TravelMate 2000 Computer BatteryPro & Productivity Software User's Manual
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Changes may be periodically made to the information in this publication. Such changes will be incorporated in new editions of this manual.

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Read Me First

Your new TravelMate™2000 Computer is delivered with exclusive Texas Instruments power-saving and productivity utility programs to help you use your computer. These programs are installed on the hard disk and the internal ROM at the factory and are also provided on the *BatteryPro™ & Productivity Software* 3.5-inch floppy packed with your new computer.

Pioneered by Texas Instruments, the unique TravelMate 2000 BatteryPro utility package is an intelligent power-conservation system. BatteryPro prolongs the battery charge life while providing complete power management and maintenance. The Battery Watch feature of the package monitors battery consumption while BatteryPro saves power via real-time, active power conservation.

BatteryPro provides you the means to use only the computer battery power required to do your work, recovering valuable battery power usually wasted by other portable computers.

To get the most work from a battery charge, you should use the Battery Watch utility-fully described in Chapter 3 of this manual-at all times when operating your computer on battery power. Battery Watch is designed to measure personal variations in computer use habits, but it can do this only if you use it all the time so that Battery Watch can "learn" from experience through several full battery charge/discharge cycles.

Using Battery Watch also enhances your battery's lifetime via full charge/discharge cycling, a recommended practice for NiCad battery users.

Please read Chapter 3 carefully to learn how to teach and use the Battery Watch feature-which will, in turn, help you get the most working time from each computer battery charge.

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BatteryPro

The heart of the utilities provided is the unique BatteryPro program that prolongs battery charge life through extensive real-time battery power management, conservation, and maintenance. And the Battery Watch utility, an integral part of the BatteryPro utility package, monitors and displays battery power consumption.

Note: The BatteryPro program and the other utilities described in this manual are controlled by the BATTERY.PRO device driver. **Do not** delete this file from your hard disk nor from the CONFIG.SYS file or you cannot benefit from the BatteryPro power conservation utilities.

The BatteryPro utility programs provide your TravelMate 2000 the following battery conservation benefits:

❑ Active battery power savings for your application programs

❑ Automatic and manually controlled low-power Standby mode

❑ Battery maintenance via full charge/recharge cycles for optimum NiCad battery charge life

❑ Automatic CPU (central processor unit) speed selection for your application programs

❑ Battery Watch's real-time power monitoring display with updating every 3.8 seconds

❑ Battery Watch's hot-key pop-up battery charge gauge display

TravelMate 2000 Power Conservation Methods

The computer's Standby mode increases the internal battery charge life by switching the computer to low power after either a preset period of inactivity or by pressing the **Fn-Pause** keys. Either action places the computer into a low-power Standby mode until you again press the **Fn-Pause** keys. The computer then resumes operation where you last left off in your application program (you do not have to reload your program). The Standby feature saves the data in memory until the internal battery charge is exhausted, and BatteryPro continues to monitor power usage during the Standby mode.

The hard disk drive can be programmed to stop spinning after a preset period of inactivity and enter into a Standby mode. It automatically returns to normal speed when your application program requests access to the hard disk or when you enter MS-DOS.

Another BatteryPro power-saving utility, Cache, conserves battery power by storing data accessed from the hard disk in a RAM area, greatly reducing the number of hard disk accesses. You can configure the Cache utility to save multiple disk writes until the RAM is full before the system accesses the hard disk.

The TravelMate 2000 LCD display's backlight can be programmed to enter Standby mode after a preset period of keyboard inactivity. The LCD resumes normal display when you next press any keyboard key. BatteryPro monitors backlight power consumption, but cannot measure changes in brightness level you may make. (Lower brightness levels use less battery power.) However, using the Battery Watch Fast Tracking feature, Battery Pro can adjust to a constant brightness level. Please refer to Chapter 3 for details on calibrating your power usage using Battery Watch.

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You can select CPU clock speeds to help reduce battery power consumption. BatteryPro monitors and computes power usage and savings based on the active CPU speed, and Battery Watch's status window shows you the power consumption and conservation status.

Productivity Utilities

The BatteryPro program package furnished with your new TravelMate 2000 also provides you the following programs to operate your computer and maintain your application programs and data files and directories.

❑　　　LM.COM (Laptop Manager)

❑　　　LFM.EXE (Laptop File Manager)

❑　　　RPAL.COM (resident palette utility)

❑　　　CURSOR.COM and SHADOW.COM (cursor and typematic control utilities)

Laptop Manager

Laptop Manager (LM), supplied on your TravelMate 2000 hard disk as a standard user interface (shell) between MSDOS and your application programs, is both a user convenience and a key interface to the BatteryPro power conservation and monitoring package. LM gives you quick, one-key access to your application programs and MS-DOS management.

You can program LM to require a password to access MSDOS or any other application program you designate. LM provides one-key access to your application programs or you can use a mouse to access the programs. The TravelMate 2000 is delivered to access the supplied Laptop File Manager utility and the supplied LapLink file transfer utility with a keystroke.

Another feature of LM is its automatic loading of your grayshade palette selections while loading many of your application programs. You can configure a palette for each application program to produce the most readable display on your TravelMate 2000.

Laptop Manager is a key contributor to BatteryPro's power conservation since LM enables you to control CPU clock speed and set the appropriate power-savings level for each application program you install.

Laptop File Manager

The Laptop File Manager (LFM) is another time-saving feature, enabling you to quickly access and manage your files and directories without having to directly access MS-DOS. You can set up LFM to permit one-key access to your word processing program and one-key show-file capability. LFM also enables you to use the TravelMate 2000's built-in VGA display or an external VGA monitor (using the optional CRT Interface Adapter) in either 25- or 50-line text mode.

RPAL Palette Utility

BatteryPro utilities include the RPAL palette utility to enhance both the TravelMate 2000 LCD display or an external VGA monitor. RPAL is a terminate and stay resident (TSR) program, providing palette selection from a hot-key pop-up menu or from a disk file.

RPAL enables you to preconfigure individual palettes for each of your application programs and save the palettes to hard disk. A Laptop Manager feature automatically loads the custom palette with the application program.

Read Me First

Shadow Cursor Utility

The Shadow utility is a BatteryPro program designed to enhance the visibility of the cursor on the TravelMate 2000 LCD display or an attached external VGA monitor. Shadow enables you to configure cursor size for many of your application programs.

Other Utilities

The other utilities which complete the BatteryPro powersavings package include:

❑ The Setpower utility enables you to change the current power saving level maintained by the BatteryPro utility to maximize battery charge life in relation to the application program you are currently using.

❑ The Speed program permits you to change the computer's CPU operating speed to conserve power when operating on batteries.

❑ The Cache program improves hard disk drive performance and helps conserve battery power, particularly when you run application programs that often access the hard disk.

❑ The SETCMOS utility enables you to save computer configuration data to your own custom file, and restore the file to the computer in case of battery discharge or disconnection.

❑ The Dates program permits you to check the version number of the computer's internal firmware and the current power-savings level,

Preface

About This Manual

The information in this manual is presented, as much as possible, in independent chapters and sections so you can skip pages with information that you already know or that does not apply to your operating environment. Look at the top of each page to determine its major subject.

Keyboard keys are shown several ways in this manual, depending on the number of keys you must press to produce a character or function. Some keys on the keyboard are color coded to indicate their use only in conjunction with another key.

❑ If the instructions refer to the **Enter** key, simply press and release the **Enter** key.

❑ Some keys (for example, **Break** and **Num Lk)** must be pressed in conjunction with another key (for example, **Ctrl** and **Alt)** to perform their action. The text in this manual refers to these keys according to their function, preceded by the additional key you must also press. For example, to toggle the number lock (Num Lk) feature on and off, you must press and hold the **Fn** key and then press the **Ins** key **(Ins** is on the key top, **Num Lk** on the key front).

❑ If the instructions refer to the **Ctrl-Alt-Del** keyswitch cause the computer to restart-press and hold both the **Ctrl** key and the **Alt** key, press the **Del** key, and then release all three keys.

The word *type* means to press the appropriate alphabet and numeric keys to enter data. The word enter is used to mean to invoke a function or to initiate some action; for example, to *enter a menu* means to cause the computer to display that menu so you can perform some action.

Preface

The word *floppy* is used in this manual to refer to diskettes, microdiskettes, disks, and other terms commonly used to describe a removable, nonvolatile, magnetic-media diskette. The words *disk* and *diskette* are used in direct quotations, for example, in describing a displayed error message, setup menu, etc.

To describe commands and other data you type at prompts, this manual shows uppercase (capital) alphabet characters for clarity. However, you may type all referenced alphabet characters in either uppercase or lowercase.

Symbols Used in This Manual

Note that several international symbols are used through out this manual to advise you of important information.

This symbol indicates a **Note** concerning operating procedures or information you should know to help you operate your computer.

This symbol alerts you to a **Warning** or **Caution** which can prevent you from causing a hazard to your computer or your data.

This symbol tells you that more information about the same subject is continued on the next page.

Contents of This Manual

Chapter 1 - Laptop Manager explains how to set up and use the Laptop Manager utility to access your application programs at the touch of a key.

Chapter 2 - Power Savings Utilities tells you about the BatteryPro power conservation utilities, including the Setpower, Speed, and Cache programs, that help your computer work the longest possible time on its battery pack(s).

Chapter 3 - Battery Watch explains how to set up and use two utilities that monitor battery power usage and report the amount of time remaining on the battery charge.

Chapter 4 - Display Utilities describes several utilities designed to control cursor appearance and control the gray shades of the built-in screen and colors of an external monitor.

Chapter 5 - Laptop File Manager describes how to use the file manager program (LFM) to help you manage and manipulate your directories and data files.

Contents

1 Laptop Manager

2 Power Saving Utilities

3 Battery Watch

Contents

This chapter tells you about

❑   How to use the Laptop Manager program to supervise your application programs

❑   How to configure the Laptop Manager utility to load your application programs at the touch of a key

Contents

Laptop manager Features

Laptop Manager, furnished with your TravelMate 2000 Computer, is an application control program. Laptop Manager provides two submenus into which you can insert application programs you have installed on the hard disk. You can then load application programs from one of the submenus with one keystroke, and from the other submenu using the arrow keys and the **Enter** key.

Laptop Manager (LM) enables you to specify unique operating parameters for each application program you install under its control, including the following.

❑ Fixed and prompted parameters that are passed to the application program as it loads

❑ Working directory

❑ Password protection, if desired, to any or all application programs

❑ Unique color palettes for each application program, if desired

❑ Unique power-savings level for each application program

❑ Unique CPU processing speed for each application program

Using these features you can select the parameters and operating environment that maximize battery charge life, display clarity, and application program performance for each of your application programs you load under LM management.

Note: Do not confuse Laptop Manager (LM) described in this chapter with the Laptop *File* Manager (LFM) utility also furnished on your computer and described in Chapter 5 of this manual.

Laptop Manager Main

The Laptop Manager program is loaded onto your computer's hard disk at the factory
and is furnished on the 3.5-inch *BatteryPro & Productivity Software* floppy. LM
displays its main menu after the power-up and copyright messages are displayed when
you turn on the computer.

```
┌─────────────────────────────────────────────────────────────────────┐
│ Laptop Manager v.n.nn                              Tue Oct 15 12:15 pm │
│                                                                       │
│    ───────── Applications ─────────        ┌── Quick Commands ──┐     │
│   ┌─────────────────────────────────┐      │                    │     │
│   │  Texas Instruments Incorporated │      │ F1  - File Manager  │     │
│   │        TravelMate 2000          │      │ F2  -              │     │
│   └─────────────────────────────────┘      │ F3  -              │     │
│                                            │ F4  -              │     │
│                                            │ F5  -              │     │
│                                            │ F6  -              │     │
│                                            │ F7  -              │     │
│                                            │ F8  -              │     │
│                                            │ F9  - Cache Status  │     │
│                                            │ F10 - Battery Watch │     │
│                                            │ F11 - LapLink       │     │
│                                            │ F12 - Change Menu   │     │
│                                            │                    │     │
│                                            │ D   - DOS Command   │     │
│                                            │ P   - Path/Directory│     │
│                                            └────────────────────┘     │
│ C:\                                                        ESC = Exit │
└─────────────────────────────────────────────────────────────────────┘
```

The main menu enables you to select your application programs with a few keystrokes.
Procedures for adding items to the Applications list and Quick Commands box are
described later in this chapter.

Note: If your TravelMate 2000 is equipped with the optional Internal Modem, the left
side of the LM main menu includes a modem control prompt instead of the logo shown

Pressing the **F12 (Shift-F2)** key at the Laptop Manager main menu loads the Change
Menu screen. It enables you to add, delete, or modify items on the main menu
Procedures for using the Change Menu are provided later in this chapter.

Laptop Manager Main Menu

Pressing the **Esc** key at the LM main menu returns com puter control to MS-DOS and displays the MS-DOS prompt
C:\>

You can reload Laptop Manager at the MS-DOS **C:\>**prompt by typing

LM

and pressing the **Enter** key.

Quick Commands Box

Application programs you add to the Quick Commands box can be selected by pressing the function key (**F1** to **F11**) you assign to it. Instructions for installing your own application programs are provided later in this chapter.

For your convenience the Laptop File Manager, Battery Watch, Cache Status, and the LapLink file transfer utility are installed at the factory. However, you can delete any of the utilities and replace them with your own application program by using the Change Menu procedure explained later in this chapter.

Single-Character Quick Commands

At the bottom of the Laptop Manager menu Quick Commands box are two single-character commands:

Press the **D** key and Laptop Manager displays a prompt at the bottom of the screen at which you can enter MS-DOS commands of up to 67 characters. Pressing the **Enter** key starts the command. When the command is executed, pressing any key returns you to the Laptop Manager main menu.

❑ Press the **P** key and Laptop Manager displays a prompt at the bottom of the screen at which you can change drives and/or directories. For example, you can change from the **C:\>**(root directory) to the **C:\UTILS** directory by pressing the **P** key, typing C:\UTILS, and pressing the **Enter** key.

If you have the optional Floppy Drive Unit attached, you can change from the **C:** \ (hard disk) to the **A:** drive by pressing the **P** and **A** keys in order, and then pressing the **Enter** key. Note that the **C:\>**prompt at the bottom left corner of the menu changes to a **A:** prompt. See your *MS-DOS User's Manual* for details on drives and directories.

Selecting Applications From the
Applications List

After you have added your own application program names to the Applications list, you can select the program you want as follows. Press the ↑ and ↓ keys to highlight the application you want to load and press the **Enter** key. Laptop Manager loads your application selection into memory for your use.

Adding Applications to the Menu

You can add your own IBM AT-compatible application programs to the LM main menu for easier access; you can also alter or move current menu items. After you have installed your own programs into the hard disk according to the instructions furnished with each program, you are ready to insert listings into the Laptop Manager menu.

You can insert the application program name into either the *Applications* list or the *Quick Commands* box. Insert the programs you use most often into the *Quick Commands* box for fast, one-key program loading. Put less frequently used programs and those requiring a longer name under the Ap*plications* list.

Quick Commands Program Setup Menu

You can set up your own Quick Commands selections to display on the Laptop Manager main menu as follows.

1.   At the Laptop Manager main menu, press the **F12 (Fn**-**F2)**   key. Laptop Manager displays the following Laptop Manager Change Menu screen.

```
┌─────────────────────────────────────────────────────────────────────┐
│ Laptop Manager-Change Menu v.n.nn            Tue Oct 15 12:15 pm     │
│ ─────────────────────────────────────────                            │
│ ──────────── Applications List ────────      ┌─ Change Menu Commands ─┐│
│  ┌──────────────────────────────────────┐    │                        ││
│  │   Texas Instruments Incorporated     │    │ F1  - Help             ││
│  │         TravelMate 2000              │    │ F2  - Insert Appl      ││
│  └──────────────────────────────────────┘    │ F3  - Delete Appl      ││
│                                               │ F4  - Modify Appl      ││
│                                               │ F5  - Cut Appl         ││
│                                               │ F6  - Paste Appl       ││
│                                               │ F7  - Modify Fkey      ││
│                                               │ F8  - Cut Fkey         ││
│                                               │ F9  - Paste Fkey       ││
│                                               │ F10 - Exit Password    ││
│                                               │ F11 -                  ││
│                                               │ F12 - Save             ││
│                                               │                        ││
│                                               └────────────────────────┘│
│                                                                         │
│ C:\                                                        ESC = Exit    │
└─────────────────────────────────────────────────────────────────────┘
```

2. Press the **F7** key to get the *Modify Function* Key prompt at the bottom of the Setup menu.

Note: Press the **F1** key at the Laptop Manager Change Menu screen and at the Quick Command Program Setup screen for on-screen help.

---

3. In response to the Modify Function Key prompt, press the function key **(F1 through F11)** you want to assign to your application program. For example, if you want to assign the **F1** key, press the **F1** key.

Laptop Manager then displays the following Quick Command Program Setup menu.

```
Laptop Manager - Change Menu vn.nn                    Mon Sep 18 4:40 pm
      ┌────────────────────── Quick Command Program Setup - Fn ──────────
      │        Display String:   [                    ]
      │
      │
      │        Program pathname:   [                          ]
      │        Parameter string:   [                          ]
      │        Working Directory:  [                          ]
      │
      │        Password required? [ N ]    Password [          ]
      │        Use color palette? [ N ]    Filename [         ]
      │
      │        Power savings level to use?........  [Current]
      │
      │        CPU speed during program execution?  [Auto   ]
      │
      │        Keep Laptop Manager resident?......  [ N ]
      │        Prompt after program execution?....  [ N ]
      │                                                        ─ F1=help ─
      └─────────────────────────────────────────────────────────
   ────────────────────────────────────────────────────────────────
   C:\                                                    ESC = Exit
```

The Quick Command Program Setup menu screen provides the following prompts to help you configure the Quick Commands box on the Laptop Manager main menu. Press the **Enter** key after you answer each prompt.

↪

Applications to the Menu

Display String

Type up to 15 characters on the *Display string* prompt line to identify the name you want displayed beside your selected function key on the main menu. For example, type

Word Processing

and press the **Enter** key. Thereafter, the phrase *Word Processing* will be displayed in the main menu Quick Commands box, opposite the function key number you selected.

You also can type line graphics characters to appear on the function key display (press the **F1** key for a list of graphic characters you can use). Press and hold the **Fn-Alt** keys and then type the three digits for each graphic character on the embedded numeric keypad (blue key fronts); then release the **Fn-Alt** keys. If you have the Numeric Keypad option, you can enter the characters directly by pressing and holding only the **Alt** key.

Program Pathname

In response to the *Program pathname* prompt, type up to 67 characters for your application program pathname. This normally is the command your application program tells you to use to load the program at the MS-DOS **C:\>**prompt.

For example, if your communication program (named *COM*PROG) is installed under the UTILS directory on the hard disk (drive C), the process to load the program would be to type UTILS\COMPROG at the **C:\>**prompt. Therefore, you would type that same command at the Change Menu Program pathname prompt:

C:\UTILS\COMPROG

This tells Laptop Manager that the communication program is installed on drive C (the hard disk) under a directory named *UTILS* and that the command *COMPROG* loads the file for your use.

Adding Applications to the Menu

Refer to the *MS-DOS User's Manual* furnished with your computer for discussions of *paths, pathnames*, and *directories*. See your application program documentation for directions on how to install the program on the hard disk and what command to use to load the program.

Parameter String

The *Parameter string* prompt provides the capability to set up your menu so it does more than just call application programs. It also enables you to define parameters passed to the program when it is loaded.

For example, if your communications program requires a phone number as a parameter when the program loads, you would type the phone number at the *Parameter string* prompt.

As a result of the examples discussed here, your Quick Commands Program Setup menu might now resemble the following screen.

```
Laptop Manager - Change Menu vn.nn                    Mon Sep 18 4:40 pm
     ┌────────────── Quick Command Program Setup - Fn ──────────────┐
     │    Display String:   [ Communications Program ]              │
     │                                                              │
     │    Program pathname:  [ C:\UTILS\COMPROG          ]          │
     │    Parameter string:  [ 1-234-555-6789            ]          │
     │    Working Directory: [                           ]          │
     │                                                              │
     │    Password required? [ N ]    Password  [          ]        │
     │    Use color palette? [ N ]    Filename  [          ]        │
     │                                                              │
     │    Power savings level to use?........  [Current]            │
     │                                                              │
     │    CPU speed during program execution?  [Auto   ]           │
     │                                                              │
     │    Keep Laptop Manager resident?......  [ N ]               │
     │    Prompt after program execution?....  [ N ]               │
     └──────────────────────────────────────────────────────────────┘
C:\                                                        ESC = Exit
```

Adding Applications to the Menu

In addition, you can create a prompt to solicit a typed input that is passed to the application program as a parameter by using the string flag %S. In the sample menu above, type the *Parameter string* as:

%S,"Enter phone number to call:,,

When you press the selected function key, the prompt
Enter phone number to call: [
displays at the bottom of the Laptop Manager menu. You can then type a phone number between the square brackets. When you press the **Enter** key, Laptop Manager loads the program into memory and passes the phone number to the program.

If you want the data you type in response to the prompt stored and used as a default value each time you load the program from Laptop Manager, you can use the buffer flag %A in the *Parameter string*. In the sample menu above, type the *Parameter string* as

%S="%A","Enter phone number to call:"

With the buffer string in the *Parameter string*, the phone number you typed is saved in the %A buffer and used as the default value the next time you load the program from Laptop Manager.

You can use up to four optional parameter string buffers (%A, %B, %C, and %D); however, the %D buffer is assigned for use by the Laptop Manager single-character command D (DOS). You can use all four, but the information in the %D buffer will change every time you enter a string for either the application or the D (DOS) command.

Adding Applications to the Menu

Working Directory

A working directory is one that is currently in use. Many application programs require that the program reside in the current directory if it is not in the path. The *Working directory* prompt enables you to change the working directory to meet the program's requirements.

This prompt's primary purpose is for use with application programs that use data files (for example, Lotus 1-2-3, Microsoft Excel, and most word processing programs) so you can name the directory that stores the associated data files. For example, your word processing program might store data files under a directory you call **LETTERS** on the hard disk. Thus your working directory prompt could be

C:\LETTERS

Note: If your application program does not need or use a data-file working directory, leave the *Working directory* prompt absolutely empty; that is, be sure there are no spaces or anything else in the prompt field.

Password Required?

In response to the *Password required?* prompt, select Yes or *No* by pressing the **Y** or **N** keys. If you choose not to use a password and select N, the highlight skips the Password prompt.

Password

If you choose to assign a password, type up to 19 characters for the password you want to use. To protect the secrecy of the password you type, the characters are not displayed; asterisks are displayed. So carefully memorize your password and record it in a secure place.

If you change your mind and decide to delete the password (before exiting the Setup menu), press the **Del** key until all asterisks are erased.

Adding Applications to the Menu

Caution: **Be careful if you decide to use a password. Once you assign a password, you have to use it every time you want to run the application program to which the password is assigned. This caution is particularly pertinent if you assign a password to the *Exit to DOS* function (the *Exit Password* - F10 - key choice on the setup menu). If you forget the password for this function, you cannot get the MS-DOS prompt or the Change Menu screen.**

Case is important in your password; to be accepted, a password must be typed exactly the way you entered it during setup. For example, if your password is all uppercase letters, you must type it that way to gain access to your program.

Use Color Palette?

Note: This prompt is not displayed if the BATTERY.PRO device driver is not installed in the computer.

If you have used the RPAL utility (described in Chapter 4) to create individual color/gray-shades settings for each of your application programs and stored them in data files, select *Y(es)* at the *Use color palette* prompt and press the **Enter** key.

Then, at the *Filename* prompt, type the pathname of the palette data file associated with this application program and press the **Enter** key.

Note: Your TravelMate 2000 UTILS directory has several color palette files configured at the factory as examples for use with individual application programs. These files end with the. PAL extension (for example, the sample palette for Bitfax™ is BITFAXPAL). When you install your programs, examine the UTILS directory for available palette files.

Adding Applications to the Menu

Power Savings Level to Use?

Note: This prompt is not displayed if the BATTERY.PRO device driver is not installed in the computer.

When operating your computer on battery power, some application programs work more efficiently and still conserve battery power at different power saving levels. If your programs are running satisfactorily at their current power savings level, choose the *Current* selection at the *Power savings level* prompt.

If you have determined, after reviewing "Real-Time Power Savings" in Chapter 2 of this manual, that a particular power savings level works best for this application program, press the **Spacebar** to select that level number (1 - 4). Or you can select 0 (zero) to disable the power savings feature.

CPU Speed During Program Execution?

Note: This prompt is not displayed if the BATTERY.PRO device driver is not installed in the computer.

In response to the *CPU speed during program execution?* prompt, select the system speed you want to use during program execution by pressing the **Spacebar** to toggle between *High Low, and Auto*. Select *Low* for optimum battery charge conservation. *Auto* selects high speed if the computer is on ac power or low speed if the computer is on battery power. Your application program may specify a processing speed; check your application program documentation.

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Adding Applications to the Menu

Keep Laptop Manager Resident?

If you want to keep the Laptop Manager program in memory (resident) while your application program is running, type Yin response to the *Keep Laptop Manager resident?* prompt. You may not want to keep Laptop Manager resident when executing large programs; it uses approximately 130 K bytes memory space the application program may need. You may want to choose Y if you are running an application program that does not use the entire memory and if you want to avoid wasting the time needed to reload Laptop Manager from the disk after running your application. Laptop Manager uses only 2.5 K bytes memory if not resident.

Prompt After Program Execution?

In response to the *Prompt after program execution*? prompt, select Y if you want Laptop Manager to display the following prompt when you exit your application program.

Press any key to return to Laptop Manager

If you select N, the Laptop Manager main menu automatically returns with no prompt when you exit your application program.

Exiting the Quick Command
Program Setup Menu

When you complete all. your Quick Command Program Setup menu selections, press the **Esc** key. Laptop Manager prompts you at the bottom of the screen:

Keep changes? [Y]

In response to this prompt, press the **Enter** key, **Esc** key, or **Y** key if you want to keep your changes or additions. Press the **N** key if you want to exit the Quick Commands Program Setup menu without keeping the changes you just made. In either case the Laptop Manager Change Menu returns.

At this point you can either select another Quick Command to program or press the **Esc** key to exit the Change Menu. If you made changes and previously elected to keep the changes, Laptop Manager again prompts you at the bottom of the screen:

Save changes? [Y]

In response to this prompt, press the **Enter** key, **Esc** key, or **Y** key if you want to keep your changes or additions. Press the **N** key if you want to exit the Change Menu without saving the changes you just made. In either case the Laptop Manager main menu returns.

Testing Your Menu

At the Laptop Manager main menu, test your new application program setup by pressing the newly assigned function key. Does it load the application program for you? If you get an error message, press the **F12** key, **F7** key, and newly assigned function key again. Check your entries for correctness. Make sure you specified the correct pathname and working directory and that the color palette file exists.

You can add both information display strings and application programs to the Laptop Manager Applications list in the Laptop Manager main menu.

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Adding Items to the Application Men

The procedure is the same as described previously for the Quick Command Program Setup menu, except you use the **F2, F3, F4, F5,** and **F6** keys to insert, delete, modify, or move an item, respectively. On the Applications fist, you must also designate whether the item is for display only or is to run an application program. Press the **Spacebar** at the *Application Type* prompt on the Application Setup menu to select *Display Only* or *Application*.

In other respects, the Application Setup menu works the same as the Quick Command Setup menu. You can enter up to 42 characters in response to the *Display string* prompt. If you need more space to enter a label or title than is available on one *Display string* prompt line, you can leave the *Application Type* prompt set to *Display only* , enter the line of type you want to have displayed, and move down a line at time, inserting lines by pressing the **F2** key (Insert Application) for each line you want to insert. When finished inserting lines, toggle the *Application Type* prompt to *Application* by pressing the **Spacebar** when you get to the line on which you want to have Laptop Manager run the application program.

Note that when you press the ↓ key when the highlighted item is at the bottom of the Application List, the Change Menu automatically appears for you to create another entry.

You can continue inserting entries-at the beginning, end, or between existing lines-in your Applications List up to a total of 255 lines. After you insert the seventeenth line, succeeding lines will require you to use the **Page Down/Page Up** keys (or the ^ and I keys) to view all lines on your list.

This chapter tells you about

❏ How to operate your computer to get the most out of a battery charge

❏ The BatteryPro program, which controls computer battery power levels for optimum power savings; and the Setpower program that enables you to reset the BatteryPro power levels

❏ The Cache program, a hard disk performance and battery power-saving enhancement program

❏ The Speed program, which lets you change CPU operating speed for optimum performance and battery power savings

Note: If you have not already read the **Read Me First** section at the beginning of this manual, please do so before reading this chapter to gain a better understanding of the entire battery power-saving program.

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Optimizing Battery Operation

Your TravelMate 2000 Computer is furnished with three types of power-saving features to enable you to get the most work on a battery charge. When operating your computer on battery power, the computer does the following.

❑ Lets you manually turn off the computer's display and hard disk drive and induce a low-power Standby mode

❑ Automatically turns off the display and hard disk drive and enters a low-power Standby mode after a specified period of keyboard inactivity

❑ Automatically saves power, in real time, while running your application programs, depending on your program and the power-saving level you select

Automatic Control of the Display and Hard Disk

Your TravelMate 2000 display turns off automatically after a period of no keyboard activity. You can change the factoryset period of 2 minutes at the Set Up menu described in the *TravelMate 2000 Computer User's Manual*. Pressing any key-preferably the **Shift** key-turns on the display again.

The computer's hard disk drive turns off automatically after a period of no hard disk access. You can change the factory default 1 -minute period at the Set Up screen (see your computer User's Manual). Any function requiring hard disk access turns on the hard disk drive again.

Note: When the hard disk drive is off, remember that there will be a slight delay for the disk drive to reach operating speed before it performs your command.

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Optimizing Battery Operation

Even though your application program requires heavy keyboard activity (keeping the display on), you should use the factory-default I -minute Set Up menu *Power Saving, HDD Motor Off* settings. This turns off the hard disk drive when not needed, as is the case, for example, when you type data into a spreadsheet.

However, if you use a mouse with Your TravelMate 2000, you should consider setting the *Display Timeout to Always On* at the Set Up screen to prevent the LCD from going blank because you have no keyboard activity.

Some word processing and file editing programs periodically save your work to a back-up file, causing frequent access to your hard disk. This could use more power than leaving the hard disk always on. With such programs, set the Set Up menu Power Saving category items to higher values.

Real-Time Power Savings

Your computer has a special power-saving feature that can activate in real time while you are running your application program. This feature is implemented by a special device driver called BATTERY.PRO in the CONFIG.SYS file.

BATTERY.PRO provides four levels of power saving and an off state you can select, depending on how your application program operates. You can set the power-saving levels three ways: In the CONFIG.SYS file, by using the Setpower utility described later in this chapter, or by using the Laptop Manager *Change Menu* feature described in Chapter 1.

In the TravelMate 2000 CONFIG.SYS file is a command that loads the BATTERY.PRO device driver when you boot the computer; for example

DEVICE=C:\UTILS\BATTERY.PRO /L4

Optimizing Battery Operation

The L4 parameter at the end of the command sets BatteryPro's active power-saving level to level 4. Other levels are LO (off) through L3. If no L-number appears,

BatteryPro automatically reverts to level 2, the factory default value.

Using BatteryPro's Setpower utility, you can also set the power-savings level at any MS-DOS prompt. For example, at the C: \ > prompt you can type

SETPOWER /Ln

where n is the power-saving level (0 through 4) you want to use. You can also include this command line in any batch file (AUTOEXEC.BAT) file you create to load an application program. Laptop Manager will automatically respond to this command if you configure an application program using LM's *Change Menu* feature.

Note: Setpower and all other BatteryPro utilities furnished with your TravelMate 2000 are loaded on the hard disk at the factory under the UTILS directory with the MS-DOS PATH command already in the AUTOEXEC.BAT file.

Power-Saving Levels

The power-saving levels, 0 through 4, used by the BatteryPro and Setpower programs are defined as follows. The power saving level you should use to optimize battery charge life depends on the operations you are performing and how the application program is written.

For example, Microsoft (R) software typically is written to include significant idle states, resulting in power savings even at level 1. Lotus(R) software yields little power savings at level 1, but performs well at level 2 or 4, reducing power consumed by frequent disk access.

Optimizing Battery Operation

Programs that work well at level 2 sometimes work even better at level 4. For example, Lotus 1-2-3(R), version 3.0, works better because version 3.0 accesses the disk more often than other versions of Lotus.

BatteryPro's power levels generally do not conflict with most available application programs. However, some applications may fail or suffer performance problems. Try your programs at the highest level and evaluate their performance. If undesirable problems occur, simply try the next lower level until performance is satisfactory. (Note that level 0 disables power savings.)

The Lotus PrintGraph utility will print correctly at all levels, but you may ftnd reduced performance at levels 2 through 4 unacceptable. You also may not like serial printer performance at the higher levels.

Level 0

Level 0 (zero) disables the battery power-saving feature. BatteryPro performs no real-time power savings.

Level 1

Level 1 conserves battery power when the processor is idle, for example, when waiting for keyboard activity and device input/output. Level 1 features are also active in levels 2 through 4. For example, Microsoft ExceITM, WordTm, and Windows™ perform well using level 1. Operating system enhancement programs such as DESQview™ also work well at level 1.

Level 1 is the highest level you can use without affecting processor performance using Lotus PrintGraph or serial printer interfaces.

Note: Some application programs such as Lotus 1-2-3 do not use the Standby mode for keyboard and other devices inactivity. You must use a higher level than I to conserve battery power during keyboard activity.

Optimizing Battery Operation

Level 2

The factory default, level 2, induces more idle time between keyboard activations and MS-DOS access. Performance is slightly degraded but should be unnoticeable. This level is the Optimum compromise between Program performance and battery charge life.

Most available application programs work well at level 2, for example, Lotus 1-2-3 and Microsoft Paint Brush™and Works.

Level 3

Level 3 induces less idle time in the keyboard and MS-DOS access areas than level 2 but induces idle time in hard disk and video input/output. This level saves more power overall with application programs that access the hard disk often.

Programs with high disk read/write rates increase battery power consumption. Level 3 "smooths" disk read/write power consumption over longer access periods, thus reducing peak power needs. Using level 3 (and level 4) permits more frequent disk access while using little more power than Standby disk mode.

Note: Generally, use level 3 only if level 4 is not acceptable. Try level 4 first. Levels 3 and 4 function identically, except for the increased power savings of level 4.

Level 4

Combining all techniques used by the lower levels at a slightly higher value, level 4 produces the highest power conservation. This level also affects performance more than the other levels, but you will not notice this with most application programs.

Optimizing Battery Operation

Battery Charge Monitor

The Battery Watch program furnished with your computer, although not a power-saving utility, is designed to monitor the charge level remaining in the computer's battery and to measure the power saved by BatteryPro.

Battery Watch displays the active power conservation level for 3.8 seconds on its Status window. The value can be used to measure the power savings resulting from the four power-savings levels. See Chapter 3 of this manual for details on the Battery Watch utility.

Your TravelMate 2000 has a special power-saving feature you can activate in real time while you are running an application program. This feature is implemented by the special BATTERY.PRO device driver included at the factory in the CONFIG.SYS **file** that resembles:

DEVICE=C:\UTILS\BATTERY.PRO /Ln /Bn

where /Ln is the power-saving level (0-4) described below, and /Bn tells the program how many batteries (1 or 2) you have installed in your computer - the standard internal battery (1) and the optional external battery pack (2).

If the /Ln parameter is omitted from the command line, the power-savings level defaults to level 2. If the /Bn parameter is omitted, the program assumes that only the standard battery is installed.

See "Power-Saving Levels" earlier in this chapter for a discussion of the /Ln parameter. You can change the powersaving level using the Setpower utility or at the Laptop Manager when you install an application program.

Setpower Power Level Control

The Setpower utility enables you to change the BatteryPro utility's power-saving levels. To learn the current level, at the **C:\>** prompt type

SETPOWER IS

and press the **Enter** key. Setpower displays the current setting, 0 through 4.

To change the setting use the command
SETPOWER /Ln /Bn
where Ln is the number (0 through 4) of the new setting (note that 0 turns off the BatteryPro utility), and Bn is the number of batteries- I for the internal battery or 2 if you also have the Add-On Battery Pack option-installed in your computer.

See "Optimizing Battery Operation" earlier in this chapter for more information on power-saving levels and hints for use of the BatteryPro utility.

Note: If the BatteryPro utility is not installed on the hard disk drive (drive C) Setpower displays the following error message:
Invalid Hardware/Software detected

Cache

The Cache utility is software that stores copies of recently used hard disk sectors in RAM or Extended/Expanded memory. In operation, Cache intercepts disk access requests and stores them in system memory (RAM), EMS memory, or extended memory.

Your application program can more quickly access the RAM than it can access the hard disk, thus improving the application's performance. Because it greatly reduces the quantity of disk accesses, Cache also contributes to conserving battery power.

You can specify read or read/write caching. If you select read caching, all write operations are cached immediately. If you select read/write caching, both read and write operations are cached, but write operations are performed only when buffers are full.

If you specify read/write caching, a FLUSH option also is available. The FLUSH option writes all cached data to the hard disk.

Cache Parameters

You can load the Cache command with the following parameters.

CACHE[nnnn] [It] [/RI [/W [/W=nnn] [/B=nn] [/Nd]

where:

nnnn specifies the size of the cache buffer you want to create in K bytes (1024).

t specifies the memory type to use, E for extended memory, V for EMS memory, and S for system memory.

R specifies that the cache supports only read caching; this is the default if an **R** or **W** parameter is not included.

W specifies that the cache supports both read and write caching; see 'Write Caching" later in this section before using this parameter.

W=nnn specifies that the cache support both read and write caching to the maximum of **nnn** number of writes that can be saved and written later; the default is 100. See 'Write Caching" later in this section.

B=nn specifies the number of sectors per logical cache block; **nn** must be 1, 2, 4, 8, or 16 and the default is 2. The block size determines the number of sectors read each time data is saved in the cache. Different values may affect the speed of caching, depending on the data being read.

Nd specifies a physical hard disk which should not be cached. Normally all drives are cached; Nd (where d is the drive letter: A:, B:, etc.) can be specified to inhibit caching specific drives. For example, **/N1** causes the cache to save data from drive 0, but not from drive 1. Note that the cache program saves data on *physical* drives rather than *logical* drives (A, B, C, etc.); a physical drive may be divided into multiple logical drives. Generally, your hard disk is drive 1. See the *MS-DOS 4.01 User's Manual* for more information on physical and logical drives.

Cache Options

In addition to the loading parameters, Cache can execute several other options after Cache is loaded. To use these options, at the MS-DOS **C:\>** prompt type

CACHE [option]

and press the **Enter** key.

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Cache

Cache LIMIT=nn Option

The LIMIT=nn option specifies the size of the transfer limit. If a disk transfer is larger than the transfer limit, the data win not be cached. This prevents large programs from "thrashing," which uses a considerable portion of cache memory. The LIMIT option also reserves the cache for smaller transfers.

The default transfer limit is 24 sectors. If no limit is specified, (for example, CACHE LIMIT), the limit is set to "None" and all disk accesses are cached.

Cache STATUS Option

The STATUS option displays the current status of the Cache program.

Cache ON Option

The ON option turns on the Cache program.

Cache OFF Option

The OFF option turns off the Cache program.

Cache FLUSH Option

The FLUSH option "flushes" (writes to the hard disk) all sectors that have not yet been written to the hard disk. This occurs automatically if you press the **Ctrl-Alt-Del** keys to reboot the computer.

Caution: Do not turn off the computer if write caching is enabled and the cache is not flushed.

Write Caching

If you enable write caching when you load the Cache program, data written to the cache is saved and written when the computer is not accessing the hard disk. This enables an application program to write many times to the same sector before the sector is actually written to the disk. The maximum number of cache blocks that can be saved before they are written is specified by the **/W=nnn** parameter you specify when loading the Cache program. If you do not specify a value, 1 00 writes are allowed.

After your application program completes its read/write operations, the Cache program waits about 2 seconds and then it flushes its write buffers. Cache then writes in background while the application program continues to run. Cache writes approximately 10 blocks per second; therefore, Cache takes about 1 0 seconds to write I 00 default blocks to the hard disk. The larger the number of write blocks you specify to the **/W=nnn** parameter, the more time required to flush the write buffers.

Write Error Handling

If an error occurs while Cache is writing its buffers to the hard disk, Cache sounds a long beep, followed by two short beeps. Cache then is disabled and subsequent read/write operations are not cached. If you hear the beeps or suspect an error, at the MS-DOS **C:\>** prompt type

CACHE STATUS

and press the **Enter** key.

↪

Cache

The status display shows whether an error has occurred and the head, track, and sector where it occurred. Data has been saved in the cache, so you should back up any files you think may have caused the error. After you do the back up, at the MS-DOS **C:\>** prompt type

CACHE FLUSH

and press the **Enter** key.

Cache then attempts to again write the cache buffers. After the flush, you can again enable caching by typing at the MS-DOS **C:\>** prompt

CACHE ON

and pressing the **Enter** key.

Cautions When Using Write Caching

Do **not** use write caching unless you follow the rules outlined below. The rules apply *only to write caching*, not to read-only caching. If **you do not follow these rules, you can lose some or all your hard disk data.**

1   *Do not turn off or reboot your computer until Cache completes writing its buffers to disk.* Cache will intercept the **Ctrl-Alt-Del** key sequence and flush before allowing the computer to reboot, but it is still wise to wait until flushing completes before rebooting.

2.   *Do not use write caching if you use programs that may cause the computer to hang or reboot*. This includes misbehaving resident programs or operating environments. If you are debugging software, do not use write caching.

3   Do not use write caching if your computer is not operating properly or frequent power losses occur.

4 .   Do not use write caching if your hard disk is not operating properly.

The Speed utility enables you to set the current CPU operating speed to low, medium, or high. Your TravelMate 2000 computer can operate at 6 MHz, 7.16 MHz, or 12 MHz. However, because the faster speeds consume more power, you may want to select the low or medium speed to conserve power when you are operating the computer on it internal battery.

Note that you also can change CPU speed at the TravelMate 2000 Set Up screen. See your *TravelMate 2000 Computer User's Manual* for details.

Show Speed Option

The Speed command S(how) option displays the current CPU speed setting if you type at the MS-DOS **C:\>** prompt

SPEED IS

and press the **Enter** key. The program displays

CPU speed is set to [High, Medium, or Low]

Note: The Speed utility requires the BatteryPro device driver. If this device driver has been removed from the CONFIG.SYS file, running the SPEED utility displays the message: *Invalid Hardware/Software Detected.*

Speed

Using Speed Utility

You can set the CPU speed to low, medium, or high using the command

SPEED [/L] [/M] [/H]

where L sets CPU speed to low, M sets speed to medium, and H sets speed to high. The program responds to the L, H, or M option with the display

set CPU Speed vTM2000.*N.NN.N.NN*

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Current CPU speed is set to Low.

Battery Watch

This chapter tells you about

❑   Battery Watch, the program that monitors battery power consumption by your computer

❑   Count Down version of Battery Watch, the program that displays time remaining on your battery charge

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About Battery Watch

The NiCad batteries used in your computer do not fade gradually. They can power the computer for only a few minutes after the **Low Batt** warning first appears. The Battery Watch utility helps by calculating the charge remaining in your battery so you are not caught unprepared by a dying battery-and a dying computer

Battery Watch is a TSR (terminate and stay resident) program, meaning it runs in background all the time, monitoring your computer and keeping track of how much battery life is left. Although using only 16 K bytes of RAM, Battery Watch monitors all aspects of your computer's hardware operation. Battery Watch "knows" which components your computer has and, because it also knows how much power each component consumes, Battery Watch can estimate the current charge in the battery.

Every 3.8 seconds Battery Watch checks to see which of the computer's components (floppy drive, display, etc.) are in operation and then recalculates how long your battery can operate at the current rate of power consumption.

Battery Watch also includes the Smart Tracker feature. Smart Tracker automatically adjusts itself to your computer battery's actual charge capacity over several charge/discharge cycles.

Battery Watch also includes a Count Down version, which displays the remaining hours and minutes of charge in the upper right corner of the computer screen. The Count Down version occupies even less memory than the full version-only 7 K bytes of RAM.

In addition, Battery Watch has a Deep Discharge feature to assist in conditioning the NiCad battery to its maximum charge-retention capacity. (See the *Deep Discharge* section.)

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About Battery Watch

Battery Watch is a popular program developed by Traveling Software, Inc. The Battery Watch program furnished with your TravelMate 2000 is a special version providing several unique features not available with the standard Battery Watch program, including

❑ Integration into the TravelMate 2000 BatteryPro utilities system

❑ Increased capabilities to monitor power consumption along with enhanced accuracy

❑ Knowledge of TravelMate 2000 options with automatic detection of power consumption

❑ *Average* (AVG) or *current* (CUR) power drain calculations to forecast Time to Empty

❑ Automatic calculation of BatteryPro's active power savings shown on a status window that includes current drain, average drain, and BatteryPro savings

Note: The Battery Watch pop-up windows are intended for use only with text application programs and do not display with graphic applications such as Microsoft Windows, Ventura Publisher(R), and the graph display within Lotus 1-2-3. However, Battery Watch is still functioning while these programs are running, so the audible alarm can still sound.

How Battery Watch Works

Battery Watch does *not* measure the charge in your battery! Only a hardware device attached to your battery could

measure the battery charge. Such a measurement wouldn't be very informative, however, because you would still not know how long the charge would last.

When you use your computer for the first time, Battery Watch uses the battery manufacturer's stated capacity for the battery. Every 3.8 seconds Battery Watch recalculates the power consumption in your computer, based on which components are in use *at that particular moment*. Battery Watch uses its built-in figures to estimate how much each active component is draining the battery.

Finally, Battery Watch averages all its recalculations since being loaded in the current session and uses that average to forecast how long the charge in your battery will last consuming power at the same rate. Battery Watch displays this average as "AVG Drain" in the status window. The power consumption at that particular moment is displayed as "CUR Drain".

You should *always* have Battery Watch loaded while your computer is turned on. When Battery Watch is inactive, it cannot record any changes in your battery's charge, and the next time you load the program, it Will "remember" a higher charge level in your battery than actually exists. Periodically you should also completely charge and then discharge your battery so that Battery Watch can learn the actual capacity of the battery.

Calibrating Battery Watch

Your computer is a precision electronic device comprising a large number of components; however, the power consumption of components can vary as much as 10 percent and still be within specification. These variations can affect power consumption calculations. In addition, individual batteries vary in capacity, charge rate and other factors that add to the differences among computers.

Although Battery Watch can determine from the BatteryPro device driver the rated capacity of the battery and anticipated use factors for the components, these values are only approximate. To achieve a more precise estimate of battery life, you must calibrate Battery Watch to your computer.

Installing and Removing Options

Any time you add or remove an option, you should do the following to calibrate Battery Watch.

1.   At the MS-DOS **C:\>** prompt type

        BW UN

        and press the **Enter** key. This command "uninstalls" Battery Watch.

2.   Then type

        BW

        and press the **Enter** key.

Battery Watch can now get the factory defaults for the new options from the BatteryPro device driver. The factory defaults represent the upper power consumption range for each component. As you use your computer, Battery Watch, using its Smart Tracker features, "learns" the actual consumption and adjusts its calculations accordingly.

Calibrating Battery Watch

BatteryPro uses as the initial battery capacity the minimum charge level for a new battery. As you use your computer, the power savings of component variation is added to the battery capacity along with any higher charge level your battery can absorb. Of course, as your battery weakens with age and use, any charge level loss is subtracted from the total capacity.

Calibrating Screen Power Requirements

The TravelMate 2000 has a specially made LCD display with an adjustable backlight feature. Battery Watch cannot measure power consumption variations resulting from different brightness levels: Since lower brightness uses less power, you should set the screen to the lowest brightness that is still readable and comfortable. Once you have found your preferred brightness level, you should not change it. Using the same brightness level increases the accuracy of the Battery Watch forecasts.

At the end of your battery-powered work session, Battery Watch stores the amount of power you used. When the battery discharges and then recharges, Battery Watch stores the amount of power used in the Last Cycle value, which then reflects your brightness level power consumption. By saving the *Last Cycle* to the *Currently Saved Value*, you can teach Battery Watch the power requirements of your screen brightness level.

Calibrating Battery Watch

Battery Watch is already installed on your new TravelMate 2000 Computer at the factory, including the appropriate AUTOEXEC.BAT line to load Battery Watch when you turn on your computer. If you must rebuild the files on your hard disk and manually reinstall Battery Watch, you must:

❑ Copy the Battery Watch program file, BW.COM, to your hard disk

❑ Edit your AUTOEXEC.BAT file to load Battery Watch when you turn the computer on

Copying Battery Watch to Your Computer

The Battery Watch program, BW.COM, is included on the *BatteryPro* & *Productivity Software* floppy furnished with your TravelMate 2000.

If you have the optional Floppy Drive Unit for your TravelMate 2000, insert the *BatteryPro & Productivity Software* floppy into the floppy drive and copy the BW.COM file to your hard disk **(drive** C) using the furnished Laptop File Manager program or the MS-DOS COPY command.

If you do not have the optional Floppy **Drive** Unit, copy the BW.COM **file** from a second computer to your hard disk, using the furnished LapLink file transfer program and cable. See the *LapLink File Transfer and Device Driver User's Manual* furnished with your computer for instructions.

Modifying the AUTOEXEC.BAT File

To work best, Battery Watch should always be **running** in background whenever you use your computer. (If Battery Watch is not available to monitor your operations continuously, it cannot provide reliable information.)

If you do not modify your AUTOEXEC.BAT file for Battery Watch as described in this section, you will have to load the program manually each time you turn on your computer or reboot.

To ensure that Battery Watch is always loaded while you are using your TravelMate 2000 check that your AUTOEXEC.BAT file includes this line:

BW

To modify the AUTOEXEC.BAT file, use your text editor or word processor or the MS-DOS EDLIN command (described in the *MS-DOS User's Manual* furnished with your computer).

Note: If you copied BW.COM to any directory other than the root directory, include the full path of the directory in front of BW. For example, if the BW.COM file is in the UTILS directory, the line to include in your AUTOEXEC.BAT file is C:\UTILS\BW.

Loading Battery Watch

The first time you load Battery Watch, it is important to start with a fully charged battery. Although you can use Battery Watch if you have not fully charged the battery, Battery Watch is more accurate if you start with a fully charged battery.

Once Battery Watch is loaded, you can run other programs and still be able to call up Battery Watch whenever you want even from within those other programs.

You can run Battery Watch in the following ways.

❑   Automatically (from the AUTOEXEC.BAT file)

❑   Manually from MS-DOS

Follow the instructions below to load the full Battery Watch program. To load the smaller Count Down version of Battery Watch, refer to the "Count Down Version" section.

Loading Battery Watch Automatically

If you have modified your AUTOEXEC.BAT file for Battery Watch, you can load the program by turning your computer off and on again or by pressing the **Ctrl-Alt-Del** keys to reboot the computer.

Manually

To load Battery Watch manually, follow these steps.

1 .   Change to the directory in which the BW.COM file resides.

2.   Type

BW

press the **Enter** key.

Loading Battery Watch

The Loading Process

Whether you load Battery Watch automatically or manually, the following message appears as Battery Watch loads.

Press F10 if battery is fully charged,
or any key to resume previously saved battery level.

If the battery has been charging for at least two hours, press the **F10** key before the message disappears and refer to the section, 'Designating Battery Capacity," which follows.

If you do not press the **F10** key or if you press any other key, you see this message, telling you that Battery Watch is

now loaded:

BATTERY WATCH is now resident.
Version 2.00b, Copyright 1988-1990, Traveling Software, Inc.
Press ALT-SHIFT-B to display window.

The last line indicates you can call up the Battery Watch window by pressing the **Alt-Shift-B** keys. The Battery Watch window shows you an estimate of how much time is left in your battery. Refer to *Using the Battery Watch Window.*

Loading Battery Watch

Designating initial Battery capacity

When you press the **F10** key to indicate a full battery, the Full Battery Capacity window appears:

```
======================== FULL BATTERY CAPACITY========
  If you are loading BW for the first time, or have just changed the
     battery, press F.

  If BW was always loaded from last complete charge to empty battery,
     press L.  Otherwise press C.


                 Last Cycle :    0 % of Factory Capacity
        Currently Saved Value :  100 % of Factory Capacity

  C  Currently Saved Value |   L  Last Cycle   |    F Factory Capacity
```

In this window you designate the capacity of your battery. The first time you load Battery Watch select *Factory Capacity* by pressing the F key.

Then in response to this message:

```
=========================FACTORY CAPACITY ========
The Factory Capacity may be used in the future as the Currently Saved
Value.   This will   restore the Currently  Saved Value to is original
value.

DO YOU WISH TO MAKE THE FACTORY CAPACITY THE CURRENTLY SAVED VALUE? N
```

press the **Y** key and then the **Enter** key to make the Factory Capacity the Currently Saved Value. For more information about these values read the next section, "Keeping Battery Watch Up to Date."

When Battery Watch is loaded, the Battery Watch copyright message appears and AUTOEXEC.BAT completes the start-up process.

when you use Battery Watch for the first time, Battery Watch begins with the rated capacity of the battery, the factory capacity. If you want Battery Watch to provide you more accurate information, you must help Battery Watch adjust the factory capacity to the *actual* capacity.

The factory capacity does not yield accurate Battery Watch readings for the following reasons.

❑ Factory capacity is only the *average* capacity of all batteries of the same model, but variances in manufacturing mean that the capacity of *your* battery may be higher or lower than the average.

❑ The power consumption of the components in the computer vary from machine to machine.

❑ Like any batteries, NiCad batteries gradually lose the ability to hold a charge.

❑ Screen brightness levels vary from user to user and possibly from one user's different working environments. Therefore, you must "teach" Battery Watch your average brightness level.

Battery Watch records the actual capacity of your battery as a percentage of factory capacity. It is this percentage that must be updated from time to time to yield the most accurate readings.

The Complete Battery Watch Cycle

You should take the following steps when you start using Battery Watch-and periodically thereafter-to keep it informed about the actual capacity of your battery-and thus keep your battery operating at its peak.

1. Fully charge the battery.

2. Reboot your computer or unload Battery Watch and load it again.

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Keeping Battery Watch Up to Date

3. When prompted to do so, press the F10 key to can up the Full Battery Capacity window.

4. If the previous cycle started with a full charge, ended with a full discharge, and Battery Watch was loaded throughout, press the **L** key for Last Cycle and the **Y** key and then the **Enter** key to confirm. Otherwise, press the **C** key to select Currently Saved Value.

5. With Battery Watch loaded the entire time the computer is on, completely deplete the battery using your computer in your normal way Over one or more sessions,

6. Fully recharge the battery.

7. Repeat steps 2 and 3 to call up the Full Battery Capacity window.

8. Now that Battery Watch has compiled a record of your computer's performance you can use that record for future estimates. In the Full Battery Capacity window, press the **L** key to select Last Cycle. Then in response to this message

press the Y key and press the **Enter** key to confirm.

```
══════════════════════LAST CYCLE ══════════════
The Last Cycle value may be used in the future as the Currently
Saved Value. This will  allow it to be  used in  future runs of
Battery Watch  as  the Full Battery  value.  This value is only
useful if the battery was fully discharged and fully recharged.

DO YOU WISH TO MAKE THE LAST VALUE THE CURRENTLY SAVED VALUE? N
```

Keeping Battery Watch Up to Date]

Incomplete Cycles

The complete Battery Watch cycle is the ideal. It yields the most accurate Battery Watch information and ensures the peak capacity of your battery. You should use only the information gathered during a complete Battery Watch cycle.

Unfortunately, you cannot always perform a complete cycle. You frequently will recharge the battery before it is completely discharged, and you may have to use your computer for a period when Battery Watch is not loaded. The information Battery Watch records in these circumstances is *not* reliable and should not be saved for future use.

If you were unable to complete any part of the complete Battery Watch cycle described previously-by not completely charging or discharging the battery or by operating your computer without loading Battery Watch-select *Currently Saved Value* on the Full Battery Capacity window.

Full Battery Capacity Window

When you press the **F10** key when prompted at startup, the computer displays the Full Battery Capacity window.

```
═════════════════════════ FULL BATTERY CAPACITY═══════════════════════
 If you are loading BW for the first time, or have just changed the
    battery, press F.

 If BW was always loaded from last complete charge to empty battery,
    press L.  Otherwise press C.


              Last Cycle :    0 % of Factory Capacity
     Currently Saved Value :  100 % of Factory Capacity

 C   Currently Saved Value│   L   Last Cycle   │    F Factory Capacity
```

Options

You can press the following keys.:

F   Factory Capacity-use only as a starting point, when you begin using Battery Watch, replace the battery, or notice that the Battery Watch time estimates are losing accuracy.

L   Last Cycle-use only when you have just performed the complete Battery Watch cycle.

C   Currently Saved Value-use whenever you cannot perform the complete Battery Watch cycle.

Capacity Estimates

Two values appear near the bottom of the Full Battery Capacity window. Both values appear as a percentage of Factory Capacity.

❑   Last Cycle-the battery capacity experienced the last time Battery Watch was used

❑   Currently Saved Value-the estimate being used by Battery Watch.

Full Battery Capacity Window

The Currently Saved Value is used until you select either Factory Capacity or Last Cycle. If you select Factory Capacity, the Currently Saved Cycle becomes 100% of Factory Capacity; if you select Last Cycle the value appearing on the screen for Last Cycle is saved and becomes the Currently Saved Cycle, on which future Battery Watch calculations will be based.

Unloading Battery Watch

Although you should usually have Battery Watch loaded while you are operating your computer, you might need to unload it under the following circumstances.

❑　　　　You have switched to battery operation after recharging the battery

❑　　　　You need to use the 18K bytes of RAM occupied by Battery Watch

To unload Battery Watch, follow these steps.

1 .　　　If you have loaded any other programs after you loaded Battery Watch, quit standard applications programs and unload other TSR programs.

2.　　　At the **C:\>** prompt type BW UN

　　　　and press the **Enter** key.

The screen then displays this message:

Battery Watch has been unloaded.

Note: If you type the unload command when Battery Watch is not loaded, the screen displays a Battery Watch not installed message.

Displaying the
Battery Watch Window

When Battery Watch is loaded, you can call up the Battery Watch window by pressing the **Alt-Shift-B** hot key. (If you are in the Laptop Manager Main Menu, you can also call up the Battery Watch window by pressing the F10 key.) You can call up the Battery Watch window from MS-DOS or from within most programs *except* graphics programs, such as Microsoft Windows.

Note: You can designate a different hot key from **Alt-ShiftB** on the Battery Watch Options window, described later in this chapter.

When you call up the Battery Watch window, a window *similar* to the following appears in the center of the screen:

```
╔═══════════TM2000-Battery Watch ══════════╗
║                                          ║
║   Ver n.nn      (C) Traveling Software   ║
║   E|       |        |        |      |F   ║
║   ██████████████████████████████████     ║
║      Estimated Time to Empty   nn:nn     ║
╠════════════════════╦═══════════╦═════════╣
║ Alarm #1=   30 min │  #2=   15 │ #3=   5 ║
╠════════════════════╩═══╦═══════╩═════════╣
║    (C)harger OFF       │  Modem Uninstalled║
╠════════════════════════╩═════════════════╣
║    (D)rain   AVG                          ║
╠═════════════╦═══════════════╦════════════╣
║  F1 Help    │  F3 Utilities │  ESC Exit  ║
╚═════════════╩═══════════════╩════════════╝
```
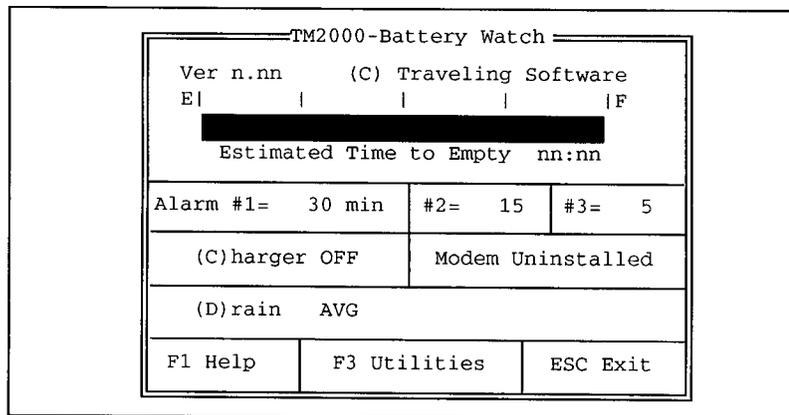
The top two lines show which computer version of Battery Watch you have installed, the version number, and copyright information. The significance of the remaining information on the Battery Watch window is explained on the following pages.

Note: To clear the Battery Watch window from the screen, press the Esc key.

Using the Battery Watch Window

The Battery Watch window gives you the following information about the status of your battery and computer.

Bar Gauge

The horizontal bar gauge is a visual representation of the amount of charge remaining in the battery. If the battery was fully charged when you installed Battery Watch, the gauge shows a full charge. If you activated Battery Watch in your last computer session and have not recharged the battery since, Battery Watch remembers the charge your battery had when the computer was turned off, and the gauge reflects that reading.

Time Estimate

The Estimated Time to Empty is the length of time, in hours and minutes, that the battery should last. The time shown depends upon the drain selected.

❑   If average drain is selected, the time estimate reflects the average rate of consumption. This value is recalculated every 3.8 seconds-based upon the components in use-and then averaged out for the current session since Battery Watch was loaded.

❑   If current drain is selected, the time estimate reflects the current power consumption.

Because the rate of power consumption changes from moment to moment as various computer components become active or idle, the Estimated Time to Empty also changes. For instance, if you are using your Floppy Drive Unit continuously, the Estimated Time to Empty is less than when the computer is turned on and idle.

Using the Battery Watch Window

Alarm Settings

Battery Watch has three alarms to alert you that the battery is running low. When the Estimated Time to Empty reaches the time in one of these alarms, Battery Watch sounds a warning to alert you that the battery is about to fail.

You set the alarms on the Battery Watch Options window. The current settings for the alarms are shown on the Battery Watch window. Refer to the section, 'Setting Battery Watch Options," for instructions on changing the alarms.

Charger Status

The Battery Watch window displays the current assumption about whether you are charging the battery. When it is loaded, Battery Watch detects whether you are charging the battery. If you change the charger status by plugging or unplugging the computer, you need to change the charger status.

To change the charger status, press the **C** key while on the Battery Watch window. This toggles the charger status from *OFF* to *ON* or from *ON* to *OFF*.

Modem Status

The Battery Watch window displays the current status of the internal modem.

❏   If your computer does not have an internal modem, the status is *UNINSTALLED.*

❏   If your computer has an internal modem, the status is either *ON* or *OFF*.

Note: For Battery Watch to detect the correct status of the internal modem, the optional serial port on the Hardware Installation screen must be set to disabled. This procedure is described in the User's Manual for your computer.

Using the Battery Watch Window

Drain Status

The Battery Watch window shows the current assumption Battery Watch is using to estimate time remaining.

❑   If the status is *AVG*, Battery Watch is using the average power consumption since the beginning of the current Battery Watch session.

❑   If the status is *CUR*, Battery Watch is using the current power consumption.

To change the drain status, press the **D** key to toggle from *AVG* to *CUR* and from *CUR* to *AVG*.

Getting Help

The Help window provides some information about the Battery Watch window. You can get to the Help window by pressing the **F1** key. You can return to the Battery Watch window by pressing the **Esc** key.

Getting to the Utilities Window

The Utilities window gives you access to several Battery Watch functions described in the next section. You can get to the Utilities window by pressing the **F3** key. You can return from the Utilities window to the Battery Watch window by pressing the **Esc** key.

Leaving the Battery Watch Window

You can leave the Battery Watch window by pressing the **Esc** key. When you leave the Battery Watch window, the computer returns to where it was when you pressed **Alt-Shift-B** to enter the window.

Using Battery Watch Utilities

Pressing the **F3** key at the Battery Watch window causes the Utilities window to appear in the middle of your screen:

```
┌──────────────────────TM2000-Battery Watch ════════════════════┐
├────────────────────┬─────────────┬────────────────┬───────────┤
│ F4 Deep Discharge  │ F5 Status   │ F6 Battery Set │ ESC Exit  │
└────────────────────┴─────────────┴────────────────┴───────────┘
```
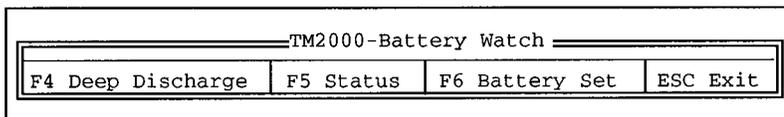
Deep Discharge

As explained previously, there are two good reasons for completely discharging your battery:

❑   NiCad batteries left idle for long periods of time may require reconditioning to recover their full capacity.

❑   By occasionally charging, discharging, and recharging your battery completely, you give Battery Watch an accurate reading of your battery's current capacity.

The Deep Discharge feature available in the Utilities window reduces the time necessary to discharge the battery. Deep Discharge takes control of the computer until the battery is discharged (you won't be able to use the computer in the meantime).

Before using Deep Discharge, you can do the following to reduce the time it takes to discharge.

❑   Run the TravelMate 2000 Set Up program and disable the Power Saver option by setting the time out option to *ALWAYS ON*.

❑   Put a floppy into the optional Floppy Drive Unit (if you have this option).

❑   Run the SETPOWER /LO utility to turn off active power savings

❑   Set the screen brightness control at the brightest possible level.

Using Battery Watch Utilities

If YOU want to deep discharge the battery, follow these steps.

1.   Disconnect the battery charger from the computer.

2.   Turn off your computer's low-battery alarm. Refer to the User's manual for
              your computer for instructions. You do not need to turn off the Battery Watch
              alarms. These alarms do not function during deep discharge.

3.   Press the **F4** key at the Utilities window to display the Deep Discharge window
              on your screen:

```
========================DEEP DISCHARGE ========================
WARNING:   In order to condition or recondition a NiCad battery, the battery
must be discharged as far as possible before recharging.  In order to assist
in this process, Battery Watch will take control of the computer for the
remainder of the battery's charge, turning components on and off in order to
discharge the battery as deeply as possible. Once activated, pressing ESC
will reboot your computer.  See your Battery Watch manual for more details.

            DO YOU WISH TO DEEP DISCHARGE THE BATTERY? (Y/N) N
==============================[ ESC to Exit ] ==============================
```

4.   Press the **Y** key and then the **Enter** key. The *ESC to Exit* line changes to:

              Press ESC to reboot

The time required for Deep Discharge depends on your battery's capacity, its charge, and
your computer's components. A deep discharge can last as long as four hours, although
most take less time. The most convenient time to use Deep Discharge is usually
overnight.

You can halt the Deep Discharge process any time by pressing the **Esc** key to activate a
system reboot.

Note: After completely discharging your battery, you may see an *Invalid
Configuration Information message the next time you turn on the computer. If this
happens, you need to reset the configuration on the Hardware Installation screen. Refer
to Chapter 4 in the User's Manual for instructions.

Using Battery Watch Utilities

Status

Pressing the **F5** key at the Utilities window causes the Status window to appear on your screen:

```
==============================DEEP DISCHARGE ==============================
This window shows the current values used in the Battery Watch calculations.
You may change these values by using the Options screen.  ( Type 'BW OP' at
DOS prompt. ) See your Battery Watch manual for further details.

Capacity  1200 mAH   Charger     0 %    24 mA   HD Motor      100 %     90 mA
Avg Drain  690 mA    Lo System   1 %   270 mA   HD Active       0 %    360 mA
BatteryPro   0 mA    Md System   0 %   340 mA   FD Active       0 %    300 mA
Cur Drain  766 mA    Hi System  98 %   340 mA   Backlight     100 %    350 mA
                     Modem       1 %    10 mA   Miscellaneous:          0 mA
============================[ ESC to Exit ] ============================
```

Press the **Esc** Key to exit the Status window.

Abbreviations Used in the Status Window

mA   milliAmps-a measure of electrical current

mAH   milliAmp Hours-a measure of the energy a battery contains; for example, at 1200 mAH, a battery can provide 1200 mA for one hour or 600 mA for two hours, etc.)

HD   Hard disk drive

FD   Floppy disk drive.

The middle and right columns of data lists various components with the average percentages of time they are on and the current required while they are on. For example,

HD Motor   100%   90 mA

means the hard disk drive motor has been on I 00% of the time, requiring 90 mA while on.

Using Battery Watch Utilities

The left column on the Status window provides the following information.

Capacity	The assumed or measured battery capacity in maH; the factory capacity is 1200 maH
Avg Drain	The average current required to power the computer during the current session; recalculated and redisplayed every 3.8 seconds
BatteryPro	The amount of power being saved by the BatteryPro device driver; helpful when determining the power savings level to use with an application; refer to Chapter 2 for details
Cur Drain	The power being used by the computer at the last Battery Watch check; recalculated and redisplayed every 3.8 seconds

Note: The displayed figure for BatteryPro savings is valid only until the next Battery Watch check 3.8 seconds after displaying the Status window. After that, the value goes to 0. To see the BatteryPro value again, press the **Esc** key three times to terminate the Battery Watch window. After waiting at least five seconds, return to the Status window by pressing the **Alt-Shift-B** keys, then the **F3** key, and then the **F5** key.

The Battery Set Window

Pressing the **F6** key at the Utilities window causes the Battery Set window to appear at the bottom of the Battery Watch window.

```
============================BATTERY SET ============================
                   Adjust to Estimated Battery Level
-----------------------------------------------------------------------
    <- Decrease          |      ESC Exit       |        Increase ->
```
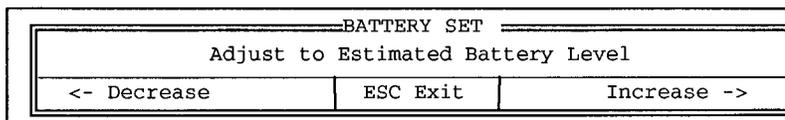
With the Battery Set feature, you can override the current battery level Battery Watch is using. You need to do this if you know that your battery has more or less charge than shown by Battery Watch. For example, if you run your computer for a while without loading Battery Watch, your battery has a smaller charge than shown by Battery Watch.

❑   Pressing the <- key while the Battery Set window is displayed shortens the bar gauge in the Battery Watch window. The *Estimated Time to Empty* is correspondingly reduced as the bar gauge contracts.

❑   Pressing the -> key lengthens the bar gauge and increases the *Estimated Time to Empty*.

❑   Pressing the **Esc** key exits the Battery Set window.

Any adjustment you make is only a rough estimate and so time estimates Battery Watch can provide are rougher than usual.

Note: If you used Battery Watch in your last computer session, Battery Watch remembers how much of a charge your battery had when the computer was turned off uses that charge to begin its calculations for the current session. In this case, you do *not* need to use the Battery Set window to adjust the charge level.

Battery Watch Options

Your version of Battery Watch was designed specifically for the factory-standard components of your TravelMate 2000 Computer, so you should have little need to modify Battery Watch. Those components and their preset Battery Watch values are displayed in Battery Watch's Status window.

You might want to customize Battery Watch under the following circumstances.

❑ You want to change the hot key or alarm settings

❑ You add non-factory-standard components (such as an enhanced battery) to your computer

❑ Your battery's charge is expiring significantly before or after the time estimated by Battery Watch. *Aged batteries* are especially prone to early expiration-a condition that a full discharge cannot significantly correct.

❑ You need to adjust the battery capacity to comprehend the external add-on battery pack.

To display the Battery Watch Options window, whether or not you have already loaded Battery Watch, at the **C:\>** prompt type

BW OP

and press the **Enter** key.

You now see a window similar to this:

```
=====================BATTERY WATCH OPTIONS =========
 The items below are the default settings used in the Battery Watch
 calculations.  They may be changed by moving the bar cursor to the
 appropriate item and entering the new value. Typing the letter 'F'
 in any location will invoke the factory default setting.  Typing
 'C' in any location will invoke the currently saved value.

 Battery capacity      1200 maH       Modem installed      Y
 Low speed system       270 mA        Modem active        10  mA
 Med speed system       290 mA        Modem base          44  mA
 Hi  speed system       340 mA        Alarm #1            30  min
 System sleep mode      200 mA        Alarm #2            15  min
 Floppy disk            300 mA        Alarm #3             5  min
 Hard disk active       360 mA        Charge rate         24  mA
 Hard disk motor         90 mA        Modem inst. drain    2  mA
 HD timeout             127 min       Hot key  ALT-SHIFT-B
 Backlight              350 mA
 BL timeout               0 min
=====================[ ESC to Exit or F10 to Save ] =====
```

Making Changes on the Option Window

To change the values on the option window, follow these steps.

1   Press the I or ^ keys to move the bar cursor to the field you want to change.

2.   Type in the new value, or press one of the following keys.

❑   Press the **F** key to change to the factory default for the field.

❑   Press the **C** key to change to the currently stored value for the field.

Battery Watch Options

3. After you have been through all the fields, Battery Watch asks whether you want to save the new settings.

- ❑ Pressing the **Y** key saves the settings.

- ❑ Pressing the **N** key returns the cursor to the first field.

You can press the **F10** key at any time to save the new settings. You can also press the **Esc** key to leave the Options window without saving changes.

Note: If Battery Watch is *not* active when you leave the Options window, this message appears above the MS-DOS prompt:

To install Battery Watch, type 'BW' - or 'BW CD' f or the Count Down version.

Changing Capacity/Usage Fields

Before changing the values in the battery capacity field or one of the current requirements fields, you should determine the value to enter using the documentation that accompanied the component. If you have any questions about these values, check with your computer dealer or the manufacturer of the component.

Caution: Battery Watch uses refined algorithms, and the item values it uses are precise under normal circumstances. Make changes to the factory values judiciously and only on an informed basis. Guessing about values leads to inaccurate and undependable calculations.

Changing the Hot Key

The Hot Key is your means of calling up the Battery Watch window. The default hot key is **Alt-Shift-B,** but you can set it to another key. When changing the hot key, keep the following in mind.

❑ Most hot keys have two parts: the **Ctrl, Shift,** and **Alt** keys (or a combination thereof) plus a letter, number, or function key.

❑ Do not set the hot key to a single or shifted alphanumeric key; the possibility of conflict with other needed keys is too great.

❑ You can use a function key without the **CtrI, Shift,** or **Alt** keys, but you should ensure it is not already used in any of the applications programs you have on your computer.

To change the hot key, move the cursor to the hot-key field and press and hold the **Ctrl, Shift,** and/or **Alt** keys and then press the alphanumeric or function key.

Changing the Alarms

The Options window also includes three alarm settings. These alarms warn you when your battery is near depletion. You can set these alarms to ring as many minutes in advance of estimated battery failure as you want. You can turn off an alarm by setting its value to 0.

For example, if you set Alarm # 1 to 30 minutes, Alarm #2 to 15 minutes, and Alarm #3 to 5 minutes, then, when Battery Watch estimates only 30 minutes worth of charge remains in your battery, the computer sounds a three-tone alarm and displays a window similar to the Battery Watch window, but with the heading changed to Battery Watch Alarm. The three-tone alarm and Battery Watch Alarm display is repeated at 15 and 5 minutes prior to estimated battery depletion.

Note: Because Battery Watch's algorithms cannot guarantee complete accuracy, you might want to add a "cushion" of 5-1 0 minutes to your alarm settings just to ensure that your battery is not depleted without sufficient warning.

Using Battery Watch
With an Add-On Battery

When you have an Add-On Battery Pack attached to the computer, you must adjust Battery Watch to allow for the additional battery capacity. To change the battery capacity Battery Watch uses, follow these steps.

1 . At the **C:\>** prompt type BW OP

and press the **Enter** key.

2. When the Options window is displayed, enter **3400** for the value of the Battery Capacity field.

3. Press the **F10** key to save the change.

Now when you press the **Alt-Shift-B** keys to display the Battery Watch window, the *Estimated Time to Empty* should be approximately five hours.

Note: If you remove the Add- On Battery Pack, you need to change the Battery Capacity field back to **1200**.

Count Down Version of Battery Watch

Battery Watch also comes in a *Count Down* version, which takes up only 7 K bytes in RAM, instead of the 16 K bytes required by the 'full" version of Battery Watch. The Count Down version is handy if you use other TSR programs and have little memory available. It also gives you a constantly available reminder of the status of your battery.

The Count Down version consists only of a digital clock display in the upper right corner of your screen showing the hours and minutes of battery life remaining. The Count Down version has no alarms.

Note: The Count Down version does not display the clock when you are running a graphics program such as Microsoft Windows

To load the Count Down version of Battery Watch, at the **C:\>** prompt, type

BW CD

and press the **Enter** key.

The Count Down Version of Battery Watch loads in the same way as the full version.

Note: If the full version of Battery Watch is loaded, you must first unload if before loading the Count Down version.

If you want to use the Count Down version of Battery Watch on a regular basis, you might want to edit your AUTOEXEC.BAT file to change the line that loads Battery Watch (BW) to BW CD. With this change, the AUTOEXEC.BAT file loads the Count Down version, not the full version.

4

Display Utilities

This chapter tells you about

❑ The PAL and PALSET programs which are designed for gray shade and color control

❑ The RPAL utility which enables you to make real-time changes to gray shades on your built-in LCD screen or color combinations on a color monitor connected to your computer

❑ The Shadow utility which controls cursor blinking rate

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Contents

Cursor and Typematic Control

The Cursor utility gives you control over of the size, blink rate, and visibility of the cursor on your LCD display. This utility also enables you to control the typematic character repeat rate and character repeat delay times.

Note: Many application programs take control of the cursor and typematic features and provide their own cursor setup procedures. See your application program documentation.

Adjust the cursor and typematic characteristics as follows.

1 .   Type

CURSOR

at the **C:\>** prompt and press the **Enter** key. The Cursor utility displays the following menu and then returns to the MS-DOS prompt:

```
usage:   cursor [/rx /dx /bx /sx]

           /rx char repeat rate, x is:
                   v - 30 cps
                   f- 20 cps
                   n - 10 cps (def)
                   s - 5 cps
                   c - 2 cps
           /dx char repeat delay, x is:
                   1 - 1 second
                   2·- .75s
                   3 - .5s (def)
                   4 - .25s
           /bx  cursor blink rate, x is:
                   s - slow
                   f - fast
           /sx  cursor size, x is:
                   f - full cursor
                   h - half
                   u - underline (def)
```

Cursor and Typematic Control

2. To change the cursor type

CURSOR /XY

where X is the one-letter code for the cursor characteristic you want to change (r, *d, b,* or s), and Y is the one-letter code for the cursor action you want.

For example, the code to change cursor size is S, and the code for a full-size cursor is F. Therefore, to change the cursor to full-size, you would type

CURSOR /SF

and press the **Enter** key.

Note that you can include any one or all four parameters on the same line, for example

CURSOR /RV /D2 /BS /SU

Note: Be sure you include the / (slash) character before each two-letters between codes are optional.

Character Repeat Rate

The character repeat rate, set using the rx code, enables you to adjust the number of characters per second (cps) the keyboard generates when you hold down an alphanumeric key. You can set the rate from 2 cps to 30 cps as shown on the Cursor command listing. The default repeat rate is 10 cps.

Character Repeat Delay

The character repeat delay, set using the dx code, lets you adjust the time you must hold down a key before the typematic feature starts. You can set the delay from 0.25 to I second as shown on the CURSOR command listing. The default delay value is 0.5 second.

Cursor and Typematic Control

Cursor Blink Rate

The cursor blink rate, set using the bx code, enables you to set the speed at which the cursor blinks. You can choose either a slow or fast blink rate as shown on the Cursor command listing. The fast blink rate is the default value.

Cursor Size

The cursor size adjustment, set using the sx code, lets you set the cursor size to a half, full, or underline cursor. The underline is the default size.

Adding Cursor to Your AUTOEXEC.BAT File

You can include the Cursor setting in your AUTOEXEC.BAT file so that the cursor and character repeat characteristics you want are active when you turn on the computer. For example, to set the character repeat rate to 20 cps, the delay to I second, and the cursor to full size at a fast blink rate when you start the computer, add the following line to your AUTOEXEC.BAT file:

CURSOR /RF/Dl/BF/SF

Note: Some application programs may require additional cursor enhancements for improved viewing. The Shadow utility, described later in this chapter, can be useful.

PALSET and PAL Utilities

The TravelMate 2000 LCD screen displays up to 16 colors as shades of gray. You can change the shade of gray selected to represent each of the 16 colors to maximize contrast between adjacent gray scale shades when running programs that use particular color combinations. A given mapping of gray scales to colors is called a *palette*.

The TravelMate 2000 comes with a default palette (PO) which is suitable for most applications, two alternative fixed palettes (P2 for text display and P3 for graphics), and two user-definable palettes (P4 and P5).

In addition, auto palette PI automatically sets the foreground and background shades for text mode displays to give the best contrast. The P2 palette uses gray scales which uniquely match the colors used in a program displaying in text mode, while PI uses a smaller number of gray scales to ensure that the displayed text is always readable on a background of any color combination.

The PALSET utility furnished with the BatteryPro package enables you to modify the two user palettes, P4 and P5. However, in 4-color and 2-color graphics modes, the palette is predefined and cannot be modified.

Note: Some application programs, including the LapLink program furnished with the BatteryPro package, take control of the display and provide their own color setup proce-

PALSET Utility

The PALSET utility enables you to modify the two user palettes, P4 and P5. To run the PALSET utility, type PALSET at the MS-DOS **C:\>** prompt, and press the **Enter** key.

PALSET and PAL Utilities

The Palette Utility menu displays user palette I at the top and user palette 2 at the bottom of the screen. For each palette, the top band (COLOR) represents the colors/shades available, and the lower band (PALETTE) represents the shades that each of the top colors will be displayed as, aligned vertically under the corresponding color/shade. The colors/shades are numbered 0 through F as follows:

0	Black	8	Dark Grey
1	Blue	9	Light Blue
2	Green	A	Light Green
3	Cyan	B	Light Cyan
4	Red	C	Light Red
5	Magenta	D	Light Magenta
6	Brown	E	Yellow
7	White	F	Intensified White

The right side of the menu lists the keys used in making palette settings.

F1   changes the current palette settings to the default palette (PO).

F2   changes the current palette settings to fixed palette 1 (P2 - text).

F3   changes the current palette settings to fixed palette 2 (P3 - graphics).

F5   changes the current palette settings to reversed.

↑   selects user palette I

↓   selects user palette 2.

↪

PALSET and PAL Utilities

The setting method is the same for both user palettes.

1. Use the <-- and --> keys to position the pointer on the color band you want to set.

2. Press the **Space Bar** or the + (plus) key to increase the lower color number in steps until you reach the shade you want, or press the - (hyphen) key to decrease the color number.

PAL Utility

The PAL utility defines the current palette. The power-on default is PO. You can use the PAL utility to do one of the following

❑ Change to a predefined palette

❑ Change specific colors/shades

Changing to a Predefined Palette

To change to one of the system palettes or a user palette defined by the PALSET or RPAL utility, at the MS-DOS **C:\>** prompt, type

PAL Pn

and press the **Enter** key.

In this form of the command, n has the following meaning.

    0 - Default palette
    1 - Auto palette (text)
    2 - Fixed palette I (text)
    3 - Fixed palette 2 (graphics)
    4 - User palette 1
    5 - User palette 2

Note: Palettes P0-P3 are system palettes that cannot be changed. Palettes P4 and P5 are user palettes defined with either the PALSET or RPAL utilities.

Changing Specific Shades

To change only a few specific shades, at the MS-DOS **C:\>** prompt type

PAL *Cm:n [, Cm:n]*

and press the **Enter** key.

In this form of the command, m is the color number (0-F) and n is the gray scale shade number (0-F). Refer to the PALSET Utility for the meaning of the color numbers. If n is smaller than m, the shade will be lighter. If n is larger than m, the shade will be darker.

Note: Palettes created or modified with the PAL command are not saved.

Other Ways to Select a Predefined Palette

After defining a palette with the PALSET or RPAL utility, you have two additional ways to select the palette.

❑ From the keyboard

❑ In the AUTOEXEC.BAT file

Changing the Palette From the Keyboard

To change the current palette, hold down the **Fn** key and press **Set Up.** Each time you press **Fn-Set** Up, the computer changes to a different palette (F0-F5). Stop pressing **Fn-Set Up** when the palette you prefer is displayed.

Defining the Palette in the AUTOEXEC.BAT file

If you want the computer to load a particular palette at start up, include the PAL command in your AUTOEXEC.BAT file. For example, to start up with user palette I loaded, include the command PAL P4 in the AUTOEXEC.BAT file.

RPAL Utility

With the RPAL utility, you can make real-time gray shade changes to the LCD or color changes to an attached color monitor. RPAL displays a small gray shades/color palette over part of your current screen when you press a hot key (the **Alt** key plus an alphabet key) you can assign.

Note: The RPAL pop-up menu is intended for use only with text application programs and has no effect with graphic applications such as Microsoft Windows, Ventura Publisher(R), and the graph display within Lotus 1-2-3.

You can create custom palettes for each of your application programs and store the specific settings in a data file. If you assign the custom palette file to the application using the Laptop Manager Setup Menu, the computer loads the custom palette when you select the application.

By adding RPAL to your AUTOEXEC.BAT file, you can also define the current palette when you turn on your computer.

Note: Some application programs provide their own color setup procedures. Some application programs also take control of the keyboard and do not recognize the RPAL hot key.

RPAL will not display the palette when you run graphics application programs. However, you can adjust your colors/ gray shades at an MS-DOS prompt before you load your graphics application program.

RPAL Utility

To see your options when installing the RPAL utility, at the MS-DOS **C:\>** prompt type

RPAL /?

and press the **Enter** key.

RPAL displays the following menu and then returns to the
MS-DOS prompt.

Resident Palette vTM2000.n.nn.n.nn
(C)   1990 Texas Instruments Incorporated
Usage: RPAL [**/U** /I /Ddatafile /Kc /luserlfile /2user2file]
        [ ] - denotes optional parameters
        Parameters:
        /U   attempt to uninstall RPAL
        /I   install RPAL as a TSR
        /Ddatafile   use palette setting in datafile
        /KC   use char key with the ALT key as hot key, where char is a
                        letter between A and z
        /luser1file   set user palette 1 to setting in userlfile
        /2user2file   set user palette 2 to setting in user2file

RPAL Switches

/I Switch - Installing RPAL as TSR Program
You can install RPAL as a terminate-and-stay-resident (TSR) program. As a TSR
program, RPAL is accessible from MS-DOS and most application programs by pressing
a hot key (defined by the /Kc switch). To install RPAL as a TSR program, at the **C:\>**
prompt type

RPAL / I

and press the **Enter** key. In the absence of a /Kc switch, the computer uses **Alt-P** as the
hot key.

RPAL Utility

/U Switch - Removing RPAL From RAM

If RPAL is installed as a TSR program and you want to remove RPAL from RAM, at the **C:\>** prompt type

RPAL /U

and press the **Enter** key. RPAL is then deleted from RAM but not from the hard disk, you can reinstall RPAL at any time at the MS-DOS prompt.

/Ddatafile **Switch - Loading an RPAL Data File**
To load an RPAL data file, at the **C:\>** prompt type

RPAL /Ddatafile

and press the **Enter** key. In this command, is the full path and filename of the RPAL data file *datafile*. Refer to the "Saving an RPAL Data File" later in this section for a description of how to save an RPAL file.

For example, if you stored your custom color data file (named COLORDAT) in the utilities directory (UTILS) your command could resemble the following:

RPAL /D\UT1LS\C0L0R.DAT

/Kc Switch - Defining a Hot Key

If you make RPAL a TSR file without defining a hot key, **Alt-P** functions as the hot key. To define another alpha key (A-Z) as the hot key, at the **C:\>** prompt type

RPAL /Kc

and press the **Enter** key. In this command, c is the alpha character whose key you want to be the hot key.

/1 and /2 Switches - Defining User Palettes

To establish an RPAL data file as one of the two user palettes, at the **C:\>** prompt type either

RPAL */1user1file*

or

RPAL */2user2file*

and press the **Enter** key. In these commands, *user1file* and *user2file* are the full paths and filenames of the RPAL data file you want to be user palette I (p4) or user palette 2 (p5). You can then access these palettes from the keyboard by pressing the **Fn-Set Up** keys.

Refer to the "Saving an RPAL Data File" later in this section for a description of how to save an RPAL file.

Using RPAL

To use RPAL at any MS-DOS prompt or during most application programs, press the **Alt-P** keys (or **Alt** plus other key you assigned during installation); RPAL displays the following menu on the left side of your screen.

```
       Set Palette v3.0

  0   Black               00
  1   Blue                04
  2   Green               07
  3   Cyan                08
  4   Red                 0A
  5   Magenta             0C
  6   Brown               0D
  7   White               0F
  8   Gray                0A
  9   LtBlue              04
  A   LtGreen             07
  B   LtCyan              0A
  C   LtRed               0A
  D   LtMagen             0C
```

RPAL Utility

The following keys function in this menu.

↑↓	selects the color to adjust
← →	selects the color hue or gray shade
Ctrl ←	moves the menu to the left or right
Ctrl →	so you can view the entire screen
R	resets all color hue or gray shades to their factory default values
S	saves the current palette to an RPAL data file (see the following section)
L	load an RPAL data file
1	save the current palette as user palette I (p4), which is accessible by pressing the **Fn-Set Up** keys
2	save the current palette as user palette 2 (p5), which is accessible by pressing the **Fn-Set Up** keys
H	displays help information
Esc	exits the menu and saves any changes

RPAL changes gray shades/colors in real time, so you can see the changes to your application program display as you make them.

Saving an RPAL Data File

To save an RPAL data file, follow these steps.

1. Press the **S** key from the RPAL Set Up Menu. RPAL displays the following prompt.

```
File:
```

2. Type the full path and filename of the RPAL data file (using standard MS-DOS path and filename rules). RPAL limits your *pathname/filename* to 38 characters.

3. Press the **Enter** key to save the **file.** Press the **Esc** key to leave without saving the file.

◁◉ **Note:** You can save an unlimited number of palettes by assigning them unique filenarnes.

Adding RPAL to Your AUTOEXEC.BAT File

By including an RPAL command in your AUTOEXEC.BAT **file,** you can install RPAL each time you turn on the computer. Add the following line to your AUTOEXEC.BAT file:

RPAL /I */Ddatafile /Kc*

where the option *datafile* is the pathname of your custom RPAL data file (if you do not want the factory default palette), and the c is the alphabet character (A through Z) you want to use with the **Alt** key as the hot key combination (if you do not want the default **Alt-P** key combination).

◁◉ **Note:** Your TravelMate 2000 UTILS directory has several sample color palette files configured at the factory for use with individual application programs. These files end with the PAL extension (for example, the sample palette for Bitfax™is BITFAX.PAL). When you install your programs, examine the UTILS directory for available palette files and try them.

Shadow Utility

The Shadow Program is a terminate-and-stay-resident (TSR) utility that enhances your choice of cursor characteristics. The Shadow cursor feature works with most text application programs.

Note: The Shadow utility is intended for use only with text application programs and has no effect with graphic applications such as Microsoft Windows, Ventura Publisher, and the graph display within Lotus 1-2-3.

Using the Shadow Utility
To use the Shadow utility, follow these steps.

1. At the MS-DOS **C:\>** prompt type

SHADOW /?

and press the **Enter** key. The Shadow utility displays the following menu and then returns to the MS-DOS prompt:

Usage: Shadow [/u /ox /bx

   /u   uninstall the shadow cursor

   /ox   turn shadow cursor on or off, x is:
          n - turn on (def)
          f - turn oft

   /bx   cursor blink rate, x is:
          s - slow
          n - normal
          f - fast
          b - no blink, solid (def)

2. To change the shadow cursor characteristics type

SHADOW */XY*

For example, the code to change shadow cursor blink rate is B (or b), and the code for fast blink rate is F (or f). Therefore, to change the cursor blink rate to fast, you would type

SHADOW /BF

and press the **Enter** key. Use the one- or two-letter code for shadow cursor characteristics listed on the Shadow command listing-The default settings are identified by (def) on the listing,

Note: Be sure you include the / (slash) character before the two-letter code. Spaces between codes are optional.

Adding Shadow to Your AUTOEXEC.BAT File

By including a Shadow command in your AUTOEXEC.BAT file, you can define the Shadow cursor characteristics each time you turn on the computer.

For example, to turn on the Shadow cursor at a fast blink rate when you start the computer, add the following line to **your AUTOEXEC.BAT file:**

SHADOW /BF

This chapter tells you about

❑　　　Using the Laptop File Manager (LFM) program to view your files and directories

❑　　　How to use LFM commands to simplify directory and file copying, deletion, printing, renaming, and other common file management functions

Contents

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Contents

Getting Started With LFM

The Laptop File Manager (LFM) utility furnished with your TravelMate 2000 Computer provides the following functions to help you manipulate files and directories stored on your computer's hard disk-and many functions will operate on two or more files, called *multiple file operations*.

❑　Assign or change file attributes to one or multiple files

❑　Copy one or multiple files or directories to other directories or to floppies using the optional Floppy Drive Unit

❑　Delete one or multiple directories and files from hard disk or floppies using the optional Floppy Drive Unit

❑　Edit files after you install your own word processing or file editing program

❑　Find files using MS-DOS patterns

❑　Send one or multiple files to a printer or other device connected to your computer

❑　Rename one or multiple files and directories

❑　Show files for viewing

❑　Change file's date and time

❑　Display hard disk and floppy statistics such as disk capacity and disk space in use

❑　Execute application programs at the press of a key

❑　Create files and directories

❑　Sort the directory/Me listing by name, extension, date, or size

❑　Execute MS-DOS commands or shells

Getting Started with LFM

Note: Do not confuse Laptop *File* Manager (LFM) described in this chapter with the Laptop Manager (LM) utility also furnished on your computer and described in Chapter 1 of this manual.

Loading LFM

The LFM program is installed on your computer's hard disk drive at the factory. The Laptop Manager utility is configured at the factory so you can load LFM from the Laptop Manager main menu by pressing the F1 key. See Chapter I for details about Laptop Manager.

You also can load Laptop File Manager at the MS-DOS **C:\>** prompt by typing

LFM

and pressing the **Enter** key. Either way, LFM displays a listing of the files and directories in the cur-rent directory similar to the following figure. From this listing you can select other drives and directories to view and manipulate.

```
Laptop File Manager vn.nn                          Day Mon 00  12:00 pm

C:\
 Filename Ext     Bytes    Attr    Last Update      ┤ Commands ├
  DOS            <DIR>    ....  00/00/90 00:59:59   A - Attr     P - Print
  UTILS          <DIR>    ....  00/00/90 00:00:59   C - Copy     Q - Quit
  AUTOEXEC BAK     183    A...  00/00/90 00:00:59   D - Delete   R - Rename
  CONFIG   BAK      75    A...  00/00/90 00:00:59   E - Edit     S - Show
  AUTOEXEC BAT     184    A...  00/00/90 00:00:59   X - Excl     T - Tag
  LAPLINK  CFG      55    A...  00/00/90 00:00:59   F - Find    ESC- Up
  COMMAND  COM   25308    A...  00/00/90 00:00:59   I - Incl     U - Update
  MSETUP   EXE  143680    A...  00/00/90 00:00:59
  CONFIG   SYS      79    A...  00/00/90 00:00:59
  MSDOS    SYS   30128    ARSH  00/00/90 00:00:59


 F1=Help F2=CDir F3=ReRd F4=STAT F5=Split F6=Creat F7=Sort F8=DOS F9=Go F10=Setup
```

Using the Main Menu

Use the following keys and commands to move the highlight around the LFM main menu to help you work with your directories and files.

LFM Menu Function Keys

Key	Function
F1	show Help screen
↑	move highlight up listing
↓	move highlight down listing
End	highlight last listing entry
Home	highlight first listing entry
PgDn	show next page of listing or Help screen if more than 1 page
PgUp	show previous page of listing or Help screen
S, Enter	if directory name highlighted, shows selected subdirectory; if filename highlighted, show contents of file
T	tag/untag highlighted directory/file for multiple command action
Esc	if at subdirectory, returns to higher directory; if at root directory, no action; if command active, cancel command
Q	exit LFM or current screen of split screen after "Are you sure?" prompt: * press Y to exit LFM or one screen of split screen * press N or Enter to cancel exit command

↪

Function Key Command

The function keys (Fl, **F2,** etc.) listed along the bottom of the LFM main menu provide the following functions.

F1 Help Key

Pressing the **F1** key at the LFM main menu-and at many other LFM submenus-displays a Help screen with condensed user instructions. Some Help screens have more than one page; look in the upper right corner of the Help screen for the number of pages available. Press the **PgUp/PgDn** keys to move among the pages.

F2 CDir (Change Directory) Key

The change-directory function enables you to view other directories on the cur-rent drive and directories on optional drives connected to your computer. Press the **F2** key at the main menu and LFM prompts you at the bottom of the screen:
Path:

to which you can type the pathname of the directory or drive you want LFM to display. If you want to change directories, type

C: \DIRNAME

and press the **Enter** key. LFM then displays the subdirectory and filenames of the directory named DIRNAME.

If you want to change drives, type the drive letter followed by a colon (for example, A:). You also can name a subdirectory on the new drive to display; for example

A:\EDITOR

and press the **Enter** key. LFM displays the EDITOR directory and its files.

Function Key Commands

F3 ReRd (Reread) Key

Pressing the **F3** key causes LFM to reread the listing. This function is useful if you are examining several floppies on the optional Floppy Drive Unit. Rather than having to use the **F2** (Change Directory) key and typing the pathnarne, simply press the **F3** key each time you insert a new floppy into the Floppy Drive Unit. You can also "untag" all files you may have previously tagged by pressing the **F3** key.

F4 STAT or CMDS Key

The **F4** key is a toggle that causes LFM to display in the upper right quadrant of the main menu either the current drive statistics or the list of available commands you can use at the main menu. If the statistics are displayed, the F4 prompt on the main menu reads "F4=CMDS." Conversely, if the commands list is displayed, the F4 prompt reads "F4=STAT."

The statistics display displays the following information.

❑　　　The current drive letter and volume name (if any)

❑　　　The number of bytes available on the drive or floppy

❑　　　Bytes used and available for use (free) on the drive or floppy

❑　　　The number of files on the current directory and their size in bytes; note that subdirectories are listed as files with no size

Note:　Subdirectories are included as 0 length files.

❑　　　Number of included (tagged) files, if any, and their size in bytes

The commands display reminds you which key to press to activate a file management command. The commands are detailed later in this chapter.

Function Key Commands

F5 Split (Split Screen) Key

The split screen function enables you to view two directory listings on the same screen. At the LFM main menu press prompt displays at the **F5** key and the "Path: bottom of the screen.

Type the pathname of the second directory you want to view and press the **Enter** key. The directory can be on the same drive or a different drive. You can use all function key and single-letter commands on directories and files in either listing.

While in split-screen mode, press the **F5** key to switch the highlight between the upper and lower directory listing.

Using Split Screen to Copy Files

You can simplify use of the Copy command using the split screen mode. For example, you can first select (highlight) the destination directory to which you want to copy the file on one screen and then the source file/directory on the other screen. LFM then displays the destination directory name in the "Path: [... I" prompt, saving you the time and effort to type the destination directory name. And the split screen quickly displays the results of the copy process.

Exiting Split Screen

Press the **Q** key to exit the highlighted window; LFM prompts you at the bottom of the screen

Are you sure? [N   ]

Press the **Y** key to exit the split screen and return to one screen. Press the **Enter** key or the **N** key if you do not want to abandon the split screen mode.

F6 Creat (Create) Key

Pressing the **F6** key enables you to create a new directory or filename. Press the **F6** key and at the bottom of the screen, LFM prompts

[F]ile or [D]irectory:

Press the **F** key if you want to create a new file or the **D** key if you want to create a new directory. LFM then prompts you

Path: [   ]

Type the filename or directory name and path using standard MS-DOS Me and directory naming conventions (see the *MS-DOS User's Manual* furnished with your computer) and press the **Enter** key.

Example: If you want to create a new text file called MYFILE under the existing NEWDIR directory on floppy drive A, you would type

A:\NEWDIR\MYFILE.TXT

and press the **Enter** key.

Example: If you want to create a new subdirectory called JULY under the existing MEMOS directory on the root directory of hard drive C, you would type

C:\MEMOS\JULY

and press the **Enter** key.

Note: If you do not type a drive letter and/or directory name, LFM stores the new file/directory under the displayed or highlighted directory.

Note that you cannot create a new directory and a new file with one command. You must first create the new directory before assigning new or existing files to it.

Function Key Commands

F7 Sort Key

Pressing the **F7** Sort key enables you to sort your listed files in an order determined by several file attributes. Press the **F7** key and LFM displays at the bottom of the screen

Sort file list: [N]ame, [E]xtension, [D]ate,/time, [S]ize:

Press the keyboard key corresponding to the boxed character in the prompt to begin the sort function. LFM then sorts and displays the files in the current directory listing (and all other directories LFM displays) as follows.

Name

Press the **N** key and LFM sorts all files in alphabetic order (A to Z). If any filenames begin with nonalphabetic characters, they are displayed before the alphabetic names.

Extension

Press the **E** key and LFM sorts all files by filename extension in alphabetic order. Filenames with no extension are listed first.

Date/time

Press the **D** key and LFM sorts all files by most recent time and date first.

Size

Press the **S** key and LFM sorts all files by number of bytes used, the largest first.

F8 DOS (Disk Operating System) Key

Press the **F8** key at the LFM main menu and LFM prompts at the bottom of the screen

Execute a DOS (S)hell or (C)ommand:

Function Key Commands

❑   If you want to execute an MS-DOS shell, press the **S** key. LFM then displays a copyright message and the MS-DOS **C:\>** prompt where you can type your shell pathname and press the **Enter** key to execute.

❑   If you want to execute an MS-DOS command, press the **C** key and LFM prompts at the bottom of the screen

DOS Command: [   ]

where you can type any MS-DOS command (except shell) and press the **Enter** key to execute.

F9 Go Key

Pressing the **F9** key at the LFM main menu loads and executes the highlighted filename if the file is an executable program.

For example, if you want to execute the MS-DOS EDLIN line editor utility on a particular file, move the highlight to the EDLIN.COM line under the DOS directory listing and press the **F9** key. LFM prompts you at the bottom of the screen

Press ESC to cancel, any other key to execute:

Press any key-except the **Esc** key-and, depending on how you have set up your LFM "Execute Commands Setup" menu under the **F10** Setup menu, LFM may prompt you

Parameters: [   ]

At this prompt you can type the pathname of the file you want to edit and press the **Enter** key (or, if you are executing another type of file that requires no parameters, press the **Enter** key to start execution). In the example, the EDLIN screen would appear.

↪

Function Key Commands

When you exit the executable program, LFM reloads and displays its main menu.

See the Help screens at the F 10 "LFM Setup Commands" menu and at the "Execute Commands Setup" menu for more information on configuring the F9 Go function.

F10 Setup Key

Pressing the **F10** key at the LFM main menu causes LFM to display the following setup menu at which you can configure LFM operating features.

```
─┤ LFM Setup Commands ├─────────────

      P - Pathnames / Options
      C - LFM Colors
      E - Execute Commands

```

At this menu you can

❑   Press the **P** key to get the Pathname/Options Setup menu described below.

❑   Press the **C** key to get the LFM menu Screen Color Setup menu.

❑   Press the **E** key to get the LFM Execute Commands Setup menu described in this section.

❑   Press the **F1** key to get a Help screen describing the setup functions.

Character Key Commands

The upper right quadrant of the LFM main menu lists the commands you can use to manipulate the directories and files displayed on the main menu. If the Commands box is not displayed, press the **F4** key and LFM replaces the drive statistics display with the Commands box.

To execute a command press the ↑ and ↓ keys to highlight the directory/filename to which you want to apply the command and then press the first letter of the command name listed in the box (except the **Esc** key) to start the command.

Note: Many of the character key commands are capable of operating on multiple files and directories. See "Multiple File Operations" at the end of this chapter for information.

Attr (Attribute) Command

To set or change file attributes, highlight the filename on the LFM listing and press the **A** key at the LFM main menu. LFM places an "A" to the left of the highlighted file and prompts you at   the bottom of the screen

Attributes: [Y]es,   [N]o,   [I]gnore: [I] arch
[I] rdonly   [I] sys   [I] hide

Press the -> and <- keys to move the cursor to the attribute you want to change. Then press the **Y** key to set the attribute for the highlighted file, or press the **N** key to delete a previously set attribute, or press the **I** key to leave the attribute unchanged.

When you have changed the attributes), press the **Enter** key to complete the process. LFM then changes the "Attr" (Attribute) column of the highlighted file to reflect your selections.

↪

Character Key Commands

arch (Archive)

Setting a file's Archive attribute affects how MS-DOS and some application programs create a back-up file when you make changes to the file.

rdonly (Read Only)

Setting a file or directory to Read-Only protects the file from any changes or editing. The file cannot be written to or deleted from the storage device (hard disk, floppy, etc.).

sys (System)

The System attribute should be used for system files required to star-t and run your computer. Usually only a user familiar with programming should modify this attribute. System files are hidden in MS-DOS directory (DIR command) listings, but LFM *does* display system (.SYS) files.

hide (Hide File)

The Hide attribute "hides" the file from the MS-DOS DIR, TYPE, and PRINT commands; the file cannot be displayed, read, or printed. However, LFM *does* display, show, and print "hidden" files.

Copy Command

The Copy command enables you to copy the file you have highlighted, tagged files (see "Multiple File Operations" later in this chapter), or an entire directory to another directory or to another drive if your computer has the optional Floppy Drive Unit.

To copy a file/directory, highlight the file/directory you want to copy and press the **C** key. LFM prompts you at the bottom of the screen

Path: [C:\   ]

Type the pathname where you want the directory/file copied and press the **Enter** key.

If you do not type a new drive letter and/or directory name, LFM copies the file/directory to the current drive or directory.

If you do not type a new filename, LFM assumes you want to use the existing filename. You also can copy a file/directory to another name you type at the *Path*: prompt.

You also can create a new directory while copying. At the Path: prompt type the new directory name as part of the pathname and press the **Enter** key. LFM prompts you at the bottom of the screen

Directory doesn't exist, CREATE? [Y]

Press the **Y** key if you want LFM to create the new directory.

If you attempt to copy a file using the same filename under a different directory, LFM prompts you

copy file : [R]eplace, [A]ppend, [S]kip

Press the **R** key to the prompt and LFM deletes the existing file and replaces it with the highlighted file.

Press the **A** key to the prompt and LFM appends (adds) the highlighted file to the end of the existing file. Use this option if you want to combine multiple files into one file.

Press the **S** key to the prompt and LFM aborts the Copy operation and does nothing.

Delete Command

The Delete command permits you to delete the file you have highlighted, tagged files (see "Multiple File Operations" later in this chapter), or an entire directory and all files stored in the directory.

↪

Character Key Commands..

To delete a file, highlight the file you want to delete and press the **D** key. LFM prompts you at the bottom of the screen

Are you sure? [N I

If you are certain you want to delete the file, press the **Y** key. LFM deletes the file and removes the filename from the listing. If you change your mind, press the **N** key or the **Enter** key and LFM aborts the Delete operation.

To delete an entire directory of files, highlight the directory name you want to delete and press the **D** key. LFM prompts you at the bottom of the screen

Delete Directory and ALL Subfiles: [N]

If you are certain you want to delete the directory and all its files, press the **Y** key. LFM displays a second prompt to make sure you want to delete a directory

Are you sure? [N I

If you still are certain you want to delete the directory, press the **Y** key. LFM deletes the directory and its files and removes the directory name from the listing. If you change your mind, press the **N** key or the **Enter** key and LFM aborts the Delete operation and does nothing.

Edit Command

The Edit command loads the highlighted file and the word processing or editing program whose pathname you entered using the F 10 Setup function key described previously. You must have installed your word processor or editor on the hard disk drive (drive C)

LFM does not provide a word processing program; however, the EDLIN line editor program is available under the MSDOS directory on the hard disk. See the *MS-DOS User's Manual* furnished with your computer for information on loading and using EDLIN.

Excl (Exclude) Command

The Exclude command works in conjunction with the Include command described later in this chapter. Both commands are used for multiple file operations where you want to simultaneously execute one command (such as Copy or Delete) to a number of files in one operation. The Exclude command permits you to selectively exclude filenames from a number of files you tagged using the Include or Tag commands, both described later in this chapter.

If you have not tagged any files using the Tag or the Include commands, Exclude takes no action. If you have tagged files-indicated by the >> symbol appearing in the left margin by the filename-you can Exclude them from the listing by pressing the **X** key at the main menu. LFM then prompts you at the bottom of the screen

Exclude: [A]ttribute, [E]arlier Date, [L]ater
Date, [S]elect all, [I]gnore:

Note: This prompt permits you to exclude certain files from a list of tagged files according to the parameters in the above prompt.

If you want to exclude (untag) *all* included names, press the **Enter** key or the **S** key.

Attribute

To exclude (untag) all files with certain attributes, press the **A** key at the Exclude prompt and LFM prompts you at the bottom of the screen

Attributes: [Y]es, [N]o, [I]gnore: [1] arch
[I] rdonly   [I] sys   [I] hide

Character Key Commands

This prompt enables you to exclude all files with the same attributes. For example, if you want to exclude all read-only files in a directory, you would move the cursor to the *[I] rdonly* option and press the **Y** key to select read-only files and then press the **Enter** key twice. If you want to exclude all archived files, you would type **Y** with the cursor in the *arch* box. You can also select any combination of attributes.

Earlier Date

This prompt enables you to exclude all files dated earlier than the date and/or time you select. Press the **E** key at the *Exclude* prompt and LFM prompts you

File Date: [12/21/90] Time: [12:34:56]

At this prompt (the cur-rent file/directory date and time is first displayed) type the date or time which represents the *latest* date/time you want; LFM then excludes all files dated earlier than that date. Then press the **Enter** key and LFM prompts

File pattern:

At the *File pattern* prompt type the *.* wildcard characters if you want to exclude files only by date, or type filename extensions (for example, TXT) or filename fragments-plus wildcards to further delimit the Exclude function. See "Find Command" described previously and your *MS-DOS User's Manual* for discussions of wildcard use.

Later Date

Pressing the **L** key at the *Exclude* prompt displays the same *File Date* prompt as the "Earlier Date" prompt described above, and works exactly the same except LFM excludes all files *after* the date you specify.

Character Key Commands

Select All

Press the **S** key (or the **Enter** key) at the *Exclude* prompt to exclude (and untag) all files in the directory. This option is particularly useful if you first select all files and then use the Exclude command to deselect certain files from the included list.

Ignore

Press the **I** key at the *Exclude* prompt if you do not want to use any of its options to select files. LFM then prompts you

File pattern: [*.*   ]

at which you can type file patterns to use to exclude files. For example, you can use the filename pattern *.TXT to exclude all files with that extension in the tagged listing. See "Earlier Date," the "Find Command" described previously and your *MS-DOS User's Manual* for discussions of file patterns and wildcard characters.

Find Command

The Find command helps you find files, according to filename/extension pattern, on the current (displayed) directory. Press the **F** key at the main menu and LFM prompts you at the bottom of the screen

Find file: find the [F]irst or [N]ext:

If you select the *[F]irst* option by pressing the F key, LFM looks for the first occurrence of the filename pattern in the listing, no matter where the main menu highlight is located.

If you select the *[N]ext* option by pressing the **N** key, LFM looks for the first occurrence of the filename pattern below the main menu highlight.

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Character Key Commands

After you press the F or **N** key, LFM prompts you at the bottom of the screen

File pattern: [*.*   ]

At this prompt enter the filename pattern for which you are searching. For example, to find the first or next file with a .TXT extension, you would type

*.TXT

and press the **Enter** key. LFM then would search for the first or next filename with the TXT extension. If you wanted to find the first or next filename beginning with the characters MI, you would type MI*.* and LFM would look for the first or next filename beginning with those two characters.

The * character (and the ?) are called *wildcard* characters. You can use these two characters to create the pattern for LFM to conduct the search. If you are unfamiliar with wildcard characters, see the *MS-DOS User's Manual* furnished with your computer.

Incl (Include) Command

The Include command enables you to tag (select) a number of files from the current (displayed) directory listing for later multiple execution of commands such as Delete and Copy. You can tag all files in a directory or certain files according to date, file attribute, or **file** pattern. You can use the Exclude command in con unction with the Include command for even greater selectivity (see the "Exclude Command" earlier in this chapter).

Press the I key at the main menu and LFM prompts you at the bottom of the screen

Include: [A]ttribute, [E]arlier Date, [L]ater
date, [S]elect all, [I]gnore:

Attribute

To include (tag) all files with certain attributes, press the **A** key at the Include prompt and LFM prompts you at the bottom of the screen

Attributes: [Y]es, [N]o, [T]gnore: [I] arch
[I] rdonly   [I] Sys   [I] hide

This prompt enables you to include all files with the same attributes. For example, if you want to include all read-only files in a directory, you would move the cursor to the *[I] rdonly* option and press the **Y** key to select read-only files and then press the **Enter** key twice. If you want to include all archived files, you would type **Y** with the cursor in the *arch* box. You can also select any combination of attributes.

Earlier Date

This prompt enables you to include all files dated earlier than the date and/or time you select. Press the **E** key at the include prompt and LFM prompts you

File Date: [12/21/90] Time: [12:34:56]

To this prompt (the current file/directory date and time is first displayed) type the date or time which represents the *latest* date/ time you want: LFM then includes all files dated *earlier* than that date. Then press the **Enter** key and LFM prompts

File pattern: [*.*   ]

At the *File pattern* prompt type the *.* wildcard characters if you want to include files only by date, or type filename extensions (for example, TXT) or filename fragments-plus wildcards to further delimit the Include function. See "Find Command" described previously and your *MS-DOS User's Manual* for discussions of wildcard use.

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Character Key Commands

Later Date
pressing the **L** key at the *Include* prompt displays the same *File Date* prompt as the "Earlier Date" prompt described above, and works exactly the same except LFM includes all files *after* the date you specify.

Select All
Press the **S** key (or the **Enter** key) at the *Include* prompt to include (and tag) all files in the directory. This option is particularly useful if you first select all files and then use the Exclude command described previously to deselect certain files from the included list.

Ignore
Press the **I** key at the *Include* prompt if you do not want to use any of its options to select files. LFM then prompts you

File pattern: [*.*   ]

at which you can type file patterns to use to include files. For example, you can use the filename pattern *.TXT to include all files with that extension in the tagged listing. See "Earlier Date," the "Find Command" described previously and your *MS-DOS User's Manual* for discussions of file patterns and wildcard characters.

Print Command

The Print command enables you to send the highlighted file to your system printer or other device connected to your computer via the LPT or COM ports. Using the **F10** key, LFM Setup Commands, "Pathnames/Options Setup" screen described previously, you can select the printer output port (LPT parallel or COM serial) and whether to use the MS-DOS PRINT command.

The LFM Print command prints your file as recorded, with no pagination or perforation-skip capabilities. You must embed the appropriate printer control characters and escape sequences in your file to control your printer (see your printer's user manual). Since most application programs provide their own printing facility, you may find their print functions more convenient to use.

Quit Command

The Quit command at the main menu deletes LFM from RAM and returns control to MS-DOS or Laptop Manager, depending on how you loaded LFM. If LFM is in split-screen mode, LFM quits the current screen of the two screens.

To quit LFM or one of the split screens, press the **Q** key at the main menu. LFM prompts you at the bottom of the screen

Are you sure?   [N   ]

Press the **Y** key if you want to quit LFM. Press the **Enter** key or the **N** key if you want LFM to remain on screen.

Character Key Commands

Rename Command

The Rename command enables you to rename the highlighted file or directory using standard MS-DOS naming rules. (See the *MS-DOS User's Manual* furnished with your computer for the rules.) You also can use the Rename command to move the highlighted file to another directory or drive under the same or a new filename. Use the Rename command instead of the Copy command when you want to delete the files from their present area while copying the files to another area.

To rename or move the highlighted file/directory, at the main menu press the **R** key and LFM prompts you at the bottom of the screen

Path: [FILENAME.EXT   ]

If you only want to change the name of the file/directory and not move it, type the new name, using MS-DOS file naming conventions, and press the **Enter** key.

If you want to move the file and/or change the name, type the entire pathnarne where you want the Me moved, including the new or existing filename, and press the **Enter** key. For example, if you want to move MYFILE.TXT to the MEMOS directory on drive A and change the name, you would type:

A:\MEM0S\FILE1.TXT

LFM would delete MYFILE.TXT from the current directory and save it to the FILE1.TXT file under the MEMOS directory on drive A. You also can move files to other directories or subdirectories on the same drive.

Show Command

The Show command has two purposes: To display the highlighted file for you to view and to show a subdirectory listing.

Character Key Commands

To view a file, move the highlight to the desired filename and press the **S** key. You cannot edit or modify the file using the Show command (unless you specified a word processor or editor program for the Show command). You can use the **PgUp** and **PgDn** keys to page through the file, the ↑ and ↓ keys to scroll up/down one line at a time, and the <-- and ---> keys to scroll left and right four lines at a time. Press the **Home** and **End** keys to display the beginning and end of the file, respectively. Press the **Esc** key to return to the LFM main menu.

To view a subdirectory move the highlight to the directory name and press the **S** key. LFM displays the selected directory listing. To return to the next higher directory level, press the **Esc** key (if the root directory is currently displayed, LFM takes no action).

Tag Command

The Tag command enables you to tag (include) directories/files one at a time for later multiple file operations. To tag a directory/file move the highlight to the desired name and press the **T** key. LFM displays in the left margin

opposite the name the >> symbol to denote the directory/file is tagged and moves the highlight down one name.

If you want to "untag" (exclude) a name, move the highlight

to the name and again press the **T** key. LFM removes the)) tag symbol. If you want to untag all tags, use the Exclude command.

Up (ESC Key) Command

The Up command displays the parent directory of the currently displayed directory. Press the **Esc** key at any listing and LFM displays the next higher directory (if the root directory is currently displayed, LFM takes no action).

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Character Key Commands

Update Command

The Update command permits you to change the *Last Up*date date and time listing for individual files or multiple tagged files. At the main menu press the **U** key and LFM prompts you at the bottom of the screen

File Date: [01/01/90]   Time: [00:00:59]

Type the new date and/or time you want and press the **Enter** key. LFM changes the date on the *Last Update* column listing to your new date.

Multiple File Operations

You can perform the same character key command on two or more directories/files simply by using the Tag, Include, and/or Exclude command to choose the names and then activate the command. The following commands operate on more than one file:

❑   Attribute command

❑   Copy command-be careful with your pathname; do not supply a filename when copying multiple files; make use of MS-DOS wildcard characters ***** and **?** (see your *MS-DOS User's Manual*)

❑   Delete command-be extremely cautious using the Delete command with multiple files; examine the tagged names carefully before answering the final "Are you sure?" prompt

❑   Print command-places selected files in print queue in order displayed at main menu from top to bottom

❑   Update command

❑   Rename command-you can use the Rename command to move more than one selected file to another directory or drive**:** in the pathname, type only a drive and/or directory name, and use MS-DOS wildcard characters ***** and **?**

Refer to the individual descriptions of these commands earlier in this chapter and, where the directions refer to one file, imply that the directions affect all tagged files/ directories.

Multiple File Operations

Tagging Files for Multifile Operation

To select files for multifile commands, you can use the Tag command to individually tag each file in the main menu listing or the Include and Exclude commands to select a large number of related names or extensions. You also can Include All files and then selectively exclude (untag) files by pressing the T(ag) key.

Refer to the individual descriptions of these commands earlier in this chapter for more details.

Split Screen

You can simplify use of the Copy command using LFM's split screen mode (press **F5** to enter split screen mode). For example, using a split screen you can view and tag the source files/directories on one screen and the destination files/directories on the other screen. See "Copy Command" earlier in this chapter for details.

Copying Multiple Files

When you tag multiple files for copying, LFM assumes you want to use the existing filenames under the new destination directory (or drive). Thus you *do not* have to type the MS-DOS wildcard characters in the pathname.

Insta11ing LFM

If the Laptop File Manager program has for some reason been deleted from your TravelMate 2000 hard disk, you can install the LFM files from the 3.5-inch *BatteryPro & Productivity Software* floppy furnished with your computer.

Use the LapLink utility program on your hard disk or on the same floppy (plus the furnished cable) to install the program from a desktop computer.

Or if you have the optional Floppy Drive Unit for your TravelMate 2000, insert the *BatteryPro* floppy into the Floppy Drive and at the **A:\>** prompt type

INSTALL

and press the **Enter** key. Then respond to the prompts to install the appropriate software for your computer and its options.

After installing the software, you should be able to load LFM from the hard disk, or you can configure Laptop Manager to load LFM from the Laptop Manager main menu as described earlier in this chapter.

Other Utilities

This chapter tells you about

❑ The Dates utility, which tells you your computer's firmware version and power savings levels

❑ The SETCMOS utility, which restores your Set Up and Hardware Installation data in case of a power loss

Contents

Dates Utility

The Dates Utility displays information similar to the following figure when you type at the MS-DOS **C:\>** prompt

DATES

and press the **Enter** key. Dates displays the following information screen.

DATES vTM2000.n.nn.n.nn
copyright (c) 1990 Texas Instruments Incorporated

System information:
          Processor: 80286
          Model ID: Notebook

system Bios information:
          Link date: NN/NN/90
      Checksum: 8ca500
          Version: TRAVELMATE 2000

VGA BIOS Information:
            Name: Chips 455 VGA BIOS
          Version: 902

BatteryPro Information:
            BATTERY.PRO   version: N.NN
      Current Power Level: 2
    Maximum Power Level: 4

In addition to listing the version numbers for internal firmware, the Dates utility is useful for determining the currently selected power savings level.

Note: The Dates utility requires the BATTERY.PRO device driver. If this device driver has been removed from your CONFIG.SYS file, running the Dates utility displays the message: *Invalid Hardware/Software Detected*.

SETCMOS Utility

The SETCMOS utility enables you to save and restore, if necessary, the computer configuration data stored by the Set Up and Hardware Installation screens. The computer stores the configuration data in CMOS RAM, which is powered by the computer's internal battery. If the computer battery totally discharges or the battery is removed or disconnected from the computer for any reason, the CMOS RAM loses power and can lose your configuration data.

If the CMOS RAM *does* lose your configuration data, the computer will display an invalid-configuration message the next time you cold start the computer by turning on the power switch (but not if you warm start by pressing the **Ctrl-Alt-Del** keys). When the message displays, you can use the SETCMOS utility to restore either the factory default configuration settings or your own settings you have previously saved under your own filename.

Note: The factory default file, FACTORY.CMS, sets *Internal Memory Size* to 1 MB and *Optional Serial Port to Disable*. If you have optional RAM installed or an optional Internal Modem installed, you must change the Hardware Installation screen to reflect the option(s). Then use the SETCMOS /S command to permanently save your new configuration.

SETCMOS Utility

SETCMOS Command

To view the SETCMOS utility command and options, at the MS-DOS **C:\>** prompt type

SETCMOS /?

and press the **Enter** key.

The utility displays the following screen and returns to the MS-DOS prompt.

Usage: setcmos   [[/r] file /s file /n /v /h /?]

/r file	Restore from file
/s file	Save to file
/n	No reboot on restore
/v	Display version
/h or /?	This help message

Saves/restores CMOS RAM to/from a file.

Note: The /R switch is the default switch for the SETCMOS command.

Restoring Factory Default CMOS Data

To restore the factory default CMOS configuration data file, at the MS-DOS **C:\>** prompt type

SETCMOS /R C:\UTILS\FACTORY.CMS

and press the **Enter** key.

The factory default configuration values are restored in the CMOS RAM and the computer reboots itself. The factory default file (FACTORY.CMS) is stored on the hard disk under the UTILS directory and on the *Battery Pro & Productivity Software* floppy furnished with your computer.

SETCMOS Utility

Saving Your CMOS Data

Once you have used the TravelMate 2000 Hardware Installation and Set Up screens to configure your new computer for your operating environment and options, you should save the data stored in the CMOS RAM to your own custom file in case of future battery discharge or removal. To save the current CMOS RAM data, at the MS-DOS **C:\>** prompt type

SETCMOS IS MYFILE.CMS

and press the **Enter** key.

You can type any filename you want instead of the MYFILE.CMS shown in the example. If you ever need to restore the computer to *your* configuration settings, type your filename to the SETCMOS /R command described previously.

Adding SETCMOS to Your AUTOEXEC File

When your system configuration is established, you can add the SETCMOS /R /N command to your AUTOEXEC.BAT file for additional convenience. However, you must take special care when you subsequently make any change to the Set Up or Hardware Installation screens: The SETCMOS command in your AUTOEXEC.BAT file overrides any changes you made the next time you boot your computer.

To avoid this problem, you **must** complete the following procedure before you make any changes to the settings in the computer's Set Up and Hardware Installation screens.

1 .   Use your word processor or the furnished EDLIN utility to delete the SETCMOS command from your AUTOEXEC.BAT file (if it is indeed there). You can delete the command by deleting the SETCMOS line in the AUTOEXEC.BAT file or by typing REM at the beginning of the SETCMOS line.

2.   Make your configuration changes on the Set Up and/or Hardware Installation screens.

SETCMOS Utility

3. Reboot your computer by pressing the **Ctrl-Alt-Del** keys or turning the power switch off for several seconds, and then on again.

4. At the MS-DOS **C:\>** prompt, type

SETCMOS IS C:\UTILS\MYFILE.CMS

and press the **Enter** key to create a new CMOS RAM data file. (You can use any MS-DOS filename.)

5. Add the SETCMOS command to your AUTOEXEC.BAT file using the file you created in step 4. For example, to your AUTOEXEC.BAT file, add the line

SETCMOS/R /N C:\UTILS\MYFILE.CMS

or other filename you created in step 4.

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