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WINDOW MANAGER

This chapter contains an introduction to the Window Manager and a description of each of the Window Manager commands.

About Window Manager

Window Manager is a component of GRiD-OS that allows you to simultaneously run and view multiple GRiD applications; it provides true multi-tasking of GRiD applications. In addition, you can use Window Manager to define macros. A Macro is a sequence of recorded keystrokes that can be invoked by a single keystroke.

Window Manager is contained in the file Executive, which is automatically started when you boot GRiD-OS. Window Manager is always resident in main memory (RAM) after you start GRiD-OS but remains dormant until you ask it to do something for you. This means that if don't have the need to simultaneously run multiple applications, you don't need to learn how to use Window Manager--your system will run fine. However, Window Manager is easy to use and it is a powerful tool that can greatly increase your productivity. We think that once you become accustomed to using Window Manager, you'll wonder how you'd have gotten along without it.

Here's some simple examples of ways that Window Manager can help you get the most from your computer:

- o You can be printing a file in one window while you're working on some other task in another window.
- o While you're downloading information from a mainframe computer or a file server in one window you can be working on some other task in another window.
- o While you're using one of the above window configurations, you could also have a GRiDmail window open from which you can send and receive electronic mail from a GRiD Server.
- o You can record a macro that automatically signs-on to a mainframe computer or file server, downloads a particular file, then prints that file. Then, whenever you want to do that operation, you simply press one keystroke and your computer does the rest.

- o When writing a document, you can record a certain frequently used phrase or piece of text in a macro and then use a single keystroke to insert that text into the document whenever you need it.

The Window Concept

The basic concept of Window Manager is the window. Think of a window as a viewing screen that can be used to look at and operate a particular application. Most computer systems give you only one window--the screen of your computer. With GRiD's Window Manager, however, you are effectively given several screens, or windows.

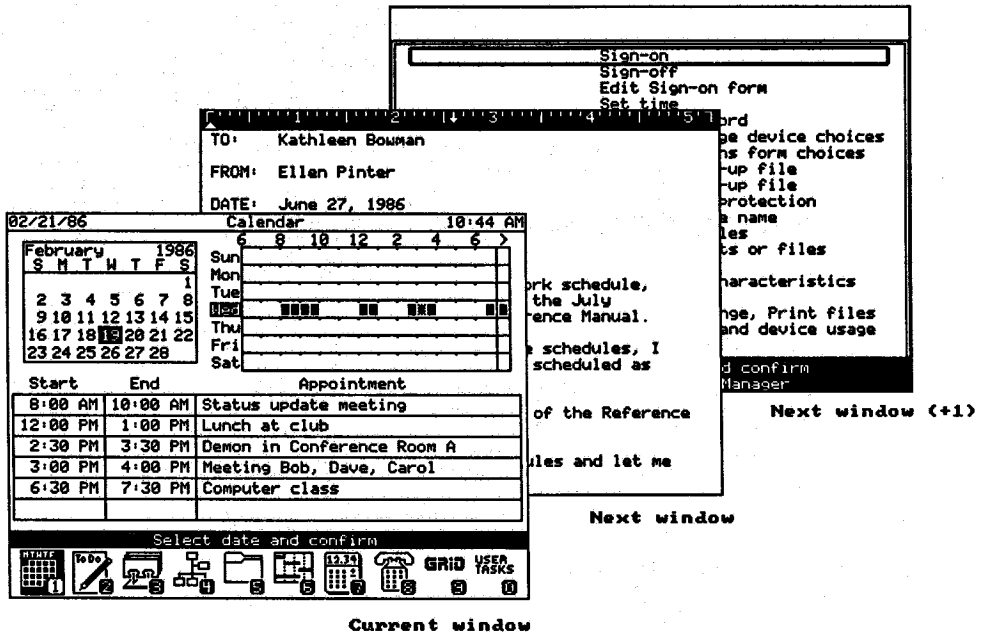
When you have several applications operating simultaneously, each one gets its own window. The various windows can be displayed one at a time on your computer screen or in combinations so you can view two or more windows at once.

One window is always designated as the current window; this is the window that is accepting input from the keyboard. The current window is the window that is currently displayed, or, if multiple windows are displayed, it is the window surrounded by a solid line.

With a single keystroke, you can instantly switch to another window and use the application in that window. When you switch to another window, then that window becomes the current window.

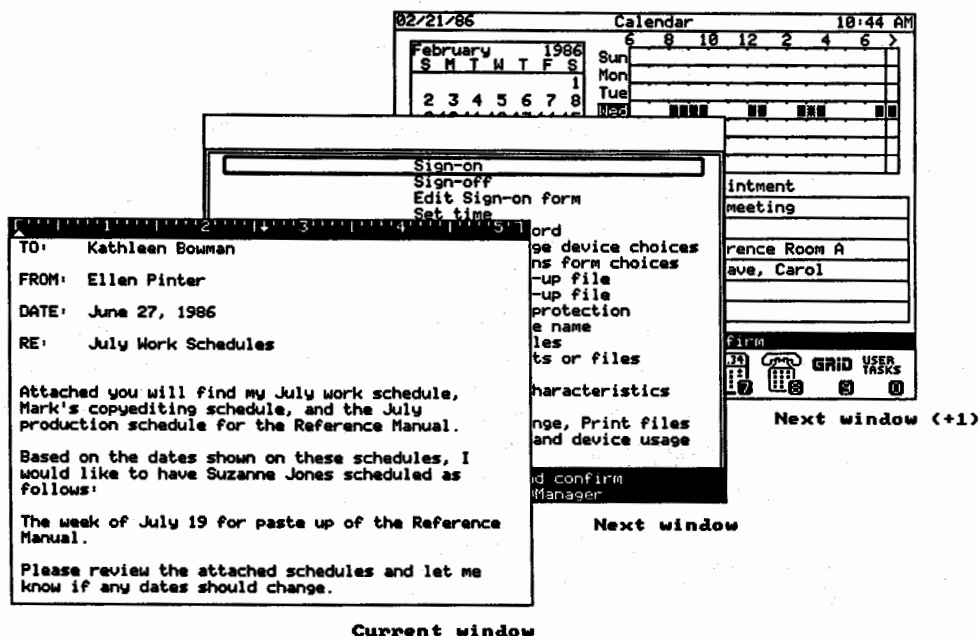
The concept of multiple windows is shown in Figure 2-1. Each of the applications shown in Figure 2-1 is assigned its own window.

Figure 2-1. Multiple Windows



In Figure 2-1, the window in the front (the GridMaster application) represents the current window--the one being displayed on your computer screen and responding to data you enter from the keyboard. The windows behind the front one are not currently displayed on the screen and are not accepting input from the keyboard; they are active, however, and could be performing activities such as printing or duplicating files. You can instantly switch to the next window by using the Window Manager Switch to Next Window command (press Code-Ctrl-N). The order of the windows after issuing the Switch to Next Window command is shown in Figure 2-2.

Figure 2-2. Switching Windows



The windows can be thought of as a stack of cards. When you use the Switch to Next Window command, the current window moves to the bottom of the stack, and the next window moves to the top and becomes the current window. You can cycle through all your windows by using the Switch to Next Window command several times.

When you Quit or Cancel the application in the current window, that window is removed from your stack of windows and the next window on the stack automatically becomes the current window.

Window Manager gives you immediate access to two or more application programs by keeping each program present in RAM and operating simultaneously. The only limitation on the number of windows you can have open is the amount of RAM available, since each application and its data occupy some RAM space.

NOTE: All user information such as a start-up window configuration and user-defined keys is stored in the User file (described in more detail

in the System Basics chapter). Ensure that your User file is available on a read-write storage device before you save a window configuration or define any user keys. At start-up, GRiD-OS reads the User file to set all user-defined functions. If your User file is not available when GRiD-OS starts up, your user-defined functions will not be active.

Window Manager Commands

For ease of learning and use, all Window Manager commands are accessed by special keystrokes that combine the *Code* and *Ctrl* keys with a letter key. For example, you already learned that *Code-Ctrl-N* is the Switch to Next Window command. The Window Manager commands can be used at any time and within any application.

The complete menu of Window Manager commands is accessed by pressing *Code-Ctrl-?* and is shown in Figure 2-3. Each of the commands is described in the following sections. The last section, Special Notes, contains information that may be helpful if you are having problems using Window Manager.

Figure 2-3. Window Manager Commands

Window overview	
	Save window configuration
Code-Ctrl-B	Begin a new application
Code-Ctrl-H	Split window horizontally
Code-Ctrl-K	Define user keys
Code-Ctrl-M	Move this window off screen
Code-Ctrl-N	Switch to next window
Code-Ctrl-U	Split window vertically
Code-Ctrl-W	Display list of windows
Code-Ctrl-Z	Zoom window up or down
Commands: Select item and confirm	
Version 3.2.0 of Windows Executive	

Window Overview--Code-Ctrl-?

The Window Overview command displays a brief overview of Window Manager and its functions.

Save Window Configuration--Code-Ctrl-?

The Save Window Configuration command saves your current window configuration as the start-up configuration. This means that the next time you restart GRiD-OS on your computer, the window configuration you saved is started up automatically.

To change your start-up window configuration, set up your windows the way you want them and then select and confirm Save Window Configuration. The new window configuration overwrites the old one.

For example, you could open two windows--one with your GRiDMaster organizer and one with GRiDManager. Then select and confirm the Save Window Configuration command. Then, everytime you start up GRiD-OS, it automatically starts up those two windows. The window that is the current window when you select the Save Window Configuration command is made the current window when GRiD-OS starts up.

During start-up, if you want to cancel your preset window configuration and start up with no windows except the File form, press *Code-Esc* when the start-up screen image is displayed. This cancels the start-up window configuration for that particular session, but does not erase the start-up window configuration. The next time you start up normally it starts up your preset windows again.

Note that this command and the GRiDManager command, Select Start-Up File, both can set which files, if any, are loaded at start-up. Between these two commands, the one most recently executed governs which files are loaded at start-up. For example, if a start-up file is selected, and then a window configuration is saved, the window configuration is activated at start-up. On the other hand, if a window configuration is saved, and then a start-up file is selected, the start-up file is activated at start-up. See the Select Start-Up File command in the GRiDManager chapter for details on selecting a start-up file.

Begin a New Application--Code-Ctrl-B

The Begin a New Application command opens a new window and displays the File form in it so you can begin a new application. The new window is created at the front of your stack of windows and then becomes the current window. When you fill in and confirm the displayed File form, a new application is started in that window.

Note that when you begin a new application, the typeface used for the new application is the typeface of the previous current window, if the new applications's current typeface is set to System-Wide. If the new application's typeface was previously set to some other typeface, then that typeface is used in the new window.

If you decide that you don't want to open a new window, just switch out of the new window or press *Esc* before confirming the File form and the new window is removed automatically from your stack of windows.

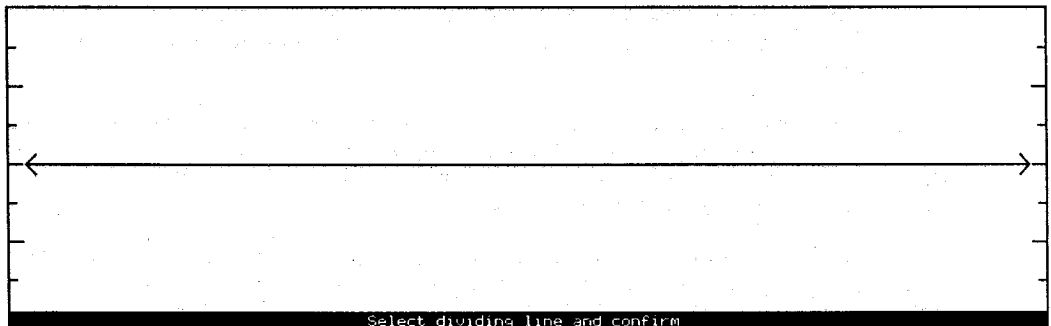
When you eventually Quit or Cancel the application that you started in the new window, that window is removed from your stack of windows and the next window on the stack automatically becomes the current window. When you Quit or Cancel the last application, the File form is displayed for you to select a new application.

Split Window Horizontally--Code-Ctrl-H

The Split Window Horizontally command splits your screen into two sections--an upper and a lower section--so you can simultaneously display two or more windows. What was formerly your current window is displayed in the upper section, and in the lower section (now the current window) you can either start a new window or display one of the other windows from your window stack.

When you press *Code-Ctrl-H*, the screen shown in Figure 2-4 is displayed. This screen allows you to select how you want to divide your screen for the two windows.

Figure 2-4. *Splitting a Window Horizontally*



Initially, the horizontal line marking where the window is to be split is positioned in the center of the screen. If you want to split the window in different proportions, use the Up and Down arrow keys to position the horizontal line where you want it. You can press *Shift-UpArrow/Shift-DownArrow* or *Code-UpArrow/Code-DownArrow* to move the horizontal line in larger steps. Confirm when you have positioned the horizontal line correctly.

The screen splits into two windows where you indicated; the upper window displays what was formerly your current window and the lower window (now the current window) displays the File form to allow you to start a new application in that window.

For example, Figure 2-5 shows how the screen would look if you had been working on a memo in your current window when you executed this command. Note that the current window is surrounded by a solid line and any other windows displayed on the screen are surrounded by broken lines. This makes it easy for you to tell which window is the current one.

Figure 2-5. A Window Split Horizontally

To: Field sales personnel From: District manager Subj: 2nd quarter sales strategy Date: March 10, 1986	
First, I'd like to commend you all on your excellent selling during the last quarter. Our sales bookings increased over 21% and we've added several extra people on our manufacturing line to help build more products. Please keep up the good work--we need to continue increasing our sales now more than ever.	
31-Jul-86	GRID Systems Corporation 3:00 PM
Internal Hard Disk Device Internal Hard Disk Subject Title Kind	
Select a file and confirm or press Code-? for help	

To start a new application in the lower window, fill in the File form and confirm. To move one of your other windows into the lower window, simply press *Code-Ctrl-N*; the File form is cancelled automatically. You can continue to press *Code-Ctrl-N* until the window you want appears in the lower position.

To move between windows when you have split the screen into two or more horizontal sections, press *Code-Ctrl-UpArrow* to move up or *Code-Ctrl-DownArrow* to move down. You can zoom up the current window to fill the screen by pressing *Code-Ctrl-Z*.

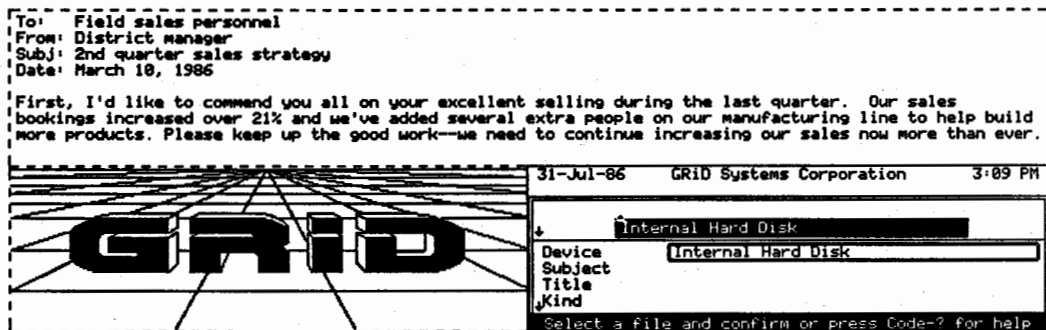
When displaying multiple windows, you may want to change to a smaller font size in your applications in order to view more information. You can change the font size for all applications by changing the System-wide Typeface item in the GRIDManager Options form. See the GRIDManager chapter for details.

Remember that to close a window, simply Quit or Cancel the application in that window. Automatically, the remaining windows on the screen expand to fill the vacated space. To simply move a window off screen without closing it, use the Move This Window Off Screen command (*Code-Ctrl-M*).

NOTE: Any non-current window displaying a menu or form is temporarily blanked out when you have multiple windows on the screen. This is to avoid confusion from having more than one cursor displayed on the screen at a time. (The highlighted choice bar in menus and forms is a kind of cursor.) When you move to a blanked out window using a *Code-Ctrl-Arrow* key the menu or form in that window is immediately redisplayed.

After you have split a window, you can split the remaining windows again, if you wish. For example, Figure 2-6 shows a screen that has been split horizontally and then one part has been split vertically again. (See Split Window Vertically--Code-Ctrl-V for details on splitting a window vertically.)

Figure 2-6. Screen Split Horizontally then Vertically



Define User Keys--Code-Ctrl-K

The Define User Keys command allows you to define a key as a file or as a sequence of recorded keystrokes (macro). You can define up to 26 user keys (macros) which are accessed by pressing *Code-Shift* and then a letter key. To display a menu of all your defined user keys, press *Code-Shift-?*.

Press *Code-Ctrl-K* to execute the Define User Keys command and display the menu shown in Figure 2-7. The items on the Define User Keys menu are explained in the following subsections.

Figure 2-7. Define User Keys Menu



Define a Key as a File

The Define a Key as a File command allows you to define a user key as a file. This means that pressing that user key automatically causes the file you have defined to start up in a new window; that new window becomes the current window.

For example, the user key Code-Shift-G is predefined for you as GRiDManager. You can instantly start GRiDManager at any time by pressing *Code-Shift-G*. You don't need to fill in a File form. In addition, Code-Shift-M is predefined as GRiDMail. (GRiDMail is a separately purchased program that allows you to use the GRiDMail Electronic Mail System.)

If you press a user key and the file defined for that key is already active in another window, that window is simply displayed on the screen and made the current window; a new copy of the file is not started. This feature is useful if you have many windows open. You don't have to use the Switch to Next Window command to cycle through your windows until you get to the one you want to see; if the one you want has a user key defined for it, you can simply press its user key to display it.

When you select Define a Key as a File, the File form is displayed. Fill in the File form with the name of the file you want to assign to a user key, then confirm. Note that the file is not run at this time.

Next, the form shown in Figure 2-8 is displayed. Enter the letter of the user key that you want to assign the file to. You can also enter a comment or label that is to be shown in the menu of all user-defined keys. If you leave the Comment item blank, the title of the selected file is used. At any time, you can display the menu of user keys that you have defined by pressing *Code-Shift-?*. Note that the Define User Keys command is also available on the *Code-Shift-?* menu.

Figure 2-8. *Define a User Key Form*

A thru Z	
Key	
Comment	
Define a key: Fill in form and confirm	

To cancel a user key definition, use the Cancel a Key Definition command, described below. Note that you can change a key definition without first cancelling the old definition; simply assign a new definition to the same user key.

Define a Key as Keystrokes (Start Recording)

The Define a Key as Keystrokes command allows you to define a user key as a sequence of keystrokes. This means that pressing that user key

automatically causes the recorded sequence of keystrokes to play back as if you had typed them on your keyboard. There are an endless number of cases where this feature could be used. Basically, you can automate any frequently used sequence of keystrokes.

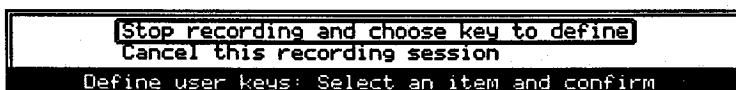
For example, you could record the keystrokes used to sign on to a mainframe computer and download a weekly report, then print that report. Then, once a week all you would need to do to execute that function is press the user key defined for it. User keys also can be used to store frequently used pieces of text, formulas, etc. for use within specific applications.

CAUTION: If you record a sequence of keystrokes to sign on to a remote computer or file server device, you may not want to record your password. Recording your password could lead to a breach of security.

NOTE: When you press a user key to play back a sequence of recorded keystrokes, all Window Manager commands are temporarily disabled until your recorded keystrokes finish playing back. This prevents any window commands from getting confused with your recorded keystrokes, which can include recorded window commands.

When you select Define a Key as Keystrokes, Window Manager immediately starts recording your subsequent keystrokes. Enter all the keystrokes that you want to record, then press *Code-Ctrl-K* again and the menu shown in Figure 2-9 is displayed. Select and confirm the first item, Stop Recording and Choose Key to Define, if you want to save your recording; to cancel and erase your recording, select the second item, Cancel This Recording Session. Note that the keys used to select the Stop Recording command aren't recorded.

Figure 2-9. Stop Recording Menu

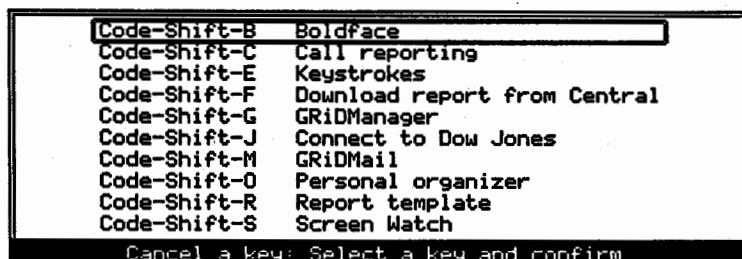


If you selected Stop Recording and Choose key to Define, the form shown in Figure 2-8 is displayed. Enter the letter of the user key that you want to assign the file to. You can also enter a comment or label that is to be shown in the menu of all user-defined keys. Generally, you should enter a short description of the keystroke sequence you recorded. At any time, you can display the menu of user keys that you have defined by pressing *Code-Shift-?*.

Cancel a Key Definition

The Cancel a Key Definition command cancels a previously defined user key. When you select this command, a menu of all your user keys is displayed, as shown in Figure 2-10. Select and confirm the key you want to cancel. After the key is canceled, you are returned to your current window.

Figure 2-10. Cancel Key Definition Menu



Move This Window Off Screen--Code-Ctrl-M

The Move This Window Off Screen command is used when you have multiple windows on the screen. It moves the current window off screen and places it at the back of your window stack. The other windows on the screen expand to fill the space left by the window that was removed. If only one window is left on the screen, it becomes the current window. If two or more windows are left on the screen, then the window that expands into the vacated space becomes the current window.

If this command is used when you don't have multiple windows on the screen it has the same effect as the Switch to Next Window command (Code-Ctrl-N).

Switch to Next Window--Code-Ctrl-N

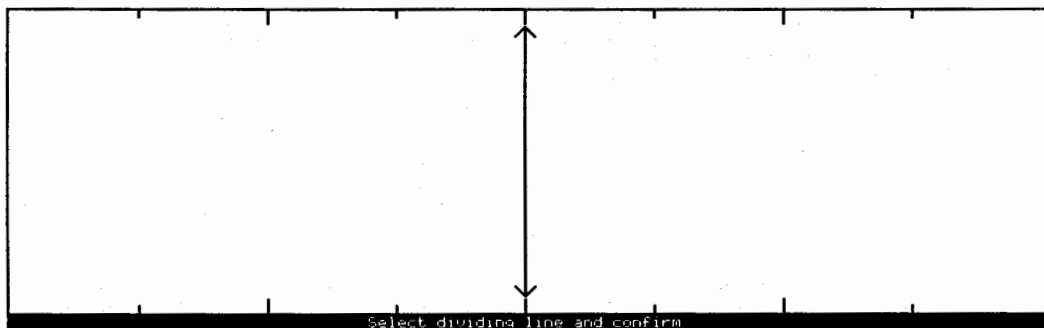
The Switch to Next Window command brings the next window in the window stack onto the screen in place of the current window. The current window is moved off screen to the bottom of the window stack and the new window becomes the current window. If you have only one window or all your windows are displayed on the screen at once, this command has no effect.

Split Window Vertically--Code-Ctrl-V

The Split Window Vertically command splits your screen into two sections--a right and a left section--so you can simultaneously display two or more windows. What was formerly your current window is displayed in the right section, and in the left section (now the current window) you can either start a new window or display one of the other windows from your window stack.

When you press *Code-Ctrl-V*, the screen shown in Figure 2-11 is displayed. This screen allows you to select how you want to divide your screen for the two windows.

Figure 2-11. *Splitting a Window Vertically*



Initially, the vertical line marking where the window is to be split is positioned in the center of the screen. If you want to split the window in different proportions, use the Right and Left arrow keys to position the vertical line where you want it. You can press *Shift-RightArrow/Shift-LeftArrow* or *Code-RightArrow/Code-LeftArrow* to move the vertical line in larger steps. Confirm when you have positioned the vertical line correctly.

The screen splits into two windows where you indicated; the right window displays what was formerly your current window and the left window (now the current window) displays the File form to allow you to start a new application in that window.

For example, Figure 2-12 shows how the screen would look if you had been working on a memo in your current window when you executed this command. Note that the current window is surrounded by a solid line and any other windows displayed on the screen are surrounded by broken lines. This makes it easy for you to tell which window is the current one.

Figure 2-12. A Window Split Vertically

To: Field sales personnel From: District manager Subj: 2nd quarter sales strategy Date: March 10, 1986 First, I'd like to commend you all on your excellent selling during the last quarter. Our sales bookings increased over 21% and we've added several extra people on our manufacturing line to help build more products. Please keep up the good work—we need to continue increasing our sales now more than ever. Here's our 2nd quarter strategy:	31-Jul-86 GRiD Systems Corporation 3:18 PM Read Only Memory Internal Hard Disk Portable Floppy Disk Marketing Budget 1986 Sales figures Device Read Only Memory Subject Title Kind Password
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Select a file and confirm or press Code-? for help

To start a new application in the left window, fill in the File form and confirm. To move one of your other windows into the left window, simply press *Code-Ctrl-N*; the File form is cancelled automatically. You can continue to press *Code-Ctrl-N* until the window you want appears in the left position.

To move between windows when you have split the screen into two or more vertical sections, press *Code-Ctrl-RightArrow* to move right or *Code-Ctrl-LeftArrow* to move left. You can zoom up the current window to fill the screen by pressing *Code-Ctrl-Z*.

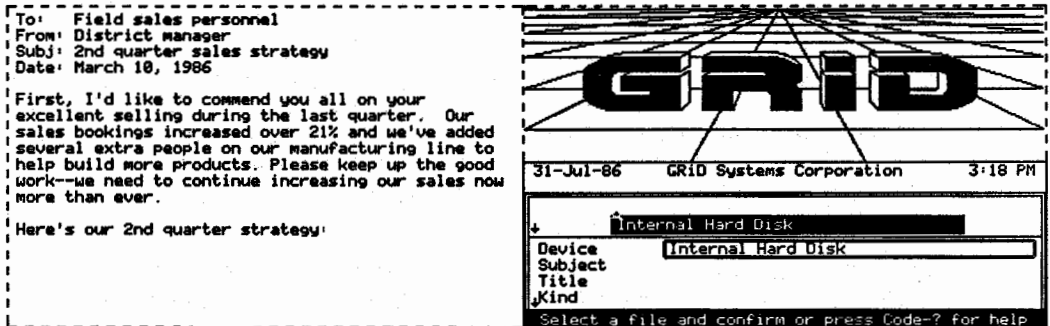
When displaying multiple windows, you may want to change to a smaller font size in your applications in order to view more information. You can change the font size for all applications by changing the System-wide Typeface item in the GRiDManager Options form. See the GRiDManager chapter for details.

Remember that to close a window, simply Quit or Cancel the application in that window. Automatically, the remaining windows on the screen expand to fill the vacated space. To simply move a window off screen without closing it, use the Move This Window Off Screen command (*Code-Ctrl-M*).

NOTE: Any non-current window displaying a menu or form is temporarily blanked out when you have multiple windows on the screen. This is to avoid confusion from having more than one cursor displayed on the screen at a time. (The highlighted choice bar in menus and forms is a kind of cursor.) When you move to a blanked out window using a *Code-Ctrl-Arrow* key the menu or form in that window is immediately redisplayed.

After you have split a window, you can split the remaining windows again, if you wish. For example, Figure 2-13 shows a screen that has been split vertically and then one part has been split horizontally again.

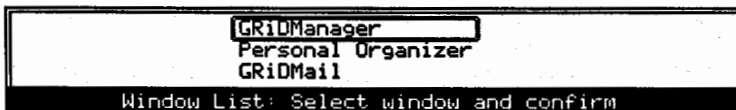
Figure 2-13. Screen Split Vertically then Horizontally



Display List of Windows--Code-Ctrl-W

The Display List of Windows command displays a menu of all your open windows, as shown in Figure 2-14. Each item on the menu is the name of a file open in one of your windows. For example, the menu in Figure 2-14 shows that there are three windows open: GRIDManager, Personal Organizer, and GRIDMail. Personal Organizer is the name of an organizer file using the GRIDMaster application.

Figure 2-14. Open Windows Menu



To switch to one of the other windows shown on the menu, select that window and confirm, otherwise press *Esc*.

Zoom Window Up or Down--Code-Ctrl-Z

The Zoom Window command is used when you have multiple windows on the screen. It temporarily expands the current window to the full size of the screen. The other windows are moved off screen and can be accessed by the Switch to Next Window command. To return to your original configuration of multiple windows on the screen, press *Code-Ctrl-Z* a second time.

Note that the zoomed state is saved as part of the window configuration, so you can save a configuration with multiple windows where one is zoomed up.

Special Notes

This section includes information that may help you if you are having problems with Window Manager.

Delays

Sometimes you can experience a delay when you issue a window command; this is normal. Delays can happen anytime another task is executing that involves accessing a file (retrieving an application, or duplicating, erasing, or printing a file, etc.). Be patient while your computer finishes the task; then it will process your window command.

NOTE: You may also find that your screen isn't updated immediately if you issue a window command while you're simultaneously executing a task that involves file access. For example, if you're duplicating a file in a GRiDManager window that occupies only part of the screen, and you zoom up the window, it may appear blank; the window is properly updated when the duplicate is finished.

Limited Memory Alerts

Occasionally, while using Window Manager, you can receive a Limited Memory alert; this is a box in the middle of your screen that says "Limited memory" and flashes the message "Confirm to continue." This alert indicates that there is not enough free RAM left to perform the command that you requested; the windows you have open are using almost all of the RAM available on your system. You should press *Code-Return* to return to the application that was in progress when you received the alert.

If there is some task executing in an off-screen window that requires a large amount of memory, such as duplicating a file or printing a GRiDPaint file, you may have to wait for that task to finish before you

can issue another command without receiving another Limited Memory alert.

If there are no tasks executing in any of your windows and you continue to receive the Limited Memory alert when you issue a command, then you have too many windows open. You should Quit or Cancel the applications in one or more of your windows.

If you were running a GRiDTask or GRiDTask II application when you received the Limited Memory alert, you may be left with a blank window after you confirm to continue. Try pressing *Code-Return* again, or *Esc*, to exit the blank GRiDTask window; if nothing happens, then you must restart your computer.

GRiDManager

If you use GRiDManager version 3.1.0 (ROM version 31.0.0), we recommend that you don't split your windows while GRiDManager is running. This older version of GRiDManager does not operate properly in a split window. If you wish to use split windows with this version of GRiDManager, contact your GRiD representative for information on upgrading to a newer version.