 has a \MUSICBOX subdirectory, containing the following files:

MUSICBOX.EXE—The standard version of *Music Box* software, with graphical interface, designed to run from the MS-DOS command line. This version of *Music Box* software may be optionally run as a memory-resident application (referred to as *Music Box TSR* software). Once installed, *Music Box TSR* software takes up about 18 KB of memory, and provides most of the commands available in graphical interface mode. When memory resident, *Music Box TSR* software uses keyboard control only, and provides audio feedback to the user through the computer's speaker, thus making it usable in any screen mode, even when graphical software (except Windows) is running.

MBOXRES.EXE—A version of *Music Box* software which invokes the memory-resident option, then immediately returns to the DOS command line. See *Section 14.5.5*.

MBOXRES.OVL—An overlay file used by the memory-resident version of *Music Box* software. This file must be in either the current directory or the DOS path when the memory-resident version of *Music Box* software is loaded into memory.

MBOXWIN.EXE—The Microsoft Windows version of *Music Box* software, for use with Windows version 3.0 or later. Includes a disc database to store disc/track titles and play-order preferences.

MBOXREAD.ME—A text file which may be included, containing up-to-date information since this manual was printed. It is important that you look for this file and, if it exists, read it carefully.

14.2 Requirements

The following are hardware and software requirements specific to *Music Box* software; see *Appendix A* for more details.

14.2.1 Hardware

Music Box software is designed to operate with virtually any CD-ROM drive for IBM-compatible computers. No specific CD-ROM hardware configuration is required, but it is presumed that your CD-ROM drive is properly installed and functioning prior to installation of *Music Box* software.

The MS-DOS command-line version of *Music Box* software automatically recognizes and operates with the following video graphics card standards:

CGA, EGA, VGA and Hercules® Monochrome Graphics

Other video card designs may work, but are not certified to do so. You **must** have a graphics card installed to use the graphical and Windows versions of *Music Box* software; text-only displays are not compatible. CGA displays runs *Music Box* software in relatively low resolution compared to the others. The Windows version of *Music Box* software functions with any graphic display supported by your version of Windows. *Music Box* software, in memory-resident mode, may operate properly with text-only video display systems, but is not certified to do so.

14.2.2 Software

Since MS-DOS (through version 5.0, as of this writing) does not directly support CD-ROM drives, *Music Box* software requires that Microsoft's CD-ROM software extensions for CD-ROMs (MSCDEX) and an audio-capable CD-ROM driver be installed. Both are supplied with your software—see *Chapter 4* for installation instructions.

14.3 Music Box Installation

Prior to installation and first use of *Music Box* software, you should make sure your CD-ROM software driver and hardware are completely installed and working properly (see *Chapters 3* and *4* for details).

Installation of *Music Box* software consists of copying the contents of the \MUSICBOX subdirectory on your software distribution diskette to your own hard disk drive. We recommend that you place the *Music Box* files in the same location as your other CD-ROM files, which is typically the \TSCSI subdirectory on your hard disk. For convenience, the location of the *Music Box* files should be in a PATH statement in your

14 Music Box Operation

AUTOEXEC.BAT file, so that *Music Box* software may be loaded from any current directory on your system. See your MS-DOS documentation if you are not familiar with the PATH command.

To copy the files, first move to your desired diskette or subdirectory, then use the DOS COPY command to copy the files as follows (assuming the software distribution diskette is in Drive B):

```
COPY B:\MUSICBOX\*.*
```

No additional preparation is necessary, as *Music Box* software automatically recognizes and adapts to your video display and CD-ROM hardware.

14.4 Running Music Box Software

This section details running *Music Box* software both from the MS-DOS command line and from Windows. If you plan to use *Music Box* software with Microsoft Windows, skip to Section 14.4.2.

14.4.1 From the DOS Command Line

To run *Music Box* software in the graphical non-resident mode, type **MUSICBOX** from your DOS prompt. The memory-resident option is described below, but running *Music Box* software first in non-resident mode helps you to learn its functions.

When run from the command line, *Music Box* software displays a brief copyright notice, then switches to graphics mode for operation (see Figure 21).

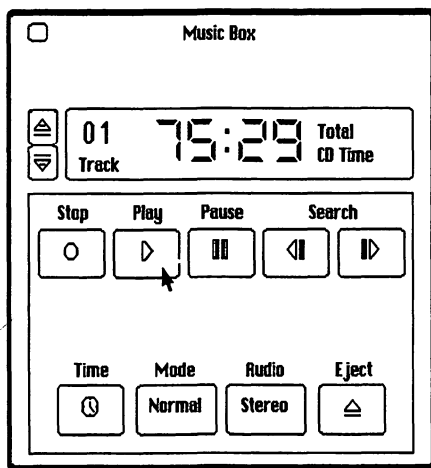


Figure 21 Music Box Command-line Graphical Interface

If you are running *Music Box* software with a Hercules-compatible monochrome graphics adapter, you are asked to confirm the switch to graphics mode.

Now that *Music Box* software is running, please skip to *Section 14.5* for a full description of the commands available to you.

14.4.2 Running Music Box Software with Microsoft Windows

If you wish to use *Music Box* software in the Microsoft Windows 3 environment, you should first install *Music Box* software as a Windows Application in the Program Manager. See your Windows manual for instructions on how to do this. For convenience, you may wish to load *Music Box* software automatically, when Windows is loaded, by adding it to the "RUN =" line in WIN.INI. See your Windows manual for information about how to do this.

To start *Music Box* software in the Windows environment, simply double-click on its icon to bring up its Main Control Panel (*Figure 22*).

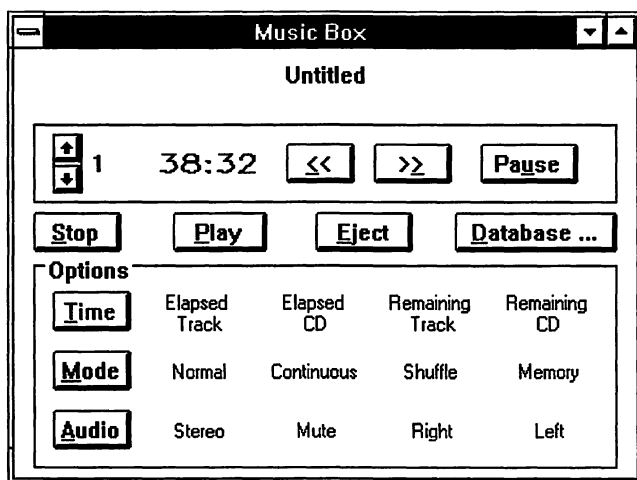


Figure 22 Windows 3 Main Control Panel

Once loaded in Windows, *Music Box* software may then be run like any other Windows application, including resizing, moving and minimizing it to an icon. If you are unfamiliar with standard Windows application functions such as these, see your Windows manual for a complete description. When minimized, the *Music Box* software icon displays and

updates the current time display information. As long as you remain in the Windows environment, *Music Box* software continues to monitor and control the audio operation of your CD-ROM drive.

Please continue with *Section 14.5* for a full description of the commands available to you.

14.5 Learning Music Box Software

Once running, the graphical command-line version of *Music Box* software and the Windows version operate similarly (except for the disc database feature available in the Windows 3 version only, described below in *Section 14.5.4*) with some differences in their appearance. Refer to *Figures 21* and *22*. Note that not all CD-ROM drives support all audio functions.

If you haven't loaded a disc, *Music Box* software indicates "no CD" in the display window, and indicates track #00. If you have loaded a disc with data tracks only (no audio tracks), *Music Box* software indicates "no CD" in the display window, and indicates track #01. In this event, inserting a disc with audio tracks and clicking on Play resets *Music Box* software and begin play; it is not necessary to exit the program and restart.

Music Box software allows you to select any track on your audio disc and play it on your audio-capable CD-ROM drive. If you have loaded a mixed-media disc which also contains digital data, non-music tracks are skipped and *Music Box* software begins operation at the next available audio track on the CD.

Most functions are self-explanatory, and work in a fashion similar to conventional CD audio players, but there are some additional features which are explained below.

Music Box software displays the total CD time when it is first activated. To the left of the time display is the Track Number indicator. For an all-audio disc, this displays Track 1 when *Music Box* software is first loaded; a mixed media disc displays the number of the first audio track.

To exit *Music Box* software at any time, press [Esc] (for the DOS version) or [Alt] + [F4] (for the Windows version) or use your mouse to click on the small Close Box in *Music Box* software's upper left corner. If the current CD is playing, it continues to do so until the end of the disc is reached. If you exit and then reload *Music Box* software, the current play information displays.



14.5.1 Mouse Control

If you have a mouse installed, a mouse cursor appears (as shown in *Figure 21*) in the graphical command-line and Windows versions, permitting point-and-click interaction with *Music Box* software. Operation is very simple—clicking anywhere inside the perimeter of a button performs the desired function.

14.5.2 Keyboard Control

Whether or not you have a mouse, *Music Box* software may also be controlled from the keyboard. In the function explanations which follow, the equivalent key is listed in parentheses and is usually the same as the first letter of the function.

14.5.3 Music Box Control Functions

  Just to the left of the Track Number display are the Track Skip buttons. The upper button (or [Up Arrow] or **U** on your keyboard) skips forward to the beginning of the next track, the lower button (or [Down Arrow] or **D** on your keyboard) skips backward to the beginning of the current track on the first click, then back to the beginning of previous tracks with subsequent clicks. Note that if *Music Box* software is in Shuffle mode (see **Mode**, below) the **Track Skip** buttons skips to a randomly-chosen track, not necessarily the next or previous track.

 **Play**

When you click on the **Play** button (**P** on the keyboard), the CD begins playing and the elapsed time of the track you are playing displays.

 **Time**

You can change the time display by clicking on the **Time** button (**T** on the keyboard), which has a clock icon displayed on it. Each click cycles the time display through Elapsed Track Time, Elapsed CD time, Remaining Track Time, and Remaining CD Time. You must be in the Play mode to select these alternate time displays with the **Time** button.

 **Stop**

Clicking on the **Stop** button (**S** on the keyboard) causes the CD-ROM drive to stop playing and to return to the first audio track.

 **Pause**

The **Pause** button (or [Spacebar]) stops at the current play location and resume playing when either the **Pause** or the **Play** button is clicked.





The **Search** buttons moves the play point quickly in either direction. (The **F** or [Right Arrow] to search forward, the **R** or [Left Arrow] key to search in reverse.) If

you continue to hold down the **Search** button or key, the search speed increases and larger jumps between audio segments are made, up to a maximum of 30 seconds per jump. When the **Search** button or key is released, the CD continues in Play mode from that point.

Mode

The **Mode** button (**M** on the keyboard) allows you to select the various operating modes available as follows:

- **Normal**—the CD plays starting at track 1 and continuing to the end of the disc.
- **Continue**—the CD continuously plays through to the end of the disc, then restart from the beginning.
- **Shuffle**—*Music Box* software randomly plays all tracks on the CD before beginning the shuffle play again.
- **Memory**—*Music Box* software queries the disc database for the play order designated (Windows 3 version only).

Note that, when running from the DOS command line, Shuffle and Continue modes require that *Music Box* software remain on screen to control CD operation. If either Shuffle or Continue mode is selected, and *Music Box* software is closed, the CD continues sequential play from the current play location to the end of the disc. In Windows, you may resize or minimize Music Box without disturbing play operation.

Audio

The **Audio** button (**A** on the keyboard) allows you to select either Stereo, Right, or Left channel output, or you may Mute the output entirely on CD-ROM drives that support these commands. Repeated pressing of this button cycles through the various options.

Eject

The **Eject** button (**E** on the keyboard) stops playing the disc, and eject the disc carrier on CD-ROM drives that support the Eject function.



The Close Box in the upper left corner ([Escape] on the keyboard) exits *Music Box* software and returns you to the MS-DOS command line or Windows, depending on which version you are running. Note that the standard Windows Close Box is used for the Windows version of *Music Box* software.

14.5.4 Using the Windows 3 Version

There are a few differences between the Windows 3 version of *Music Box* software and the DOS command-line graphical version.

Minimized Icon Display

If you minimize *Music Box* software to an icon in Windows 3, the currently programmed play settings continues to govern operation of the CD-ROM and the icon itself displays and update the time display normally shown in the *Music Box* software window (we don't want you to feel left out!).

Fine-Tuning the Windows 3 Version

Music Box software "polls" the CD-ROM disc during play mode to update the time and track display information. By default, polling occurs every two seconds, and on slower computers or with slow CD-ROM drives polling can slow down overall Windows performance.

If you discover that some programs are operating sluggishly under Windows when *Music Box* software is running, try reducing the polling rate by adding the following to your WIN.INI file using any text editor:

```
[MUSICBOX]
POLLRATE=5000
```

The POLLRATE is expressed in milliseconds; 5000 causes polling to occur every five seconds (instead of the default of two seconds), 10000 would poll every ten seconds, etc.

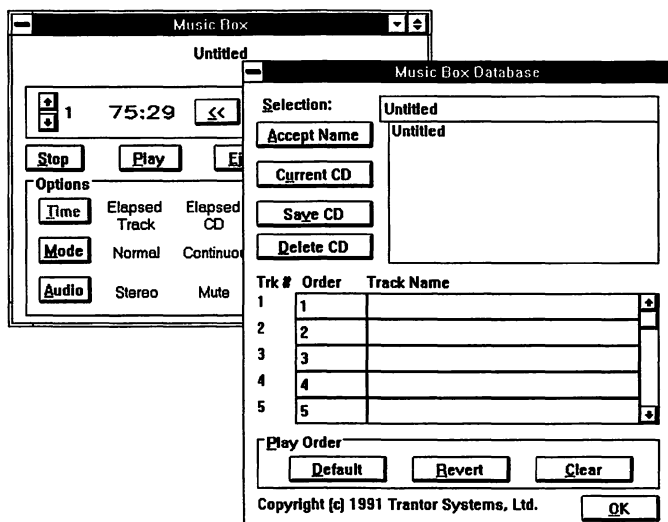



Figure 23 Windows 3 Database Control Panel

Disc Database Operation

The **Database** button brings up an additional Windows 3-only *Music Box* feature. The first time you use run the Windows 3 version, *Music Box* software creates empty database files on your system, and inform you of this fact. Then, from the Database Control Panel (*Figure 23*), you can enter CD disc names, track names and play order.

-  To play tracks in the sequence you've set in the Database Control Panel, remember to select the Memory mode by pressing the **Mode** button on the Main Control Panel.

Each CD audio disc has a unique ID that is automatically logged into the database. Additional information such as the number and length of each track is also encoded directly on the disc, but name information is not, so you'll have to manually enter this information into the database (one time only) if you wish to make use of it. To enter a CD into the database, insert the CD into your drive and click on the **Current CD** button. If the CD is not recognized by *Music Box* software, it is given a default name of Untitled (see *Figure 23*). This name must be changed for it to be saved into the database, so type a new name into the **Selection** box, then click on **Accept Name**. The CD name is now saved in the database and is recognized whenever it is inserted and **Current CD** is clicked.

To enter track names and play order into the database, make sure the correct CD is inserted in the drive, then click on **Current CD**. The CD is recognized and any already existing track information displays. Use the scrollbar and the edit table to change/enter any track name and the play order desired.

The **Default** play order button can be used to reset the play order to sequentially play all tracks in standard order. The **Clear** play order button clears all play order fields; you may then enter a new play-order sequence for any or all tracks. For example, if you click on **Clear** then enter **1** for the third track and **2** for the first track, the Memory mode plays tracks 3 and 1 in sequence—no other tracks plays. As an added feature, you can

Track #	1	2	3	4	5
Play Order	3	not played	1 & 2	5 & 6	4

specify playing track 3 twice for each play of track 1, by entering 1 2 for the third track (make sure a space separates the numbers) and 3 for the first track. To skip a track entirely, make sure the Order column has no entries.

Example: *Figure 24* illustrates an example of track resequencing. As shown, *Music Box* software plays the disc tracks in the following order:

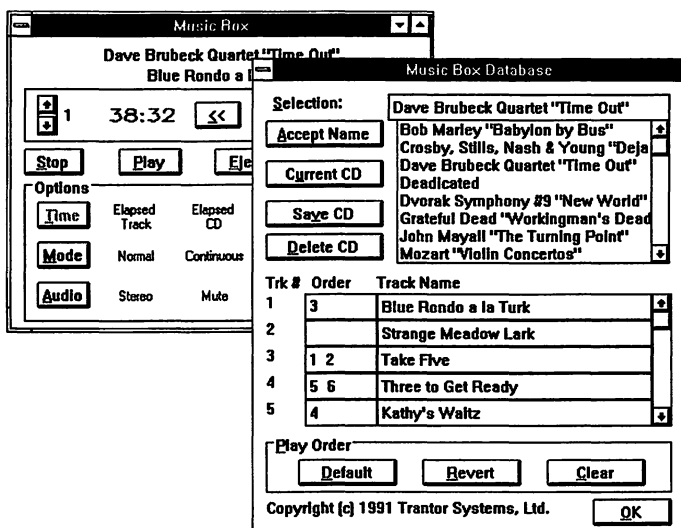


Figure 24 Database Entries, with Track Resequencing


The **Revert** button reads the last-saved play order back into the database, in case you change your mind about the current changes. When you are finished editing the track name and play order list, click on the **Save CD** button to save the track list and play sequence permanently.

Over time, you'll probably enter a number of disc titles into the database. These appear in the name-list box, with a scrollbar if necessary to accommodate a large number of discs (Figure 24). CDs other than the current one in the drive may be edited by clicking on the desired CD in the name-list box. The **Delete CD** button deletes the selected CD from the disc database. If the CD being deleted is the selected CD then the reserved name *Untitled* is created for that CD. The name of a CD may be changed by selecting the desired CD, typing a new name, and clicking on the **Accept Name** button.

When you're finished editing the database, close the database control panel by clicking on OK or using the Close Box provided in the upper left corner.


14.5.5 Running Music Box Software in Memory-Resident Mode

You may choose to load the DOS version of *Music Box* as a *Terminate and Stay Resident* application (referred to as "*Music Box TSR* application"). When memory-resident, *Music Box TSR* application occupies about 18 KB of memory, and once loaded, may be invoked at any time, even while running other applications (except Windows).

 *Music Box TSR* application should not be used if you run Microsoft Windows, as Windows inhibits the keystrokes necessary to operate *Music Box TSR* application. Use MBOXWIN instead.

There are two ways to load *Music Box TSR* application: either directly into memory from the MS-DOS command line, or while simultaneously invoking the standard graphical interface.

- If you choose to load *Music Box TSR* application at the same time you invoke the graphical interface, simply type **MUSICBOX** with one of the command-line switch options shown below.
- If, however, you wish to load *Music Box TSR* application directly into memory, type **MBOXRES**, optionally adding one of the command-line switches shown below. Loading *Music Box TSR* application in this manner returns you directly to the DOS command line, and is particularly useful for loading *Music Box TSR* application from a batch file, such as AUTOEXEC.BAT.

 Note that MBOXRES.OVL, included on your **SCSIworks!** diskette, must be available either in the current directory, or via the PATH command of MS-DOS, for *Music Box TSR* application to load properly.

The command line switch options for *Music Box TSR* application are as follows (note that either upper or lowercase characters are acceptable):

/R makes *Music Box* application memory-resident. The “hotkey” is the key combination which, when pressed, suspends your current application and invokes *Music Box TSR* application. [Ctrl]-[Left Shift]-[Tab] is the default hotkey. Note that all three keys must be pressed simultaneously. This switch is the default when MBOXRES is executed.

/Rx changes the resident version’s hotkey combination from the default of [Ctrl]-[Left Shift]-[Tab], where x is the keyboard character desired (allowed characters are A-Z and 0-9). The chosen character is always used in conjunction with [Ctrl]-[Left Shift].

Examples:

The following invokes *Music Box* software in memory-resident mode, with the default [Ctrl]-[Left Shift]-[Tab] hotkey, and then presents the graphical interface. When you exit the graphical mode, *Music Box TSR* application remains in memory.

MUSICBOX /R

Or set the hotkey to [Ctrl]-[Left Shift]-**M**

MUSICBOX /RM

The following invokes *Music Box* software in memory-resident mode, with the default [Ctrl]-[Left Shift]-[Tab] hotkey, then immediately returns you to the MS-DOS command line prompt. (This is equivalent to typing MBOXRES by itself, as the /R switch is assumed.)

MBOXRES /R

Or set the hotkey to [Ctrl]-[Left Shift]-5,

MBOXRES /R5

Note that if you wish to change the hotkey combination after *Music Box TSR* application has been loaded, you must first completely unload *Music Box TSR* application (with the [Ctrl]-X command), then reload it with your new hotkey selection. If you attempt to load *Music Box TSR* application with a different hotkey when *Music Box TSR* application is already loaded, the new loading attempt is ignored.

14.5.6 Music Box TSR Software Commands and Audio Interface


In memory-resident mode, *Music Box TSR* application uses audio feedback, rather than a screen display, to convey information (that's why you don't get any pretty screen illustrations in this section). This method allows *Music Box TSR* application to operate in conjunction with virtually any non-Windows application you may be running, including programs that run in graphics mode, and greatly reduces the amount of memory needed to remain resident.

When the hotkey combination is pressed, *Music Box TSR* application responds with a series of descending tones to inform you that it is in operation. Until you exit back to your application (with the [Escape] key), *Music Box TSR* software either executes CD-ROM audio commands or responds with a low error tone if an inappropriate key is struck. When a keystroke command is entered, *Music Box TSR* application acknowledges it with a tone.

When running, *Music Box TSR* software uses the same keyboard commands as those which are allowed in the non-resident graphical mode:

P	begin or resume play.
S	stop playing and return to track 1.
[Spacebar]	pause or restart play.
U or [Up Arrow]	skip to next track.
D or [Dn Arrow]	skip to beginning of the current or previous track.
F or [Rt Arrow]	search in the forward direction.
R or [Lt Arrow]	search in the reverse direction.

E	stop play and eject the CD disc.
M	cycle through the various Mode options.
A	cycle through the various Audio options.

 Note that the Time command is not functional in TSR mode, as there is no information display.

There are also two special keystrokes for use with *Music Box TSR* software:

[Esc]	exits back to your application.
[Ctrl]-X	unloads <i>Music Box TSR</i> software from memory (see below).

14.5.7 Unloading Music Box TSR Software

To unload the memory-resident version of *Music Box* software from memory, press [Ctrl]-X (i.e. hold down [Ctrl] while pressing X) while you are at the MS-DOS command line level and *Music Box TSR* software is running. Note that *Music Box TSR* software must be the *last* memory-resident application loaded into memory in order to unload it, to avoid disturbing the operation of other memory-resident programs. Otherwise, *Music Box TSR* software is disabled, but still occupies memory space. An attempt to unload *Music Box TSR* software from within another application is ignored.

14.5.8 Reloading Music Box TSR Software

If *Music Box TSR* software has been removed from memory or disabled via the [Ctrl]-X keystroke, you may reload it at any time. If disabled, reloading re-enables *Music Box TSR* software, otherwise the reloading places *Music Box TSR* software back in memory. Reloading never causes more than one copy of *Music Box TSR* software to be in memory at any time. Refer to Section 14.5.4 and 14.4.2 for information on .INI files.

14.6 Music Box Troubleshooting

Refer to *Chapter 12* for further technical support

The Windows Version of Music Box Software Doesn't Recognize My CD-ROM.

- First, make sure that your CD-ROM drive is properly installed and configured and that MSCDEX has been loaded. If the CD-ROM is installed and operating properly, you should be able to use the MS-DOS DIR command with the CD-ROM drive when a data disc loads.
- If you believe your CD-ROM drive is installed properly, try running the command-line version of *Music Box* software by typing **MUSICBOX**. If this version operates properly, your CD-ROM drive installation is operating correctly.

- Make sure you are not attempting to use the standard DOS version of *Music Box* software (MUSICBOX.EXE) from within the Windows environment. To operate properly with Windows, you must use the Windows-only version (MBOXWIN.EXE).

When Music Box Software is Running, Windows Operation Seems Sluggish.

This is probably due to the polling rate of the *Music Box* software time and track information display. See *Section 14.5.4* for details of how to change the polling rate.

Tape Mate II

Tape Backup Software

Tape Mate II

15 Introduction to Tape Mate II Software

Tape Mate II software is a powerful archiving and data management system designed for single-user computer systems. With **Tape Mate II** software, you have the flexibility of backing up or restoring all or part of one or more disk drives, and you can perform the operation immediately or schedule it to run automatically later.

15.1 Hardware Support

Tape Mate II software supports a wide range of hardware devices and media, including fixed and removable disk, tape, digital-audio tape (DAT), and magneto-optical drives. Any device (fixed and removable hard disk, and optical drive) that has a DOS drive designation is supported through a DOS driver. **Tape Mate II** software supports tape drives through SCSI adapters. Nearly every SCSI ¼-inch cassette and DAT drive made is supported. Please review the SUPPORT.LST file on your distribution diskette for currently supported devices.

15.2 Tape Mate II Features

You can use **Tape Mate II** software to

- back up data.
- restore data.
- verify the integrity of data that has been backed up or restored.

In addition, **Tape Mate II** software offers utilities that allow you to

- create and manage a database of the backup, restore, and verify operations.
- schedule backup, restore, or verify operations that run automatically.
- erase or format tapes and floppy disks.
- read and print log files of the backup, restore, and verify operations.
- eject tape cartridges.
- retension a tape (retensioning helps maintain the integrity of tapes).

All features are designed to give you maximum flexibility in deciding what, when, and how to back up your data.

15.3 Using the Tape Mate II Section of this Manual

Begin with the installation procedures in *Chapter 16*. If you have never used a backup program before, your next step should be reviewing *Section 17.2*, which explains basic concepts in backing up data. Experienced users can skip to chapters of interest:

- **Chapter 16**—describes the procedure for installing and configuring the software.

- **Chapter 17**—provides such basic information as using menus and dialog boxes and typical backup procedures.
- **Chapter 18**—explains the procedure for backing up data.
- **Chapter 19**—describes the procedure for restoring data.
- **Chapter 20**—describes the procedure for verifying data.
- **Chapter 21**—explains how to select and schedule an operation to run automatically at a specified time.
- **Chapter 22**—explains how to create a script file that performs the backup, restore, and verify operations automatically.
- **Chapter 23**—describes the database and the options for viewing and managing its contents.
- **Chapter 24**—describes the utilities.
- **Chapter 25**—explains how to set local and global configuration parameters.

16 Installation and Configuration

This chapter describes how to install and configure **Tape Mate II** software. Be sure to consider the items listed in *Section 16.1* prior to installing the software.

16.1 Before You Begin

Before installing **Tape Mate II** software:

- 1 Read the contents of the TMTREAD.ME file on the **Tape Mate II** distribution diskette #2. If included, this file contains information about recent changes that may not be included in this manual. To read it, insert the **Tape Mate II** distribution diskette in the disk drive (drive A, for example); then type **TYPE A:TMTREAD.ME | MORE** and press [Enter]. If the text fills more than one screen, press [Enter] to display another screen of text.
- 2 Install the ASPI manager (MAXXX.SYS) onto your boot drive using the main **SCSIworks!** install program. See *Chapter 4* for details.
- 3 Verify that your archive device is supported before installing the device or **Tape Mate II** software. Supported devices are listed in SUPPORT.LST and TMTREAD.ME files on your distribution diskette #2.
- 4 Verify that system requirements are met (see *Appendix A*).
- 5 Install the archiving hardware.

16.2 Installing Tape Mate II Software

Follow these instructions to install **Tape Mate II** software:

- 1 Insert the Program Diskette in drive A (or B, as appropriate). At the DOS command line, type **A:** and press [Enter] (if you inserted the diskette in drive B, type **B:** and press [Enter]).
- 2 Type **INSTALL** and press [Enter].
- 3 At the Enter Target Drive ID prompt, type the letter of the drive on which **Tape Mate II** software is to be installed; then press [Enter].
- 4 At the Enter Target Path ID prompt, type the name of the directory to contain **Tape Mate II** software (the default is \TMATE); then press [Enter]. If the directory does not exist, the INSTALL program prompts you to create the directory. Type **Y** and press [Enter] to create the directory; or type **N** and press [Enter] to stop the installation and return to the DOS command line.
- 5 When prompted, type the letter of the drive containing the AUTOEXEC.BAT and CONFIG.SYS files and press [Enter].
- 6 At the Enter Company Name prompt, type the company name and press [Enter].

- 7 At the Enter User Name prompt, type your name and press [Enter].
- 8 When prompted to confirm the information, type **Y** and press [Enter] to confirm the information is correct; or type **N** and press [Enter] to return to the Enter Company Name prompt.
- 9 When prompted to modify the AUTOEXEC.BAT file, type **Y** and press [Enter] to modify the file so Tape Mate II software can be started from any directory. The file is also changed to permit proper use of [Ctrl]-[Break]. The original file is saved in the root directory as AUTOEXEC.SAV. Type **N** and press [Enter] to make no changes to the AUTOEXEC.BAT file.
- 10 Another message appears, prompting you to update the CONFIG.SYS file to add the following two lines:

FILES=20

BUFFERS=20

These values are minimums. If the current values are larger than 20, **Tape Mate II** software makes no changes. If changes are made, then the original CONFIG.SYS file is saved in the root directory as CONFIG.SAV. Select **Yes** to make the changes; or **No** to make no changes.

- 11 Press [Ctrl]-[Alt]-[Del] to re-boot the system before using **Tape Mate II** software.

16.3 Configuring Tape Mate II Software for Your Device

The first time you use **Tape Mate II** software, you must configure it for your backup device (i.e., tape drive, floppy drive, etc.). Follow these steps:

- 1 Start **Tape Mate II** software by typing **TMATE** and pressing [Enter]. (If the AUTOEXEC.BAT file wasn't modified during installation, first change to the directory containing **Tape Mate II** software.) If the screen is distorted, see the note following these steps.
- 2 A message indicates that no devices were found in the configuration file. Press [Esc] to open the Local Backup Device Selection dialog box, shown in *Figure 25*.
- 3 The Current Backup Device field is set at No Device Selected. Press [Enter]. The Device Type Selection menu appears, listing supported devices. An arrow at the left of the menu indicates the list extends beyond the menu box. To scroll through the list, use the arrow keys or press [PgUp] and [PgDn].
- 4 Highlight the correct device, and press [Enter].
- 5 If **Tape Mate II** software needs additional information for your device, a Device Configuration dialog box appears. The dialog box contains one or more of the following fields (see the example in *Figure 26*):

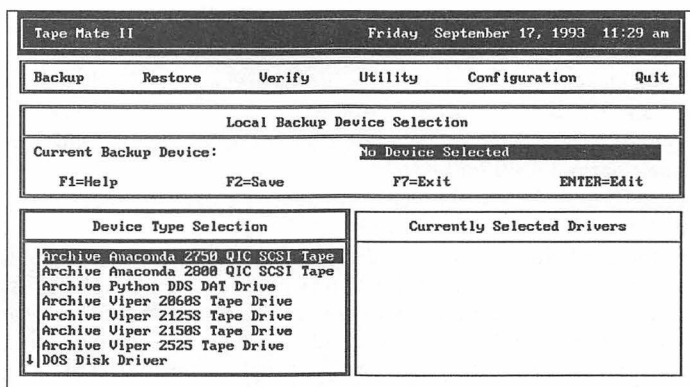


Figure 25 Local Backup Device Selection Dialog Box

Compression—The default setting for this field is Default. With this setting, **Tape Mate II** software uses the media as it has previously been used: if the media was used with compression enabled, then compression is used; if the media was used with compression disabled, then compression is not used. To change this setting, select the Compression field; then select Disabled to disable compression, or Enable to enable compression.

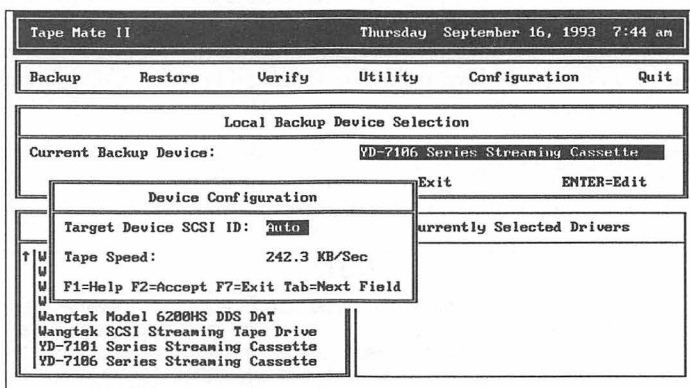


Figure 26 Device Configuration Dialog Box

Target Device SCSI ID—The default setting for this field is Auto. With this setting, the driver uses the first device of this product type that it finds on the SCSI bus. To change the setting, press [Enter] to display the SCSI Bus ID menu; then select from the list of possible SCSI identification numbers, 0–6.

Tape Speed—Select this field to list the supported tape speeds for the selected device; then select the appropriate tape speed.

Tape Density—Select this field to list the options Default, Enabled, and Disabled, and select an option.

- 6 Press [F2]. The Adapter Type Selection dialog box appears, with the single option: ASPI for DOS Driver.
- 7 Press [Enter]. Another Device Configuration dialog box appears, displaying the Card Number field.
- 8 In the Card Number field, the default is Card 0. If you have multiple adapters running under ASPI, you may need to select the appropriate card number for the device. First try card 0. If **Tape Mate II** software doesn't recognize the device, try another card number up to 4. To select the card number, press [Enter] to display a menu of card numbers, and then select the card number.
- 9 Press [F2]. The names of the selected device and driver (if applicable) appear in a box at the lower right of the screen.
- 10 Press [F2] to save the configuration parameters. A Save Changes prompt appears.
- 11 Select **Yes** to save the changes, or **No** to abandon them. These changes are saved in the configuration file.

After you save the changes, the Configuration menu appears. You may want to select Global Configuration Parameters from this menu to set global features, such as global run time options. You'll also use this menu if you later need to reconfigure **Tape Mate II** software—for example, if you switch to a different archive device. For information on the Configuration menu, see *Chapter 25*.

To exit the Configuration menu, select **Exit** from the menu. This places you at the main menu. Subsequent chapters explain the options on this menu. To exit **Tape Mate II** software, select **Quit**.

NOTE

If the screen is distorted the first time you start **Tape Mate II** software, press [Ctrl]-[Alt]-[Del] to reboot the system. Type **TMATE /MONO** and press [Enter]. This forces **Tape Mate II** software to operate in monochrome. Follow the steps above to configure **Tape Mate II** software. After step 11, when the Configuration menu appears, select **Global Configuration**. The Global Configuration Parameters dialog box appears. Change the Force Monochrome Display option to **Yes** and save the change by pressing [F2]. At the Save Changes prompt, select **Yes**. Otherwise, you'll have the same problem the next time you run the program. For more information on selecting the Force Monochrome Display option, see *Chapter 25*.

17 Getting Started

This chapter describes **Tape Mate II** software basics, such as entering and exiting the main menu and selecting menu options. It also explains general principles for backing up data.

17.1 Terms You Should Know

Before using **Tape Mate II** software, review the following definitions. These terms appear throughout the **Tape Mate II** software and this manual.

Archive Flag—A marker that indicates a file has been modified. When a file is modified, DOS “sets” the archive flag. As part of the backup procedure, you can have DOS reset (clear) the flag. DOS won’t set the flag again unless the file is later modified. In this way, the backup program can tell whether a file has changed since the last backup.

Click(ing) On—A method of selecting items. To “click on” an item means to move the mouse pointer to the item and press and release the left mouse button.

Dialog Box—A box (window) that appears on screen when **Tape Mate II** software requires additional information. You must enter information in the dialog box, either by selecting options or by typing text, before you can proceed with the operation.

Session—A single backup operation.

Volume—The medium (tape cartridge or removable disk) that stores the backed up data.

17.2 Concepts

To protect your data, you should back it up routinely. A typical weekly routine is to perform a full backup on Monday evening, when you back up all files and subdirectories on all drives. Then, at the end of each day Tuesday through Friday, perform an intermediate backup.

The most common types of intermediate backups are differential and incremental backups. Both types are based on the setting of the archive flag (“archive flag” is defined in the preceding section). In an incremental backup, the archive flag for each file is reset (cleared) after the file is copied, and the next backup copies only those files that have changed since the previous backup. If you are backing up files every week day, for example, the Tuesday backup copies only files that have changed since the Monday backup; the Wednesday backup copies only files that have changed since the Tuesday backup; and so forth.

In a differential backup, the archive flag is not reset after a backup, and subsequent backups copy the cumulative changes since the last time the archive flag was reset. If you perform a full backup and reset the flag Monday evening, for example, performing a differential backup on the remaining weekdays has the following effect: on Tuesday evening, the backup copies all files that changed between Monday evening and Tuesday evening; on Wednesday evening, the backup copies all files that changed between Monday evening and Wednesday evening; and so forth.

A differential backup takes longer to perform, since the amount of data being backed up increases as the week progresses. Restoration is quicker, however, because only two sessions must be restored to rebuild the system as completely as possible. Restore the full backup first, then the last daily differential backup.

An incremental backup takes less time each day, since only those files that changed that day are backed up. But restoration takes longer, because you must restore the last full backup plus each subsequent incremental backup.

Backup and restore times vary, depending on the speed of your computer system and the amount of data you are backing up or restoring. If you have a PC AT, for example, backing up 10 MB of data may take several minutes; and 120 MB, about 30 minutes. If you have a 386 or 486 computer, backing up 10 MB should take about a minute; and 120 MB, about 15 minutes.

17.3 Starting Tape Mate II Software

Start **Tape Mate II** software by typing **TMATE** and pressing [Enter]. (If the AUTOEXEC.BAT file wasn't modified during installation, first change to the directory containing **Tape Mate II** software.) The company name, user name, and software serial number appear briefly; then the main menu appears.

17.4 The Main Screen

The main screen has two parts: the information header and the menu bar. The information header displays the name of the application, the day of the week, the date, and the current time. The menu bar lists the options that you can select: Backup, Restore, Verify, Utility, Configuration, and Quit. If you select Backup, Restore, or Verify, a dialog box appears. If you select Utility or Configuration, another menu appears; choosing one of those menu options displays a dialog box. Use the dialog boxes to provide the information necessary to execute the operations.

17.5 Selecting Items

Select menu options and dialog box fields in any of the following ways:

- If the name of a menu option includes a bold letter, type the bold letter.
- Use the arrow keys or [Tab] key to move the highlight from option to option (in a menu) or field to field (in a dialog box); then press [Enter] to choose the highlighted option or field.
- Using the mouse, click on the option or field.

17.6 Entering Information in Dialog Boxes

Most **Tape Mate II** operations involve dialog boxes that require user input. In some dialog box fields, such as those for entering a password, you must type the information in the field. To do so, highlight the field and type the information. You can type over existing entries.

With other fields, you must select options from another dialog box or a menu. To display that dialog box or menu, select the field. When the dialog box or menu appears, select the options you want. Multiple items can be selected in some dialog boxes by highlighting each item and pressing [F5]. To deselect an item, highlight it and press [F5] again. Press [F2] to accept your selections and return to the main dialog box.

17.7 Keyboard Keys

The following keyboard keys perform special functions in dialog boxes. When these functions are available, the key names and functions are listed at the bottom of the dialog box.

[F1]	Displays a help screen.
[F2]	Initiates or executes the operation; saves the information entered in the desired field or screen.
[F5]	Marks or unmarks a selection to be modified or deleted.
[F7]	Closes the dialog box without performing the operation.

The following keyboard keys are available at any time, even though they are not listed at the bottom of the dialog box.

Arrows	Move the cursor through the fields.
[Esc]	Closes the dialog box without making any changes.
[Enter]	Selects the item; accepts text entered in a field and moves the cursor to the next field.
[Tab]	Moves the cursor to the next field.

17.8 Using the Mouse

You can use a mouse compatible with the Microsoft Mouse Interface to select items in dialog boxes and menus. Just click on the item, using the left mouse button. Press the right mouse button to escape back to the previous menu without saving information.

You can select a function key listed at the bottom of a dialog box by clicking on the key name, unless the key name appears in reverse video (white background with black letters). In that case, you must press the designated key.

17.9 Getting Help

You can display information about a menu option or dialog box field by highlighting the option or field and pressing [F1].

17.10 Quitting Tape Mate II Software

Quit **Tape Mate II** software by selecting Quit from the main menu. When prompted to confirm you want to quit, select Yes.

17.11 Do's and Don'ts in Tape Mate II Software

The following guidelines will help you avoid costly and time-consuming mistakes:

- Test the restore operation immediately, so if you ever need it, you'll know how to use it. Perform a small test backup with your computer running in its everyday configuration. Then restore files to a different directory and use the DOS COMPARE command to compare the original and restored data (see your DOS manual for information on the COMPARE command).
- Retest **Tape Mate II** software after installing any new memory-resident software.
- Before overwriting data on an old backup tape, verify that you don't need that data. Run the DOS CHKDSK command on your hard drive(s) to determine if any data is corrupted (see your DOS manual for instructions). If data is corrupted, first try using a disk utility to recover it. If the disk utility does not recover the data, however, you'll need to use the old backup tapes to restore the corrupted data.
- Perform at least two full backups (and verifies) before formatting or replacing a hard disk.
- Keep a set of backup volumes at an off-site location.

18 Backup Operation

Backups can be attended or unattended. In an attended backup, you work interactively with the software to set up and execute the backup. In an unattended backup, **Tape Mate II** software performs the backup without operator intervention, using instructions stored in a file. This chapter describes how to perform an attended backup; for information on unattended backups, see *Chapter 21*. If you've never used a backup program, you might find it helpful to review *Section 17.2*.

18.1 Overview

The backup procedure involves these main steps:

- 1 Selecting backup options.
- 2 Executing the backup, providing any information requested by dialog boxes as the backup proceeds.

Tape Mate II software provides great flexibility in selecting data for backup:

- You can back up all drives, directories, and files; or limit the backup to drives, directories, and files you select.
- You can select files and directories by specifying their directory paths or by specifying a date range.
- You can back up only data that has changed since the last backup.

You can also select the following special run time options: preview the backup operation without actually backing up any data; mark the original files as "archived"; delete the original files after they are backed up; encrypt the data; and verify the integrity of the backed up data.

In **Tape Mate II** software, you can specify default backup parameters (file and directory selections and run time options) that apply to all drives. You can also set individual backup parameters for each drive. Default parameters are those you specify in the Backup Parameters dialog box (see *Section 18.5.1*). Individual backup parameters, on the other hand, are set in a Drive Backup Parameters dialog box for that drive (see *Section 18.5.2*). If you don't set specific parameters for a drive, **Tape Mate II** software uses the default parameters.



The main Backup Parameters dialog box and Drive Backup Parameters dialog box are similar and have similar names—a potential source of confusion. The best way to tell the difference is by the title at the top of the dialog box. If the dialog box is for a specific drive, the drive letter will be part of the dialog box title.

If you set default parameters and then specify different parameters for a drive, the drive parameters have precedence over the default parameters (for that drive only). If you have several drives, therefore, an easy way to set parameters is to specify as default those parameters that apply to most drives; then specify individual drive parameters only for those drives that have exceptions to the default parameters.

If you often use the same run time options, you can change the software configuration to automatically display those options as the defaults in the Backup Parameters dialog box. For information on this feature, see *Section 25.2*.

18.2 Performing a Backup

To back up data, follow these steps:



Before performing the first backup, be sure **Tape Mate II** software is configured properly for your system. See *Chapter 25* for configuration instructions.

- 1 Select **Backup** from the main menu. The Backup Parameters dialog box appears, as shown in *Figure 27*.

Figure 27 Backup Parameters Dialog Box

- 2 Set any default parameters that you want to apply to all drives. For information on the Run Time Options field, see *Section 18.3*. For information on the session parameters, see *Section 18.4*. Information on the other fields, which are used for file selection, can be found in *Section 18.5*.



To perform a full backup, set the File Specification field to **Default**; the Previously Backed Up Files field to **Included**; and the Source Drive(s) field to **All Drives**. Leave the Since Date and Before Date fields blank.

18 Backup Operation

- 3 To set different backup parameters for an individual drive, select the Source Drive(s) field. The Selected Drives dialog box and the Select Drive to Add dialog box appear. In the Selected Drives dialog box, select the letter of the drive whose parameters you want to change; a Drive Backup Parameters dialog box for that drive appears. Set the parameters, then press [F2] to save the changes. Any parameters you set override the defaults, for that drive only. Press [F2] again to return to the main Backup Parameters dialog box. For additional information, see *Section 18.5.2*.
- 4 When you are satisfied with the parameters, press [F2] in the main Backup Parameters dialog box. The Select a Volume dialog box appears, as shown in *Figure 28*. (If you disabled the database, as described in *Section 25.2*, this dialog box doesn't appear; skip to step 6 to continue.)

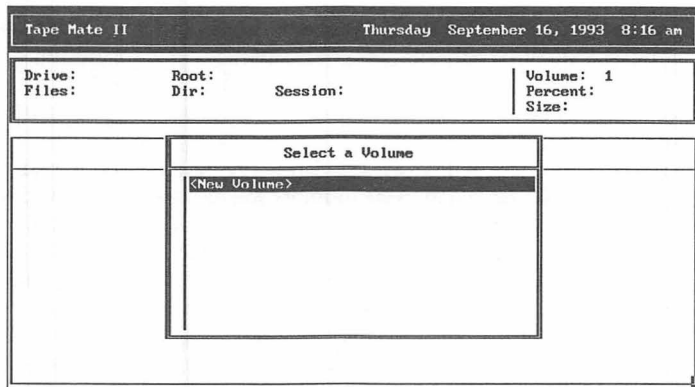



Figure 28 Select a Volume Dialog Box

- 5 Select the name of the volume (i.e., the name of the tape or disk) to which you are backing up data. If the volume is new or isn't listed, select **New Volume**. The Mount Archive Volume dialog box appears. If you selected a volume name, the dialog box indicates the name of the required volume; otherwise, it states simply "Mount Volume #1."
 - 6 Insert the archival tape or disk in the tape or disk drive; then press [F2] to continue or [Esc] to abort the backup.
-  **Tape Mate II** software scans the volume you inserted. Depending on the volume, you may need to complete additional steps, as described in steps 7 through 10 below.
- 7 If you insert a tape or floppy disk that needs to be formatted, you are prompted to initialize the volume. Select **Yes** to format the tape or

floppy disk; if you select No, or if you insert any other type of unformatted media, the backup aborts. If you select Yes, a message warns you that the tape will be erased and prompts you to verify that you want to continue. Select Yes to format the tape, or No to abort the backup.

- 8 If the tape or disk has never been used with **Tape Mate II** software, the Volume Information dialog box appears. (This dialog box won't appear if you disabled the database, as described in *Section 25.2*). The dialog box has these fields:

Volume Title—You must type a volume title in this field. You should also label the tape or disk with this title.

Storage Location—In this optional field, you can note where you will physically store the tape or disk when it's not in use.

Press [F2] to continue. A message prompts you to save the information in the database. In most cases, select Yes; but if you are performing a one-time backup for which no record is needed, select No. A volume header is written to the medium using the information in this dialog box.

- 9 If the tape or disk contains a session that has no retention date or an expired retention date, a message prompts you to append the new data to the selected volume. Above that message, a second message warns you that *not* appending will delete the listed sessions (those that have no retention date or an expired retention date). Select Yes to append the new data to the old data without overwriting the listed sessions. Select No to write the new data over the data in the listed sessions; the data in the listed sessions will be deleted, as will the corresponding session entries in the database.
- 10 If the backup data cannot fit on the volume, you are prompted to "Mount Archive Volume #2" (i.e., insert another volume). If you are using tapes or floppy disks, you can insert an unformatted tape or disk in the drive; then repeat steps 7 and 8 to initialize the volume and specify a volume title. If you are using any other media, you must insert a formatted disk; then repeat step 8.

Tape Mate II software scans the first source drive and source path being backed up and displays on screen the file and directory statistics for the current session (see *Figure 29*). Following this scan, the actual copying of files begins. As each subdirectory and each file is copied, its name, size, and date appear on screen. If an error occurs during the backup, an error message appears beneath the name of the file where the error occurred. The Percent field at the right of the screen displays the percentage of the backup that has been completed.

18 Backup Operation

Tape Mate II		Thursday September 16, 1993 12:44 pm	
Drive: C:	Root: \	Files: 88	Dir: 5
Elapsed Time: 00:00:30		Session: 1	Volume: 1
			Percent: 17
			Size: 2,893,644
BACKUP STATUS			
Writing Directory Index			
\DOS			
\DOS\TEMP			
\NET			
\UTIL			
\WIN31\EMM386.EXE			
[110174 03-10-1992]			

Figure 29 Backup Status

Open files won't be backed up unless you have enabled the Backup Open Files option in the Global Configuration Parameters dialog box (see *Section 25.2*). At the end of the backup session, **Tape Mate II** software retries any files that were open.

When the backup is completed, a summary of the operation appears on screen (for an example, see *Figure 30*). A summary statement also appears if the backup is aborted. In either case, press [Esc] to clear the screen and return to the main menu.

Tape Mate II		Thursday September 16, 1993 12:48 pm	
Drive: C:	Root: \	Files: 364	Dir: 17
Elapsed Time: 00:03:03		Session: 1	Volume: 1
			Percent: 100
			Size: 11,875,884
BACKUP STATUS			
\TSCSI\TRANTOR			
\TSCSI\TRANTOR\OLD			
\TSCSI\TRANTOR\RELEASE			
\TSCSI\TEST			
\TSCSI\OLD			
Writing Directory Index			
Number of files Backed Up: 364 in 17 sub-directories			
Total number of files backed up: 364 in 17 sub-directories			
*** Press [Esc] to exit this screen ***			
\TSCSI\INSITE			

Figure 30 Final Summary of Backup Operation

18.3 Selecting Run Time Options

The Backup Run Time Options menu, shown in *Figure 31*, appears when you select the Run Time Options field in the main Backup Parameters dialog box or in the Drive Parameters dialog box. The menu lists the following options:

Preview Backup Option—Allows the backup steps to be viewed without affecting the source data or writing to the archive volume. This lets you validate the selected options. No other run time option can be selected when the Preview option is selected. Otherwise, an error message appears, and all but the preview backup option are disabled.

Reset Backed Up Status—Resets the archive flag for each file as it is backed up. An archive flag indicates whether a file has been modified since it was last archived. When a file is modified, DOS sets the archive flag. Resetting a flag clears this flag, so that in future backups you can determine which files have been modified since the last backup. If this option is not selected, then no change is made to the archive flag for each file. See *Previously Backed Up Files* in *Section 18.5* for how this can affect your selection of files for backup.

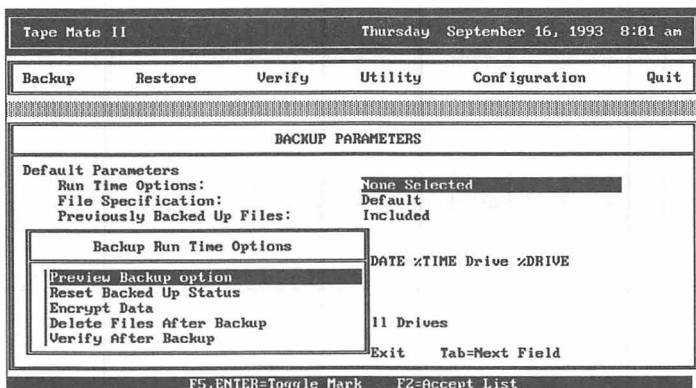


Figure 31 Backup Run Time Options Menu

Encrypt Data—Encrypts the data being stored on the archive media for security purposes. The encryption is performed at the data source and no unencrypted data is either transmitted over a LAN or stored on the archival volume. The encrypted data is automatically decoded when it is restored using the Restore operation.

Delete Files After Backup—Deletes the original data upon the completion of a successful backup. You can use this option to “relocate” data to a

new drive or purge old files from a selected drive. Because this option results in the destruction of data, you are prompted to verify this selection.

Verify After Backup—Select this option to perform a byte for byte comparison between the original data and the backup data after the backup is complete.

You can select more than one run time option. To select an option, highlight it and press [F5] or [Enter]. Marked options flash on screen when highlighted. To unmark an option, highlight it and press [Enter] or [F5] again. Press [F2] to close the dialog box and save the list of options. If you select a combination that is not allowed, a message indicates the options are not compatible, and one or more of the options is disabled.

When an option is selected, a letter representing that option appears in the Run Time Options field of the Backup Parameters dialog box (or Drive Backup Parameters dialog box, if you are setting drive-specific parameters). The letters that represent the options are listed below:

P	Preview Backup Option
E	Encrypt Data
A	Reset Backed Up Status
D	Delete Files After Backup



A drive-specific setting overrides the default setting, for that drive only (see *Section 18.1*).

18.4 Specifying Session Parameters

The main Backup Parameters dialog box and the Drive Parameters dialog box allow you to specify the following session parameters:

Session Title—The default session title is the current date and time (see *Figure 27*). To change the title, highlight the Session Title field and type a new name (e.g., Backup of server #1). You can insert a question mark to represent the drive letter; **Tape Mate II** software will automatically replace it with the letter of the drive being backed up.

Session Password—Leave the Session Password field blank if you don't want to assign a session-specific password. To assign a password, highlight the field, type a password of up to 6 characters (spaces are not allowed), and press [Enter]. (For security, the typed characters will not appear on screen.) A message prompts you to re-type the password to verify the spelling. Type the password again and press [Enter]. *If you use a password, be sure to remember it, because the Verify and Restore operations will require it!*

Session Retention Date—You can type a date in this field to protect the session data from being overwritten until that date. Enter the date in the format MM-DD-YY or MM/DD/YY (e.g., 10/31/93 or 4/1/94).

18.5 Selecting Drives, Directories, and Files

When selecting data to backup, you can set default parameters that apply to all drives; and you can set drive-specific parameters for individual drives. Any drive-specific parameters override the default parameters, for those drives only.

18.5.1 Setting Default Parameters

To select default parameters, use the main Backup Parameters dialog box (see *Figure 32*). To display this dialog box, select **Backup** from the main menu.

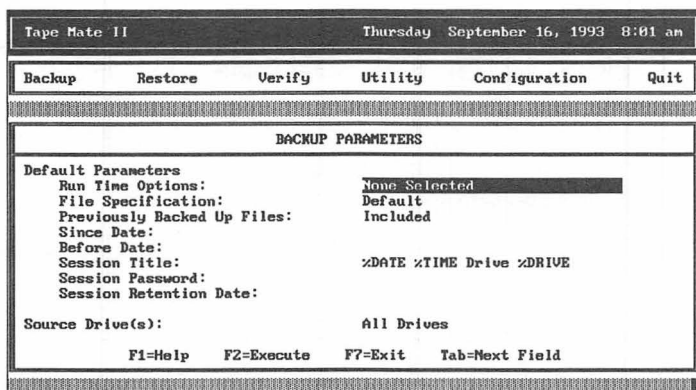


Figure 32 Backup Parameters Dialog Box

The following selections in the Backup Parameters dialog box let you choose drives, directories, and files for backup:

- **File Specification**—Specify the paths of directories and files to be backed up.
- **Previously Backed Up Files**—Include or exclude files that have been modified since the last backup.
- **Since Date and Before Date**—Select files based on the date they were last saved.
- **Source Drive(s)**—Select specific drives you want to back up.

File Specification

Select the File Specification field in the Backup Parameters dialog box to display the File Specification menu, shown in *Figure 33*. You can use the

menu options—Default, Script, Included Files, and Excluded Files—to select the directories and files that will be backed up on any drive for which drive specific parameters have not been set.

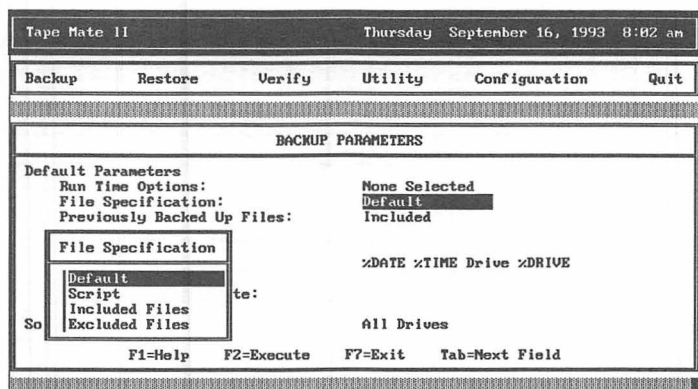


Figure 33 File Specification Menu

Default—If Default is selected, all files meeting the other specifications in the Backup Parameters dialog box are backed up. The source path is assumed to be the root directory.

Script—Choose Script to use an attended script file to select files. A script file is an ASCII text file that contains INCLUDE and EXCLUDE commands. These commands emulate user input on the Inclusive and Exclusive File Selections lists (see the following descriptions of the Include and Exclude options). If you use the same Inclusive and Exclusive lists often, using a script file saves the time of re-entering the same path and file specifications for every backup. For information on creating attended script files, see *Chapter 22, Script Files*.

When you select Script, the Script Selection List menu appears, listing all the attended script files. Note that these script files have .NSS extensions. (If **Tape Mate II** software finds no script files, a message indicates that there are no script files in the list.) Select the script file to be used in the operation.

Included Files—Choose this option to generate a list of directories and files that will be backed up. When you select Included Files, the Path and File Name dialog box and Inclusive File Selections dialog box shown in *Figure 34* appear. In the Path and File Name dialog box, type a full path, including directory and file name. The following examples show the type of paths that can be entered in this dialog box:

```
\*.*
\*.C
\TMATE\*.EXE
\TMATE\FILE.NAM
```

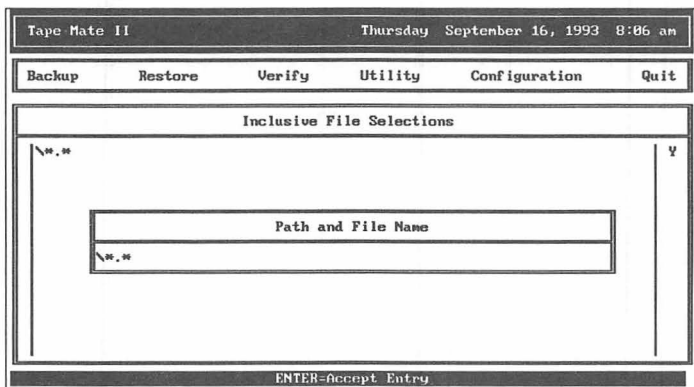


Figure 34 Path and File Name Dialog Box

As shown above, DOS wild card characters can be used to include complete groups of files or just files with the same file name extension. If you aren't familiar with DOS wildcard characters, see your DOS reference manual.

After typing the path, press [Enter]. The Path and File Name dialog box closes, and a message appears, inquiring whether the subdirectories of the specified path should be included in the backup. Select **Yes** to include subdirectories in the backup, or **No** to exclude them. If you select **No**, files in subdirectories are not backed up.

After you select **Yes** or **No**, the path is listed in Inclusive File Selections dialog box, as shown in *Figure 34*. A column on the right side of the dialog box indicates whether subdirectories will be included (Y for yes, or N for no).

To add another path to the list, press [Ins]. Repeat this process until the list in the Inclusive File Selections dialog box defines the directories and files to be backed up.

To delete a path from the list, highlight it and press [Del]. To delete several paths, mark them using [F5] and then press [Del] to delete the group. To unmark a path, highlight it and press [F5] again. When prompted to verify the deletion, select **Yes** to delete the path or **No** to cancel the deletion.

To modify a path after it has been added to the Inclusive File Selections list, highlight the selection and press [Enter]. Make any required changes and press [Enter]. When the Process Subdirectories prompt appears, select either Yes or No.

When the list is complete, press [F2] to accept the list. The Inclusive File Selections dialog box closes and the File Specification menu appears. Press [F2] to close the File Specification menu and return to the Backup Parameters dialog box. Or, select **Excluded Files** to create a list of files to exclude from the backup.

Excluded Files—Use this option to exclude files or directories from being backed up. When you select Excluded Files, the Path and File Name dialog box and Exclusive File Selections dialog box appear. Adding, deleting, and modifying a path in the Exclusive File Selections dialog box is identical to the procedures just described in *Included Files*.

The Included Files and Excluded Files options can be used together to add flexibility in specifying files to be backed up. When lists are generated by both the Included Files option and the Excluded Files option, **Tape Mate II** software compares the Inclusive File Selections list with the Exclusive File Selections list and generates a new list that excludes any path that appears on both lists. This generated list is then used in the backup.

Previously Backed Up Files

Use this feature to reduce the amount of time required to perform a backup by backing up only those files that have been modified since the last backup. If the files have not been modified since the last backup, they do not need to be backed up.

The options for this field are Included and Not Included. To select an option, select the **Previously Backed Up Files** field, and then select the option.

If you select Included, all files meeting the drive, path, and file specifications listed in previous fields are backed up. The setting of the archive flag for each file is ignored. If you select Not Included, the program looks at the archive flag for each file that meets the drive, path, and file specifications listed in previous fields. Only files whose archive flag is set, indicating the file has changed since the last backup, are backed up. If the archive flag is clear, the file has not been modified since the last backup, and the file is not backed up.

Use of the Not Included option has no effect on the Reset Backed Up Status option that resets the archive flag (see *Section 18.3* for information on Reset Backed Up Status). However, the setting of the Reset Backed Up Status option does affect the Not Included option. If Reset Backed Up

Status was not selected during the previous backup, the archive flag was not cleared. In this case, the current backup may copy files that haven't been modified since the previous backup.

Since Date and Before Date

You can use the Since Date and Before Date fields in the Backup Parameters dialog box (or Drive Backup Parameters dialog box) to back up files that have dates within a specified time period. If you type a date in the Since Date field, only files dated on or after the specified date are backed up. If a date is entered in the Before Date field, only files dated on or before the specified date are backed up. The date format is MM-DD-YY or MM/DD/YY; preceding zeros are not required for single digit days or months. To enter January 20, 1994, for example, type: **1/20/94**.

The Since Date and the Before Date fields can be used together to select a narrow range of files to back up. If the date specified in the Before Date field is more recent than the date specified in the Since Date field, only files dated on or between the two specified dates are backed up.

Source Drive(s)

The default selection in the Source Drive(s) field is All Drives. With this selected, all files meeting file selection criteria are backed up on all drives. To specify the drives you want backed up, select the Source Drive(s) field. The Select Drive to Add dialog box appears, listing the valid drives (see *Figure 35*). To the left is the Selected Drives dialog box. In the Select Drive to Add dialog box, select the letter of the drive you want to back up. The drive letter appears in the Selected Drives dialog box. To add a second drive, press [Ins], and select another drive. When finished, press [F2] to save the list and return to the Backup Parameters dialog box.

You can also use this field to select different backup parameters for individual drives. See the following section for details.

18.5.2 Setting Different Parameters for Different Drives

If you don't want the default parameters in the Backup Parameters dialog box to apply to all drives, you can select drive-specific parameters for the drives that should differ. The drive-specific parameters override the default parameters for the specified drive only.

To set drive-specific parameters, select the Source Drive(s) field in the Backup Parameters dialog box. The Selected Drives dialog box and Select Drive to Add dialog box appear (see *Figure 35*). In the Selected Drives dialog box, select the letter of the drive whose parameters you want to set (if you haven't yet selected a drive, the Selected Drives dialog box is empty; see *Source Drives* in *Section 18.5.1* for instructions on selecting a drive).

Tape Mate II		Thursday September 16, 1993 7:58 am	
Backup	Restore	Verify	Utility Configuration Quit
BACKUP PARAMETERS			
Default Parameters			
Run Time Options:		None Selected	
File Specification:		Default	
Selected Drives	Up F	Select Drive To Add	
		C:	E Drive %DRIVE
Session Retention Date:			
Source Drive(s):		All Drives	
F1=Help F2=Execute F7=Exit Tab=Next Field			
INS=Insert DEL=Delete F2=Accept List ENTER=Modify			

Figure 35 Select Drive To Add Dialog Box

The Drive Backup Parameters dialog box for that drive appears. Use this dialog box to set the different file selection criteria for the selected drive (see Figure 36).

Tape Mate II		Thursday September 16, 1993 7:59 am	
Backup	Restore	Verify	Utility Configuration Quit
Drive C: Backup Parameters			
Source Path:		N	
Run Time Options:		None Selected	
File Specification:		Default	
Previously Backed Up Files:		Included	
Since Date [MM/DD/YY]:			
Before Date [MM/DD/YY]:			
Session Title:		%DATE %TIME Drive %DRIVE	
Session Password:			
Session Retention Date:			
F1=Help F2=Execute F7=Exit Tab=Next Field			

Figure 36 Backup Parameters Dialog Box

The Drive Backup Parameters dialog box is similar to the main Backup Parameters dialog box described earlier. Only the Source Path and Tree Select options differ; the remaining parameters function as described earlier in this chapter.

Source Path—Type the name of the path from which the backup operation is to begin copying data for this drive. The root directory is the default for this field, which results in the entire drive being backed

up. To back up only part of a drive, enter a specific path name in this field.

Tree Select—This option appears on the File Specification menu, which appears when you select the File Specification field. The other menu options are Default, Included Files, and Excluded Files, which are described in *Section 18.5.1*.

Select **Tree Select** from the File Specification menu to display a directory tree of the selected source path. If you select a directory or subdirectory name, a list of all files in the highlighted directory appears (see *Figure 37*).

When the parameters have been set for one drive, press [F2] to save and return to the Selected Drives dialog box. You can select another drive, and define its backup parameters, or press [F2] to return to the main Backup Parameters dialog box.

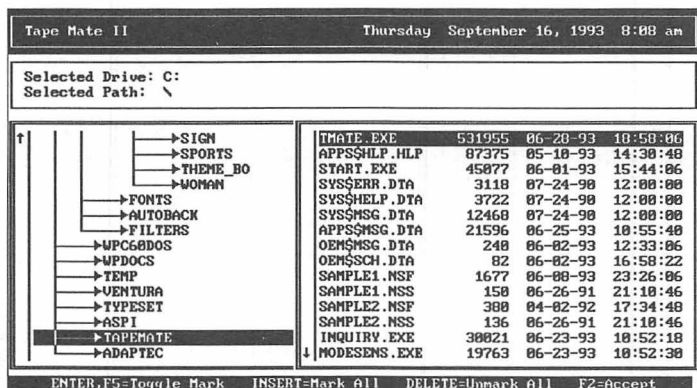


Figure 37 Tree Selection

19 Restore Operation

To restore backed up data to a hard disk, use the Restore option on the main menu. Restore copies backed up files, along with the directory structure, from an archive volume (tape or disk) to a specified disk drive and directory.

19.1 Restoring Data

Restoration involves setting the restoration parameters and executing the restoration, as described in the following steps. For details on the restoration parameters, refer to *Section 19.3*.

- 1 Select **Restore** on the main menu. The Restore Parameters dialog box appears (see *Figure 38*).

Tape Mate II		Thursday September 16, 1993 8:18 am			
Backup	Restore	Verify	Utility	Configuration	Quit
RESTORE PARAMETERS					
Destination Drive:	C:				
Destination Path:	\				
Run Time Options:	None Selected				
Source Session:	<Currently Mounted Volume>				
Since Date [MM/DD/YY]:					
Before Date [MM/DD/YY]:					
F1=Help F2=Execute F7=Exit Tab=Next Field					

Figure 38 Restore Parameters Dialog Box

- 2 In the Destination Drive field, type the letter of the drive where the data is to be copied.
- 3 In the Destination Path field, type the name of the directory or subdirectory to which **Tape Mate II** software will begin restoring the archived data (see *Section 19.3.2, Destination Path*).
- 4 Choose any run time options you want by selecting the Run Time Options field, and then selecting one or more options from the Restore Run Time Options menu (see *Section 19.3.3, Run Time Options*).
- 5 To select a specific session for restoration, select the Source Session field, and then select the session you want (see *Section 19.3.4, Source Session*).

- 6 To select files dated within a specific time period, type the date or dates in the Since Date and Before Date fields. Use the format MM-DD-YY or MM/DD/YY (see *Section 19.3.5, Since Date and Before Date*).
- 7 When you are satisfied with the parameters, press [F2]. A Mount Archive Volume dialog box appears. The dialog box states the name of the required volume if you selected a session in step 5; otherwise, it says simply "Mount Volume #1."
- 8 Insert the volume (tape or disk) in the archive drive, and press [F2].
- 9 If you didn't select a session in step 5, the Session Header dialog box and Confirm Session I.D. menu appear (see *Figure 39*). The Session Header dialog box displays information on the first session on the volume. If you don't want to restore this session, select **Skip This Session** from the Confirm Session I.D. menu. Information on the next session then appears in the dialog box. When the dialog box displays the session you want restored, select **Use This Session**.

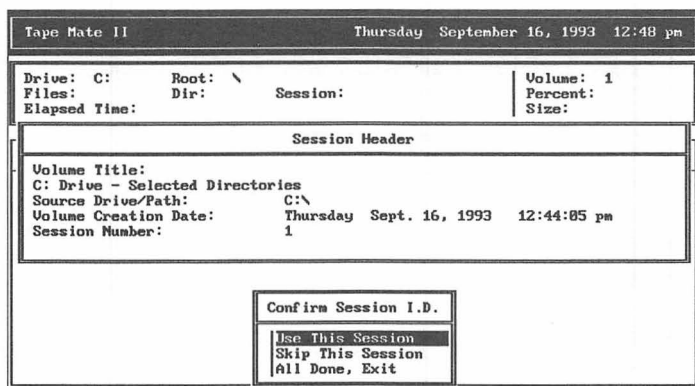


Figure 39 Confirm Session I.D. Menu

- 10 If the session you selected in step 5 or step 9 requires a password, a message prompts you for the password (see *Section 18.4* for information about passwords). Type the password; on screen it is replaced by asterisks for security reasons. If you enter the password incorrectly, you are prompted for it again. The restoration aborts after three failed password attempts.

Tape Mate II software begins restoring the data. If the archive device supports Quick File Access (QFA), a message indicates that the QFA process is being performed (QFA is a feature that provides a higher-speed file retrieval from supporting tape devices).

As the restoration proceeds, the status is shown in the Restore Status screen. As shown in *Figure 40*, a percent (%) complete number appears at

the top right-hand side of the screen. The percentage changes as the restoration proceeds. As each file is copied, its path, name, size, and date appear. If an error occurs, an error message appears beneath the file associated with the error, and the processing continues.

Tape Mate II		Thursday September 16, 1993 2:01 pm	
Drive: C:	Root: \	Session: 1	Volume: 1
Files: 364	Dir: 1		Percent: 100
Elapsed Time: 00:04:29			Size: 11,875,884

<p style="text-align: center;">RESTORE STATUS</p> <p> \TSCSI\TRANTOR \TSCSI\TRANTOR\OLD \TSCSI\TRANTOR\RELEASE \TSCSI\TEST \TSCSI\OLD Number of files restored: 364 in 1 sub-directories *** Press [Esc] to exit this screen *** </p> <p> \WIN31\GAMES \TSCSI \TSCSI\ADAPTEC \TSCSI\INSITE </p>
--

Figure 40 Restore Status

When the session is restored, a summary statement appears—unless you selected a session in step 9 and other sessions follow that session on the volume. In that case, the Session Header dialog box and Confirm Session I.D. menu reappear (see *Figure 39*). If you don't want to restore another session, select **All Done, Exit**. If you select another session, the Restore Parameters dialog box reappears so that you can change the Destination Drive and Destination Path fields for the new session.

19.2 Restoring a Multiple-Volume Session

The procedure for restoring a multiple-volume session is similar to that for a single-volume session. Insert the first volume, and follow the steps listed in *Section 19.1* to set the restoration parameters and execute the restoration. When all data on the first volume is restored, you are prompted to mount (i.e., insert) volume #2. Insert the volume and press [F2] to continue. If more than two volumes are required, you are prompted for each additional volume.

19.3 Setting the Restoration Parameters

The Restore Parameters dialog box, shown in *Figure 38*, appears when you select Restore on the main menu. Use this dialog box to specify restoration criteria, such as run time options or a specific session you want to restore. The following sections describe the fields in this dialog box. Note that the first two fields, Destination Drive and Destination Path, are required information.

19.3.1 Destination Drive

The information in this field is required. Type the letter of the drive where the data is to be copied. The drive can be any valid DOS drive (A to Z), including re-directed drives and RAM drives.

19.3.2 Destination Path

The information in this field is required. Type the name of the directory or subdirectory to which **Tape Mate II** software will begin restoring the archived files.

To restore the directory structure and files to their original locations, enter the same path specified as the source path in the backup. If you selected drive-specific parameters, this is the path specified in the Source Path field of the Drive Backup Parameters dialog box (see *Section 18.5.2*). If you used the default backup parameters, this is the root directory (designated by a backslash \). Files can be relocated on the hard disk by entering a different source path than was used in the backup.

19.3.3 Run Time Options

When you select Run Time Options from the Restore Parameters dialog box, the Restore Run Time Options menu appears. Shown in *Figure 41*, the menu lists the following options: Restore Preview Option, Restore Newest Option, Restore READ ONLY Option, and Prompt User for Restore.

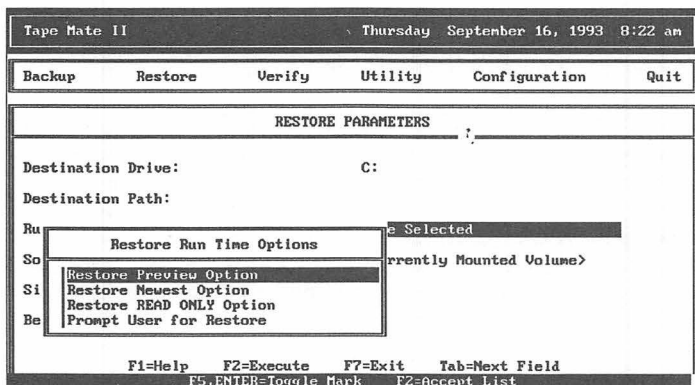


Figure 41 Restore Run Time Options Menu

You can select more than one option. To select an option, highlight it and press [Enter] or [F5]. Marked options flash on screen when highlighted.

19 Restore Operation

To unmark an option, highlight it and press [Enter] or [F5] again. Press [F2] to close the dialog box and save the list of options.

When an option is selected, a letter representing that option appears in the Run Time Options field of the Restore Parameters dialog box. The letters that represent the options are listed below:

- P** Restore Preview Option
- N** Restore Newest Option
- R** Restore READ ONLY Option
- Q** Prompt User for Restore

Restore Preview Option—This option allows the restoration to be previewed without writing the data to the destination drive and destination path. You can use this option to validate the selected options.

Restore Newest Option—Use this option to restore only those files for which the archived version has a later date than the version in the destination drive and destination path. If the file exists on the destination drive and has a more recent date than the version on the archive media, that file will not be restored.

Restore READ ONLY Option—Use this option to restore read-only files. The normal mode is to honor the read-only attribute and not restore the read-only files. By selecting this option, you can restore read-only files.

Prompt User for Restore—For added security during a restore operation, select this option to require a confirmation before overwriting and replacing an existing file. A yes or no response must be entered for each overwrite case. In this manner, you have manual override on a file-by-file basis.

19.3.4 Source Session

You can select Source Session to specify which session will be restored. When you select this option, the Select a Session menu appears, listing all sessions recorded in the database (see the example in *Figure 42*). If previous backups were performed with the database disabled, the list is empty except for the default option, Currently Mounted Volume.

From the Select a Session menu, select the session you want restored. The File Specification menu appears. If you selected a specific session, the menu contains these options: Default, Script, Included Files, Excluded Files, and Tree Select. If you selected Currently Mounted Volume, the menu doesn't include Tree Select.

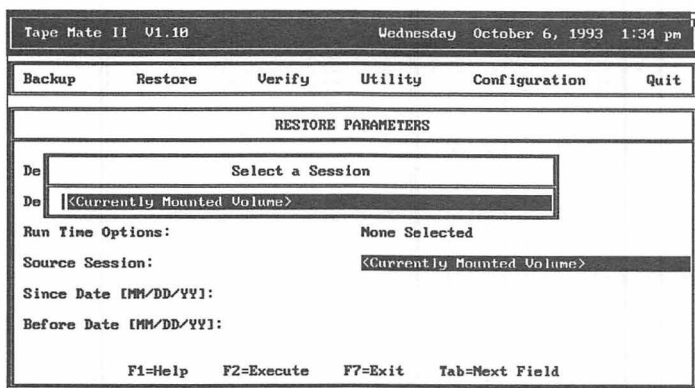


Figure 42 Select a Session Menu

Default—Select Default to restore all files in the session.

Script—Select this option to choose an attended script file that specifies the files to be restored. A script file is an ASCII text file containing INCLUDE and EXCLUDE statements. When you select Script, a menu of all attended script files appears. Select a script file from this menu. Instructions for creating a script file can be found in *Chapter 22*.

Included Files—Use this option to generate a list of directories and files to be restored. For information on using this option, see *Included Files* in *Chapter 18*.

Excluded Files—Use this option to exclude files from being restored. This feature is explained in *Excluded Files* in *Chapter 18*.

Tree Select—Selecting this option displays a directory tree of the selected session. See *Tree Select* in *Section 18.5.2* for details on this feature.

19.3.5 Since Date and Before Date

The Since Date and Before Date fields in the Restore Parameters dialog box let you restore files dated within a specified time period. If you type a date in the Since Date field, files with dates on or following the specified date are restored. Enter a date in the Before Date field to restore files with dates on or before the date specified. The format for entering the date is MM-DD-YY or MM/DD/YY (e.g., 10/31/99, or 1-1-94).

The Since Date and the Before Date fields can be used together to select a narrow range of files to restore. If the date specified in the Before Date field is more recent than the date specified in the Since Date field, only files with dates the same as or between the two specified dates are restored.

20 Verify Operation

Use the Verify option to compare byte for byte the data that was written during the backup or restore operation with the original files (if you're verifying a backup) or the archived files (if you're verifying a restoration). Any discrepancies are reported on a file-by-file basis. If a discrepancy is noted, you can choose to continue or abort the verification.

Follow these steps to verify data after a backup or restore operation:

- 1 Select **Verify** on the main menu. The Verify Parameters dialog box appears, as shown in *Figure 43*.

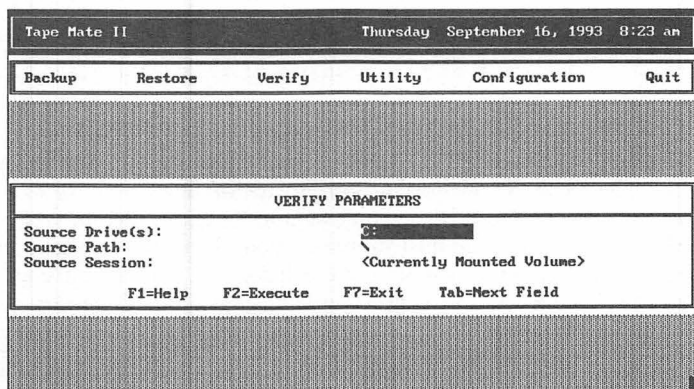


Figure 43 Verify Parameters Dialog Box

- 2 In the Source Drive field, type one of the following:
 - If verifying a backup operation—Type the letter of the drive that contains the original data.
 - If verifying a restore operation—Type the letter of the drive containing the restored data.

The drive can be any valid DOS drive that is physically attached, including virtual drives or RAM drives.
- 3 In the Source Path field, type the name of the directory where **Tape Mate II** software will begin verifying data:
 - If verifying a backup operation—You should specify the root directory (/) if you used default backup parameters to back up the data. If you selected drive-specific backup parameters, you should enter the

same path specified in the Source Path field of the Drive Backup Parameters dialog box (see *Section 18.5.2*).

- If verifying a restore operation—You should enter the path specified in the Destination Path field of the Restore Parameters dialog box.
- 4 Press [F2]. The Select a Session menu appears, listing all sessions recorded in the database. If previous backups were performed with the database disabled, the list is empty except for the default option, Currently Mounted Volume. (If the database is currently disabled, this menu doesn't appear; skip to step 6 to continue.)
 - 5 Select a session. If the session you want verified isn't listed, select **Currently Mounted Volume**. A Mount Archive Volume dialog box appears. The dialog box states the name of the required volume if you selected a session in step 5; otherwise, it says simply "Mount Volume #1."
 - 6 Insert the correct volume (tape or disk) in the archive drive, and press [F2].
 - 7 If you selected Currently Mounted Volume in step 5, the Session Header dialog box and Confirm Session I.D. menu appear (see *Figure 44*). The Session Header dialog box displays information on the first session on the volume. If you don't want to verify this session, select **Skip This Session** from the Confirm Session I.D. menu. Information on the next session then appears in the dialog box. When the dialog box displays the session you want verified, select **Use This Session**.

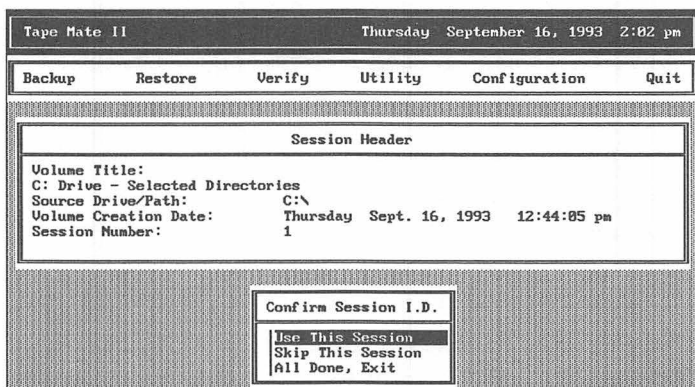


Figure 44 Confirm Session I.D. Menu

- 8 If the session you selected in step 5 or step 7 requires a password, a message prompts you for the password (see *Section 18.4* for information about passwords). Type the password; on screen it is replaced by asterisks for security reasons. If you enter the password incorrectly, you

are prompted for it again. The verify operation aborts after three failed password attempts.

Tape Mate II software begins verifying the data. As the verification proceeds, the status is shown in the Verify Status screen. As shown in *Figure 45*, the screen shows the percentage complete, information on the files and directories being compared, the real-time number of compared bytes, and error information. The status numbers change as the verification proceeds.

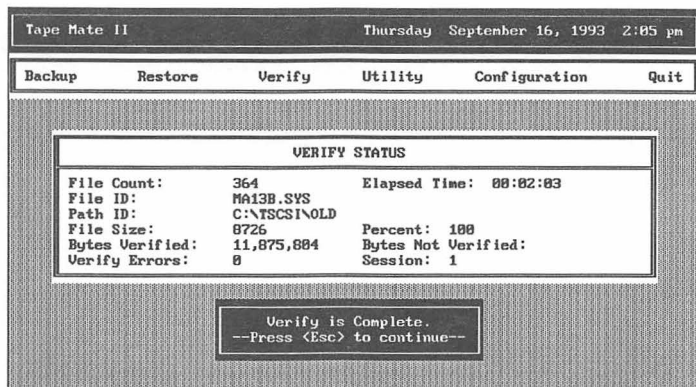



Figure 45 Verify Status

 If multiple volumes were used for the session that is being verified, a message prompts you to mount (insert) the next volume.

If **Tape Mate II** software detects a discrepancy between the archived data and the source or restored data, an error message appears, along with a continue or abort query. If you continue, the Bytes Not Verified field is updated to reflect the size of the rest of the current file. **Tape Mate II** software assumes that at the point of the discrepancy, the remaining data in that file will not compare either. The number of errors, shown in the Verify Errors field, is also updated.

When the verification is complete, a summary statement appears—unless other sessions follow that session on the volume. In that case, the Session Header dialog box and Confirm Session I.D. menu reappear (see *Figure 44*). If you don't want to verify another session, select **All Done, Exit**. If you select another session, the Verify Parameters dialog box reappears so that you can change the Source Drive and Source Path fields for the new session.

21 Unattended Operations

An unattended operation is a backup, restore, or verify operation performed using a script file and accomplished without user intervention. There are two types of unattended script operations: immediate and delayed. An immediate operation is performed from the DOS command line. A delayed operation is set up within **Tape Mate II** software and is executed at a specified time without operator intervention.

The script file used in the unattended operation is an ASCII text file containing **Tape Mate II** Script Language commands. Instructions for creating an unattended script file can be found in *Chapter 22*.

21.1 Immediate Unattended Operations

An immediate unattended operation is performed by typing **TMATE** on the DOS command line, followed by the name of the script file. The file name can be entered with or without the file name extension. To execute the script file **BACKUP1.NSF**, for example, type **TMATE BACKUP1** and press [Enter].

If the **AUTOEXEC.BAT** file was modified when **Tape Mate II** software was installed, the command can be entered from any DOS prompt. If the **AUTOEXEC.BAT** file was not modified, change to the directory and drive (if a multiple drive system) where **Tape Mate II** software is located before entering the command.

The commands in the specified script file are executed immediately. When the commands have been completed, **Tape Mate II** software closes and the DOS prompt reappears.

If the operation fails, an error message appears. If the Log History option on the Global Configuration Parameters dialog box is enabled, you can check the log history file for clues to the reason for the failure.

21.2 Delayed Unattended Operations

To set up and schedule a delayed operation, use the Unattended Parameters option on the Utility menu. The procedure involves these steps, which are described in the following sections:

- 1 Scheduling the start time.
- 2 Activating the **Tape Mate II** scheduler.
- 3 Enabling the Log History option on the Global Configuration Parameters dialog box.

21.2.1 Scheduling the Start Time

Follow these instructions to schedule the operation:

- 1 Select **Utility** from the main menu. The Utility menu appears.
- 2 Select **Unattended Parameters**. The Unattended Parameters dialog box appears, as shown in *Figure 46*.

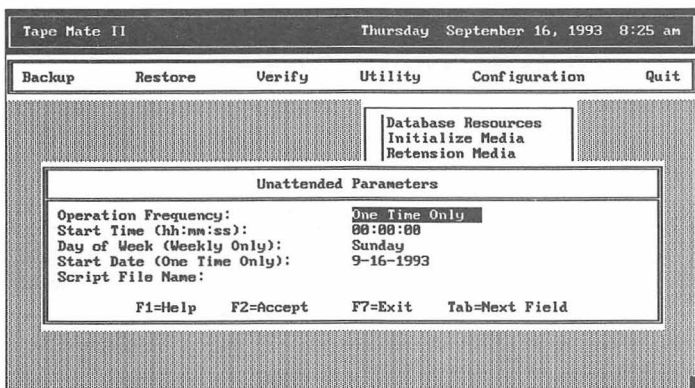


Figure 46 Unattended Parameters Dialog Box

- 3 Select the Operation Frequency field. In the Operation Frequency menu that appears, select the desired frequency.
- 4 In the Start Time field, type the time for the unattended operation to begin. Use the HH:MM:SS time format, where HH represents the hour (use a 24-hour format), MM represents minutes, and SS represents seconds. If the unattended operation is to begin at 8:05 pm, for example, enter 20:05:00. The leading zeros in single digit hours, minutes, or seconds are required.

The clock hours and corresponding 24-hour time are given below:

midnight	00:00:00	noon	12:00:00
1:00 am	01:00:00	1:00 pm	13:00:00
2:00 am	02:00:00	2:00 pm	14:00:00
3:00 am	03:00:00	3:00 pm	15:00:00
4:00 am	04:00:00	4:00 pm	16:00:00
5:00 am	05:00:00	5:00 pm	17:00:00
6:00 am	06:00:00	6:00 pm	18:00:00
7:00 am	07:00:00	7:00 pm	19:00:00
8:00 am	08:00:00	8:00 pm	20:00:00
9:00 am	09:00:00	9:00 pm	21:00:00
10:00 am	10:00:00	10:00 pm	22:00:00
11:00 am	11:00:00	11:00 pm	23:00:00

- 5 If Weekly is the specified frequency, move the cursor to the Day of Week field. Press [Enter] to display the Day of Week menu; then select a day of the week.
- 6 The Start Date field displays today's date. To change the date, type a new date using the MM-DD-YY format. Preceding zeros are not required in the date format. If the unattended operation is to begin on October 20, 1993, for example, enter 10-20-93.
- 7 Select the Script File Name field to list the available script files, and select a file. Script files have an .NSF file name extension. The default directory for the unattended script files is the directory that contains **Tape Mate II** software. If the script file was saved to a different directory, move the file to the directory containing **Tape Mate II** software.
- 8 Press [F2] to save the information in the Unattended Parameters dialog box.
- 9 Select Exit on the Utility menu to close the menu.

21.2.2 Activating the Tape Mate II Scheduler

To support an unattended operation in a single-tasking MS-DOS environment, **Tape Mate II** software supplies a scheduler, which is a Terminate and Stay Resident (TSR) application. The scheduler must be loaded in memory for the delayed operation to execute. The scheduler continually monitors the system clock and compares it to the start time specified in the Unattended Parameters dialog box. At the specified time, the scheduler starts **Tape Mate II** software and executes the commands in the specified script file.

The scheduler is a program called START.EXE. You can load this TSR application into system memory using the AUTOEXEC.BAT file; or you can run it before leaving work for the day by typing **START** at a DOS prompt and pressing [Enter].

START will reside in system memory until the system power is turned off or until START is removed. START can be removed from system memory by pressing [Ctrl]-[Alt]-**R** simultaneously.

The delayed unattended operation can be executed immediately, regardless of the start time specified in the Unattended Parameters dialog box, by pressing [Ctrl]-[Alt]-**S** simultaneously.

21.2.3 Enabling the Log History Option

Enable this option in the Global Configuration Parameters dialog box. Refer to *Section 25.2* for instructions.

22 Script Files

Script files let you perform archive operations while you are away from your computer. They are particularly useful for running routine backups during off-hours, when no one is using the system. Such operations are called unattended operations, and the corresponding script file is called an unattended script file. Unattended script files contain commands that specify all parameters in a backup, restore, or verify operation.

Even if you conduct most archive operations within **Tape Mate II** software, in interactive mode, you may find script files useful—especially if you often use the Included Files and Excluded Files options to select files (see *Section 18.5*). By specifying the included and excluded paths and files in a script file, you don't need to enter them over again every time you perform an operation. Script files used within **Tape Mate II** software are called attended script files. Unlike unattended script files, they include only two commands: INCLUDE and EXCLUDE.

This chapter explains how to create unattended and attended script files. For information on scheduling and executing an unattended script file, see *Chapter 21*. For information on using an attended script file within **Tape Mate II** software, see *Section 18.5*.

22.1 Creating a Script File

You can create a script file in **Tape Mate II** software or in an ASCII text editor. To create a script file in **Tape Mate II** software, follow these steps:

- 1 Select **Utility** from the main menu.
- 2 Select **Edit Script File** from the Utility menu.
- 3 Select **Unattended Script** or **Attended Script**. The **Select Script File** menu appears.
- 4 Press [Ins]. You are prompted to enter a file name.
- 5 Type a file name of up to 8 alphanumeric characters, and press [Enter]. (Don't include a file name extension; the extension .NSF is automatically added to unattended script files, and .NSS to attended script files.) A blank screen appears, ready for you to enter script commands.
- 6 Type the commands. See *Section 22.4* and *Section 22.5*, for detailed instructions. You can also display a Help screen by pressing [F1].
- 7 When finished, press [Esc]. The **Save Changes** prompt appears.
- 8 Select **Yes** to save the file and exit, or **No** to exit the file without saving it. Files are automatically saved in the directory containing **Tape Mate II** software.

You return to the Select Script File menu, which now lists the name of the script file you created. Even if you selected No when prompted to save the file, the name of the (empty) script file still appears in this menu. To delete it, see *Section 22.3*.

- ☞ If you create a script file in an ASCII text editor, be sure to save it in the directory containing **Tape Mate II** software and to include the appropriate file name extension: .NSF for unattended script files, and .NSS for attended script files.

22.2 Editing a Script File

To edit a script file in **Tape Mate II** software, follow these steps:

- 1 Select **Utility** from the main menu.
- 2 Select **Edit Script File** from the Utility menu.
- 3 Select **Unattended Script** or **Attended Script**. The Select Script File menu appears, listing script files in the directory that contains **Tape Mate II** software (see *Figure 47*). If you selected **Attended Script**, the list displays only the attended script files. If you selected **Unattended Script**, it displays only unattended script files.

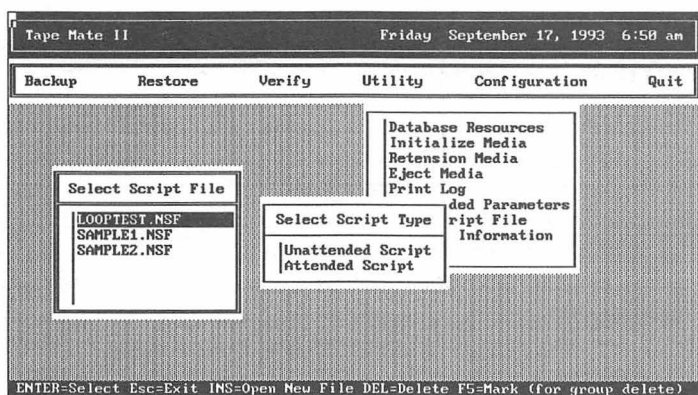


Figure 47 Select Script File Menu

- 4 Select the name of the script file you want to edit. The file appears on screen.
- 5 Edit the file. For information about the script commands, see *Sections 22.4 and 22.5*. You can also display a Help screen by pressing [F1].
- 6 When finished, press [Esc]. If you changed the file, the Save Changes prompt appears.
- 7 Select Yes to save the changes and exit, or No to exit the file without saving the changes.

22.3 Deleting a Script File

To delete a script file, follow these steps:

- 1 Select **Utility** from the main menu.
- 2 Select **Edit Script File** from the Utility menu.
- 3 Select **Unattended Script** or **Attended Script**. The Select Script File menu appears, listing script files in the directory that contains **Tape Mate II** software. If you selected **Attended Script**, the list displays only the attended script files. If you selected **Unattended Script**, it displays only unattended script files.
- 4 Highlight the name of the script file you want to delete. To select a group of files, highlight each file name and press [F5] to mark it. To unmark a file, press [F5] again.
- 5 Press [Del]. A prompt asks you to confirm that you want to delete the file.
- 6 Select **Yes** to delete the file or files; otherwise, select **No**.

22.4 Script Language Commands

The **Tape Mate II** script language uses a number of commands; here is a brief summary:

APPEND	Append current session to existing sessions.
BATCH	Execute a DOS batch file within a Tape Mate II script.
BEFOREDATE	Select files dated on or before a specified date.
DRIVE	Specify a source or target drive.
EJECT	Set the Eject Tape flag so the volume ejects at the end of the operation.
END	Terminate the operation.
EXCLUDE	Exclude paths/files from operation.
INCLUDE	Include paths/files from operation.
INTERMEDIATE	Back up only files modified since last backup.
MODE	Select Backup, Restore, or Verify.
MOUNTWAIT	Specify a hardware "wait" time to account for robotic insertion of tapes on certain devices (Exabyte EXB-10).
OPTIONS	Specify run time options.
OVERWRITE	Overwrite the selected volume, rather than append the data.
PATH	Specify a source or target path.
RDATE	Specify a retention date for the session.
REM	Insert a remark or description of the script file.
SESSION	Select the number of the session to be restored or verified.

SESTITLE	Specify a session title.
SINCE DATE	Select files dated on or since a specified date.
VOLTITLE	Specify a volume title.

The following sections present the command format and describe the commands.

22.4.1 Command Format

Type commands in uppercase letters, lowercase letters, or a combination of the two. For all commands except APPEND, END, INTERMEDIATE, and OVERWRITE, the command format is

COMMAND = COMMAND SYNTAX

For APPEND, END, INTERMEDIATE, and OVERWRITE, type only the command name, for example

APPEND

22.4.2 Command Descriptions

APPEND—Use APPEND to append the current session to existing sessions on the volume during a backup. Once the APPEND command appears in a script file, it applies to all remaining sessions.

APPEND

BATCH—Any standard DOS BATCH file may be specified and executed via this command. Since these commands are executed within a **Tape Mate II** software operation, you must consider memory requirements. Do not use such batch files to load a TSR or to execute applications accessing the backup drive.

BATCH = C:\BATCH\RUN.BAT

BEFORE DATE—Use this command to select files created or modified on or before a given date. The operation is performed on any file dated on or before the date specified. The date format is MM/DD/YY. In the following example, the operation is performed only on data created or modified on or before July 30, 1993.

BEFORE DATE = 7/30/93

DRIVE—Specify a source drive for backup and verify operations, or a target drive for restore operations. Each drive to be used in the operation must be listed on a separate line as a different DRIVE command. Section 22.5 contains additional instructions on using this command.

DRIVE = D:

EJECT—Use this command to eject the volume at the end of an operation. The volume is ejected only if the archive device supports ejection under software control. This command should appear only in the last session in the script file.

EJECT = ENABLE

END—This command terminates the operation. It is required at the end of every script file.

END

EXCLUDE—Use **EXCLUDE** to select directories and files to be excluded from the operation. A script file can contain more than one **EXCLUDE** command. If this command is not included in the script file, no files are excluded. Use a separate **EXCLUDE** statement for each path (directory/file) to be excluded. Adding a **,Y** or a **,N** dictates whether the contents of subdirectories are included (**,Y** to include subdirectory contents; **,N** to exclude them).

EXCLUDE = *.EXE, N or

EXCLUDE = *.COM, Y

INCLUDE—Use **INCLUDE** to select directories and files to be included in the operation. A script file can contain more than one **INCLUDE** command. If this command is not included, all files ("*.") are included. Use a separate **INCLUDE** statement for each path (directory/file) to be included. Adding a **,Y** or a **,N** dictates whether the contents of subdirectories are included (**,Y** to include subdirectory contents; **,N** to exclude them).

INCLUDE = *.ASM, Y or

INCLUDE = *.DRV, N

INTERMEDIATE—Use this command to perform an intermediate backup. Only files modified since the archive flag was reset are backed up. Including or excluding the command **OPTION = A** (resets the archive flag) determines whether the intermediate backup is a differential or an incremental operation (see *Section 17.2*).

INTERMEDIATE

MODE—Specify one of the three modes: Backup, Restore, or Verify. This command is required at the beginning of every script file.

MODE = BACKUP

MOUNTWAIT—This command specifies a hardware “wait” time for autochangers, such as the Exabyte EXB-10. **Tape Mate II** software does not support autochangers, but this command is maintained for upward compatibility.

MOUNTWAIT = 200

OPTIONS—This command specifies the run time options. The format is

OPTIONS = A

where the letter to the right of the equal sign represents the selected option. Enter the following letters to select options:

- A** Reset the DOS archive flag
- D** Delete file after backup
- E** Encrypt data
- M** Append this session to the existing session
- N** Restore the file only if the archive version has more recent date
- P** Preview mode
- Q** Query overwrite. Do not overwrite existing files
- R** Restore “read-only” files
- V** Verify after backup

To specify more than one option, type the letters together in any order. Use no spaces or commas between the letters. For example, the following command selects options to reset the DOS archive flag and encrypt the data.

OPTIONS = EA

OVERWRITE—Use this command to overwrite existing data on a volume. If you use this command in a script that places multiple sessions on a volume, place the **OVERWRITE** command in the first command set (see *Command Sets*, later in this chapter). (If you place the command in a subsequent command set, the sessions following the **OVERWRITE** command will overwrite the previous sessions.) The default procedure is to append data, so that any previously written data is preserved.

OVERWRITE

PATH—Specify the source path for backup and verify operations or the target path for restore operations. This command cannot be used globally; it affects only data on the drive specified by the **DRIVE** command listed previously in the script file. A separate **PATH**

command must be used for each drive. If the script file does not contain a PATH command, the root directory is assumed.

PATH = \TMATE

RDATE—Use RDATE to specify a retention date for the current (new) session. The format for the date is MM/DD/YY. Leading zeros aren't necessary for single-digit months and days.

RDATE = 1/1/94

REM—Use this command to insert a brief remark. This command does not affect the execution of the script file.

REM = Backup of Server 1

SESSION—Use this command to specify the session number for restore and verify operations if other than the first session is to be used.

SESSION = 2

SESTITLE—Use this command to specify a session title.

SESTITLE = FILESERVER 1 BACKUP

SINCE DATE—Use this command to select files created or modified on or after a given date. The operation is performed on any file dated on or after the date specified. The date format is MM/DD/YY. In the following example, the operation is performed only on data created or modified on or after January 15, 1993.

SINCE DATE = 1/15/93

VOLTITLE—Use VOLTITLE to specify a volume title.

VOLTITLE = FULL BACKUP #1, TAPE #1

22.5 Script File Format

This section describes the required command sequence for both the attended and unattended script files. The requirements and restrictions are different for the two types of script files.

22.5.1 Attended Script Files

An attended script file can have only INCLUDE and EXCLUDE commands, as illustrated in *Figure 48*. No other commands are needed, because the script is merely a substitute for entering path and file name specifications in the Inclusive and Exclusive File Selections dialog boxes (see *Section 18.5*). You must select and run an attended script file from within **Tape Mate II** software; see *Section 18.5* or *19.3.4* for directions.

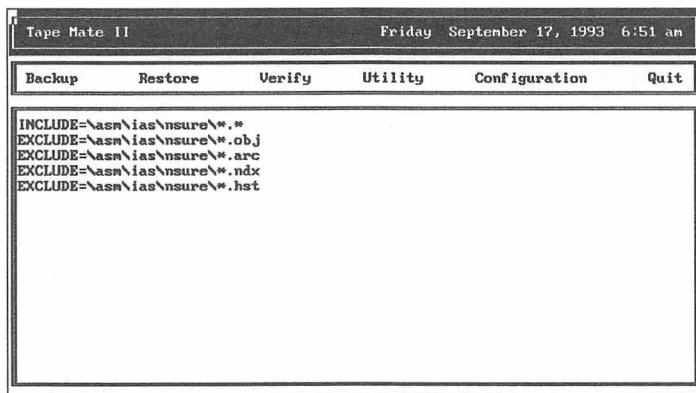


Figure 48 Sample INCLUDE and EXCLUDE Commands

22.5.2 Unattended Script Files

The requirements for an unattended script file are more extensive because it must specify the parameters normally defined on the Backup, Restore, or Verify Parameters dialog box. In addition, the order in which the commands appear in the script file affects the operation. This section describes the required commands and format for unattended script files. For information on scheduling and running an unattended script file, see *Chapter 21*.

Required Commands

All unattended script files must contain the commands MODE, DRIVE, and END. A DRIVE command must also be entered for each drive to be used in the operation. Other commands may be used as needed.

Command Sequence

The required command sequence for an unattended script file is

MODE

- (At least one DRIVE command and any optional commands)

•

END

Several commands that can apply globally, affecting all specified drives, can also apply to individual drives. Whether a command affects all drives or a specific drive is determined by the location of the command relative to the DRIVE command(s) in the script file. Commands that can be used globally or specifically are

INTERMEDIATE
INCLUDE
EXCLUDE
OPTIONS
SINCE DATE
BEFORE DATE

If any of these commands appear before the first **DRIVE** command, they affect all drives listed in the script file. Any that appear after one **DRIVE** command but before a second **DRIVE** command affect only the first drive. For example,

INTERMEDIATE	This command applies to all drives.
DRIVE = C	
EXCLUDE = *.EXE	This command applies to drive C.
DRIVE = D	
OPTIONS = P	This command applies to drive D.

The **PATH** command can be used only after a **DRIVE** command. If a **PATH** command doesn't follow a **DRIVE** command, the root directory is used as the path for that drive.

Other commands can appear anywhere in the script file after the **MODE** command and before the **END** command. These commands are

APPEND
SESSION
SESTITLE
VOLTITLE
RDATE
EJECT

The **REM** command is the only command that can appear before the **MODE** command.

Command Sets

A command set is a list of commands starting with the **MODE** command and ending with the **END** command. A script file may contain one or more command sets. The following example illustrates a command set for a backup operation:

MODE = BACKUP	Specifies a backup operation.
INTERMEDIATE	Selects files modified since the archive flag was reset.
OPTIONS = AE	Resets archive flags after backup, and encrypts data on the archive volume.
INCLUDE = *. *	Includes all files on all drives.
DRIVE = C:	Selects drive C for backup.

EXCLUDE = *.EXE	Excludes \.EXE files on drive C from backup.
DRIVE= D:	Selects drive D for backup.
PATH = \VENTURA	Starts the backup in the \VENTURA directory
INCLUDE *.* ,N	Overrides the global INCLUDE command above, choosing to not back up subdirectories of D:\VENTURA.
DRIVE = E:	Selects drive E for backup.
INCLUDE = *.EXE	Overrides the global INCLUDE command; on drive E, only \.EXE files will be backed up.
END	Terminates the script file.

22.6 Validating a Script File

You can verify that an unattended script file performs correctly by executing it at the DOS command line and observing the operation. To execute the script file, type **TMATE** followed by the name of the script file; you needn't include the file extension. To execute a file named **BACKUP.NSF**, for example, type **TMATE BACKUP** and press [Enter].

You can decrease the time required for the operation by temporarily adding the Preview run time option to the script file. This lets you verify both syntax and workstation configurations without actually writing to the archive volume or the destination drive. To add the Preview option, modify the script file to include the following line:

OPTIONS = P



DO NOT FORGET to remove the **OPTIONS = P** line from the script file after you validate the file. If this line remains in the file, the unattended operation will write the data only to the computer screen, and not to the volume or destination drive.

23 Database Resources

The **Tape Mate II** database lets you keep track of the volumes and sessions that are used by or created with **Tape Mate II** software. Volume and session information is stored in the database only if the Volume/Session Database option in the Global Configuration Parameters dialog box is enabled (see *Section 25.2*). Enabled is the default setting.

Use the Database Resources utility to view information on any volume or session defined in the database. The information in this database is cross-referenced so that a volume can be selected and a list of the associated sessions displayed. If a session is selected, then the volume or volumes associated with that session can be displayed. You can also use Database Resources to add new volumes and to delete volume and session entries from the database.

To use Database Resources, select **Utility** from the main menu, then select **Database Resources** to display the Database Selection menu, shown in *Figure 49*. The menu has the following options:

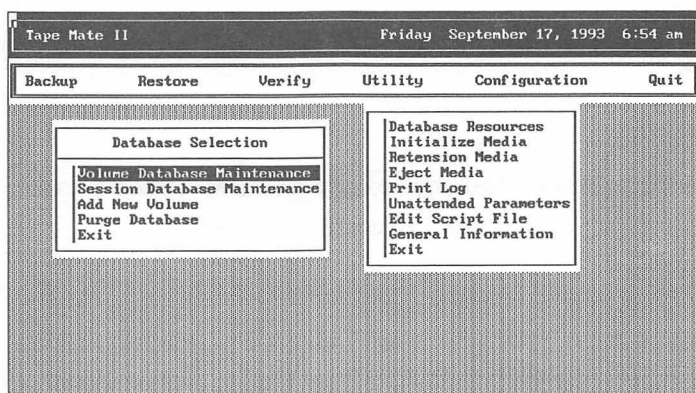


Figure 49 Database Selection Menu

- **Volume Database Maintenance**—View volume information. Delete volumes and sessions from the database. Change the entry for the volume storage location.
- **Session Database Maintenance**—View session information.
- **Add New Volume**—Add a volume to the database.
- **Purge Database**—Delete all information from the database.

Each of these options is described in the following sections.

23.1 Volume Database Maintenance

When you select Volume Database Maintenance from the Database Selection menu, the Volume Database Information dialog box appears. It lists all volumes defined in the database. From this dialog box, you can view summary information on all defined volumes; view detailed information on a volume; delete a volume; and change the entry for the volume storage location.

To view summary information for all volumes, press [F9]. A Volume Summary Report screen appears, as shown in *Figure 50*. Press [Esc] to display any additional records that did not fit on the screen and to exit the screen.

Tape Mate II		Friday September 17, 1993 12:19 pm			
Backup	Restore	Verify	Utility	Configuration	Quit
Volume Summary Report					
TITLE		DATE	SESSIONS		
Backup - Tape 1		09/16/93	1		
Esc=Exit					

Figure 50 Volume Summary Report

To view details on a volume, highlight the volume title in the Volume Database Information dialog box and press [Enter]. The Volume Detail Information dialog box appears (see *Figure 51*), displaying the following information about the selected volume.

- **Storage Location**—indicates where the volume is stored when not in use.
- **Creation Date**—indicates the date a volume header was written on the volume.
- **Media Count**—indicates the number of volumes (media) used in the backup operation.
- **Session Count**—indicates the number of sessions on the volume.
- **Device Type**—indicates the type or class of device used for the backup operation.
- **Data Quantity (Bytes)**—indicates the total amount of data stored on the volume.

Tape Mate II		Friday September 17, 1993 12:19 pm	
Backup	Restore	Verify	Utility
Configuration		Quit	
Database Resources			
Volume Detail Information			
Volume Title:	Backup - Tape 1		
Storage Location:			
Creation Date:	Thursday Sept. 16, 1993		
Media Count:	1		
Session Count:	1		
Device Type:	DDS DAT 4mm Tape Device		
Data Quantity (Bytes):	11,875,804		
F1=Help F3=Update F4=List Sessions F7=Exit F8=Delete F9=Print Report			

Figure 51 Volume Detail Information Dialog Box

Storage Location is the only field in this dialog box that can be changed. To change the entry in this field, type a new storage location, and then press [F3] to update the field with the new information.

While in the dialog box, you can press [F4] to list the sessions in the volume. Press [F9] to print the information to a printer.

You can also use the Volume Detail Information dialog box to delete the volume. To do so, press [F8]. The Delete Database Records menu appears. Select **Delete Session Records Only** or **Delete Volume and Session Records**. When prompted to confirm your selection, select Yes to delete the records or No to cancel the deletion. If only the session records are deleted from the database, the number in the Session Count field is reset to zero. If both the volume and session records are deleted from the database, the volume title is removed from the list of volume names in the Volume Database Information dialog box.

23.2 Session Database Maintenance

To view session information, select **Session Database Maintenance** from the Database Selection menu. The Session Database Information dialog box appears. Using this dialog box is similar to using the Volume Database Information dialog box, described in the previous section. See that section for details on viewing information. The option to delete volumes and sessions is not available in the Session Database Information dialog box; you must use the Volume Database Information dialog box.

23.3 Adding a New Volume

The Add New Volume option lets you add volumes that were created at other workstations or when the database was disabled. Follow these instructions to add a volume to the database:

- 1** Select **Add New Volume** from the Database Selection menu. You are prompted to mount the archive volume.
- 2** Insert the volume in the archive device and press [F2]. The Volume Detail Information dialog box appears, displaying information about the volume. You are prompted to add the volume to the database.
- 3** Select **Yes** to add the volume to the database; otherwise, select **No**. If you select **Yes**, you are prompted to enter a storage location.
- 4** Type the storage location if desired, and press [Enter]. A message prompts you to add the sessions on the current volume to the database.
- 5** Select **Yes** to add the sessions or **No** to add only the volume name. Several messages appear, including a final message that the volume has been added.
- 6** Press [Esc] to return to the Database Selection menu.

23.4 Purging the Database

Use the Purge Database option to delete all session and volume entries from the database. When you select Purge Database from the Database Selection menu, you are prompted to confirm that you want to delete all database records. Select **Yes** to clear the database of all volume and session records. Select **No** to exit without deleting any records.

23.5 Exiting the Menu

Select **Exit** from the Database Selection menu to close the menu and return to the Utility menu. To return to the main menu, select **Exit** from the Utility menu.

24 Utility Menu

This chapter describes the Utility menu, shown in *Figure 52*. The menu contains the following options:

- **Database Resources**—View and manage the contents of the database.
- **Initialize Media**—Erase or format tapes.
- **Retension Media**—Retension a tape. Retensioning winds a tape from one spool in the tape cartridge to the other and back again.
- **Eject Media**—Eject a tape cartridge from the tape drive (available only if the drive supports ejection under software control).
- **Print Log**—Print the log history file on screen or to a printer.
- **Unattended Parameters**—Schedule an unattended operation.
- **Edit Script File**—Create, edit, and delete attended and unattended script files.
- **General Information**—View a screen of general information about your copy of **Tape Mate II** software.

This chapter describes all options except Database Resources, Unattended Parameters, and Edit Script File, which are described in *Chapters 23, 21, and 22*, respectively.

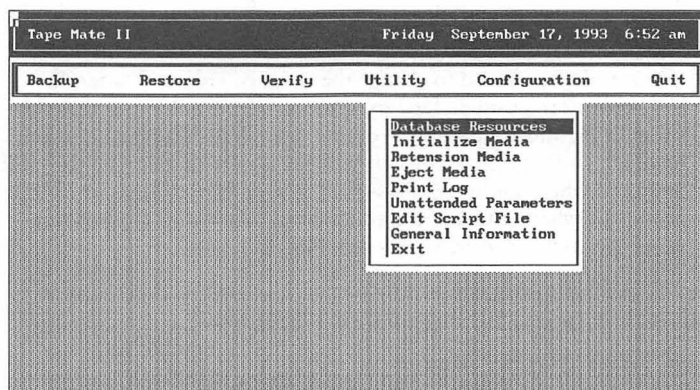


Figure 52 Utility Menu

24.1 Initializing Media

You can use the Initialize Media utility to erase or format tapes. To use the utility, follow these steps:

- 1 Select Utility from the main menu.

- 2 Select **Initialize Media** from the Utility menu. You are prompted to mount the archive volume.
- 3 Insert the tape in the tape drive, and press [F2] to continue. A message prompts you to verify that you want to continue. (If the tape has never been used with **Tape Mate II** software, this message doesn't appear; skip to step 7 to continue).
- 4 Select **Yes** to continue or **No** to stop.
- 5 If initialization will violate a retention date specified for any session on the mounted volume, a second message notes this and asks whether you want to continue. Select **Yes** to continue or **No** to stop.
- 6 If you selected **Yes**, a **Keep Current Volume Header** prompt appears. (If the database is disabled, as discussed in *Section 25.2*, this message doesn't appear; skip to step 7 to continue.) The first time **Tape Mate II** software used the tape, a valid volume title was assigned. Select **Yes** to keep the assigned volume header, or **No** to change it.
- 7 A menu appears with the following options: **Format Media** and **Erase Media**. Select either **Format Media** or **Erase Media**, as required. The tape is then initialized.



Formatting is the shorter procedure of the two options. Formatting rewrites the header information and functionally erases the tape. Normally, this is all that is required. Erasing physically erases the tape from beginning to end; this may take several hours if the tape drive is a DAT or 8-mm drive.

- 8 If in step 6 you elected to change the assigned volume header, the **Volume Information** dialog box appears. In the **Volume Title** field, which is required, type a new volume title. In the **Storage Location** field, which is optional, you can type the location where the tape will be stored when not in use. Press [F2] to save this information. When prompted whether to add the volume information to the database, select **Yes** to do so; otherwise, select **No**.

A message informs you when initialization is complete. Press [Esc] to remove the message and return to the Utility menu.

24.2 Retensioning Media

Retensioning winds the tape from one spool in the tape cartridge to the other and back again. Manufacturers of tape cartridges and tape drives publish the recommended frequency for retensioning tape cartridges. Generally, if a tape cartridge has not been used in over a month, it should be retensioned before use. Follow these steps to retension a tape:

- 1 Select **Utility** from the main menu.
- 2 Select **Retension Media** from the Utility menu. You are prompted to mount the archive media.

- 3 Insert the tape in the tape drive, and press [F2] to continue or [Esc] to abort the operation.

A message informs you when retensioning is finished. Press [Esc] to clear the message and return to the Utility menu.

24.3 Ejecting Media

You can use this utility to eject a tape if the tape drive supports ejection via software control. Select **Eject Media** from the Utility menu. A message informs you when the tape is ejected. Press [Esc] to clear the message and return to the Utility menu.

24.4 Printing a Log

Use **Print Log** to print or review any log history file generated by **Tape Mate II** software. Log history files are generated only if the Log History option is enabled in the Global Configuration Parameters dialog box (see *Section 25.2*). They are automatically stored in the **Tape Mate II** directory.

Log history files list operations performed, initialization parameters, files involved, and errors that occurred during the operation. All log history files are assigned an .HST file name extension. The name of a log history file is the date the operation was executed (YYMMDD); multiple executions on the same day are made unique with a letter appended to the file name.

24.4.1 Viewing and Printing a Log History File

To view or print a log history file:

- 1 Select **Print Log** on the Utility menu. The Report List menu appears, as shown in *Figure 53*. This menu lists all log history files in the directory that contains **Tape Mate II** software.
- 2 Select the name of the log history file you want to view or print. A prompt asks whether you want to print to a printer.
- 3 Select **No** to review the contents of the file on screen. Select **Yes** to print to a printer connected to LPT1. Verify that the printer has power, is on-line, and has paper. *Figure 54* illustrates a log history file.

24.4.2 Deleting a Log History File

To delete a log history file:

- 1 Select **Print Log** on the Utility menu. The Report List menu appears, listing the log history files.
- 2 Highlight the name of the log history file you want to delete. To mark a group of files for deletion, highlight each file and press [F5]. To unmark a file, highlight it and press [F5] again.
- 3 Press [Del].
- 4 When prompted to confirm that you want to delete the file, select **Yes** to delete the file or **No** to cancel the deletion.

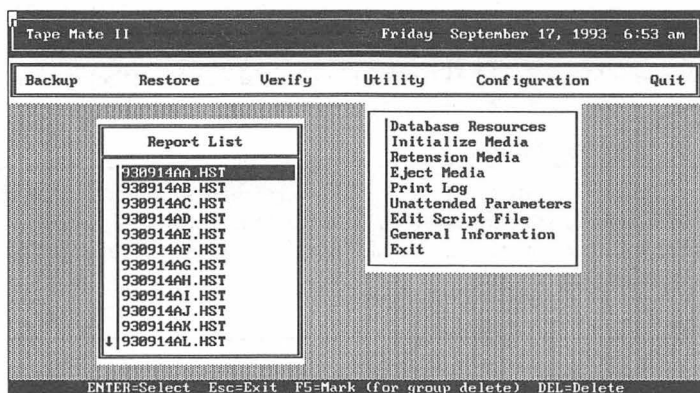


Figure 53 Report List Menu

Log history files can also be deleted using the DOS Delete command. See your DOS reference manual for details.

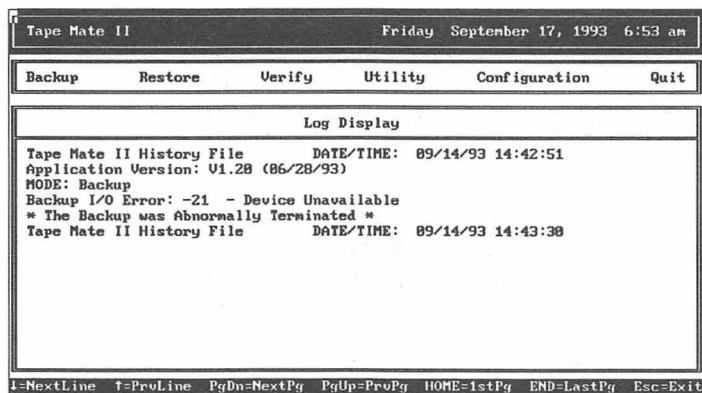


Figure 54 Log History File

24.5 Obtaining General Information

Select General Information on the Utility menu to display the **Tape Mate II** software version number, options, serial number, the company name, user name, copy number, and **Tape Mate II** software developers.

24.6 Exiting the Utility Menu

To exit the Utility menu, select Exit on the menu or press [Esc].

25 Configuration Menu

Use the Configuration menu to set the following:

- **Local Configuration Parameters**—defines the type of archive device used in operations.
- **Global Configuration Parameters**—determines whether you save log history files, operate in monochrome, enable the Volume/Session database, and eject the volume automatically at the end of a job.

25.1 Local Configuration Parameters

The local configuration parameters define the local hardware device used in the archive operations. The initial configuration is set the first time you use **Tape Mate II** software (see *Chapter 16*). If you later need to reconfigure **Tape Mate II** software—for example, if you switch to a different tape format—follow these steps:

- 1 Select **Configuration** from the main menu. The Configuration menu appears, as shown in *Figure 55*.

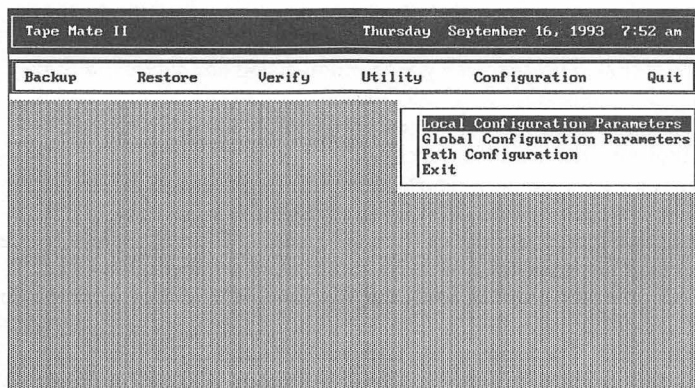


Figure 55 Configuration Menu

- 2 Select **Local Configuration Parameters**. The Local Backup Device Selection dialog box appears.
- 3 Press [Enter]. The Device Type Selection menu appears, listing supported devices. An arrow at the left of the menu indicates the list extends beyond the menu box. To scroll through the list, use the arrow keys or press [PgUp] and [PgDn].
- 4 Highlight the correct device, and press [Enter].

- 5 If **Tape Mate II** software needs additional information for your device, a Device Configuration dialog box appears. The dialog box contains one or more of the following fields.

Compression—The default setting for this field is Default. With this setting, **Tape Mate II** software will use the media as it has previously been used: If the media was used with compression enabled, then compression will be used; if the media was used with compression disabled, then compression will not be used. To change this setting, select the Compression field; then select **Disabled** to disable compression, or **Enable** to enable compression.

Target Device SCSI ID—The default setting for this field is Auto. With this setting, the driver will use the first device of this product type that it finds on the SCSI bus. To change the setting, press [Enter] to display the SCSI Bus ID menu; then select from the list of possible SCSI identification numbers, 0–7.

Tape Speed—Select this field to list the supported tape speeds for the selected device; then select the appropriate tape speed.

Tape Density—Select this field to list the options Default, Enabled, and Disabled, and select an option.

- 6 Press [F2]. The Adapter Type Selection dialog box appears, with the single option: ASPI for DOS Driver.
- 7 Press [Enter]. Another Device Configuration dialog box appears, displaying the Card Number field.
- 8 In the Card Number field, the default is Card 0. If you have multiple adapters running under ASPI, you may need to select the appropriate card number for the device. First try card 0. If **Tape Mate II** software doesn't recognize the device, try another card number up to 4. To select the card number, select the Adapter field, and then select the card number.
- 9 Press [F2]. The names of the selected device and driver (if applicable) appear in a box at the lower right of the screen, as shown in *Figure 56*.
- 10 Press [F2] to save the configuration parameters. A Save Changes prompt appears.
- 11 Select **Yes** to save the changes, or **No** to abandon them. Changes are saved in the configuration file.

25.2 Global Configuration Parameters

The global configuration parameters let you determine whether to save log history files, operate in monochrome, enable the Volume/Session database, and eject the volume automatically at the end of a job. To set the parameters, follow these steps:

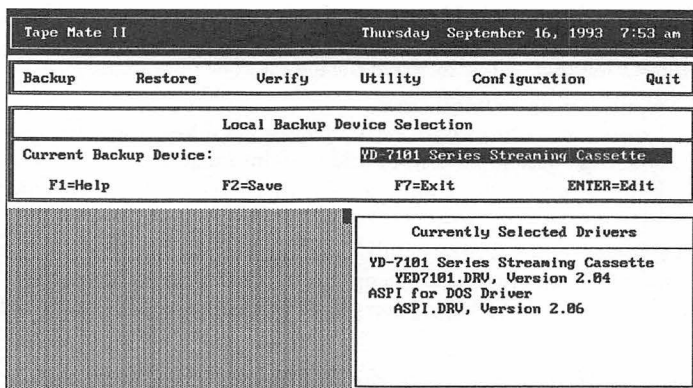


Figure 56 Currently Selected Drivers Dialog Box

- 1 Select Configuration from the main menu. The Configuration menu appears.
- 2 Select Global Configuration Parameters. The Global Configuration Parameters dialog box appears, as shown in Figure 57.

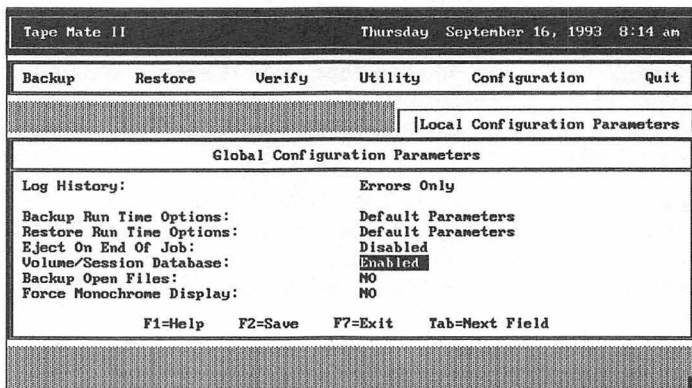


Figure 57 Global Configuration Parameters Dialog Box

- 3 Use the fields in the dialog box to set the parameters you want. A description of each field immediately follows these steps.
- 4 Press [F2] to save the changes. A Save Changes prompt appears.
- 5 Select Yes to save the changes, or No to abandon them. All parameters in this dialog box are permanently saved in a configuration file.

Log History—Tape Mate II software creates a log file for each operation (backup, restore, or verify). Select this field to specify the type of information that will be stored in the log file. The options are

- **None**—Store no information.
- **Errors Only**—Store only the header, session information, operation type (e.g., backup or restore), and error information.
- **Full**—Store all information for all files. This can result in extremely large files.

The default setting is Errors Only. To change the setting, select the Log History field, and then select an option. To read, print, or delete the log files, use the Print Log option on the Utility menu. See *Chapter 24* for details.

Backup Run Time Options—Use this field to select global backup run time options. The options you select automatically appear as the defaults in the Backup Parameters dialog box. The run time options and their function are the same as those described in *Section 18.3*.

Restore Run Time Options—Use this field to select global restore run time options. The options you select automatically appear as the defaults in the Restore Parameters dialog box. The run time options and their function are the same as those described in *Section 19.3.3*.

Eject on End of Job—For devices that support software eject control, enabling this parameter instructs **Tape Mate II** software to eject the volume when an operation is finished. The default setting is Enabled. To disable this feature, select the Eject on End of Job field, and then select Disable.

Volume/Session Database—The **Tape Mate II** database stores information about the volumes that have been used by **Tape Mate II** software. This database also records session information. Volume information stored in the database includes the volume title, storage location, creation date, media count, session count, and device type. Session information includes the title, session number, source path, media count, creation date, retention date, session size, and whether a password is required.

The default setting for this field is Enabled, so that volume and session information is stored in the database. If the database is disabled, the Database Resources utility on the Utility menu cannot be used, since the database contains no information. For information on using the database, see *Chapter 23*.

Backup Open Files—To obtain a completely valid backup copy of a file, no other application may have the file open during the backup operation. However, some files required to support mission-critical

25 Configuration Menu

applications may be active almost 24 hours a day. To provide some facility for backing up such files, select the Backup Open Files field, and then select Yes. This allows **Tape Mate II** software to open these files (on retry) in a read/share mode and attempt a complete backup. If records are not locked, a valid copy of the file can be obtained. If records are locked, **Tape Mate II** software “reads around” these locked file regions, and replaces the corresponding record locations with binary zeros. The files in such cases are compromised, but some databases supply utilities to rebuild such corrupted files. The default setting for this option is No.

Force Monochrome Display—**Tape Mate II** software was designed for color monitors, and some monochrome monitors attempt to display the screens in color. This results in a distorted screen image. To force **Tape Mate II** software to operate in a monochrome mode, select the Force Monochrome Display field, and then select Yes. The default setting is No.

25.3 Exiting the Configuration Menu

Select Exit from the Configuration menu to close the menu and return to the main menu.

26 Tape Mate II Upgrade Options

Since you have already received Trantor's **Tape Mate II** software, you have the option of upgrading this valuable standalone archiving application to a network archiving version. Trantor has arranged with FortuNet (developers of **Tape Mate II** software) to provide these archiving products to you at a discount.

Nsure Overview

FortuNet's Nsure products provide cost effective solutions to safeguarding your valuable data with extensive features today and an upgrade path for tomorrow. Nsure products vary from network products for DOS workstations to Novell NLM (NetWare Loadable Module) products with autochanger support.

Nsure is distributed across the network as separate application modules: Nsure Manager and Nsure Client. This architecture provides the flexibility to back up and restore virtually any device on a network. The Nsure Manager supports the LAN Administrator in performing necessary operations from a single station within the network. The Nsure Client provides support for backing up client stations.

As a distributed application, Nsure is the most advanced data management application available today for networked storage resources. Nsure is fully independent of operating systems, network operating systems, communication protocols and storage devices.

Nsure Features

Nsure features wildcard selection, empty subdirectory selection, before and after data ranges, incremental and differential modes, inclusive and exclusive selection, and restore directory (tree) selection.

Nsure's other features include open file retry, history log, unattended operation scheduling, script language, data encryption, volume/session database, client workstation backup/restore, Novell NetWare 2.2 and 3.1x support, Apple Macintosh backup/restore on NetWare servers, multi-level password security, Quick File Access (QFA), multiple drive support ("node" level backup/restore), autochanger support, dynamic server login/logout, and NetWare Trustee/Bindery support.

Nsure works with most popular network operating systems including Novell's NetWare/286/386, NetWare Lite, Microsoft's Lan Manager, Artisoft's Lantastic, and many others. Nsure requires either MS/PC-DOS (3.1 or greater) or DR-DOS (5.0 or greater) and 512 KB of available

memory from the network manager and 44 KB from the client. Client access protocols include NetBIOS and NetWare IPX. Nsure products support the following archive devices:

- *Floppy Disk—DOS Addressable Devices* (5¼ & 3½-inch, etc.)
- *¼-inch Tape Devices* (QIC-DC600), QIC-02 (Archive, Irwin, Mountain, Tandberg, Wangtek), SCSI (Archive, Tandberg, Wangtek, Sankyo).
- *Cassette Tape Devices* Teac, Y-E Data.
- *Digital Audio Tape* (4-mm & 8-mm) including Archive, ARDAT, Exabyte, JVC, Wangtek, WangDAT, Hewlett-Packard, Sony.
- *Other Media-Addressable Devices* including Removable Hard Disks, Optical-WORM Drives, Optical-Multifunction Devices.
- *Autochangers* including ADIC 1200 and 1200C; Exabyte EXB-10 and EXB-10i; Soltronic PROTEC 50/55 and 10/15; Colorado Technical Designs COL/8L, COL/8SL and COL/4L; Spectra Logic BTL-8000; WangDAT LD-4; and others.

Nsure Versions

The following paragraphs detail Nsure upgrade versions:

OneNet—a network backup and restore product for multiple servers.

AllNet—a network backup and restore product for unlimited number of servers or DOS workstations.

NLM/AllNet—an NLM network backup and restore product for unlimited number of servers or DOS workstations, with full selection and scheduling capabilities. It complements the above DOS-based products and provides higher performance and security of a server-based solution.

OS/2 Client—allows your AllNet or NLM/AllNet to support backup of OS/2 "client" stations on multiple OS platforms. Client modules are supplied for OS/2 V1.1, 1.3, & 2.0. OS/2 Client runs in the background and permits seamless operations from a master workstation.

NLM AutoChanger (Server-Based)—includes the NLM/AllNet with support for 4-mm & 8-mm autochangers for the highest capacity backup needs with capacities ranging from 8 GB to over 300 GB.

To insure your discount, order your FortuNet Nsure Upgrade from Trantor. Simply tear out the coupon on the following page and send it to Trantor or call Trantor direct at 1-800-TRANTOR. Additional technical information and support for these products is available from FortuNet at 1-800-959-0718 or 1-801-467-6887 – this phone number is for upgrade inquiries only. Technical support for SCSIworks! software is available only from Trantor Systems Limited (see *Chapter 12*).

To earn 30% off any version of Nsure, simply tear out this page and send to Trantor.

30% OFF Any Nsure Version

Nsure Version	Description	Model #	List Price	Your Price
OneNet	Network backup/restore for a single server	NS-WS-ON	\$175	\$122.50
AllNet	Network backup/restore for unlimited number of servers/DOS workstations	NS-WS-AN	\$895	\$626.50
NLM/AllNet	Novell's 3.x NLM network backup/restore NS-NLM-AN for unlimited number of servers/DOS workstations	NS-NLM-AN	\$995	\$696.50
OS/2 Client	OS/2 Client support for workstation & server-based solutions	NSC-OS2	\$195	\$136.50
NLM AutoChanger (Server-Based)	Novell's 3.x NLM/AllNet with support for 4-mm & 8-mm autochangers	NS-NLM-AC	\$1,995	\$1396.50

Name _____

Company _____

Address _____

City, State _____ ZIP/Postal Code _____

Country _____ Daytime Phone _____

Yes! I'm purchasing _____ copy(ies) of _____ \$ _____

_____ copy(ies) of _____ \$ _____

_____ copy(ies) of _____ \$ _____

USA shipping charge: \$3.00 each for ground shipping \$ _____

\$10 each for 2-day shipping \$ _____

\$15 each for overnight shipping \$ _____

(other countries, call Trantor for shipping rates) Total \$ _____

California residents: include 8 1/4% sales tax \$ _____

Total in U.S. funds \$ _____

Or, charge my ☐ Visa ☐ Mastercard:

Acct# _____ Expires _____

Name on Card: _____ Signature _____

SEND TO: Trantor Systems Limited
PO Box 9050, Dept. 380
San Fernando, CA 91341-9050

OR CALL: 1-800-TRANTOR
1-818-837-7245 Fax

Note: only original coupons will be accepted: no photocopies please.

This discount offer is valid only for products purchased directly from Trantor.

This offer expires Dec. 31, 1994.

Prices and specifications subject to change without notice.

SCSI Works!

Appendices

A System Requirements

Requirements

- IBM or compatible AT, PS/2, or similar computer.
- MS-DOS or PC-DOS 3.1 or above. DOS 3.3 or above is required to format and use partitions larger than 32 MB.
- A 100% IBM-compatible BIOS. Operation with some incompatible BIOSs may be possible but is not guaranteed.
- At least 640 KB of system memory.

Additional Magic Lantern Software Requirements

- Any computer capable of running MS-Windows 3.x.
- RAM—recommended 8 MB. The amount you have determines at what resolution you are able to display images, and how many image windows you are able to have open at once.
- CD-ROM player and driver supporting Photo CD—if the drive is not multisession-capable, you can access only those images stored in the first session.
- Photo CD(s).
- Monitor and Video Card—recommended at least a Super VGA monitor at 256 colors. The higher resolution and the more colors your system supports, the more options you have for viewing images.
- Microsoft Windows 3.x
- MSCDEX (Microsoft CD-ROM Extensions).

Additional Music Box Software Requirements

- Any CD-ROM drive which supports the MSCDEX CD-ROM extensions to DOS and which has audio-play capabilities.
- MSCDEX, version 2.1 or above, and a CD-ROM software driver which implements the appropriate audio-mode commands. These are included with **SCSIworks!** software.
- Windows version 3.0 or later for the Windows version of *Music Box* software.

Additional Tape Mate II Software Requirements

- A logical or local hard disk with at least 1.5 MB of free disk space.
- A local hard disk, tape drive, or other supported archive device.

Optional Requirements

- A mouse compatible with the Microsoft Mouse Interface.
- A dot matrix, daisy wheel, or laser printer to use **Tape Mate II** report feature.

Memory Usage

Drivers

- The ASPI manager, MAtxx.SYS, requires about 7 KB of system memory once loaded. TSCSI.SYS uses about 11 KB of system memory. In addition, at least 512 bytes of buffer space is required. TSLCDR.SYS uses about 10 KB of system memory. TSJII.SYS uses 2.7 KB of system memory. In most cases, all Trantor drivers should be able to be "loaded high" on 386 and 386SX computers using memory managers such as QEMM® from Quarterdeck and 386Max® from Qualitas.

DOS Extensions

- MSCDEX typically requires about 20 KB of system memory, depending on how many buffers are allocated. It is also possible for MSCDEX to be "loaded high."

Music Box Software

- *Music Box* software needs about 128 KB of system memory to run in non-resident graphical mode. The memory-resident option requires about 18 KB of memory when loaded.

Magic Lantern Software

- Your PC has three types of memory: conventional, extended, and virtual memory. Conventional memory is the first 1 MB of all the RAM you have installed in your computer. Of this 1 MB, 640 KB is used as an area in which programs are started. You never have the entire 640 KB free since some number of device drivers and TSRs are always present. It is important, however, that you fine-tune your system in order to have as close to 640 KB free as possible, or *Magic Lantern* software may not even start.
- Windows uses extended memory to move large amounts of data. Windows also uses virtual memory, which is a swap file that is usually installed when you install Windows. The resolution and speed at which you can load images depends on the combined amount of extended and virtual memory. The greater the amount of memory, the better *Magic Lantern* software runs. If you have less than 8 MB of memory total, *Magic Lantern* software cannot perform at its best, and it may not be able to load high-resolution images.

B Introduction to ASPI

What Is ASPI?

ASPI (Advanced SCSI Programming Interface) is a software interface standard originally proposed by Adaptec (Milpitas, CA). ASPI documents became publicly available when Adaptec presented them to the SCSI CAM Committee (SCSI Common Access Method Committee) as a model for a public interface standard. Trantor SCSI host adapters support ASPI.

The idea behind ASPI is to create a “black box” software interface—one which allows programmers to create software without having to know anything about the details of the SCSI interface hardware used in your computer system. With ASPI, it’s possible to write programs that can be used with any SCSI-based device used on a computer system that supports ASPI. While things are not always 100% perfect in all cases, ASPI greatly reduces potential compatibility problems for you, the user. And, of course, ASPI also reduces the need for detailed technical support by us. For both reasons, Trantor Systems fully endorses and supports widespread use of the ASPI standard.

How Does ASPI Work?

Essentially, there are two parts to an ASPI implementation, the ASPI “manager,” a device driver supplied by the hardware manufacturer, and the ASPI software application. Applications range from the ASPI-compatible CD-ROM and hard disk drivers supplied by Trantor to our **Tape Mate II** tape backup, scanner control applications from other companies or any other type of software designed to work with SCSI devices.

It’s important to note that without an ASPI manager, ASPI compatibility is not possible. It’s the manager that creates the standard ASPI-compatible layer between the SCSI host adapter hardware and the ASPI-compatible application. The manager is very hardware-specific, and is almost always supplied by the manufacturer of your SCSI host adapter. Trantor has supplied an ASPI manager in your **SCSIworks!** package for use with Trantor SCSI host adapters; you can identify it by its filename of **MAXXX.SYS**. During the software installation process, our manager and the appropriate CD-ROM or hard disk drivers are copied to your computer by the **INSTALL** program and are loaded through your **CONFIG.SYS** file during bootup.

Referring to *Figure 58*, the ASPI CD-ROM and hard disk drivers actually work through the ASPI manager to perform their functions. Also, DOS applications which access your SCSI devices work through both the drivers and the manager. ASPI applications usually access the manager directly.

From the standpoint of your ASPI-compatible software, all SCSI host adapters and devices connected to your system work the same way. The secret is the ASPI manager; it translates ASPI commands to those commands necessary for the specific SCSI adapter for which it was created.

SCSI software, interface and device compatibility has traditionally been a source of concern and confusion for many users. ASPI compatibility goes a long way toward alleviating these problems and as a result is beginning to be widely adopted by many manufacturers. As an early supporter of ASPI, Trantor strongly encourages this trend.

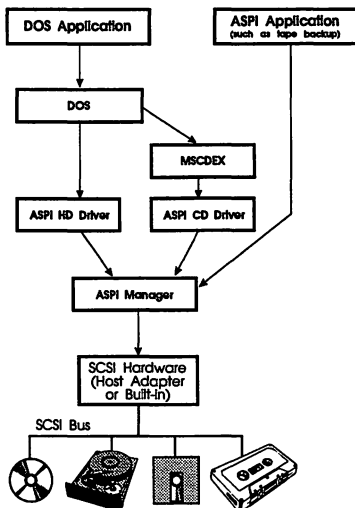


Figure 58 ASPI Block Diagram

So, What Does All This Mean To Me?

For most users, it's not important to understand the details of how ASPI works. You only need to realize that if you use software designed to work with ASPI, it should operate without problems on Trantor's ASPI-compatible SCSI host adapters, as well as those from other ASPI-compatible manufacturers. For more information about ASPI, please contact us through our technical support BBS (see *Chapter 12*).

NOTE

The information in this appendix describes Trantor's implementation of ASPI, a SCSI access model originally proposed by Adaptec to the SCSI CAM Committee.

Trantor's implementation is based on Adaptec's ASPI Revision 1.1 (dated May 30, 1989) and MS-DOS Access Method Revision 2.5 (dated October 2, 1989). However, Trantor's implementation is a superset of Adaptec's original specification, most notably adding SCSI target functions.

We believe the information contained herein to be accurate, but shall incur no liability for the use or misuse of this information. We reserve the right to modify the contents of this appendix without obligation to notify any individual or organization of such modification.

The original ASPI documents are copyrighted by Adaptec, Inc. These documents are now publicly available.

Index

A

- address, port 13, 23, 26
- address, SCSI 13, 15, 22-23, 26, 29
- Append command 126
- Appending sessions 98
- Archive flag 100, 105
- Archive hardware installation 87
- Archive media
 - Ejecting 139
 - Initializing 137
 - Retensioning 138
- ASPI
 - drivers 2, 10-11, 25, 29, 37, 39, 154-156
 - introduction 155
- ASPI manager 4, 10-11, 25, 29, 39
- Attended script file 103, 114, 129
 - Command sequence 129
- AUTOEXEC.BAT file 9, 11, 15, 19, 33, 41, 70, 79, 88, 119
- AUTOEXEC.SAV file 88

B

- Backup Empty Directories option 100
- Backup Open Files 144
- Backup operation 95-97, 99, 101, 103, 105, 107
 - Appending sessions 98
 - Attended 95, 97, 99, 101, 103, 105, 107
 - Default backup parameters 95
 - Drive-specific backup parameters 95
 - Errors 98
 - Full backup 96
 - Including and Excluding Files 105
 - Partial backup 96
 - Procedure for backing up 96
 - Script Selection List 103
 - Setting configuration 96
 - Setting Drive Parameters 106
 - Summary statement 99
 - Time required 92
 - Unattended 95, 97, 99, 101, 103, 105, 107
 - Using script files 103
- Backup parameters
 - Before Date 106
 - File Specification 102

- Previously Backed Up Files 105
- Run time options 100
 - Since Date 106
 - Source Drive(s) 106
- Backup Parameters dialog box 95, 105
- Backup Run Time Options
 - Global 144
 - Letter designations 101
- Backup Run Time Options menu 100
- Backup status 98
- Batch command 126
- BBS, technical support 39
- Before Date field 106, 114
- Beforedate command 126
- Bernoulli Box 9, 25, 36
- Bold text 4
- Brackets 5
- Bytes Not Verified field 117

C

- caching 34
- CD-ROM drives 3, 9-11, 14-16, 18, 20, 22, 24, 30, 33-37, 42, 61, 69-70, 73, 153
- Command descriptions 126
- Command format 126
- Command sequence 130
- Company name 92, 140
- Compression device parameter 88, 142
- CONFIG.SYS file 9-11, 15, 19-20, 33-34, 37, 41, 88
 - Buffers 88
 - Files 88
- configuration 13, 70, 88
 - Changing the device configuration 90
 - Setting the Initial Configuration 88
- Configuration menu 90, 141, 143, 145
 - Exit 90
 - Global Configuration Parameters 143
 - Local Configuration Parameters 141
- Confirm Session ID menu 110, 116
- connectors 55
- Copy number 140
- Creating a script file 123
- Creation Date field 134
- Current Backup Device field 88

NOTE

Items in this index that begin with capital letters refer to the Tape Mate II division of this manual; with the exception of acronyms and proper nouns which may refer to any section.

D

- Data Quantity field 134
- Database Selection menu 133
 - Add new volume 136
 - Purge Database 136
 - Session Database Maintenance 135
 - Volume Database Maintenance 134
- Day of Week field 121
- Decoding data 100
- Definitions 91
- Delayed Unattended Operation 119
- Deleting a script file 125
- Destination Drive field 109, 112
- Destination Path field 109, 112
- Device Configuration dialog box 90, 142
 - Compression 88, 142
 - Tape Format 90, 142
 - Target Device SCSI ID 89, 142
- device driver options 39
- Device Type field 134
- Device Type Selection menu 88, 141
- Dialog box
 - Entering information 93
- Dialog boxes
 - Mount Archive Volume #1 97, 110, 116
 - Verify Parameters dialog box 115
 - Append 98
 - Backup Parameters 95, 105
 - Device Configuration dialog box 90, 142
 - Drive Backup Parameters 95, 107
 - Exclusive File Selections 105
 - File Specification 105
 - General Information 140
 - Global Configuration Parameters 119
 - Inclusive File Selections 103
 - Local Backup Device Selection dialog box 88, 141
 - Mount Archive Volume 97
 - Mount Archive Volume #2 98
 - Mount Archive Volume dialog box 110, 116
 - Password 110, 116
 - Path and File Name 103, 105
 - Restore Parameters dialog box 109, 111
 - Select a Volume 97
 - Select Drive to Add 106
 - Selected Drives 106
 - Session Database Information 135
 - Session Header 110, 116
 - Unattended Parameters 120
 - Volume Database Information 134
 - Volume Detail Information 134
 - Volume Information 98
- Differential backup 91
- Display Problems 145
- Distorted Screen 145
- DOS CHKDSK command 94
- DOS COMPARE command 94

- DOS wild card characters 104
- Drive Backup Parameters
 - Source Path 107
- Drive Backup Parameters dialog box 95, 107
- Drive command 126, 130
- Drive Parameters 106
- driver
 - command-line options 39
 - sizes 154
- drivers
 - memory usage 154
- drives
 - Bernoulli Box 9, 25, 36
 - CD-ROM 2-3, 9-11, 14-16, 18, 20, 22, 24, 30, 33-36, 42, 61, 69-70, 73, 153
 - floppy 9-10, 13, 16, 25, 27
 - floptical 2, 9
 - hard 10-11, 15, 20, 22, 24-25, 27-28, 30, 35-36, 42
 - scanners 20
 - SyQuest 9

E

- Edit Script File option 124
- Editing a script file 124
- Eject command 127
- Eject On End Of Job field 144
- Ejecting tapes 139
- End command 127, 130
- Entering information 93
- Erasing tapes 137
- Error messages 115, 117
- Errors 98, 111
- Exclude command 103, 127, 129
- Exclude Files 105
- Exclusive File Selections dialog box 105
- Exit option, Configuration Menu 90

F

- features, summary of 9
- File Selection Criteria
 - Default 114
 - Include Files 114
 - Script 114
 - Tree Select 114
- File Selection menu
 - Default 103
 - Exclude Files 105
 - Include Files 103
 - Script 103
- File Specification dialog box 105
- File Specification menu 113
- files
 - .ADD 42-44
 - .DDP 43

- .INF 11
 - .OVL 11, 69, 79
 - AUTOEXEC.BAT 9, 11, 15, 19, 33, 41, 70, 79
 - CDINSTAL 10, 20, 35
 - CHKCD 11, 35
 - CONFIG.SYS 9-11, 15, 19-20, 33-34, 37, 41
 - distribution 3, 9, 13, 16, 70
 - HDINSTAL 10, 20, 29
 - INSTALL 10-11, 14-17, 19-21, 37
 - MA348.SYS 154
 - MAxxx.SYS 10-11, 20, 25, 29
 - MBOXREAD.ME 69
 - MBOXRES.EXE 69, 79
 - MSCDEX 11, 18, 33-35, 41, 61, 69-70, 153
 - OS/2 43
 - READ.ME 11, 15
 - SCINSTAL 10, 20
 - SCSITEST 10, 14, 21-24
 - TEJECT 11, 36
 - TFORMAT 10, 25-29, 42, 44
 - TLOCK 11, 35
 - TSCSI.SYS 10-11, 15, 20, 30, 154
 - TSJII.SYS 15, 55
 - TSLCDR.SYS 11, 15, 20, 33-34, 39, 41, 154
 - TSPAN 10-11, 29-30
 - TSTATUS 10, 30
 - TUNLOCK 11, 36
 - floppy drives 9-10, 13, 16, 25, 27
 - floptical drives 2, 9
 - Force Monochrome Display field 145
 - formatting media
 - high level 26-27
 - low level 26-27
 - partitioning 4, 9-10, 27-29, 41, 55, 153
 - Formatting tapes 137
 - Function key definitions 93
- G**
- General Information dialog box 140
 - General use instructions 91
 - Global Configuration Parameters 141
 - Backup Open Files 144
 - Backup Run Time Options 144
 - Eject On End of Job 144
 - Force Monochrome Display 145
 - Log History 119, 144
 - Restore Run Time Options 144
 - Volume/Session Database 144
 - Global Configuration Parameters dialog box 119
 - Global Configuration Parameters option 143
- H**
- hard disks 10-11, 15, 20, 22, 24-25, 27-28, 30, 35-36, 42
 - Help information 94
 - help, technical support 39
 - host adapter (SCSI) 1, 4, 9, 13, 15, 23
- I**
- I/O port address 13, 15, 22-23, 26, 29
 - Immediate Unattended Operation 119
 - Include command 103, 127, 129
 - Include Files dialog boxes 103
 - Inclusive File Selections dialog box 103
 - Incremental backup 91
 - Information header 92
 - INSTALL 14
 - INSTALL program 10-11, 15-17, 19-21, 37
 - installation 1, 4, 9-10, 13-21, 23, 35, 61, 69-70, 87
 - Installation and Configuration 87, 89
 - Intermediate backup 91
 - Intermediate command 127
 - Italic text 4
- L**
- Local Backup Device Selection dialog box 88, 141
 - Current Backup Device 88
 - Local configuration parameters 141
 - Local Configuration Parameters option 141
 - Log History field 119, 139, 144
 - Log history file
 - Printing 139
 - Log history files 139
 - Deleting 139
 - File name extension 139
 - Printing on printer 139
 - Printing on screen 139
 - LPT1 139
- M**
- Magic Lantern
 - commands 63
 - deinstallation 62
 - files 61
 - installation 61
 - memory usage 154
 - operation 61-63, 65
 - overview 61
 - system requirements 153
 - troubleshooting 64
 - Media Count field 134
 - media, storage 3, 9, 33
 - memory
 - expanded (EMS) 35
 - memory requirements 154
 - Menu Bar 92
 - Mode command 127, 130
 - Monitor Problems 145
 - Mount Archive Volume #1 dialog box 97, 110, 116

- Mount Archive Volume #2 dialog box 98
- Mount Archive Volume dialog box 110, 116
- Mount Archive Volume dialog boxes 97
- Mountwait command 128
- Mouse compatibility 93
- Mouse requirements 153
- MS-DOS 85
- Music Box
 - command-line version 71
 - memory usage 154
 - reloading TSR version 80-81
 - system requirements 153
 - TSR version 69-70, 78-81, 154
 - unloading TSR version 80-81
 - video modes 70
 - Windows database 69, 73, 75, 77-78
 - Windows fine-tuning 76, 82
 - Windows icon 72, 76
 - Windows version 72-73, 75, 77

O

- Off-site storage 94
- Operation Frequency field 120
- Options command 128
- OS/2
 - .ADD drivers 43
 - error messages 45-46
 - files 43, 47
 - removeable media support 44
 - set up for hard drive 45
 - Software Installation 43, 45, 47
- Overwrite 98, 102, 113, 125, 128
- Overwrite command 128

P

- partitioning media 4, 9-10, 27-29, 41, 55, 153
- Passwords 110, 116
- Path and File Name dialog box 103, 105
- Path command 128
- path, DOS 69
- power, termination 55
- Preview option 132
- Previously Backed Up Files 105
- Print Log 139
- Printer port 139
- Printing a log history file 139
- Prompt User for Restore option 113
- Purge database 136
- Purging files 101

Q

- Quick File Access 110
- Quitting Tape Mate II 94

R

- RAM drive 112, 115
- Rdate command 129
- registration, product 3
- Relocating data 100
- Report List menu 139
- Reset Backed Up Status option 105
- Restore Newest Option 113
- Restore Operation 109, 111, 113
 - Errors 111
 - Excluding files 114
 - Including files 114
 - Multiple-volume session 111
 - Setting the parameters 109, 111
 - Using script files 114
- Restore Parameters dialog box 109, 111
 - Before Date 114
 - Destination Drive 109, 112
 - Destination Path 109, 112
 - Run Time Options 112
 - Since Date 114
 - Source Session 113
- Restore Preview Option 113
- Restore READ ONLY Option 113
- Restore Run Time Options
 - Global 144
 - Letter designations 113
- Restore Run Time Options dialog box
 - Prompt User for Restore 113
 - Restore Newest Option 113
 - Restore Preview Option 113
 - Restore READ ONLY Option 113
- Restore Run Time Options menu 109, 112
- Restore Status 110
- Restoring a multiple-volume session 111
- Retensioning a tape 138
- Retention date 98
- Run Time Options
 - Delete Files After Backup 100
 - Encrypt Data 100
 - Preview Backup Option 100
 - Reset Backed Up Status 100
 - Verify After Backup 101

S

- Saving a script file 123
- Scanners 10, 20, 37
- Screen Distortion 145
- Script file
 - Command descriptions 126
 - Command format 126
 - Command sequence 130
 - Creating 123
 - Deleting 125
 - Editing 124

- Format 129
- Required command sequence 129
- Required commands 130
- Validating 132
- Script File Name field 121
- Script Files 123, 125, 127, 129, 131
- Saving 123
- Script language commands 125
- Script Selection List menu 103
- SCSI Bus ID menu 89, 142
- Select a Session menu 113
- Select a Volume dialog box 97
- Select Drive to Add dialog box 106
- Select Script File menu 123-125
- Selected Drives dialog box 106
- Selecting items 92
- Serial number 92, 140
- Session command 129
- Session Count field 134
- Session Database Information dialog box 135
- Session Header dialog box 110, 116
- Sestitle command 129
- Since Date field 106, 114
- Sincdate command 129
- Software configuration 88
- Source Drive field 115
- Source Drive(s) field 106
- Source Path field 107, 115
- Source Session field 113
- spanning, device 9-11, 29-30
- Start Date field 121
- Start Time field 120
- START.EXE program 121
- Starting Tape Mate II software 92
- status utility (TSTATUS) 10, 30
- Storage location 136
- Storage Location field 134-135
- support, technical 39
- Supported archive devices 87
- SyQuest drives 9
- System memory requirements 153
- system requirements 153

T

- Tape Mate II
 - system requirements 153
- Tape Mate II Scheduler 121
- Tape Mate II Script Language 125
- Tape Mate II Script Language Commands
 - Append 126
 - Batch 126
 - Beforedate 126
 - Drive 126
 - Eject 127
 - End 127
 - Exclude 103, 127

- Include 103, 127
- Intermediate 127
- Mode 127
- Mountwait 128
- Options 128
- Overwrite 128
- Path 128
- Rdate 129
- Session 129
- Sestitle 129
- Sincdate 129
- Voltile 129
- Tape Mate II Version number 140
- Tape Speed device parameter 90, 142
- Target Device SCSI ID parameter 89, 142
- termination power 55
- termination, SCSI device 13, 15, 55
- Terms you should know 91
- testing, device 9-10, 14, 21-24
- TMP_READ.ME file 87
- Tree Select 108, 114
- troubleshooting 15, 49, 51, 53, 55, 57
 - Magic Lantern 64
 - Music Box 81-82
 - scanners 38, 55
- TSR 121
- Typeface conventions 4

U

- Unattended Operation 119, 121
- Unattended Parameters dialog box 120
 - Day of Week 121
 - Operation Frequency 120
 - Script File Name 121
 - Start Date 121
 - Start Time 120
- Unattended Parameters option 119
- Unattended script file 130
 - Command sequence 130
 - Command Set 131
 - Example 131
 - Required commands 130
- User input 93
- User name 92, 140
- Utility Menu 119, 137, 139
 - Database Resources 133, 135
 - Edit Script File 124
 - Eject Media 139
 - Exit 140
 - General Information 140
 - Print Log 139
 - Retention Media 138
 - Unattended Parameters 119

V

- Validating a script file 132
- Verify Errors field 117
- Verify Operation 115, 117
 - Currently Mounted Volume 116
 - Error messages 115
 - Select a Session menu 116
 - Session Header dialog box 116
 - Setting the parameters 115
- Verify Parameters dialog box 115
 - Source Drive 115
 - Source Path 115
- Verify Status 117
- Verify Status dialog box
 - Bytes Not Verified 117
 - Verify Errors 117
- Version number 140
- version, software 39
- Video Problems 145
- Virtual drive 112, 115
- Voltitle command 129
- Volume Database Information dialog box 134
- Volume Detail Information dialog box 134
 - Creation Date 134
 - Data Quantity 134
 - Device Type field 134
 - Media Count field 134
 - Session Count field 134
 - Storage Location field 134-135
- Volume Information dialog box 98
 - Storage Location 98
 - Volume Title 98
- Volume/Session Database field 133, 144

W

- Wild card characters 104
- writing conventions 4

NOTE

Items in this index that begin with capital letters refer to the Tape Mate II division of this manual; with the exception of acronyms and proper nouns which may refer to any section.

