Safety Disk™

Personal Computer
System Backup & Recovery

User's Manual

Version 3.00 8/30/95

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Introduction

Congratulations on your purchase of Safety Disk, Personal Computer System Backup and Recovery. Safety Disk is a software solution to problems PC users encounter in losing either CMOS memory or DOS boot information on their computers. It is a package that provides an intelligent method of backing up, testing, and restoring your vital system information so that the system can boot itself after system information has been corrupted or lost. This is the first product that offers a combination of all of these features.

Most PCs on the market are 80286, 80386, or 80486 based computers. All these computers have an on-board CMOS RAM chip (Motorola 146818 or equivalent) that stores setup information such as disk drive types, video controller, memory settings and more. On some machines, it may even contain information about video BIOS, clock speed, keyboard, etc. All these machines rely on a battery pack of some sort to keep this information when the machine is powered off. When these batteries die, there is no warning, and all CMOS information is lost. Safety Disk saves this information and allows even the most naive user to restore the CMOS.

Another problem found in PCs is that when loading a new package or experimenting with DOS, users can delete the vital files needed to boot up the machine. Safety Disk creates a copy of all the necessary files to get a machine up and running, even when it has lost vital files. With Safety Disk's automatic restoration option, you can restore any or all of the boot files back to their original states.

A new culprit is the computer virus. Some viruses can delete or corrupt vital information in your system boot files or even erase the Boot Sector or Partition Table information of your hard disk, rendering your hard disk and all of your data completely useless. Safety Disk automatically detects when any system files have been corrupted by a virus and informs you of the problem. Safety Disk also keeps a backup copy of the Boot Sector and can automatically restore it without losing any valuable data on the disk drive.

An additional feature of Safety Disk is that every time you boot your machine, it scans your system to verify that your CMOS RAM, Partition Table, Boot Sector, DOS boot files, and system files are all valid and unchanged. If they have been modified or deleted, a warning is posted so that you can keep the Safety Disk backup information current. This check is helpful in catching the effects of the majority of viruses that change the contents of one or more system files without changing the date or size of the file.

Safety Disk requires no resident memory space, but it checks your system during bootup to make sure the information stored in its backup is current with your system.

Safety Disk's installation program automatically seeks out all files and data needed to create the Recovery Diskette and copies this information to the diskette. Then, if you boot up the Recovery Diskette, Safety Disk determines the system's problem and offers a solution. You can also load a manual mode that allows you to explore Safety Disk's stored information.

Who Should Use Safety Disk

Safety Disk is a useful tool for users with any level of expertise.

The novice user will find Safety Disk a comforting tool. Safety Disk installs itself onto the system and backs up all the vital information necessary to boot the machine. If a user accidentally deletes DOS files or overwrites them with a different version, Safety Disk quickly spots and repairs the problem.

Safety Disk provides the intermediate user with a valuable insight into how the system works and what this information looks like. It also provide this user with a quick way to safely back up valuable information that cannot be saved by other products.

For the Expert user, Safety Disk provides a comprehensive way to delve into the setup and boot information of the PC and allows for the backup and recovery of this information. Expert users often swap various hardware configurations in and out of their PC. Using Safety Disk to make a backup set for each configuration keeps an image of the vital system information for each setup.

PC Boot Process

To understand why Safety Disk is so important and how it functions, it helps to understand what actually happens when you turn on or boot a PC.

When you turn on your PC, an electrical signal follows a path on your motherboard to the CPU's internal memory registers. In the process, the signal resets the CPU register called the program counter. The Program Counter tells the CPU the address of the next instruction that needs processing. In this case, the address is the beginning of the boot program stored in the ROM BIOS.

The ROM BIOS boot program invokes a series of system checks known as the Power On Self Tests (POST). The first series of tests tells the CPU to ensure that the RAM and other internal chips are functioning properly.

The CPU then examines the setup information stored in CMOS memory, which keeps a record of the hardware setup. The CPU then verifies that the devices recorded in the CMOS match what is actually attached. The final series of tests check that input and output systems, such as the keyboard, video adapter, and disk drives, match the CMOS settings and are functioning properly.

The boot program then checks drive A: for a floppy disk. If a disk is installed in the drive, the program searches the Boot Sector of the disk for a special boot program. If the drive holds a diskette without this program, the disk generates an error. If the drive is empty, the boot program checks the Boot Sector of drive C: for boot instructions.

After locating a disk with a valid Boot Sector, the boot program reads data stored on the disk's Boot Sector and loads these instructions into the machine's memory. From here, the instructions run DOS IO.SYS (sometimes called IBMBIO.COM), a program pointed to by the Boot Sector.

The boot program takes control of the PC and loads IO.SYS into RAM. IO.SYS includes a routine called SYSINIT to manage the rest of the boot up.

SYSINIT takes control of the startup process and loads MSDOS.SYS (sometimes called IBMDOS.COM) into memory. MSDOS.SYS manages files, executes programs and responds to hardware interrupts.

SYSINIT then searches the root directory of C: for a CONFIG.SYS file and tells MSDOS.SYS to execute the commands in it. Next SYSINIT tells MSDOS.SYS to load COMMAND.COM which processes commands for other DOS programs. COMMAND.COM takes control of the PC, searches the root directory for an AUTOEXEC.BAT file, and invokes any command it finds in that file.

System Requirements

Safety Disk has the following minimum requirements for operation:

- IBM XT, AT, or 100% compatible
- PC-DOS (MS-DOS) 2.0 or later
- 475K RAM
- Floppy Disk Drive
- Hard Disk Drive

Support is also available for the following:

- Mouse
- Color monitors

Scope of This Manual

The Safety Disk User's Manual tells you everything you need to know to install and run the Safety Disk program. It explains how your PC system runs, how to invoke various Safety Disk options for examining system information, and what to do when Safety Disk detects a problem. It also contains a glossary of technical terms used in the manual and an index.

Certain conventions have been used in this manual to increase clarity. Keys that you press on the keyboard are shown in square brackets, such as [ENTER]. Words that you type are shown in all caps, although you may type them in lower case characters. The mouse cursor appears as a small rectangle with a diamond in the middle.

Online Help System

Safety Disk was designed for easy use. Because of its comprehensive Help system, you may not even need to refer to your manual. Anytime you need Help, press the [F1] key, and Safety Disk pops up a context-sensitive Help screen to explain your options. Once inside a Help screen, you have several options:

- Press [ESC] to exit the Help screen
- Press [PGDN] or [PGUP] to view the pages within a Help screen
- Press [F1] again for the alphabetical Help Index
- Press [ALT-F1] for the last topic you viewed

While you're in the Help Index, use the cursor keys to select a Help topic, then press [ENTER]. The screen responds with information on the Help topic you specified. You can also back up through previous topics you've browsed by pressing the [ALT] and [F1] keys together as many times as required to return to the topic you want.

Protected Menu Items

Some of Safety Disk's menu items may appear on your screen in very dim characters. This means the item is protected and cannot be selected. If you have a protected menu item, it means that either this menu item is not applicable to your computer or disk system, or there is another menu item you must run before this portion of the program can be selected. For example, if you don't have a computer that uses CMOS RAM, the CMOS RAM menu item will be protected.

Crash Recovery

When your computer fails to boot up properly the precautions you took in creating a Crash Recovery Disk will be welcomed. Crash Recovery may be as simple as inserting the Crash Recovery Disk and rebooting. Normally you simply select Restore from the list of options.

If your CMOS configuration RAM has been corrupted it might require you to manually configure your A: drive type in the CMOS Setup. This manual intervention is required because the system must first recognize the A: drive to be able to boot up Safety Disk for any subsequent recovery steps.

Activating the CMOS Setup Screen varies from system to system, depending upon which brand and which version BIOS is used. The computer may automatically bring up the CMOS Setup Screen when you reboot if it detects the CMOS memory has been corrupted. If this doesn't occur you will need to press a key set to activate the screen. Some common activation keys to try during the boot process are:

Ctrl Alt Esc   Delete   Insert

Many systems will tell you which key(s) to press during the initial boot sequence. If not, and if none of the suggested keys work, you must consult your system manual.

Once your system recognizes the A: drive, continue with the crash recovery sequence using the Safety Disk Crash Recovery Diskette.

Technical Support

Many times we get calls from people asking questions that can be solved easily by checking through the manual before calling tech support. We ask that you browse the manual and look for information pertaining to your particular problem before calling. This can often save you time, as we take a collection of our most common questions and try to address them in this manual.

We offer alternative methods in addition to the conventional phone support, such as a multi-line 24-hour BBS system. We also monitor most technical conferences in the BBS Interlink and RelayNet networks as well as many of the conferences on the CompuServe Information System. You may send messages and questions via any of these services.

Currently our Tech Support office is staffed Monday through Friday from 9:00 a.m. to 5:00 p.m. Pacific Time. There is a chance, however, that someone is in the office outside of this time frame. If so, we will gladly answer your questions outside the normal business hours.

HyperWare - Technical Support Department
185 Berry Street
San Francisco, CA 94107
(415) 882-1740 Voice
(415) 882-1733 FAX
(415) 882-1735 BBS
71333,3657 CompuServe
http://www.fht.com/hyper

Automatic Installation

Safety Disk's automatic installation program guides you through the steps of installing Safety Disk, backing up your system's vital information, and creating a Recovery Diskette. To run the installation program, insert your Safety Disk Program Diskette into your floppy drive and enter:

```
A:INSTALL[ENTER]
```

You can run the installation program from any diskette drive in your system. If the drive you are running the installation from is a drive other than A:, substitute that drive letter for A: in the above sequence.

After the installation program has been loading for a few seconds, you see the opening Safety Disk logo screen. From here press the any key for the program to continue.

The next screen says that you are about to install the product and verifies that you wish to do so. If you do, press [ENTER] or [Y]. If you wish to abort the installation, use the arrow keys to select NO and press [ENTER]. If you have a mouse, you may click on Yes or No.

The next screen requires you to enter some registration information. Enter the serial number that is on the back of the manual cover or on the diskette label. Then enter your name, address, and other requested information. Once you have filled in all the requested information, press [F10] to continue the installation procedure.

Safety Disk now has two installation modes, Easy or Advanced. If you wish to install Safety Disk quickly using the default options, use the Easy Installation option. If you do not understand the details of what Safety Disk does, we recommend the Easy Installation option.

Users who have a good understanding of Safety Disk or wish to see all of the configuration options during installation should use the Advanced Installation option. During Advanced Installation you will be prompted for each configuration option during the installation.

Regardless of which installation method you use you can later go in and change any of the installation options in the manual mode of Safety Disk.

Next you are informed that the installation program is going to scan your system for previous versions of Safety Disk. This takes a few minutes depending on the size of your hard disk. Press [ENTER] or [Y] to continue.

Once the installation program has searched your disk, it prompts you for the location of the Safety Disk program disk and where it should install Safety Disk on your hard disk. The installation program tries to install Safety Disk onto your C: drive in a directory named \SAFEDISK. If you require a special directory or want the program on another drive, make the changes on this screen. Once you are satisfied with the information, press [F10] to continue with the installation procedure.

You are now told the installation program will copy all the Safety Disk program files onto your machine. Press [ENTER] or [Y] to continue the installation process. The screen shows you which files are being copied and when each copy procedure is done. As Safety Disk is copying your files, a screen overlay asks permission to add the AutoCheckup feature to your AUTOEXEC.BAT file. Once all the files have been copied, press [ENTER] to continue to the next step.

The next screen tells you that you will have the opportunity to change the default settings for Safety Disk operation. To continue, press [ENTER] or [Y]. Safety Disk responds with the configuration screen. We suggest using the default settings unless you have a specific item that you wish to change. For detailed descriptions of these options, see the Configuration section in Chapter 4, Manual Operation. Press [F10] to save your selections and continue the installation process.

Now the installation program makes a backup copy of all of your system's vital information and programs. It stores these backups in the installation directory specified earlier. Press [ENTER] or [Y] to backup the system information and files. The screen shows you which files are being backed up and when each backup is done. If Safety Disk detects that your IO.SYS (IBMBIO.COM) or MSDOS.SYS (IBMDOS.COM) files are not Read Only, Hidden, and System files, it asks permission to make these changes. Once the backup is complete, press [ENTER] to continue.

The final step of the installation process is to create the Safety Disk Recovery Diskette. This is a critical step, because the Recovery Diskette provides a way to boot your system if you lose any of your system's vital bootup information.

With the Recovery Diskette, you can restore any lost or corrupted system information. A preformatted diskette has been provided for use as your Recovery Diskette.

Safety Disk tells you it is going to create a Recovery Diskette. Press [ENTER] to continue. As the next screen prompts you, remove the program diskette from drive A: and insert the Recovery Diskette. When you are ready, press [ENTER].

Safety Disk then copies the system boot files to it. Next, the system information is backed up onto the Recovery Diskette, so information can be restored from the Recovery Diskette, in case the backup information on your hard disk is inaccessible. Once this backup has been completed, press the [ENTER] key to continue.

You are prompted to remove the Recovery Diskette and told to store it in a safe place. Press [ENTER] to continue. The program then asks if you want to view the README.SD file, which contains last-minute information not found in this documentation. To exit from the README.SD file, press [ESC].

The program then asks permission to reboot your machine. The installation program has installed a copy of the command to do the Safety Disk Checkup routines in your AUTOEXEC.BAT file. By rebooting your machine, you can see the checkup take place during the boot process.

Use care when storing your Recovery Diskette as it is an important item in the case of trouble. We recommend keeping it near your computer so that it is easily accessible if you need to use it. Do not store it on or directly beside your monitor as some PC monitors emit magnetic fields that can damage the data on diskettes. Also, if you have a digitizing tablet such as those used in CAD software, never place the diskette on or directly beside the tablet, as it is also emitting a large magnetic field.

After Safety Disk has been installed, you can run it again anytime. Just enter SAFEDISK from the Safety Disk directory (\SAFEDISK, unless you have renamed it). This chapter describes the command line parameters that effect how Safety Disk runs.

Check Up Mode

During installation of Safety Disk, the command line CHECKUP is automatically placed as the first command in your AUTOEXEC.BAT file. This ensures that once the operating system is loaded, Safety Disk first performs a checkup to verify that current system information and operating system files match those maintained in Safety Disk's backup. During this test, if any discrepancies arise, you are notified and asked for the actions to take. For further discussion of your options, refer to **When a Test Fails**.

You may also specify this parameter when you run Safety Disk from the Safety Disk directory (\SAFEDISK, unless you have renamed it) to perform the same system checkup.

On the recovery disk, the program RECOVER.EXE is used instead of SAFEDISK.EXE or CHECKUP.EXE. This program only tests and repairs, it does not allow you to modify the configuration or make backups of items.

Create New Recovery Diskette /N

At any time you can create a new bootable Recovery Diskette by running **SAFEDISK /N** from the Safety Disk directory. This runs you through the process of formatting and copying the vital system information to a diskette.

View CMOS Settings /V

This option allows you to take a quick look at the PC's current CMOS RAM values. It is handy if you are just trying to verify what settings your CMOS RAM has stored. To run this mode, enter **SAFEDISK /V** from the Safety Disk directory.

Remove Read-Only Attributes /U

Sometimes the Read-Only attributes set on AUTOEXEC.BAT or CONFIG.SYS can cause problems. For example, some product installers need to modify these files to place specific configuration information to enable the products to operate properly. The Read-Only attribute set on these files may keep these installation programs from installing the proper information. If this is the case, you can use Safety Disk to turn off the Read-Only attributes quickly and easily.

Run **SAFEDISK /U** from the Safety Disk directory, and it automatically removes the Read-Only attribute from these files. Note: Remember to reset these attributes when you are done modifying these files, so that they are not inadvertently changed or deleted by some other program.

Set Read-Only Attributes /R

This option sets all your system's bootup files to have Read-Only attributes. It then verifies that none of these files have been changed since the last backup. This ensures that the backup information stored by Safety Disk matches your system's files. If you have just modified your CONFIG.SYS or AUTOEXEC.BAT files, be sure to update your backup information. To run this mode, enter **SAFEDISK /R** from the Safety Diskdirectory.

Manual Operations

You can run any of the features of Safety Disk by loading it into Manual Operation Mode. Enter **SAFEDISK** from the Safety Disk directory (`\SAFEDISK`, unless you have renamed it). The following sections explain each option available during Safety Disk's manual operation.

The options are listed on the Main Menu. To choose an option, you may use the arrow keys to select and then press [ENTER] to activate, or you may just enter the highlighted letter of the option you want. If you have a mouse, click on the item to activate it.

Backup

When you choose Backup from the Main Menu, Safety Disk backs up on your hard disk your most critical system areas and files, plus it updates internal information about those files. During a backup, Safety Disk backs up your CMOS RAM data (if applicable), Partition Table, Boot Sector, bootup files (AUTOEXEC.BAT and CONFIG.SYS), and information about your system files (IO.SYS, MSDOS.SYS, and COMMAND.COM).

Run a backup whenever you make changes to your system, such as adding or upgrading to a new hard drive, adding memory, or changing other computer configurations. Note: If you use Safety Disk's editor (recommended) to make changes to your AUTOEXEC.BAT or CONFIG.SYS files, you don't need to do a Backup. Safety Disk automatically takes care of that for you.

When you select Backup from the Main Menu, you may choose from the following options.

Select Items (to Backup)

Use this menu option to select specific files and information you want to back up. This option doesn't perform the backup; it just lets you select the files for backup. If any of the checkboxes are not checked off with the Ö symbol when you enter the option the first time, it means the file or information is not available.

Backup Selected Items

When you choose this option, Safety Disk proceeds with backing up the files and information you selected (the default is all items).

Create a New Recovery Diskette

When you choose this option, Safety Disk helps you create a new Recovery Diskette. This is the floppy diskette you use to boot your computer when you cannot boot from your hard disk. The Recovery Diskette can perform anytime the same checks that Safety Disk performs when you first boot up your computer. It will also recommend a solution to any problem it detects.

You need a blank floppy diskette to create a new Recovery Diskette. Always keep a current copy of your Recovery Diskette in a safe place, so you can use it to restore your system.

Exit

Selecting this option returns you to the Safety Disk Main Menu.

Restore

Restore allows you to bring back information on your critical system areas and files that would otherwise be unavailable. For instance, if something happens to your AUTOEXEC.BAT file, you can use Restore to get back the old (correct) file.

When you select Restore Menu from the Main Menu, choose from the following options:

Select Items (to Restore)

When you choose this option, you may select specific files or system information to restore. The default is all items. When you have made your selections, press [F10] to save the information and exit the Select Items screen.

Restore Items

When you choose this option, Safety Disk restores the items you have selected. You are prompted before each item is restored. The system forces you to reboot after it restores each of the first four items on the list: CMOS RAM, Partition Table, Boot Sector, or COMMAND.COM. It must boot after each of these, because if any one is corrupted, the items below it on the list will be adversely affected. The system asks permission to reboot your system after restoring AUTOEXEC.BAT and CONFIG.SYS. When all selected items have been restored, press [ENTER] to return to the Main Menu.

Exit

Selecting this option returns you to the Safety Disk Main Menu.

View/Edit

This View/Edit option allows you to view information about your system areas or files. You can view the contents of your CMOS RAM (if applicable), your disk's Partition Table or Boot Sector, or detailed information on your system files (size, date, time, and CRC). You can also look at the actual text inside your CONFIG.SYS andAUTOEXEC.BAT files. Finally, you can edit the contents of these two files. When you edit either of these files, Safety Disk automatically backs up the information about them.

When you select View/Edit from the Main Menu, choose from the following options:

CMOS RAM

The CMOS RAM menu option allows you to view your system's CMOS RAM data. Safety Disk allows you only to view the contents of your CMOS RAM. To change your CMOS RAM, you normally must enter a special utility program immediately after you boot your computer. We are working on a universally compatible CMOS RAM editor that will be available in the next release of Safety Disk.

Note: If you don't have an AT-compatible computer, this option does not apply. If you have an XT, you don't have CMOS RAM, and the menu option is not available to you.

CMOS RAM is a special kind of memory that contains information about the way your computer is configured. It stores data about the date and time, the type of hard disk(s) you have installed, what kind of floppy disks you have, conventional and/or extended memory, type of video card, whether you have a math coprocessor chip installed, and other important parameters about your system.

CMOS RAM is very special because it always has power (supplied by a special long-life battery) applied to it. If the battery fails, your computer (your CMOS RAM, actually) has, in effect, lost its memory. Fortunately, if this happens, Safety Disk can restore the contents of your CMOS RAM.

Partition Table

Your Partition Table is a record stored on your hard drive that determines the layout of your hard drive. There are many operating systems that will work on PC hardware, and the partition table divides the drive into logical areas for use by various operating systems including DOS. The partition table is also used to create multiple logical drives out of one physical hard drive.

Safety Disk allows you only to view the contents of your primary Partition Table. You are not allowed to change it. The information in your Partition Table is very technical and should only be changed when you install a new operating system on your disk.

If something happens to your Partition Table, you may not be able to boot up from your hard disk. Unfortunately, because the Partition Table is so critical to your system, it is often the target of viruses or other harmful programs.

Safety Disk can help you guard against data loss if something targets your Partition Table. Safety Disk can likely fix your primary Partition Table with the backup copy it has saved.

Boot Sector

Your Boot Sector (also called a Boot Record) is a small area at the very beginning of your disk. It tells the computer about your disk and how to boot it with your operating system.

Safety Disk allows you only to view the contents of your Boot Sector. You are not allowed to change it. The information in your Boot Sector is very technical and should only be changed when you install a new operating system on your disk.

If something happens to your Boot Sector, you may not be able to boot up from your hard disk. Unfortunately, because the Boot Sector is so critical to your system, it is often the target of viruses or other harmful programs.

Safety Disk can help you guard against data loss if something targets your Boot Sector. Safety Disk can likely fix your Boot Sector with the backup copy it has saved.

IO.SYS (IBMBIO.COM)

This is one of the system files DOS uses to boot your computer. Normally you can't see this file, because your operating system protects it from being seen or deleted. If something happens to this file, you won't be able to boot up from your hard disk.

You can view information about IO.SYS (the size, date, time, and CRC), but you can't view or modify the file itself.

MSDOS.SYS (IBMDOS.COM)

This is one of the system files DOS uses to boot your computer. Normally you can't see this file, because your operating system protects it from being seen or deleted. If something happens to this file, you won't be able to boot up from your hard disk.

You can view information about MSDOS.SYS (the size, date, time, and CRC), but you can't view or modify the file itself.

COMMAND.COM

In many ways your COMMAND.COM file is your operating system. COMMAND.COM is known as the command interpreter. It is the program that is running all the time and allows you to control your disk and the programs you run.

You can view information about COMMAND.COM (the size, date, time, and CRC), but you can't view or modify the file itself.

If something happens to COMMAND.COM, you won't be able to boot up from your hard disk (in fact you probably won't be able to even run a program).

Note: Safety Disk detects and supports the use of third party command interpreters such as 4DOS. It will automatically backup the proper files, no user intervention is required.

CONFIG.SYS

CONFIG.SYS is a small text file you use to tell MS-DOS how to configure itself. Sometimes when you install new software or hardware, you have to modify CONFIG.SYS, so that DOS knows about your new configuration.

Safety Disk not only allows you to view information (size, date, time, and CRC) about your CONFIG.SYS file, but it also enables you to view, browse, or edit its contents.

If something happens to your CONFIG.SYS file, you may not be able to boot your computer normally. Safety Disk will have a copy of your CONFIG.SYS file which it can restore to your hard disk when required.

When you select CONFIG.SYS from the View/Edit Menu, choose from the following options:

Info (on CONFIG.SYS)

When you select this option, Safety Disk shows you detailed information about your CONFIG.SYS file. Safety Disk keeps track of the size (in bytes) of your file, the date and time it was last modified, and the CRC value Safety Disk has computed for it.

View (CONFIG.SYS

This option allows you to view the contents of your CONFIG.SYS file. If you're curious, select this option and take a look. This option does not allow you to modify CONFIG.SYS.

Edit (CONFIG.SYS)

This option allows you to edit the contents of your CONFIG.SYS file. Use this option with caution! You could easily change your system's bootup configuration and disable some of the system's hardware or software features.

After you've edited CONFIG.SYS and saved it, Safety Disk automatically updates the information about it. If you need to go to back the previous version, you can view the contents of CONFIG.BAK.

Exit (from CONFIG.SYS)

Selecting this option returns you to the View/Edit Menu.

AUTOEXEC.BAT

Your AUTOEXEC.BAT file contains the DOS commands that tell your computer how to set itself up, just before you take over. AUTOEXEC.BAT often contains commands to run other programs (such as Safety Disk), which may perform an operation on your system or even install a service or program in memory.

Safety Disk not only allows you to view information (size, date, time, and CRC) about your AUTOEXEC.BAT file, but also it enables you to view, browse, or edit its contents.

If something happens to your AUTOEXEC.BAT file, you may not be able to boot your computer normally. Safety Disk will have a copy of your AUTOEXEC.BAT file which it can restore to your hard disk when required.

If you select AUTOEXEC.BAT from the View/Edit Menu, choose from the following options:

Info (on AUTOEXEC.BAT)

When you select this option, Safety Disk shows you detailed information about your AUTOEXEC.BAT file. Safety Disk keeps track of the size (in bytes) of your file, the date and time it was last modified, and the CRC value Safety Disk has computed for it.

View (AUTOEXEC.BAT)

This option allows you to view the contents of your AUTOEXEC.BAT file. If you're curious, select this option and take a look. View does not allow you to modify AUTOEXEC.BAT.

Edit (AUTOEXEC.BAT)

This option allows you to edit the contents of your AUTOEXEC.BAT file. Use this option with caution! You could easily change your system's bootup configuration and disable some of the system's hardware or software features.

After you've edited and saved AUTOEXEC.BAT, Safety Disk automatically updates the information about it. If you ever need the previous version, you can view AUTOEXEC.BAK.

Exit (from AUTOEXEC.BAT)

Selecting this option returns you to the View/Edit Menu.

Exit View/Edit

Selecting this option returns you to the Safety Disk Main Menu.

Test/Repair

Choosing Test/Repair initiates comprehensive tests on your system areas and files to make sure they have not been altered. If Safety Disk finds a problem, it alerts you and then helps you decide what to do about it. Safety Disk can fix the problem, ignore it, update its records and backups, give you advice on what to do, or show you detailed information about why the test failed. This option provides the same functionality as running **SAFEDISK /C** from the command line. If any of the tests finds a problem with your system, refer to Chapter 5, When a Test Fails.

Configure

Choosing Configure shows you a screen that allows you to change the way Safety Disk works. There are a few different configuration screens that allow you to change the various operating parameters of Safety Disk.

Configuration Menu

General Options	General operation options
Checkup Options	Configure the different checkup tests
Read Only File Options	Configure the Read-Only file status
Advanced Options	Setup the Advanced CMOS Options
Exit	Return to Main Menu

General Configuration Options

Default Floppy To Save To

This configuration option allows you to specify the floppy drive when you create a new Safety Disk Recovery Diskette or when you update your Recovery Diskette. Just press the letter of the drive you want, and the cursor advances to the next field.

Disk & Directory Where Safety Disk Is Installed

This configuration option allows you to tell Safety Disk where to find its backup files and other Safety Disk information. This option is configured when you install Safety Disk and should never require modification. If you do change the Disk/Directory to something else, Safety Disk may not be able to find backup files.

Use Color

This configuration option allows you to tell Safety Disk whether or not to use color. If you change this option to No, you must exit the program and restart it for the change to occur. Safety Disk attempts to detect the video type at startup but can be fooled by some systems, e.g. laptops with greyscale VGA displays. Since the colors won't display correctly on a greyscale display, you would want to force color mode off with this options.

Always Prompt Before Restoring

This configuration option allows you to tell Safety Disk to not worry about keeping the Recovery Diskette current. Generally you will always want to make sure that your Recovery Diskette is kept current with the backup information stored on your hard disk. Whenever backup information is updated on your hard disk Safety Disk will prompt you asking if you would also like to update the Recovery Diskette. By disabling this option the only way the Recovery Diskette is updated is if you run the manual mode backup to the Recovery Diskette. The default value is YES.

Beep When Tests Fail

This configuration option allows you to specify whether Safety Disk should beep when a test fails. It is useful when you boot up, because normally Safety Disk checks from your AUTOEXEC.BAT file. If you turn on your computer and then hear Safety Disk's distinctive triple beep, you will know a test failed and your bootup sequence will be stopped.

This option is set during program installation to a default of Yes, beeping when a test fails.

Checkup Configuration Options

These are the options that configure the way Safety Disk performs its checkup tests. When you are finished changing the configuration information, press [F10] to save the options. Pressing [ESC] aborts any changes you have made, without saving them.

Delay (in seconds) After Tests Complete

Normally Safety Disk will wait after completing a checkup before clearing the screen. This allows you to view the tests and see that they all passed. If you do not want the display to paused for any time after a test is complete than you may set this option to 0. The default delay is 2 seconds.

Frequency To Perform Checkup

Many users find that they will reboot a number of times during any given day and the added few seconds that Safety Disk requires to perform a checkup would like to be bypassed. You can bypass the checkup test by holding down the [CTRL][ALT][LSHIFT] keys before Safety Disk loads. This will always bypass any checkup that Safety Disk performs no matter how it is configured. The frequency option allows you to change how often Safety Disk tests your system. You can have it test on every bootup, daily or weekly. Use the [SPACEBAR] to toggle these options. The default is to ALWAYS test.

Test CMOS RAM during Checkup?

Enable or disable the CMOS RAM test. The default is 'Y', test enabled.

Enable Advanced CMOS RAM Testing?

Enable or disable the Advanced CMOS RAM test. In rare instances, Safety Disk will <u>always</u> report the Advanced CMOS RAM as being modified. If this occurs you will wish to turn this test off to avoid false alarms. The default is test enabled.

Test Partition Table during Checkup?

Enable or disable the Partition Table test. If you have a dual-boot system, such as DOS-OS/2, switching the active partition (changing which system boots up) will cause this test to fail.

Test Boot Sector during Checkup?

Enable or disable the boot sector test. Some advanced BIOSes include a virus prevention feature that alerts the user when the boot sector is being accessed. This would be a great feature if the alert only occurred only on write attempts. Unfortunately, some BIOSes also initiate the alert on a read attempt. On this type of system Safety Disk's test will active the BIOS alert. If you have this type of BIOS you can either turn of the feature in the BIOS or disable Safety Disk's boot sector test. The default is test enabled.

Test CONFIG.SYS during Checkup?

If you constantly change your CONFIG.SYS and don't use Safety Disk's built in editor, Safety Disk will complain the file does not match the backup. Some programs such as MultiBoot keep different copies of CONFIG.SYS and allow the user change which one to use during bootup. This will cause Safety Disk to complain. The default is test enabled.

Test AUTOEXEC.BAT during Checkup?

If you constantly change your AUTOEXEC.BAT and don't use Safety Disk's built in editor, Safety Disk will complain the file does not match the backup. Some programs such as MultiBoot keep different copies of AUTOEXEC.BAT and allow the user change which one to use during bootup. This will cause Safety Disk to complain. The default is test enabled.

Read Only Configuration Options

This configuration option allows you to tell Safety Disk whether or not to set Read-Only attributes on your files.

```
        Make Safety Disk files read only?       Y
        Make the Command interpreter read only? Y
        Make CONFIG.SYS read only?              Y
        Make AUTOEXEC.BAT read only?            Y
```

In addition, Safety Disk always checks that the attributes for the System files (IO.SYS and MSDOS.SYS) are correctly set to Read Only, Hidden, and System. Safety Disk always checks to ensure these files are properly set, but you don't have the option of removing these attributes from within Safety Disk.

Under normal circumstances, the files Safety Disk sets to Read Only shouldn't be modified by other programs. If another program attempts to modify your files and fails, you can use Safety Disk to turn off the Read-Only attributes. Run SAFEDISK /U from the Safety Disk directory, and it temporarily removes the Read-Only attributes from these files. Note: Remember to reset these attributes when you are done modifying these files, so that they are not inadvertently changed or deleted by some other program.

Advanced Configuration Options

This option allows you to change your CMOS RAM chip settling delay. Normally when reading information from the I/O port that stores the CMOS RAM values you have to delay in between reads so that the next read can properly retrieve data from the CMOS RAM chip. In some cases if you are having trouble with the normal CMOS RAM failing then try increasing this delay.

```
CMOS RAM Chip Settling Delay (in milliseconds): 5
```

Exit

When you select Exit, Safety Disk offers you one last chance to stay in Safety Disk before returning to MS-DOS, or you can choose to reboot your system.

When a Test Fails

When you run **CHECKUP**, **RECOVER**, **SAFEDISK /C** or the Test/Repair option from the manual mode of Safety Disk, tests are performed to verify that the backups Safety Disk has made of your system's vital information match the information currently stored in the machine. If a discrepancy is found between the backup and the current values, Safety Disk warns you of the difference and gives you a list of actions you can take to investigate and solve the problem.

It is possible, when multiple problems occur, for Safety Disk to reboot the system several times. This happens because it may not be safe or even possible to continue until the corrections have been recognized by the operating system. For example, if the CMOS RAM information is corrupted the system is unable to discern the hard-drive types. After the CMOS information is restored, probably from the **RECOVER** program, the computer must reboot to "log" the corrected information. After which the test sequence is continued, possibly finding additional problems.

Restore Original Copy

When you select this option, Safety Disk restores a backup copy of your information. This replaces the currently stored information with the copy Safety Disk previously backed up. Once the information is restored, Safety Disk will need to reboot your system.

Caution on Restoring Files!

Safety Disk is designed to help you through catastrophic problems with your system. It is capable of quickly restoring data to your system and getting you back to normal. Safety Disk always prompts you before restoring anything to your system. You must be careful not to restore data unless Safety Disk says it's necessary. Note: Restoring data to your disk should be a last resort.

Most of your system information should not change from day-to-day use. The exception is when the installation or updating of applications may require a modification to your AUTOEXEC.BAT or CONFIG.SYS files. If you have recently installed a new application or update, or have purposefully modified these files, do not use the Restore Original option, because it will erase changes by overwriting them with the backup copy of the file.

Ignore Problem

When you select this option, Safety Disk doesn't attempt to fix the problem it just detected. Safety Disk will just continue with its testing. Remember that if there were not a problem somewhere, this test wouldn't be failing. You need to either update Safety Disk's information about this file (see Update Backup) or restore the Safety Disk's backup.

Update Backup

When you select this option, Safety Disk updates its records to reflect information about this part of your system. You should select this option only if you're sure this part of the system was intentionally changed without Safety Disk's knowledge.

Test Failure Details

When you select this option, Safety Disk tells you which tests failed on this part of your system. Safety Disk also shows you both actual and expected size, date, time, and CRC values associated with this part of your system. Along with the Advice option, this can help you determine what to do about the problem.

Advice on Fixing the Problem

When you select this option, Safety Disk offers you detailed advice on correcting the problem. Safety Disk gives you information about the failure, what this information means, and what you should do next. For specific details about the failure, select the Details option. For a description of this option, see "Test Failure Details" at the end of this chapter.

After reading the advice Safety Disk gives you, press [ESC] to exit the advice screen and proceed with choosing a solution.

CMOS Test Failure

What happened? Your CMOS RAM failed one or more of Safety Disk's test.

What should you do? Safety Disk will recommend that you let it restore the copy of your CMOS RAM it saved previously. If you've made a change to your system configuration that required you to change your CMOS RAM, select Update so Safety Disk can update its backup information.

Explanation. Safety Disk compares the contents of your CMOS RAM with information saved about your CMOS RAM. When this test fails, it means one of two things:

1. You've intentionally or unintentionally modified the CMOS RAM, and Safety Disk has not had a chance to update its backup information. An intentional modification would occur, for example, when you add a second hard disk or floppy drive and modify the CMOS RAM accordingly. An unintentional modification could happen if the battery that maintains the memory in your CMOS RAM failed or you zapped the contents of your CMOS RAM.

2. Your CMOS RAM was changed by someone else or by another program. This is exactly why you have Safety Disk: it alerts you that the CMOS RAM contents have changed, and you might not want them changed.

Advanced CMOS Test Failure

If you continue to get an Advanced CMOS test failure each time Safety Disk runs a checkup then it is most likely that your machine does not have Advanced CMOS RAM. In this case, simply disable the Advanced CMOS RAM Test.

Partition Table Test Failure

What happened? Your hard disk's primary Partition Table failed Safety Disk's test.

What should you do? Safety Disk will recommend that you replace the contents of your primary Partition Table with the image of it previously saved in the backup. In the unlikely event that your Partition Table was intentionally changed, and Safety Disk didn't get a chance to update the backup files, you should select update. This means Safety Disk can get its information on your disk's Partition Table in sync with your Recovery Diskette.

Explanation. Safety Disk compares the current contents of your disk's primary Partition Table with information saved previously. It is very rare for the contents of your Partition Table to change. Unless you've installed a new version of MS-DOS, or intentionally made some other change, it's very likely that someone or some program may be tampering with your disk. For instance, many computer viruses attack the Partition Table because it's such a critical part of your system. If you know of no reason for the Partition Table to have changed, Safety Disk strongly recommends that you allow it to restore a version which was previously saved in the backup.

Boot Sector Test Failure

What happened? Your hard disk's Boot Sector failed Safety Disk's test.

What should you do? Safety Disk will recommend that you replace the contents of your Boot Sector with the image of it previously saved in the backup. In the unlikely event that your Boot Sector was intentionally changed, and Safety Disk didn't get a chance to update the backup files, you should select update. This means Safety Disk can get its information on your disk's Boot Sector in sync with your disk.

Explanation. Safety Disk compares the current contents of your disk's Boot Sector with information saved previously. It is very rare for the contents of your Boot Sector to change. Unless you've installed a new version of MS-DOS, or intentionally made some other change, it's very likely that someone or some program may be tampering with your disk. For instance, many computer viruses attack the Boot Sector because it's such a critical part of your system. If you know of no reason for the Boot Sector to have changed, Safety Disk strongly recommends that you allow it to restore a version previously saved in the backup.

IO.SYS Test Failure

What happened? Your IO.SYS (IBMBIO.COM) file failed one or more of the tests Safety Disk performed on it.

What should you do? Due to the critical nature of this file, you must restore it by booting up your computer from the Safety Disk Recovery Diskette. When your Recovery Diskette was created, Safety Disk put all of its files on the Recovery Diskette. This diskette has the IO.SYS (or IBMBIO.COM) file on it and can restore the file directly from the floppy.

Explanation. Safety Disk makes comprehensive comparisons of the physical size (number of bytes), date, time, and CRC of your system's IO.SYS (IBMBIO.COM) file. To see the detailed results of these tests, select Details from this dialog box. When any of the size, date, time, or CRC comparison tests fail, it means your IO.SYS (IBMBIO.COM) file has been changed since the last time Safety Disk backed it up. This file should never change (unless you've installed a new version of DOS). We strongly recommend that you boot up your Safety Disk Recovery Diskette and let Safety Disk restore this file.

MSDOS.SYS Test Failure

What happened? Your MSDOS.SYS (IBMDOS.COM) file failed one or more of the tests Safety Disk performed on it.

What should you do? Due to the critical nature of this file, you must restore it by booting up your computer from the Safety Disk Recovery Diskette. When Safety Disk made your Recovery Diskette, it put all its files on a bootable floppy disk. This disk includes the MSDOS.SYS (IBMDOS.COM) file. Safety Disk will restore the file directly from the floppy.

Explanation. Safety Disk makes comprehensive comparisons of the physical size (number of bytes), date, time, and CRC of your system's MSDOS.SYS (IBMDOS.COM) file. To see the detailed results of these tests, select Details from this dialog box. When any of the size, date, time, or CRC comparison tests fail, it means your MSDOS.SYS (IBMDOS.COM) file has been changed since the last time Safety Disk backed it up. This file should never change (unless you've installed a new version of DOS). We strongly recommend that you boot up your Recovery Diskette and let Safety Disk restore this file.

COMMAND.COM Test Failure

What happened? Your COMMAND.COM file failed one or more of Safety Disk's tests.

What should you do? We recommend that you let Safety Disk replace your COMMAND.COM file with the copy saved during backup.

Explanation. Safety Disk makes comprehensive comparisons of the physical size (number of bytes), the date, the time, and the CRC of the COMMAND.COM file. To see the detailed results of these tests, select Details from this dialog box. When any of the size, date, time, or CRC comparison tests fail, it means your COMMAND.COM file has been changed since the last time Safety Disk backed it up. This file should never change (unless you've installed a new version of DOS). We strongly recommend that you let Safety Disk restore this file.

CONFIG.SYS Test Failure

What happened? Your CONFIG.SYS file failed one or more of Safety Disk's tests.

What should you do? Safety Disk will recommend that you let it replace your CONFIG.SYS file with the copy it saved. If you are sure the information Safety Disk has is incorrect, select Update.

Explanation. Safety Disk makes comprehensive comparisons of the physical size (number of bytes), the date, the time, and the CRC of the CONFIG.SYS file. To see the detailed results of these tests, select Details from this dialog box. When any of the size, date, time, or CRC comparison tests fail, it means your CONFIG.SYS file has been changed since the last time Safety Disk backed it up (or we edited the file inside Safety Disk). Since you and Safety Disk have taken measures to prevent CONFIG.SYS from being modified without us knowing about it, this failure isn't a good sign.

AUTOEXEC.BAT Test Failure

What happened? Your AUTOEXEC.BAT file failed one or more of Safety Disk's tests.

What should you do? We recommend that you let Safety Disk replace your AUTOEXEC.BAT file with the copy saved during backup. If you are sure the information Safety Disk has is incorrect, you should select Update.

Explanation. Safety Disk makes comprehensive comparisons of the physical size (number of bytes), the date, the time, and the CRC of the AUTOEXEC.BAT file. To see the detailed results of these tests, select Details from this dialog box. When any of the size, date, time, or CRC comparison tests fail, it means your AUTOEXEC.BAT file has been changed since the last time Safety Disk backed it up (or we edited the file inside Safety Disk). Since you and Safety Disk have taken measures to prevent AUTOEXEC.BAT from being modified without us knowing about it, this failure isn't a good sign.

Maintanence Minder

The Maintanence Minder portion of Safety Disk is designed to remind you when important, though infrequent chores must be done on your computer.

Drive Options

Selects which drives should be checked. Use the arrow keys or mouse to highlight a drive letter (if there are more than one) and press enter to toggle the check mark. You may disable Maintanence Minder entirely by not selecting any drives. Press [ESC] to cancel your changes or [F10] to accept and exit to the previous menu. The default is to check all drives.

Fragmentation Options

Over time your files will become fragmented, that is, portions of files become spread over the entire drive instead of grouped together. This greatly reduces disk performance and makes it more difficult to undelete files. Programs such as Norton's SpeedDisk will optimize your hard drive by sorting the files into groups. Use this menu to select when you should be reminded to optimize your hard drives.

The reminder can be actived by two tests:

Percentage of files

Activate reminder when the precentage of fragmented files equals or exceeds the specified value. The default is 25% and enabled. This test can be disabled be setting "Use This Test" to (N)o.

Percentage of total disk space

Activate reminder when the percentage of total disk space that is fragmented equals or exceeds the specified value. The default is 10% and test enabled. This test can be disabled be setting "Use This Test" to (N)o.

Setting both tests to (N)o will disable this test without affecting other Maintanence Minder features.

Backup Options

Regular backups are a vital part of safe computing. It is not a question of will your system crash, it is a question of when and how bad. Since Safety Disk only recovers vital systems files, you <u>must</u> make regular backups unless you wish to court disaster.

Each file has a set of attributes associated with it to indicate status such as hidden, read-only, and archive. This last item, archive, indicates the file has been modified or is new. Backup software automatically clears this status information for each file that is backed up. Maintanence Minder takes advantage of this status information to help remind you when it is time to make a backup.

There are three tests for a backup reminder. Each test can be disabled by setting the "Use This Test" option to (N)o. The default is all tests enabled. Setting all three to (N)o disables this feature without affecting other Maintanence Minder options.

Percentage of files

Activate the backup reminder when the specified percentage of files have not been backed up. The default is 25% of files.

Percentage of total disk space

Activate the backup reminder when the specified percentage of the total hard drive has not been backed up. The default is 25%.

Megabytes of data

Activate the backup reminder when the specified number of megabytes (MB) have not been backed up. The default is 10MB.

Free Space Options

Over time hard drives become full. The saying is, data grows to fill all available drive space. It can be an unpleasant surprise to spend hours on a project, go to save it, and be given a "disk full" error message. Some programs can be downright rude about full disks, dumping you to the DOS prompt or locking up entirely, losing your hard work in the process.

You can avoid this by occassionally doing a little "spring" cleaning, moving obsolete, duplicate, and unused files to disk or tape and deleting them from the hard drive. To help locate duplicate files, **CleanUp** and **CleanUp For Windows** are highly recommended. In addition, the program **Tidy** is useful for locating and deleting unnecessary files, i.e. files with the extension of .BAK and zero length files.

Two low disk space tests are available. Both tests are enabled by default and may be disabled by setting the "Use This Test" option to (N)o. Note, some programs, such as Microsoft Windows, may use large amounts of temporary disk space. Thus, even though Maintenance Minder may think there is plenty of disk space available, in reality you may have far less space to work with. This is especially true if you use Windows temporary swap file option.

Percentage of entire disk

Activate low space warning when the percentage of available disk space failes below the specified amount. The default is 20%.

Megabytes of disk space

Activate the low space warning when the number of unused megabytes falls below the specified amount. The default is 5MB.

Cleaning Options

When was the last time you used a floppy drive head cleaning kit? When was the last time you opened up your computer and cleaned out the accumulated dust? The usual answer is "Never" for both questions. It doesn't seem like much but if ignored, not cleaning could result in system failures.

Over time the heads of the floppy drives, that's the part that reads and writes data on disks, will become dirty. Eventually the drive will have difficulty reading or writing disks. A common symptom is a freshly formated disk that fails. Cleaning the floppy heads a few times a year prevents this problem.

Cleaning the inside of a system is never thought of. Yet, over time, dust will accumulate, and the danger isn't simply your mother complaining about your housekeeping skills. Eventually this dust will reduce the efficiency of the power supply's cooling fan, endangering the entire system. This is especially dangerous with today's hot running overdrive 486 and Pentium processors.

Remind user every n months when floppy drive should be cleaned

How often should you be told to clean your floppy heads. The default is every six (6) months. In a dusty or smokey environment it should be every three (3) months. Set this field to zero (0) to disable this feature.

Offer to clean drive when cleanning is needed?

Enabling this option to have Maintenance Minder offer to clean the drive. Unfortunately, it doesn't actually do the cleaning without your help. When enabled, you will be prompted to insert the cleaning disk (follow manufacture's instructions on using the cleaning disk and cleaning fluid). Once the disk is inserted Maintenance Minder will move the drive head over the disk, ensuring the even wear of the cleaning disk. This setting is ignored if the remind interval is 0.

Clean Drive A:/B:

Selects which drives will be cleaned if the <u>Offer</u> option is enabled. The default is 'N' for both drives. This setting is ignored if the <u>Offer</u> option is disabled or the remind interval is 0.

Floppy Cleaning Passes

Sets the number of times the floppy heads are passed over the cleaning disk. The default is 10, though this number should be set to match any instructions included with the cleaning kit.

Remind user every n months when system should be cleaned

About every six months you should open up your system case and clean out the dust, especially any that has accumulated around the power supply fan. If you add new hardware to your system every few months then you don't need this reminder - if you dust out your system each time it is open. The default is six (6) months, in a dusty or smokey environment reduce this to three (3) months. A setting of zero (0) months disables this option.

Exit

Returns to the main configuration menu.

Built-In Text Editor/Viewer

One of the built-in features of Safety Disk is the ability to view or edit your AUTOEXEC.BAT and CONFIG.SYS files. This editor contains features found in most full blown text editors.

Below is a summary of the commands available to you for editing or viewing a file. If there is more than one possible combination of keystroke to activate a feature, they are separated by commas in the following lists. The Click action refers to your mouse, if applicable.

General

[CtrlBreak], [Esc], [ClickRight]
    Quit viewing.

[F1], [ClickBoth]
    Bring up this Help screen.

[ClickLeft]
    Clicking on the scroll bar at the right of the window lets you control your location in the file. Clicking the left button on a specific location in the file moves the cursor to that location.

Cursor Movement

[Left], [CtrlS]
    Scroll window left 1 column.

[Right], [CtrlD]
    Scroll window right 1 column.

[CtrlLeft], [CtrlA]
    Scroll window left 10 columns.

[CtrlRight], [CtrlF]
    Scroll window right 10 columns.

[Home], [CtrlQ][S]
    Scroll window to column 1.

[End], [CtrlQ][D]
    Scroll window to leftmost column, so the end of the longest line on the screen is displayed.

[Up], [CtrlE], [CtrlW]
    Scroll window up one line.

[Down], [CtrlX], [CtrlZ]
    Scroll window down one line.

[PgUp], [CtrlR]
    Scroll window up one page.

[PgDn], [CtrlC]
    Scroll window down one page.

[CtrlPgUp], [CtrlQ][R]
    Scroll to beginning of file.

[CtrlPgDn], [CtrlQ][C]
    Scroll to end of file.

Block Commands

[F7], [CtrlK][B]
Marks the line at the top of the window as the start of a block.

[F8], [CtrlK][K]
Marks the line at the top of the window as the end of a block.

[CtrlB][K]
Marks the line at the bottom of the window as the end of a block.

[CtrlK][H]
Toggle the display of marked blocks.

Insertion and Deletion

[Del], [CtrlG]
Delete character at cursor.

[Bksp], [CtrlH], [CtrlBksp]
Delete character to left of cursor. If the cursor is at the beginning of a line, the line is joined with the previous line.

[CtrlY]
Delete current line.

[CtrlQ][Y]
Delete from cursor to end of line.

[CtrlT]
Delete word to right of cursor. If the cursor is at end of a line, the following line is joined with the current line.

[Enter], [CtrlM]
Start a new line.

[CtrlN]
Insert a new line at the position of the cursor.

[Tab], [CtrlI]
Move the cursor to the next tab stop. If insert mode is on, any text to the right of the cursor is moved to the right of the tab stop.

[CtrlP]
Insert control character. For example, to insert a ^G, you would enter [CtrlP][CtrlG].

Mode Toggles

[Ins], [CtrlV]
Toggle insert mode on and off. A fat cursor indicates insert mode; a thin cursor indicates overtype mode.

[CtrlO][I]
Toggle auto-indent mode on or off. In auto-indent mode, pressing [Enter] while in insert mode causes the new line inserted to have the same indentation level as the previous line.

[CtrlO][W]
Toggle word wrap on and off. When word wrap is on, any attempt to insert or append text beyond the right margin causes a new line to be inserted following the current line and all words that are at least partially beyond the right margin to be moved to the new line.

Text Formatting

`[CtrlB]`

Reformat the current paragraph. Note that this command does nothing if word wrap is off.

`[CtrlK][G]`

Reformat the entire text buffer (Global reformat). Note that this command does nothing if word wrap is off. Use this command with caution!

Safety Disk Files

Below is a list of files that are part of the Safety Disk System:

Included on the Program Disk:

- INSTALL.EXE   Installation program
- SAFEDISK.INS   Archive of Safety Disk files
- README.SD   Readme Notes about changes since manual

Created on the Program Disk during installation:

- SAFEDISK.USR   User Registration information

Included on the Hard Drive Program Directory (\SAFEDISK):

- SAFEDISK.EXE   Main program
- SAFEDISK.HLP   On-line, contex sensitive help
- RECOVER.EXE   Crash recovery program
- CHECKUP.EXE   System test program
- SAFEDISK.CFG   Safety Disk Configuration
- MAINTMDR.CFG   Maintanence Minder Configuration
- SAFEDISK.USR   Registration information
- @@BOOT.DAT   Backup of Boot Sector
- @@CMOS.DAT   Backup of CMOS RAM contents
- @@PART.DAT   Backup of Partition Table Information
- AUTOEXEC.SD   Backup of Autoexec.BAT
- CONFIG.SD   Backup of config.sys
- README.SD   Additional information, late-breaking news
- COMMAND.SD   Backup of COMMAND.COM

Created on the Safety Disk Recovery Diskette:

- RECOVER.EXE   Crash Recovery Program
- SAFEDISK.HLP   On-line, contex sensitive help
- SAFEDISK.CFG   Safety Disk Configuration
- MAINTMDR.CFG   Maintanence Minder Configuration
- SAFEDISK.USR   Registration information
- @@BOOT.DAT   Backup of Boot Sector
- @@CMOS.DAT   Backup of CMOS RAM contents
- @@PART.DAT   Backup of Partition Table Information
- AUTOEXEC.SD   Backup of Autoexec.BAT
- CONFIG.SD   Backup of config.sys
- COMMAND.COM   copy of Command.COM from your hard disk
- AUTOEXEC.BAT   autoexec.bat to load up safety disk checkup/repair mode
- CONFIG.SYS   standard config.sys to load up system
- SYS.COM   System utility program (from DOS)

Other Issues

Setting Computer Date and Time

If you lose your CMOS RAM due to a dying battery or static shock Safety Disk will reset your CMOS data to the last value saved. The DATE and TIME however will be incorrect. You can use Safety Disk's /SETIME option to enter the correct date and time into your machine and the CMOS. From the C:\SAFEDISK prompt type SAFEDISK /SETIME. You will be given a full screen prompt showing the current date and time stored in the system. Enter the correct values and then when you exit Safety Disk will automatically update the information in both DOS and CMOS.

Disk Compression

Safety Disk is not currently compatible with disk compression programs such as Stacker, DriveSpace, and DoubleSpace. The Safety Disk installation program will disallow the installation of Safety Disk if it detects disk compression.

Windows and DesqView

Safety Disk should not be installed or run instead of a Windows DOS shell or a DesqView window. Exit from these programs before installation or execution.

Installing on a LANtastic server

Safety Disk will work on machines setup as LANtastic servers or network nodes. To install Safety Disk you must boot up the machine without loading the server software. Once Safety Disk has been installed and you have created your Recovery Diskette you can then reboot the machine and load the LANtastic server software.

Safety Disk and Viruses

Safety Disk by HyperWare is a system backup utility. It is the first of its kind to offer full system protection from boot up problems. It's primary purpose is to provide PC users of all levels of expertise the comfort of knowing that the vital boot up information of their PC is stored and can be easily and automatically restored. Safety Disk backs up CMOS RAM, Boot Sector, Partition Table, DOS Hidden System files as well as other vital boot up files.

Safety Disk is not an anti virus program but can come in very handy when dealing with many viruses. Anti virus programs are designed to recognize and remove viruses on your PC. They do nothing, however, if you can't boot up your PC!

Safety Disk can recover from many types of viruses. For example, the Michelangelo virus attacks the Boot Sector, Partition Table and Hidden System files. If this virus strikes even the best Anti Virus programs won't get you back up and running. Safety Disk will! Practicing safe computing means you should also run virus checking and removal software on a regular basis, especially immediately after Safety Disk has detected and corrected an error, otherwise the problem could reoccur. Since Safety Disk is only concerned with system information must must take adequate precautions to protect your everyday program and data files. First and foremost is regular backups followed closely by routine virus scanning.

There is no guarantee against your PC being infected or attacked by viruses, but at least with Safety Disk you can be assured that you can quickly get your PC back up and running.

Credits

This product started out as a means to help out the many people that would call me in a panic because they could no longer use their PC. It started out as a manual process to which only I could pull the proper puppet strings to restore valuable system information. Safety Disk has grown up into a well rounded product that I trust all of my systems to. Along the way I have had the help of many people in testing and ideas for the product. I would like to thank all of those people who have used the product and supported it during it's growth. More specifically I'd like to thank the following:

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       Brian & Tess for Channel 1
       Paul Somerson & Bantam Books
       PC Tech Journal (A Great Loss)
       PC Magazine
       Byte Magazine
       Jerry Pournelle
       Steve Gibson
       Stella Chin

Design & Concept

       David Foley
       Ross Neilson Wentworth

Programming

Safety Disk uses a wide variety of programming tools including:

       Borland Pascal 7.0
       Borland Turbo Assembler 3.0
       Borland Turbo Debugger 2.0
       Turbo Power Software Object Professional 3.x
       Phil Katz' PKLite Professional 1.13
       Ralf Brown's Interrupt List

Programming by:

       Ross Neilson Wentworth
       David Foley
       Mike Molloy

Art

Artwork for the Safety Disk was created using:

       Ian Davis' TheDraw 4.01
       Aldus Freehand 2.0
       Electronic Arts Studio/8 2.0

Art by:

       David Foley
       Noel Gamboa
       Shahasp Herardian

Documentation

Documentation for the Safety Disk was written using:

> FHTS SuperEdit 3.04
> Word Perfect 5.1
> MS Word for Windows 6.0

Documentation by:

> Susan Allen
> David Foley
> Ross Neilson Wentworth
> Mike Molloy

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Glossary of Terms

AUTOEXEC.BAT   A file that contains the DOS commands that tell your computer how to set itself up, just before you take over. AUTOEXEC.BAT often contains commands to run other programs (such as Safety Disk), which may perform an operation on your system or even install a service or program in memory.

Boot Sector   A small area (sometimes called a Boot Record) at the very beginning of your disk. It tells the computer about your disk and how to startt up your operating system.

Bootable Floppy   A diskette that contains the operating system. When a PC is started up, it looks first for a bootable floppy. If it doesn't find one, it attempts to boot from the hard disk if one is installed.

Boot, Bootup   To start your computer. When you turn on or reset your PC, the system executes a series of internal instructions to setup the proper configuration. This is known as the boot process. The word comes from bootstrap, as in pulling on your boots.

CMOS   Complementary Metal Oxide Semiconductor. A CMOS chip is a specific type of chip that can operate at higher speeds with less power required than a normal MOS chip.

CMOS RAM   The IBM AT was the first 80286 based machine. In order to save specific information about the hardware setup of the machine IBM used a Motorola 146818 CMOS chip that had 128 bytes of memory. This memory was used rather than dip switches to store the hardware configuration of the machine. All machines that are based on the IBM AT including all 286, 386 and 486 computers use a variation of the CMOS RAM to store the hardware information.

Command Line Parameters   Characters that may be added to the command to execute a program. They can effect the way a program runs or provide a program with needed setup information.

COMMAND.COM   Known as the command interpreter, COMMAND.COM is the program that is running all the time and allows you to control your disk and the programs you run on your PC.

CONFIG.SYS   A small text file you use to tell MS-DOS how to configure itself according to its hardware environment by loading system settings and device drivers.

Conventional Memory   The memory originally addressed by the 8088 processor that was used in the IBM PC and PC/XT. This is the memory space below the 1 Megabyte address and is used by DOS and DOS programs.

CPU   Central Processing Unit. The main part of your PC, contained on a single microprocessor, which computes, compares, and processes information.

CRC   Cyclical Redundancy Checking. A calculation used to detect errors or changes in data by performing various mathematical calculations on the data.

DOS Boot Files   The files DOS uses to boot your PC. They include IO.SYS (IBMBIO.COM) and MSDOS.SYS (IBMDOS.COM).

Formatting a Diskette   An initialization process that prepares a diskette for use on a particular machine. It determines the physical layout of sectors on the diskette, which is where the information is stored.

Hidden File A file that cannot be viewed, changed, or deleted.

IO.SYS (IBMBIO.COM)   One of the system files DOS uses to boot your computer. It contains instructions for interaction with your systems input/output hardware.

Math Coprocessor   A chip you add to your computer to increase its speed, when performing numerical calculations by offloading the calculations from the main processor.

MSDOS.SYS (IBMDOS.COM)   One of the system files DOS uses to boot your computer. It sets up the hardware for interaction with the operating system.

Partition Table   A record stored on your hard drive that determines the layout of your hard drive. It divides the drive into logical areas for use by various operating systems including DOS. It is also used to create multiple logical drives out of one physical hard drive.

Read-Only Attribute A characteristic that can be assigned to a file, which allows the contents of the file to be read but not changed nor deleted.

ROM BIOS Read Only Memory Basic Input Output System. A set of routines stored in a ROM chip including the boot program to control the peripheral devices.

SYSINIT A routine that is part of the PC boot process. The SYSINIT code is stored in the ROM BIOS chips.

System Files Files required for the loading of the operating system: IO.SYS and MSDOS.SYS.

Video Card A printed circuit board that plugs into a PC and generates the text and graphics on the monitor's screen. It determines the resolution quality and numbers of colors on the screen.

Virus A program that infects a computer by multiplying and attaching copies of itself to programs in the system. It has the potential to destroy data and programs.

If you find a term that is not explained here and is not made clear in the manual, please give us a call so that we may include it in the glossary in future updates of the product.