

GRiD Software

May 1984

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About This Book

This is a reference manual for the following GRiD management tools or *applications*.

- GRiD Manager, which provides a variety of communication and utility functions. These functions include commands that let you communicate with GRiD Central and external file server devices. In addition, GRiD-Manager provides commands that let you duplicate, erase, or move files.
- GRiDFile, which provides database facilities that permit you to store information—such as product inventories—and retrieve it upon request.
- GRiDPlan, which provides an electronic worksheet for the manipulation of numbers and text. Such worksheets are commonly used in projecting financial transactions and in computing and presenting other financial data.
- GRiDPlot, which converts data into graphs. You can display the graphs either on the screen, or on a printer or plotter attached to your computer.
- GRiDWrite, which permits you to create and edit text or program files. You can intersperse GRiDWrite text formatting commands in a text file to control its format and final appearance when printed.

NOTE: You will understand the information in this manual more quickly and easily if you've read the *Getting Started* tutorial. The tutorial explains concepts you need to know in working with database, worksheet, graph, and text files; it also guides you through some practical exercises in creating and using these files.

Organization of This Manual Each management application is described in a chapter marked with a tab giving you direct access to the information you need. Each chapter begins with a table of contents and a guide to using the application; this is followed by a series of sections, in alphabetical order, describing the commands and functions of the application.

In addition, the manual contains the following main chapters or subdivision:

- The “System Basics” chapter, which contains information essential to understanding and using all the applications described in the manual.
- A glossary, which describes terminology used throughout the manual.
- Appendices, which contain tables and detailed technical information referred to by other chapters in the manual.
- The “Error Message” chapter, which gives you guidance in correcting the conditions causing an error or malfunction during the operations of a

GRiD application. Each numbered error message that might appear on your screen has a corresponding explanation in this chapter.

- The index, an alphabetized listing of the subjects covered in this manual, with a corresponding page number to each subject.

Using the Manual for the First Time Here's a suggested guide to using this manual after you complete *Getting Started*.

- Read the "System Basics" chapter for a more in depth study of the software you're about to use and the importance of planning backup procedures for your files.
- Scan Appendix G for information and special instructions that may apply to your particular hardware configuration.
- Learn the organization of the entire manual. You may find that other major sections in the book—most especially the appendices—contain useful, even essential, information.
- Turn directly to the chapter of the application you are about to use. Learn the organization of the chapter by glancing through the table of contents. Then read the overview section that follows the contents ("About GRiD-File," "About GRiDPlan," etc.) for a review of the steps involved in using the application.
- Use the glossary at the back of the manual when you find terminology you don't understand.

Typographical Conventions This manual follows certain typographical conventions concerning keycaps and using the keyboard. You should be aware of these conventions as you read.

Keycaps

Keycap labels are in a special typeface and in upper case, just as they appear on your keyboard. When the text asks you to press CODE, you should press the key labeled CODE rather than typing the word "CODE" letter by letter.

Multi-Key Operations

The manual often instructs you to perform operations like "press CODE-RETURN." When you see a hyphen between two keycap names, press the keys in the order in which they appear and hold them down together. Thus, when you see "press CODE-RETURN," press down the CODE key and, while holding it down, press the key labeled RETURN. If you see three keycap names linked with hyphens, all three must be held down together.

Confirm

You are instructed both in this manual and in prompts that appear on your screen display to “confirm” that a form is filled out correctly or that you are ready to go on to the next step of the task at hand. The proper response to a “confirm” request is to press CODE-RETURN.

Screen Messages

Often, certain chapters refer to messages that can appear on your screen or to information that you can type in. This information is always printed in a special typeface as shown in the message below:

Duplicate: make a selection and confirm

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System Basics

This chapter contains both introductory information and information essential to using the GRiD software products described in this manual. The following topics are covered:

- ☐ Start-up: turning on your computer and preparing to use it.
- ☐ The File form: creating and retrieving the database, worksheet, graph, and text files you will work with.
- ☐ Printer set-up: steps you must take before using a printer attached to your computer.
- ☐ Backup and recovery: procedures to safeguard the data and files you create.
- ☐ Communications: an introduction to the GRiD products that let your computer communicate over telephone lines, and where you can get more information on the products.

Start-Up You start up your computer by turning on the power switch. (You should first turn on any external devices—printer, plotter, or disk/permanent storage devices attached to your computer—several seconds before turning on the computer.) During the next interval, the computer loads GRiD-OS (GRiD Systems operating system) into the main memory (RAM, or Random Access Memory) from an external storage device. Depending on your computer, the storage device may be a floppy disk, a hard disk, or bubble memory. When the File form appears (Figure 1-1), the computer is ready to handle your requests.

Start-Up Devices

If you have more than one storage device attached, your computer looks for GRiD-OS on a *primary device* first—either bubble memory or floppy disk, depending on your computer. If GRiD-OS isn't on the first device your computer scans, it then looks for GRiD-OS on any other storage devices attached.

When you want to use the operating system on a device other than your primary device, you can alter the order your computer searches for GRiD-OS, as described below.

- ☐ To load the operating system from Hard Disk, turn on the computer while holding down the H (for Hard Disk) key.
- ☐ To load the operating system from Floppy Disk or Portable Floppy, turn on the computer while holding down the F (for Floppy Disk) key. If both a

Floppy Disk and Portable Floppy are attached to your computer, and you want to start up from the Portable Floppy, open the door to the Floppy Disk drive before turning on the computer.

The operating system and all start-up programs and files are loaded from the specified device.

See Appendix A for a detailed explanation of start-up and a description of the software files available under the "Programs" subject on your computer.

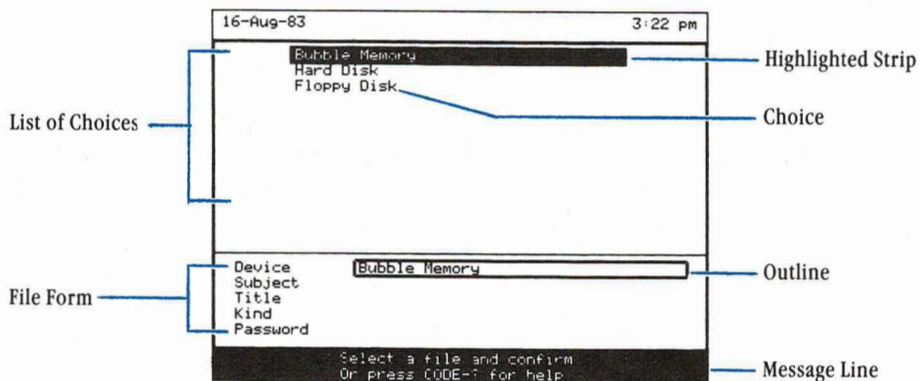
Warm Start-Up

Once start-up is complete, you may on occasion find it necessary to start up your computer again as you work. For example, some errors cause your system to "hang," making no further work possible until after a new start-up.

At this point, you can start up the computer in one of two ways: 1) by turning the power switch off and then on again, or 2) by pressing CTRL-SHIFT-CODE and the minus (-) key simultaneously for one full second. This method is often called a *warm start-up*. Some users find this method more convenient than using the power switch. Moreover, on some computers, the processing time for a warm start-up is faster than for an ordinary start-up.

The File Form After start-up, the first display you see on the screen of your computer is the File form (Figure 1-1).

Figure 1-1. *The File Form*



The File form is the "door" to your GRiD applications and files. Here are a few examples of what you can achieve by filling in and confirming the form:

- Create a file and bring it and the corresponding GRiD application into

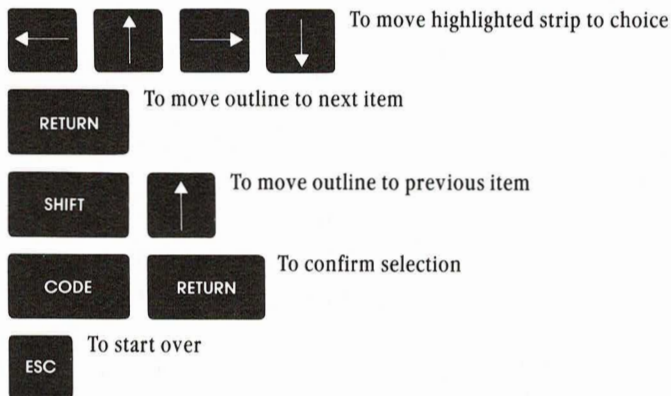
memory to process the file. For example, you fill in and confirm a File form to start work on a new worksheet, graph, text, or database file.

- Bring an existing file and its application into memory so that you can work on the file.
- Call up GRiD Central or a remote server device.

You fill in the File form by moving an outline and a highlighted strip, both shown in Figure 1-1. You either type in a name—the Title of the file, for example—or select a name from a list of choices displayed at the top of your screen.

The outline surrounds the item (Device, Subject, Title, etc.) that you select or type in. You move the outline down by pressing RETURN and up by pressing SHIFT-↑ (Figure 1-2). When the outline surrounds the Password item at the bottom of the form, pressing RETURN causes the outline to wrap around to the Device item at the top of the form. When the outline surrounds the Device item at the top of the form, pressing SHIFT-↑ causes it to wrap around to the Password item at the bottom of the form.

Figure 1-2. *Keys for Moving About the File Form*



The highlighted strip highlights a choice for the item that the outline currently surrounds. You indicate your choice by moving the highlighted strip over it. Move the highlighted strip by pressing ↑ or ↓ (Figure 1-2).

For step-by-step instructions on creating or retrieving a file, see “Session 1: Filling in the File Form” in the tutorial *Getting Started*. For step-by-step instructions to signing on to GRiD Central and copying software from GRiD Central, see “Session 4: Working with the GRiDManager.”

Pressing CODE-? causes a Help display to appear (Figure 1-3), with a brief explanation of each item on the File form.

Figure 1-3. *The File Form Help Display*

```

Fill in the File form to retrieve existing
files and create new ones.

All items in the form except Password must be
filled in. Press RETURN to move the outline to
the next item in the form. Press the Arrow keys
to move the highlighted strip over the choices.

Device    Indicates storage devices available.

Subject   Categorizes files. The "Programs"
          subject is reserved for GRiD software.

Title     Names a file.

Kind      Describes the application needed for the
          file you want to retrieve or create.

Press CODE-RETURN when the form is complete.

Press the ESC key to return to the File form
Version 3.1.0 of GRiD-US
Version 3.1.0 of Common code
  
```

The items in the Help display are explained in detail in the sections that follow.

Device

Device is the name of a permanent storage device. You must select one of the GRiD-supplied names: Bubble Memory, Hard Disk, Extra Hard Disk, Floppy Disk, Extra Floppy Disk, or Portable Floppy Disk. The external storage device holds your file when you're not working with it.

CAUTION: Before you create a file on a new diskette, you must first format it with the InitializeMedia program. See Appendix F for details.

The upper portion of the screen in Figure 1-1 shows the list of choices for Device. The list includes those permanent storage devices that are attached to your computer and turned on at start-up. If you attach or turn on a device after start-up, you must use the Add or Remove a Device command, described in this book's "GRiDManager" chapter. Confirming the command causes the new device to appear in the Device list of choices. You can then store files on the new Device and retrieve files from it.

When you are connected to GRiD Central or to a file server device, you can choose among additional storage devices. See the documentation supplied with the server device for information on the devices available. The GRiD Central devices are described in the next section.

GRiD Central Devices When you sign on to GRiD Central, seven additional device choices are available (Figure 1-4).

Figure 1-4. *GRiD Central Devices*

GRiD News Bulletins		
#	Description	Date
001	GRiD Management Tools 3.1.0 Release	05/15/84
GRiD Central: GRiD News GRiD Central: Company Subjects GRiD Central: Group Subjects GRiD Central: Software Subjects 2.0 GRiD Central: Software Subjects 3.0 GRiD Central: Software Subjects 3.1 GRiD Central: User Subjects		
Sign-on completed. Devices on GRiD Central		

As a user of GRiD Central, you can read or write your private files under User Subjects. You can assign a password to these files for privacy. In addition, you can duplicate files from the following Subjects:

- ☐ "GRiD Central: GRiDNews": a group of files containing information on new software releases and other GRiD products.
- ☐ "GRiD Central: Company Subjects": a group of files shared by all users in your company
- ☐ "GRiD Central: Group Subjects": a group of files shared by all users within the same group or division in your company
- ☐ "GRiD Central: Software Subjects 2.0": a group of files containing Version 2.0 of GRiD software
- ☐ "GRiD Central: Software Subjects 3.0": a group of files containing Version 3.0 of GRiD software
- ☐ "GRiD Central: Software Subjects 3.1": a group of files containing Version 3.1 of GRiD software
- ☐ "GRiD Central: User Subjects": a group of files created by and for the exclusive use of the user presently signed on.

Subject

Subject is the name of a group of files that you define. Each Subject contains one or more Titles (described below) that identify your files. Different Subject names let you divide your work into distinct, logical groups.

In the example shown in Figure 1-5, a user has created Subjects for “Expenses,” “Forecasts,” “Memos,” “Personnel,” and “Sales.”

Figure 1-5. Sample List of Subjects in the File Form

The screenshot shows a terminal window titled "16-Aug-83" with a time of "3:24 PM". The main area displays a list of subjects: Expenses, Forecasts, letters, Memos, Personnel, Programs, and Sales. A black highlighted strip is positioned at the top of this list. Below the list, there is a form with labels "Device", "Subject", "Title", "Kind", and "Password". The "Device" field is filled with "Bubble Memory". At the bottom of the window, a status bar reads: "Select a file and confirm Or press CODE=? for help".

If you want to specify a new Subject, move the highlighted strip to the top of the screen and type in the name. Then press RETURN to fill in the next item on the File form.

GRiD supplies you with the Getting Started subject and the “Programs” subjects. The Getting Started subject contains files for use with the *Getting Started* tutorial. The “Programs” subject contains the files that comprise GRiD-OS, system utilities, GRiDManager, and the GRiD applications you ordered. See Appendix A for a list of the files that can appear in Programs, as well as a brief description of each file and how they are used during start-up.

CAUTION: Never delete or remove the following files from the “Programs” subject. These files comprise GRiD-OS; without them, you cannot start up your computer and use your GRiD applications.

CCOS

Common

Executive

Without the following files, you cannot communicate with GRiD Central.

GRiDManager

PhoneLink

Modem

Consult Appendix A before you remove or delete any other file from Programs. Although the other files in “Programs” are optional, you should exercise extreme caution in removing or deleting them, or moving them to a

subject other than "Programs." You might need the file for an auxiliary function important to you. For example, if you want to use a Diablo Model 630 printer, you must have the Diablo 630 file and the Serial file in Programs.

Title

Title is the name you assign to a file. If you're creating a file, move the highlighted strip to the top of the screen and type in the name. Figure 1-6 shows a sample list of titles that might appear under the Forecasts subject.

Figure 1-6. Sample List of Titles in the File Form

The screenshot shows a terminal window titled "16-Aug-83" with a time of "3:28 pm". The main area displays a list of titles for the "Forecasts" subject: "Graph for memo", "Southeastern Sales", "Southeastern Sales", and "Southeastern Sales". To the right of these titles are the file types: "ScreenImage", "Graph", "Text", and "Worksheet". At the bottom, there is a section for file metadata: "Device", "Subject", "Title", "Kind", and "Password". The "Title" field is currently set to "Forecasts". Below this, a message reads: "Select a file and confirm Or press CODE-? for help".

Kind

Kind associates your file with a particular GRiD application or system function. When you move the outline to the Kind item, a list of choices appears in the upper portion of the screen. Figure 1-7 shows a portion of the list of choices available for the Kind item.

Figure 1-7. Partial List of Kind Choices in the File Form

The screenshot shows a terminal window titled "16-Aug-83" with a time of "3:28 pm". The main area displays a list of kind choices: "3101", "Basic", "Com", "Database", "Device", "Font", "Graph", "Lst", "Map", "Paint", "Reformat", and "Run". The "Database" choice is highlighted. At the bottom, there is a section for file metadata: "Device", "Subject", "Title", "Kind", and "Password". The "Kind" field is currently set to "Database". Below this, a message reads: "Select a file and confirm Or press CODE-? for help".

GRiD-OS determines the items that appear in the Kinds list from the files on the storage devices attached to your computer when you started up. The Add or Remove a Device command in GRiDManager updates the list after you attach or detach a device from your computer.

If you don't see in the list a Kind item you need, simply type in the desired Kind. Table 1-1 shows some of the more commonly used Kind settings and what happens when you specify them.

CAUTION: Make sure you have files in "Programs" that correspond to the Kind item you use, or you will receive an error message. The Kinds Database, Worksheet, Graph, and Text, for example, require GRiDFile, GRiDPlan, GRiDPlot, and GRiDWrite, respectively.

Table 1-1. *Choices for the Kind Item of the File Form*

Choice	Action After Confirming the File Form
3101	Makes the facilities on the GRiD3101 terminal emulator available and lets you connect to a remote host computer. See the <i>GRiD3101 User's Guide</i> for information on this product.
BASIC	Starts GRiDBASIC; you can enter statements for a new BASIC program or modify an existing one
Database	Brings a database file and the GRiDFile application into memory. You see a database table displayed on your screen. You can now start typing in or changing information in your database file.
Device	A file used by the system as an interface to a peripheral device such as a disk drive or modem.
Graph	Brings a graph file and the GRiDPlot application into memory. You see a graph table displayed on your screen. You can now start creating a new graph or modifying an existing one.
Plotter	A file used by the system as an interface to a plotter device. A "Plotter" file must exist for each make or model of printer attached to your computer.



Choice	Action After Confirming the File Form
Printer	A file used by the system as an interface to a printer. A "Printer" file must exist for each make or model of printer attached to your computer.
Run	Identifies a file that has executable machine code. The code is the output of a compiler, such as the PASCAL or FORTRAN compilers. When you confirm a File form whose Kind is set to Run, GRiD-OS brings the file into main memory; then, the program it contains starts to execute.
Sign-on	Brings a Sign-on form and GRiDManager into memory. You can now connect with GRiD Central or an external file server device, and you have GRiDManager available for erasing, duplicating, moving, and performing other file-managing tasks.
Terminal	Makes the facilities on the GRiDTerm terminal emulator available and lets you connect to a remote host computer. See the <i>GRiDTerm User's Guide</i> for information on this product.
Text	Brings a text file and the GRiDWrite application into memory. You can start typing or changing text in the file.
Worksheet	Brings a worksheet file and the GRiDPlan application into memory. You see a worksheet displayed on your screen. You can start entering or changing information in the worksheet.
VT100	Makes the facilities on the GRiDVT100 terminal emulator available and lets you connect to a remote host computer. See the <i>GRiDVT100 User's Guide</i> for information on this product.

Password

Password is an identification item that must be typed in by anyone accessing a file. It thus restricts the use of the file to only those persons who know the password. You designate a password using the Assign Password command in GRiDManager; you can change an existing password with the same command. See the Assign Password section in the "GRiDManager" chapter.

- CAUTION:** Don't assign a password to a file unless file security is essential. If you forget the password, you can't recover, duplicate, erase, or move the file. If you want to delete the file, you must re-initialize the device on which it resides (see the Initialize Media Utility in Appendix F). Re-initializing a device deletes all files on the device.

If you do assign a password to a file, use a word that is personally meaningful, thus easy to remember, but not easily guessed by someone else.

Printer Set-Up

GRiD supplies software for the following printers:

- The Epson Models MX82, MX100, FX80, and FX100 printers. Earlier models of the Epson are also supported, but without the Typeface commands described in Part II of the "GRiDWrite" chapter and Appendix G.
- The Diablo Models 620 and 630 printers.

Before using your printer for the first time, check the GRiDManager Options form and make sure that the printer attached to your computer is correctly specified in the Current Printer item of the form. See Current Printer under Options—CODE-O in the "GRiDManager" chapter.

- CAUTION:** Before attempting to print for the first time on a Diablo printer, ensure that the set-up switches are set as required by your system. See the Owner's Guide supplied with your computer for details.

Communications You can use your computer to exchange data with a variety of external systems or devices. The purpose of this section is to briefly describe these systems and tell you where you can get more information about them.

GRiD Central and File Server Devices

GRiD Central is a support system operated by GRiD Systems. It distributes software and provides additional storage space for files and programs that don't fit on the devices attached to your computer. You communicate with GRiD Central over telephone lines. A file server device is a system operated by the customer. It provides access to data files and programs over either telephone lines or a cable.

This manual provides information on logging on to GRiD Central and to a file server device.

You connect with GRiD Central or a file server device by creating a file whose Kind is set to Sign-on, and then filling out and confirming the applicable forms. See the Sign-on section in the "GRiDManager" chapter for details on filling out the forms.

You fill in the forms only once. When you exit and save them, all the information you typed in (except your password) is saved. Later, when you select

the same Sign-on file, the forms are available as you filled them in; you need enter only your password.

When the sign-on is completed, you have the facilities of GRiDManager available, allowing you to erase, move, and duplicate files between your computer and GRiD Central or an external file server device. See the introduction to the "GRiDManager" chapter for an overview of what you can do with GRiDManager.

When you finish your work at GRiD Central or with your file server device, you must use the Sign-off command in GRiDManager to disconnect.

Voice Communications with the Telephone Handset

You can make and receive telephone calls, using the handset on your GRiD Compass as you work, if you've purchased GRiDAccess. GRiDAccess also lets you exchange data with other computers. Once GRiDAccess is installed, pressing CODE-A effectively lifts up the receiver and lets you dial a party; pressing CODE-A again hangs up and thus terminates the connection. For information using GRiDAccess and its hardware and software requirements, see the *GRiDAccess User's Guide*.

Terminal Emulators

GRiD Systems provides terminal emulator programs that transform your computer into an intelligent terminal. Using the programs, you can access remote host systems, use their applications, retrieve data, and then use the data as source information in your worksheets, database files, and graphs.

The following terminal emulator products are available:

- ❑ GRiDTerm, which gives access to public sources such as Dow Jones, the SOURCE, and CompuServe, as well as your own firm's mainframe computer. See the *GRiDTerm User's Guide* for more information on this product.
- ❑ GRiD3101, which transforms your computer into an IBM 3101 Display terminal, and gives you the ability to communicate with a host system that supports the IBM 3101. See the *GRiD3101 User's Guide* for more information on this product.
- ❑ GRiDVT100, which transforms your computer into a DEC VT100, giving you the ability to communicate with a host system that supports DEC's VT100, VT101, and VT102 terminals. See the *GRiDVT100 User's Guide* for more information on this product.

In addition, GRiD Systems provides GRiDReformat, a program that converts the data you receive with a terminal emulator into a format suitable for one of the GRiD applications (GRiDPlan, for example). GRiDReformat is described in the user's guide provided with each terminal emulator.

Backup and Recovery

- **CAUTION:** For the security of your files and to save yourself needless work, you should establish good back-up and recovery procedures for your data.

Backup is the practice of periodically copying data to other storage media; the copied data is then available in the event the original data is damaged or lost. *Recovery* is the process of restoring files from a back-up device if they are lost on the primary storage device.

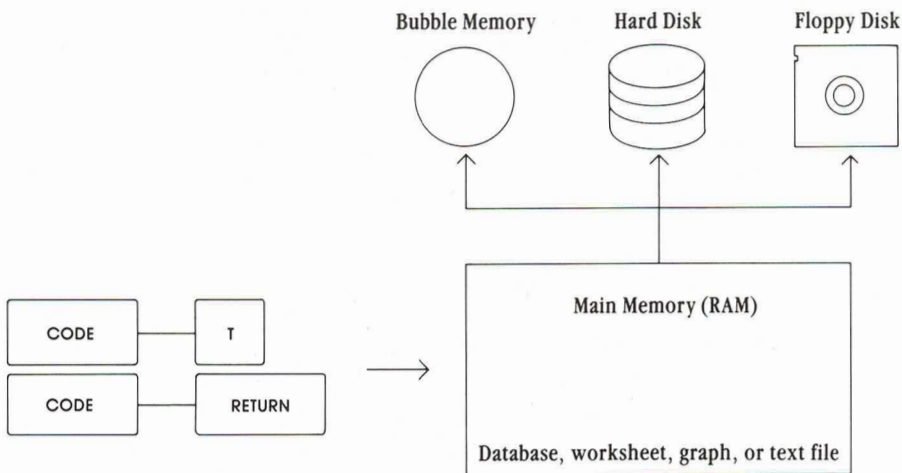
Data can be lost either as you work with it in main memory (RAM) or later, through the damage or loss of the permanent storage device where your files normally reside. The precautions you take to prevent this loss are described in the following sections.

Backing Up Data As You Work

The worksheet, graph, or text file you are currently using resides in main memory (RAM). Data in main memory is subject to loss through power failures, equipment malfunction, and your own errors. Therefore, as you work, periodically (at least every 10 minutes) save your file on the permanent storage device where it normally resides when you're not using it—Bubble Memory, Hard Disk, Floppy Disk, or Portable Floppy.

You save your file by pressing CODE-T and confirming. This automatically selects the Save This File item in the Transfer menu and saves your file with any changes you've made (Figure 1-8).

Figure 1-8. *Saving Data in Main Memory*

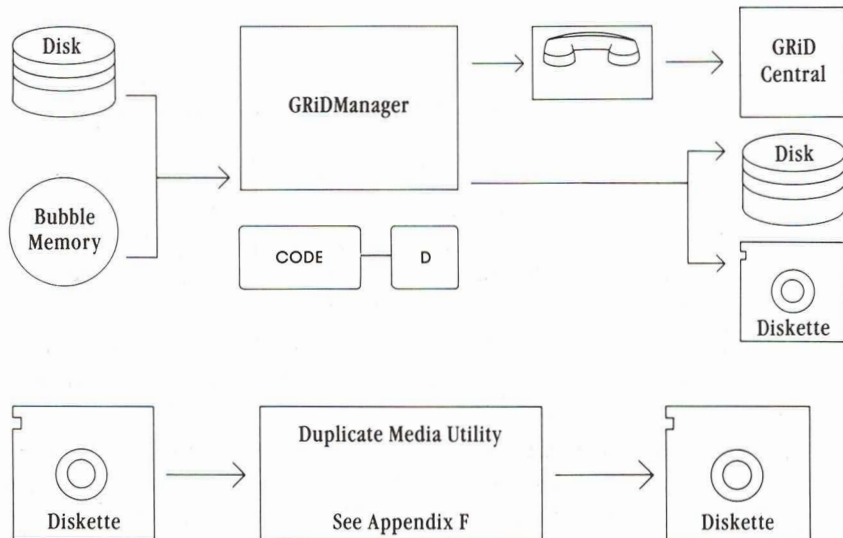


The data you are working on in main memory (RAM) is stored into the file on the device where you first retrieved it. (This method isn't necessary with GRiDFile, which automatically stores revised data onto the external device as you enter it.)

Backing Up Files in Permanent Storage

At regular intervals, make back-up copies of updated files from their external storage device to another storage device (Figure 1-9). For example, if you're using hard disk, you might want to keep duplicate copies on a floppy diskette or at GRiD Central. The interval of the backup depends on how often you update the file. If you update it every day, you might want to duplicate it at the end of each workday.

Figure 1-9. *Backing Up Files in Permanent Storage*



Here are some guidelines to consider in planning your back-up and recovery procedures.

- ☐ Make back-up copies of files that would take a long time to recreate.
- ☐ Make back-up copies each time you make changes to the original file.
- ☐ When backing up sensitive data, consider the security of the back-up device. For example, if your back-up copy is on a Floppy Disk, keep the diskette in a safe place (in a locked cabinet or at home, for example).
- ☐ Keep a record of when you make back-up copies. For example, write the back-up date on the diskette label. If you lose the original file, you'll want

to know the last back-up date. (You can also get this information with the Transfer command; see the section on Show Characteristics of a File under Transfer—CODE-T in the “Common Commands” chapter for information on determining the date and time a file was either created or last modified.)

How to Make Back-Up Copies of Files The most efficient way to back up multiple files is to use the Duplicate Files command (CODE-D) and the Wildcard character (CODE-W). For descriptions and examples of both the Duplicate Files command and the Wildcard character, see the “GRiDManager” chapter.

If you wish to back up files directly from one floppy disk to another floppy disk and you have only one floppy disk device attached to your computer, you must use the Duplicate Media utility. See Appendix F for a description of this utility.

Recovering Data

The following describes alternative actions you can take if you lose data while working with your files.

- Reselect the original file if you lose data while working in main memory (RAM). The data will be either in its original state or as you last saved it with CODE-T. If, as you are working, you want to restore the original file and throw away any changes you have just made, press CODE-ESC and confirm; then reselect the original file.
- Use the Duplicate Files command (CODE-D) in GRiDManager to restore back-up files into their original files. You can recover in this way data that is backed up on Hard Disk, Floppy Disk, or GRiD Central.
- Use the MediaRepair program to attempt to repair damaged storage areas and to provide a report on the results. A variety of incidents—power failures, physical damage, etc.—can cause files to be lost or irrecoverable. See Appendix F for information on MediaRepair.
- Use the GRiDFile Repair utility to repair or restore damaged database files—for example, database files in which you inadvertently erase records. See Appendix H for information on GRiDFile Repair.
- Use GRiDTerm, GRiD3101, GRiDV100, or other terminal emulator to restore files you backed up on a host system.