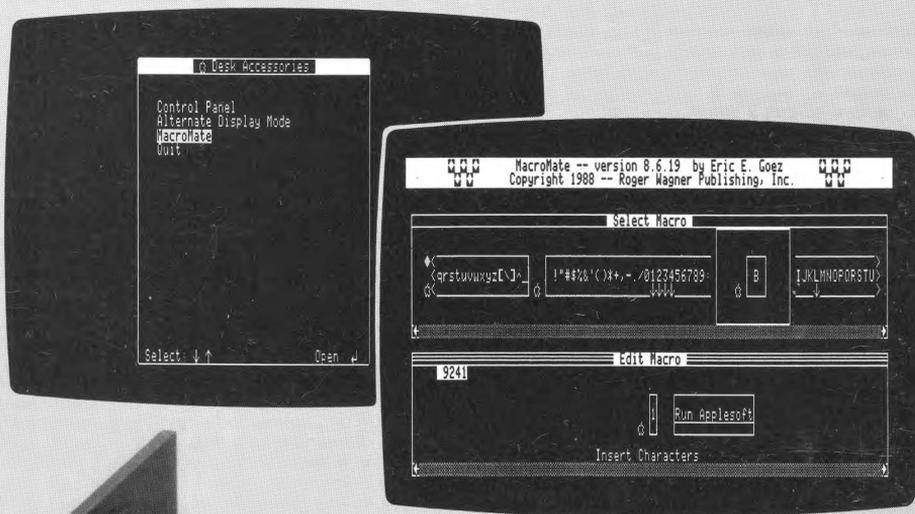


MacroMate™

A Universal Keyboard Macro Program
for the Apple® IIcs

by Eric Goetz



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Program Name: _____

Version Number (from Title screen): _____

Customer Name: _____

Street Address: _____

City: _____

State: _____ Zip: _____

Telephone (include Area Code) _____

Date Purchased: _____ Purchase Price: _____

Where Purchased: _____

Street Address: _____

City: _____

State: _____ Zip: _____

Telephone (include Area Code) _____

What is the make and model of your computer? _____

What is the make and model of your printer? _____

Which do you own? Mouse Modem Large RAM Card

Other cards etc. _____

How did you select this program? Salesperson/Demo

Name (RWP) Recognition Advertisements Friend's Recommendation

Primary use for this product? Home Business Education Other _____

What is your overall opinion of this product? _____

How can we improve this product? _____

Do you own a similar product? If so, which? _____

Do you own other RWP products? If so, which? _____

What types of software do you purchase? Home Business Utilities

Educational Games Other

Do you write your own programs? Yes No

If yes, which? Professional Personal Use Both

What types of programs do you write? _____

What computer magazines do you read? _____

Additional comments: _____

*MacroMate*TM

The Keyboard Macro System for the Apple® IIGS

by Eric Goetz

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Roger Wagner Publishing, Inc.

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Chapter 1: Overview

MacroMate is a Classic Desk Accessory program for the Apple IIgs. This means that it is automatically loaded into the computer during the boot process of any ProDOS 16 startup disk, without any conscious effort from the user*. Once loaded and active, MacroMate is always operating in the background of any DOS 3.3, Pascal, ProDOS 8 or ProDOS 16 program, watching for certain pre-defined keypresses, specifically Apple-Key and/or Option-Key sequences. When one of these key sequences is pressed, and that keypress has been defined in MacroMate, MacroMate sends the predefined string of characters to the application program. The association of a string of text and/or program commands with a single keyboard keypress is called a *macro*. If the key sequence has not been defined as a MacroMate macro, then the Apple- or Option-Key command is passed on to your main application that is currently running.

For example, in Applesoft BASIC, one could define Option-1 as the keyboard macro for "CATALOG,S6,D1". Then, whenever you pressed Option-1, the computer would automatically send out the characters CATALOG,S6,D1, cataloging whatever disk was in Slot 6, Drive 1. Here are just a few of the uses for MacroMate:

- Set up a macro to automatically type your letterhead in your favorite word processor with just a single keystroke.
- Use with a copy utility as your startup program to automatically copy any wet of programs or files to a RAM disk.
- Use the Record Mode to define custom commands and/or text within any program as you need it. You don't have to run separate utilities with MacroMate, and it can load and save macro definition files under both ProDOS 16 *and* ProDOS 8!
- Disabled computer users, or anyone who just hates typing, can create single-key commands to perform virtually any function, or type any amount of text, in a program.
- MacroMate can be used as a "translator" to re-configure any program to use your own preferred command keys. For example, if you have a program that uses Apple-Q to clear to the end of a line, and you want it to be

Apple-Y to match AppleWorks, you can use MacroMate to let you type Apple-Y, which in turn sends Apple-Q to your program.

- Use MacroMate with ProSel, or your favorite program selector to not only run a program, but automatically type frequently used setup, or program operation commands.

The intelligent definition and use of macros can make any program easier to use, and MacroMate is designed to make that process as easy and effective as possible.

The name MacroMate can be viewed as either a verb or a noun. As a verb, MacroMate is associated with the word "automate", and refers to the labor-saving process that MacroMate brings to your computer. As a noun, MacroMate suggests that it is an excellent companion to all your often-used application programs, helping you to get the most out of each program.

Using This Manual

This manual has been organized so that you can work through the tutorial provided at the beginning. Each section in the tutorial also has a *Summary* that briefly identifies the key concepts presented in that section. We suggest you work through the beginning tutorial sections to get an idea of how MacroMate works, and then briefly read through the remainder of the manual so that you will have an idea of what other features are available in MacroMate. Then, as your needs require, you can go back to the more advanced sections of the manual to read about a particular feature that is of interest.

*Roger Wagner Publishing has a separate product, P8CDA, by David Lyons, that will automatically load almost any Classic Desk Accessory into the Desk Accessory Menu of your GS when you startup a ProDOS 8 disk. With P8CDA, you can put MacroMate on any of your ProDOS 8 disks, and avoid the longer startup time of a ProDOS 16 disk. See your RWP Product Catalog for more details.

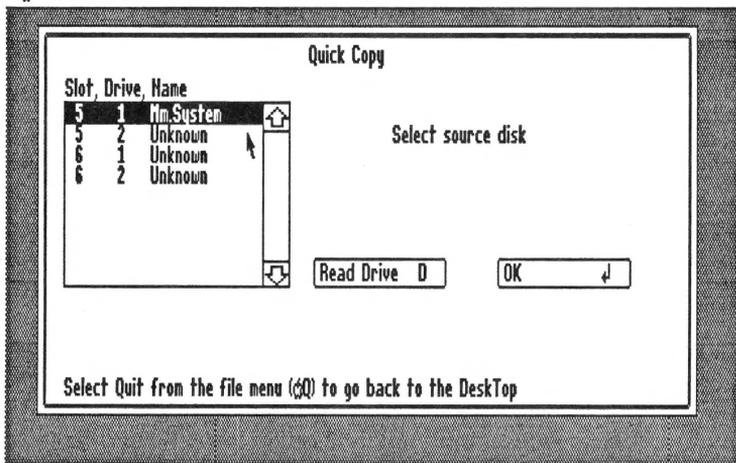
Chapter 2: Backing Up Your MacroMate Disk

Before trying out the MacroMate disk, the first thing you should do is to make a backup copy. That way, if you should accidentally erase a macro definition file, or otherwise alter the disk, you will always have the option of starting over with a fresh copy of the original. Backups can be made with any copy utility that copies either files or an entire ProDOS disk.

To make your backup disk using the MacroMate disk, you will need your original MM.System disk, and a blank 3.5" disk. You can use the "MacroMate Backup" disk label supplied in the MacroMate package for this disk. Begin the process by placing your MacroMate disk in the disk drive. If you have a second 3.5" disk drive, you may place the blank disk in your second drive now. Now start up the MacroMate disk, and press Return when you see the main title screen.

When the desktop appears, use the mouse to choose "Disk Copy" from the "Special" menu. A dialog box titled "Quick Copy" will come up, prompting you to select your source disk. Click on the name "MM.System" shown in the box (probably in slot 5, drive 1), and then click on OK.

File Facilities



The screen will then prompt for the destination disk. If you have two drives, the second disk will be listed as "Unknown", or possibly with the pathname of whatever was on the disk if you are re-copying onto an unwanted disk. If you only have one drive, you should now remove the MM.System disk, replace it with the destination disk, and then click on "Read Drive". This will then display "Unknown", or the old volume name as just discussed.

Now click on the name of the target disk, and then click on OK to start the copy. As the copy progresses, follow the prompts to insert disks if and when needed. When the process is complete, you will be returned to the DeskTop.

When the backup copy is made, apply the label supplied in the MacroMate package, put the original in a safe place, and use your backup in the tutorial Chapters that follow.

Summary: You can back up the MacroMate disk using any ProDOS disk or file copy utility. Backups can be made using the Quick Copy option in the DeskTop program supplied on the MacroMate disk.

Chapter 3a: An Introduction to MacroMate using Applesoft BASIC

To see how MacroMate works, let's spend a little time with the MacroMate disk itself. If you haven't made a backup yet, do so now before proceeding.

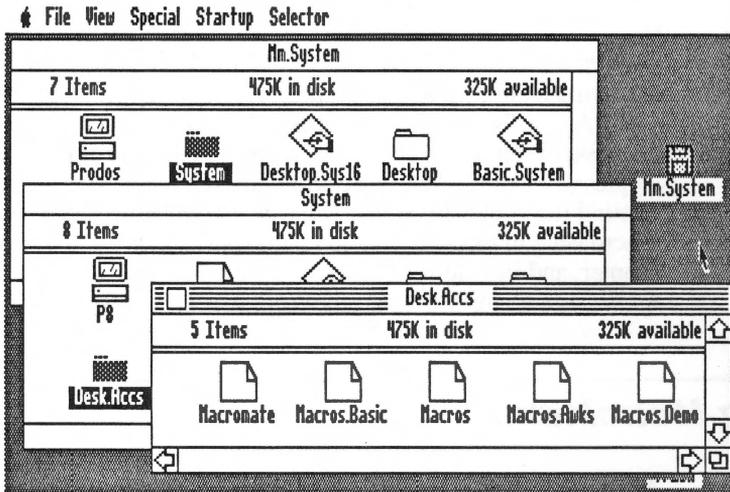
MacroMate is intended to be used with virtually any program you own. However, for demonstration purposes, we can't exactly put AppleWorks, or other commercial programs, on the MacroMate disk. For that reason, the following examples will use Applesoft BASIC, which is already present in every Apple IIgs, as the demonstration "program" for MacroMate. However, keep in mind that MacroMate is useful for far more than just Applesoft BASIC. While working through the demonstrations, try to keep in mind the applications that *you* use, and think about how you will use MacroMate in them. If you do have AppleWorks, you can elect to skip this chapter, and instead read Chapter 3b: *An Introduction to MacroMate using AppleWorks*, which is an AppleWorks-specific introduction to MacroMate.

Installing MacroMate...

A ProDOS 16 disk with MacroMate installed on it is set up in a very particular way. In the System folder, there is a folder called Desk.Accs (for "Desk Accessories") which contains the actual MacroMate Classic Desk Accessory program file (filetype "CDA" – \$B9) and any predefined macro definition files (filetype \$F7). When a disk with MacroMate is started up, MacroMate checks this same folder (Desk.Accs) for a file named Macros which contains the startup macro definitions to be used on that disk.

Before starting, you should go to the Control Panel in your Apple IIGS (Control-Apple-Escape), and select the Options item. Then set Keyboard Buffering to "Yes". MacroMate can be used with Keyboard Buffering turned off (set to "No"), but the output of Option- and Apple-key sequences may be lost due to an inherent bug in the Apple IIGS keyboard firmware. Like other Control Panel features, you need to set this only once, as the computer will retain this setting until you deliberately change it.

To see how a disk with MacroMate is set up, begin now by starting up the MM.System disk. After a moment, a title screen will appear that offers the option of either going to the Apple DeskTop program, or to Applesoft BASIC. For now, press Return. In a moment, the familiar Apple DeskTop will appear. Use the mouse pointer and double-click on the MM.System disk icon to open it up. When it opens, you will see a folder named System. Double-click on the System folder to open it up.



Inside the System folder, you'll see a group of files, all of which are important support programs for your Apple IIgs operation. The folder we're interested in right now is the Desk.Accs folder. Double-click on it to open it. As the MacroMate disk is originally packaged, you will see the MacroMate file within the Desk.Accs folder. You'll also see four other macro definition files, Macros.Basic, Macros.Awks, Macros.Demo, and Macros.

You can put MacroMate on your own ProDOS 16 disks by just using the DeskTop (the program you're using now as supplied on the MacroMate disk), or any file copy program (such as Copy II Plus) to copy the file MacroMate, and any of the macro definition files you want, to the Desk.Accs folder on your own diskette.

If you want to start an empty macros file, just put the file MacroMate in the Desk.Accs folder *without* the file Macros. When this disk is started, MacroMate will be installed without any defined macros. You can then define just the macros you want, and then save the new Macros file to the startup disk, or any other disk you wish.

For now, though, click in the "close box" in the upper left corner of Desk.Accs window, and then in the System window, to close these windows, and return to the view of the files in the main directory of MM.System. (**DeskTop tip:** You can also press Apple-B to close any and all windows open on the DeskTop at any time!)

For a detailed explanation of how to install MacroMate on a disk, see Appendix A.

Summary: You can install MacroMate on any ProDOS 16 disk by just moving the files MacroMate, Macros, and any other definition files you wish from one disk to another as long as MacroMate and its files end up in the Desk.Accs folder within the System folder on your disk.

Trying Out MacroMate...

When the MacroMate System disk started up, although it wasn't obvious, MacroMate automatically loaded itself, and also a set of keyboard macro definitions that have already been set up for this demonstration.

To try out some macros, double-click on Basic.System in the MM.System window to go to Applesoft. (Double-click on the MM.System disk icon first to open the disk if this window is not already open).

When the Applesoft title screen and prompt ("J") appear, type LIST and press Return to verify that there is no program in memory. If a program listing does appear, type NEW and Return to start a fresh program.

Now press and release Apple-1. To do this properly, you should hold down the Apple key, and while continuing to hold it down, press and release the 1 key. Then release the Apple key.

When you first press the Apple-1, you'll notice that the screen border immediately turns to a different color. This is to tell you that MacroMate has recognized a defined macro key. It then waits for you to release the key before sending out the macro. In this case Apple-1 has been defined as the first line of an Applesoft program. For your own use, this could be a remark line with your name, for example. In our case, this is the beginning of a program that MacroMate will type for you.

Now press Apple-2 and Apple-3. MacroMate again types additional lines to the program. You could LIST the program now to verify it's been entered correctly, but try pressing Apple-L (for "LIST") instead. MacroMate will clear the screen and type LIST for you.

```
                PRODOS BASIC 1.1  
                COPYRIGHT APPLE, 1983-84  
]10 TEXT:HOME  
]20 PRINT "This is a program."  
]30 PRINT "This is the end."  
]
```

Type RUN and press Return to try out the program. The screen should clear and the phrases "This is a program." and "This is the end." should appear.

You're not limited to a few characters, or even single lines with MacroMate. Literally thousands of characters can be assigned to a single macro. To see what we mean, type NEW and press Return to erase the program, and then press Apple-4. This time the entire program will be typed by MacroMate, including the necessary Return characters at the end of each line.

NOTE: A macro can be cancelled while being output by pressing Control-Apple-Delete. This is provided so that you can cancel a macro if you accidentally activate one from the keyboard.

Summary: MacroMate is automatically loaded and activated when a disk with MacroMate installed on it is started up. Macro definitions are then available by pressing the Apple or Option keys along with another keyboard character.

Defining a Macro – the Record Mode

There are two ways to define a macro with MacroMate. The first uses the MacroMate Record Mode, which will record each of your keypresses while you are in the application that you want to define the macro for. This is probably the easiest way to define a macro with MacroMate, but there is also a second method that involves going directly to MacroMate using the Apple IIGS Desk Accessory Menu, much the same way that you access the GS Control Panel to set the time, screen display, etc.

We'll look at each method, and start now with the Record Mode. With the Record Mode, you can define a macro at any particular moment. This means you don't have to prepare in advance for which macro definitions you may need. You can define them as you need them in the programs you use. Let's see how to define a macro by creating a remark line that you can use in any Applesoft program you write. We'll suppose that you want to define the macro key Option-N to automatically type your name in a program.

The MacroMate Record Mode is initiated by first pressing Control-Option-Escape. You can remember this because it is just a variation on the usual Control-Apple-Escape sequence used to access the Apple IIGS Classic Desk Accessory Menu, which you have probably already used to set the time, screen display and other features on your computer.

Assuming you are already in Applesoft BASIC, press Control-Option-Escape now. The screen border will immediately turn a dark blue, indicating MacroMate is waiting for the Apple- or Option-key that will be defined as a macro. Select the key to be defined now by pressing Option-N (for "Name" – but you could use any key). For this example, make sure that you have selected Option-(Upper Case)-N. When you press Option-N, the screen border will immediately change to a dark red. MacroMate is now in the recording mode.

When defining a macro, you want to type in the exact keys that you want automatically output later by the macro. In this example, we want to record the keys for the REMark statement with your name. For our Applesoft BASIC example, we'll pretend that you want to add the line:

```
63999 REM PROGRAM BY <Your Name>
```

To create this macro, just type 63999 followed by REM PROGRAM BY and then your own name. Type the characters 63999 REM PROGRAM BY slowly. Each time you press a key, the screen border will blink indicating MacroMate has recorded the character. The screen border turns dark red each time MacroMate is ready for your next keypress. Try not to type so fast that you are entering keys faster than MacroMate can accept them. After entering the word BY, add your name. Since you also press Return at the end of a line that's being entered into an Applesoft program, press Return here too. When you finish the macro definition, press Shift-Escape to end the definition process. The screen border will return to its normal color (that is, whatever is "normal" for your computer).

That's it! The macro has now been defined.

To test it, just press Option-N, and you'll see MacroMate automatically type the remark line with your name in it. If any letters are missing from the line, it means you typed too quickly when entering each keypress. It's easy to fix though, just go back and repeat the definition procedure, and type a little more slowly.

Using this technique, you can define a macro at any time in a program you are using. For example, maybe you are in your favorite word processor, and you are getting tired of typing a long name or phrase many times in the same document. With MacroMate, you can easily define that phrase right within the program, and then a single keypress will automatically type the entire phrase whenever you need it. You can also use this in BASIC programs, for example, when typing DOS commands that use a long filename in many places. When MacroMate types something for you, it does so at almost 600 words-per-minute, as would be measured for a typist. That's fast!

Although macro definitions do not have to be saved for later use, MacroMate does have a feature to let you save your definitions, and to later re-load them into memory when you need them. That is described in Chapter 4, which talks about advanced features in MacroMate.

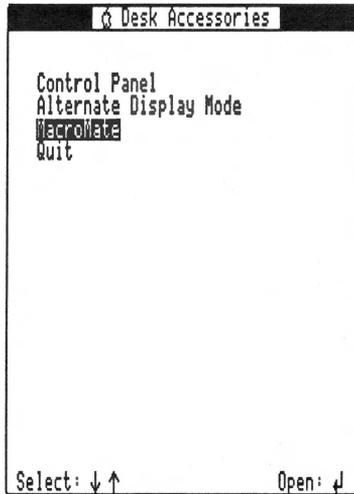
Note: MacroMate halts your application program each time it turns the screen border red and waits for your next keypress. In some cases, not enough time will have elapsed to let your application complete the action started with the last keypress. For example, as in the case of cataloging a disk, or sorting a list, or printing out a report. If your application has not completed its last action by the time MacroMate stops for the next keypress, you can press Shift-up-arrow to let your program continue its operation. When you are ready to continue the recording process, just press any modifier key (Apple, Option, or Shift keys) alone, without any other key. This will resume the Record Mode where you left off a moment before.

***Summary:** Macros can be created by just recording your actions within an application. Press Control-Option-Escape to begin the Record Mode, followed immediately by the Apple- or Option-key you wish to define as your macro. Then type the text and/or commands that will make up that macro. End the macro by pressing Shift-Escape. Press Shift-up-arrow during the Record Mode to let your application "coast" for a while to finish an action. Press any modifier key (Option, Apple, Shift) to continue the Record Mode. If an Apple- or Option key is not the first key pressed after Control-Option-Escape, MacroMate "beeps" and the Record Mode is cancelled.*

Viewing and Defining Macros within the MacroMate Editor

Although usually invisible, MacroMate has an editor that can be accessed from within almost any program, and within it any macro you wish can be defined in great detail. MacroMate provides the ability to edit the macro as you enter it, or even at a later time. In just a while, you'll also discover how to save those definitions to disk for permanent use.

MacroMate is a Classic Desk Accessory and the Editor is accessed by simply pressing Control-Apple-Escape. The Desk Accessory Menu will then appear.

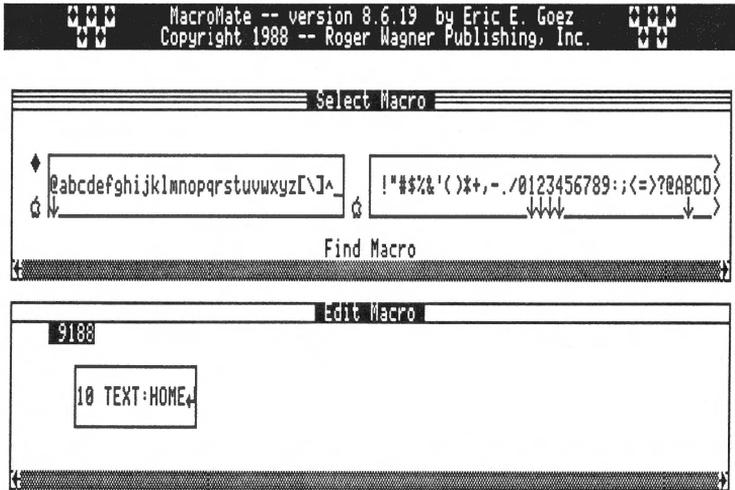


To enter the MacroMate Editor, use the arrow keys to select MacroMate and press Return. The display that greets you consists of a Title Bar at the top of the screen, the Select Macro Window, and the Edit Macro Window. On the Title Bar the program and author name, version number, and copyright notice are shown.

The Select Macro window has inside it a scrolling representation of the 384 possible definable macro keys. The 384 macros keys are grouped in 6 boxes. Each box contains the possible keys that can be pressed with a given combination of Option, Control and Apple keys. By scrolling to, or just directly selecting, the key of your choice you can easily select a given macro, to be examined or edited as your needs or fancy dictate.

In this window the characters to the left of a box show which *modifier* keys were pressed. Modifier keys are those keys that modify the primary alphabetic character on the keyboard. The modifier keys include the shift, Apple, Option and Control keys. The diamond character represents the Control key. The Solid-Apple character represents the Option key, and the Open-Apple character represents the Apple key. An Apple character is shown on the Apple keytop along with that of a propeller-like graphic symbol. This key is also sometimes called the *command* key. Every macro key must have at least the Option- or Apple-key as a modifier.

Try pressing different Apple- and Option-keys now, such as Apple-1, or Option-L, to see how the display immediately jumps to the key you have pressed. You can also press the left-arrow or right-arrow keys to scroll through the definable keys.



The window below the Select Macro window is called the Edit Macro window, because it is in this window that you will actually enter and edit the definitions for a given macro key.

In both windows you will sometimes find that certain characters have down-arrows beneath them. In the Select Macro window, this indicates a macro has been defined for that character. In the Edit Macro window this indicates that another macro key has been included in the definition of the current macro (often called a *nested macro*). Above the characters in the Edit Macro window you will occasionally find a number sign (#). This means that character was pressed on the keypad (the additional number keys on the right of the GS keyboard) instead of the main keyboard. The keypad characters are used as function keys in some applications and so are identified in a way that you can tell them apart from the similar keys on the main keyboard.

There are often messages at the bottom of the active window to help you keep track of what's going on. In the Select Macro window the only messages are "Find Macro" or "You are already here." In the Edit Macro window there are messages to indicate whether typing will overstrike or insert characters, or whether the current mode is finding a character, cut, copy, paste or others. Remember to keep an eye on the messages as they change – they are there to help!

The Edit Macro window has inside it the macro's current definition. To distinguish a Macromate command keypress like the arrow keys from the intention of actually putting the arrow key in the macro, you must also press the shift key at the same time as the arrow keys when editing. Inside the definition boxes can be almost anything. We have provided predefined macros for AppleWorks and BASIC. With the editing capabilities available in MacroMate you can add, change or delete to your heart's content. If what you want is not there, then create it. After all, MacroMate is only a tool to do with as you wish!

***Note:** The Shift key is the special key that the MacroMate Editor uses to identify a command meant for it. For example, when you press the Delete key, how would MacroMate know whether you wanted to use the Delete key as part of a macro definition, or instead, wanted to actually delete a character in the definition? The answer is the use of the Shift key. If you press the Shift key with another key, MacroMate will try to match what you press to one of its own commands. If it is not a MacroMate command, it either assumes you just want the key you typed, or will possibly "beep" at you to tell you it doesn't recognize what you pressed as either a macro key or a MacroMate command.*

Defining a Macro within the MacroMate Editor

Let's see how to define a macro by creating a remark line you can use in any Applesoft program you write. We'll suppose that you want to define the macro key Option-n to automatically type your name in a program, as we did in the Record Mode example.

First, select the key to be defined. This time (if you've been following this tutorial), we'll define Option-(lower case)n. Do that now by pressing Option-n. The letter "n" should now be blinking, and the box that it's in should have a Solid-Apple character at the left. This indicates that you have selected Option-n.

To move to the Edit Macro window, press Shift-down-arrow. Immediately Solid-Apple-n is shown in a box, and the cursor moves to the lower window. You are now in the edit mode. Moving back is easy. Just press Shift-up-arrow to return to the Select Macro window. Press Shift-down-arrow and Shift-up-arrow a few times to get the feel for this. You'll also notice that MacroMate changes the screen border color to help indicate that you are in different windows. Now press Shift-down-arrow again to go back to edit Option-n.

When defining a macro in the editor, you want to type in exactly the same keys that you would manually type at that point in a given program. For our Applesoft BASIC example, we'll pretend that you want to add the same line as before:

```
63999 REM PROGRAM BY <Your Name>
```

To create this macro, just type 63999 followed by REM PROGRAM BY and then your own name. Since you also press Return at the end of a line that's being entered into an Applesoft program, press Return here too. You'll notice that the Return character is shown as a bent arrow character within the macro definition. If you make an error while entering the text, remember to hold down the shift key to use the arrow keys or Delete key for editing. If you get things really messed up and want to start fresh, press Shift-Clear to erase all text in the macro definition.



That's it! The macro has now been defined. To move back to the Select Macro window, just press Shift-up-arrow now. You'll notice that when you do, a down-arrow is now shown under the "n" character, indicating a macro has been defined for it. In addition, the macro definition is shown in the Edit Macro window. Whenever you scroll through the macro key list, or jump to a specific macro key, any existing definitions are continuously displayed in the lower Edit window so that you can see how the keys have been defined.

To quit MacroMate now and test your new macro, press Shift-Escape. Shift-Escape is the "Quit MacroMate" command. When you press this, you will be instantly returned back to the Classic Desk Accessory menu. Press Return once more to Quit back to Applesoft BASIC (or, in general, whatever program you interrupted to go to MacroMate).

Now press Option-n, and you'll see MacroMate automatically type the remark line with your name in it.

Macro definition files can be saved to a disk, and loaded back into memory later, which is described in Chapter 4.

Summary: The MacroMate Desk Accessory is accessed by pressing Control-Apple-Escape to go to the Classic Desk Accessory Menu, and then choosing MacroMate from the list. There are two windows in the MacroMate Editor: one that shows all the possible macro keys (the Select Macro window – top) and the one that shows the particular definition for the currently selected macro (the Edit Macro window – bottom). Use Shift-up-arrow and Shift-down-arrow to move between the two different windows. A macro is defined by pressing the desired key in the Select Macro window, then pressing Shift-down-arrow, then editing the text of the macro. While editing, the Shift key is used to distinguish an edit command key, such as the left arrow (i.e., use Shift-left-arrow to move left) from an actual key to be imbedded in the macro definition. Once defined, you can return to your program by pressing Shift-Escape, and then selecting Quit from the Desk Accessory menu.

GS Bug Alert: The Desk Accessory Manager on the Apple IIGs has a built-in malfunction that affects programs that use Double Hi-Res, as is the case of the DeskTop program supplied on the MM.System disk. The problem is that if your "Display" setting in the Control-Panel is set to "Color", and you interrupt a program like the DeskTop by going to the Desk Accessory Menu, when you return, the screen will look unreadable. This is because the Desk Accessory Manager has over-ridden the program, and forced the display to "Color", when in fact the program is designed to run in "Monochrome".

Therefore, when using the DeskTop program with MacroMate, we recommend that you set your "Display" to "Monochrome".

The software product "SoftSwitch", from Roger Wagner Publishing, Inc., includes an improved Desk Accessory Manager which fixes this bug and approximately five others in the Desk Accessory Manager (including problems with mouse-driven software and others). Therefore, if you are using SoftSwitch, you will not have to worry about this problem, and may make your "Display" setting either Color or Monochrome, as you wish.

Chapter 3b: An Introduction to MacroMate using AppleWorks

To see how MacroMate works, let's spend a little time with the MacroMate disk itself. If you haven't made a backup yet, do so now before proceeding.

MacroMate is intended to be used with virtually any program you own. However, for demonstration purposes, we can't exactly put AppleWorks on the MacroMate disk. For that reason, the following examples assume that you already own a copy of AppleWorks, which will be used as the demonstration "program" for MacroMate in this chapter. However, keep in mind that MacroMate is useful for far more than just AppleWorks. While working through the demonstrations, try to keep in mind the other applications that *you* use, and think about how you will use MacroMate in them. If you do not have AppleWorks you should read Chapter 3a: *An Introduction to MacroMate Using Applesoft BASIC*, which is an Applesoft BASIC-specific introduction to MacroMate.

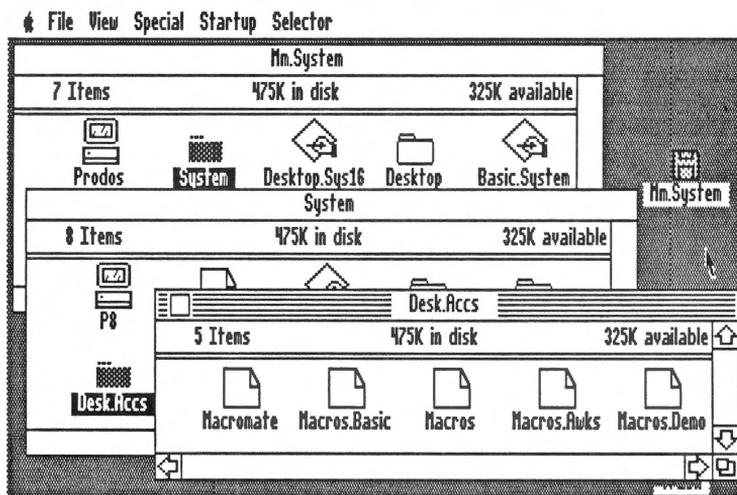
Installing MacroMate...

A ProDOS 16 disk with MacroMate installed on it is set up in a very particular way. In the System folder, there is a folder called Desk.Accs (for "Desk Accessories") which contains the actual MacroMate Classic Desk Accessory program file (filetype "CDA" – \$B9), and any predefined macro definition files (filetype \$F7). When a disk with MacroMate is started up, MacroMate checks this same folder (Desk.Accs) for a file named Macros which contains the startup macro definitions to be used on that disk.

Before starting, you should go to the Control Panel in your Apple IIGS (Control-Apple-Escape), and select the Options item. Then set Keyboard Buffering to "Yes". MacroMate can be used with Keyboard Buffering turned off (set to "No"), but the output of Option- and Apple-key sequences may be lost due to an inherent bug in the Apple IIGS keyboard firmware. Like other Control Panel features, you need to set this only once, as the computer will retain this setting until you deliberately change it.

To see how a disk with MacroMate is set up, begin now by starting up the MM.System disk. After a moment, a title screen will appear that offers the option of either going to the Apple DeskTop program, or to Applesoft BASIC. For now, press Return. In a moment, the familiar Apple DeskTop will appear. Use the mouse pointer and double-click on the MM.System disk icon to open it up. When it opens, you will see a folder named System. Double-click on the System folder to open it up.

Inside the System folder, you'll see a group of files, all of which are important support programs for your Apple IIgs operation. The folder we're interested in right now is the Desk.Accs folder. Double-click on it to open it. As the MacroMate disk is originally packaged, you will see the MacroMate file within the Desk.Accs folder. You'll also see four macro definition files: Macros.Basic, Macros.Awks, Macros.Demo, and Macros.



You can put MacroMate on your own ProDOS 16 disks by just using the DeskTop (the program you're using now as supplied on the MacroMate disk), or any file copy program (such as Copy II Plus) to copy the file MacroMate, and any of the macro definition files you want, to the Desk.Accs folder on your own diskette.

If you want to start an empty macros file, just put the file MacroMate in the Desk.Accs folder *without* the file Macros. When this disk is started, MacroMate will be installed without any defined macros. You can then define just the macros you want, and then save the new Macros file to the startup disk, or any other disk you wish.

For now, though, click in the "close box" in the upper left corner of Desk.Accs window, and then in the System window, to close these windows, and return to the view of the files in the main directory of MM.System. (**DeskTop tip:** You can also press Apple-B to close any and all windows open on the DeskTop at any time!)

For a detailed explanation of how to install MacroMate on a disk, see Appendix A.

Summary: You can install MacroMate on any ProDOS 16 disk by just moving the files MacroMate, Macros, and any other definition files you wish from one disk to another as long as MacroMate and its files end up in the Desk.Accs folder within the System folder on your disk.

Trying Out MacroMate...

When the MacroMate System disk started up, although it wasn't obvious, MacroMate automatically loaded itself, and also a set of keyboard macro definitions that have already been set up for this demonstration.

To try out some macros, insert your AppleWorks diskette, then double-click on the AppleWorks disk icon to open the disk, then double-click on Aplworks.System to run AppleWorks.

When the AppleWorks title screen appears, press Return as required, and go to the AppleWorks Main Menu, which can be identified by the words Main Menu in the center of the top line of your screen display.

Now press and release Option-1. To do this properly, you should hold down the Apple key, and while continuing to hold it down, press and release the 1 key. Then release the Apple key.

We decide to remove the hyphen in "No-one". Move the cursor up a few lines, and place the cursor on the hyphen, then press Option-space.

We find the hyphen goes away and only a space remains. Now to rewrite the last sentence.

Move down to the last line of the second paragraph, and place the cursor on the letter "c" of "call", then press Option-d (for "delete" a word), press Option-d again, and type "write again".

We find first the word "call" disappears, then the word "you." After you type in "write again", the sentence looks as it should ("I'll write again later in the week."). Now let's make a mistake and then correct our mistake.

Press Option-d to delete the word "later". We have deleted a word which we did not mean to, so let's bring it back.

Press and release Option-u (for "undo"). The word *later* has come back to us. With the undo macro we were able to correct our mistake. MacroMate gives you a second chance!

You're not limited to a few characters with MacroMate. Literally thousands of characters can be assigned to a single macro.

NOTE: A macro can be cancelled while being output by pressing Control-Apple-Delete. This is provided so that you can cancel a macro if you accidentally activate one from the keyboard.

Summary: MacroMate is automatically loaded and activated when a disk with MacroMate installed on it is started up. Macro definitions are then available by pressing the Apple or Option keys along with another keyboard character.

Defining a Macro – the Record Mode

There are two ways to define a macro with MacroMate. The first uses the MacroMate Record Mode, which will record each of your keypresses while you are in the application that you want to define the macro for. This is probably the easiest way to define a macro with MacroMate, but there is also a second method that involves going directly to MacroMate using the

Apple IIGS Desk Accessory Menu, much the same way that you access the GS Control Panel to set the time, screen display, etc.

We'll look at each method, and start now with the Record Mode. With the Record Mode, you can define a macro at any particular moment. This means you don't have to prepare ahead of time for which macro definitions you may need. You can define them as you need them in the programs you use. Let's see how to define a macro by creating a few lines that you can use in any letter you write. We'll suppose that you want to define the macro key Option-N to automatically type your name and address in a letter.

The MacroMate Record Mode is initiated by first pressing Control-Option-Escape. You can remember this because it is just a variation on the usual Control-Apple-Escape sequence used to access the Apple IIGS Classic Desk Accessory Menu, which you have probably already used to set the time, screen display and other features on your computer.

Assuming you are already in the AppleWorks word processor, press Control-Option-Escape now. The screen border will immediately turn a dark blue, indicating MacroMate is waiting for the Apple- or Option-key that will be defined as a macro. Select the key to be defined now by pressing Option-N (for "Name" – but you could use any key). For this example, make sure that you have selected Option-(Upper Case)-N. When you press Option-N, the screen border will immediately change to a dark red. MacroMate is now in the recording mode.

When defining a macro, you want to type in the exact keys that you want automatically output later by the macro. In this example, we want to record the keys for our name and address lines. For our AppleWorks example, we'll pretend that you want to add the lines:

```
Roger Wagner Publishing, Inc.  
1050 Pioneer Way #P  
El Cajon, CA 92020
```

To create this macro, just type the three lines above, pressing the Return key at the end of each line. Type the characters slowly. Each time you press a key, the screen border will blink indicating MacroMate has recorded the character. The screen border turns dark red each time MacroMate is ready for your next keypress. Try not to type so fast that you are entering keys faster than MacroMate can accept them.

When you finish the macro definition, press Shift-Escape to end the definition process. The screen border will return to its normal color (that is, whatever is "normal" for your computer).

That's it! The macro has now been defined.

To test it, just press Option-N, and you'll see MacroMate automatically type our name and address. If any letters are missing from the line, it means you typed too quickly when entering each keypress. It's easy to fix though, just go back and repeat the definition procedure, and type a little more slowly.

Using this technique, you can define a macro at any time in a program you are using. For example, maybe you are in your favorite word processor, and you are getting tired of typing a long name or phrase many times in the same document. With MacroMate, you can easily define that phrase right within the program, and then a single keypress will automatically type the entire phrase whenever you need it. When MacroMate types something for you, it does so at almost 600 words-per-minute, as would be measured for a typist. That's fast!

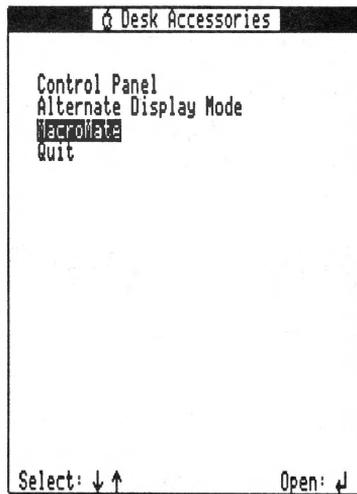
Although macro definitions do not have to be saved for later use, MacroMate does have a feature to let you save your definitions, and to later re-load them into memory when you need them. That is described in the next chapter, which talks about advanced features in MacroMate.

Summary: *Macros can be created by just recording your actions within an application. Press Control-Option-Escape to begin the Record Mode, followed immediately by the Apple- or Option-key you wish to define as your macro. Then type the text and/or commands that will make up that macro. End the macro by pressing Shift-Escape. Press Shift-up-arrow during the Record Mode to let your application "coast" for a while to finish an action. Press any modifier key (Option, Apple, Shift) to continue the Record Mode. If an Apple- or Option key is not the first key pressed after Control-Option-Escape, MacroMate "beeps" and the Record Mode is cancelled.*

Viewing and Defining Macros within the MacroMate Editor

Although usually invisible, MacroMate has an editor that can be accessed from within almost any program, and within it any macro you wish can be defined in great detail. MacroMate provides the ability to edit the macro as you enter it, or even at a later time. In just a while, you'll also discover how to save those definitions to disk for permanent use.

MacroMate is a Classic Desk Accessory and the Editor is accessed by simply pressing Control-Apple-Escape. The Desk Accessory Menu will then appear.

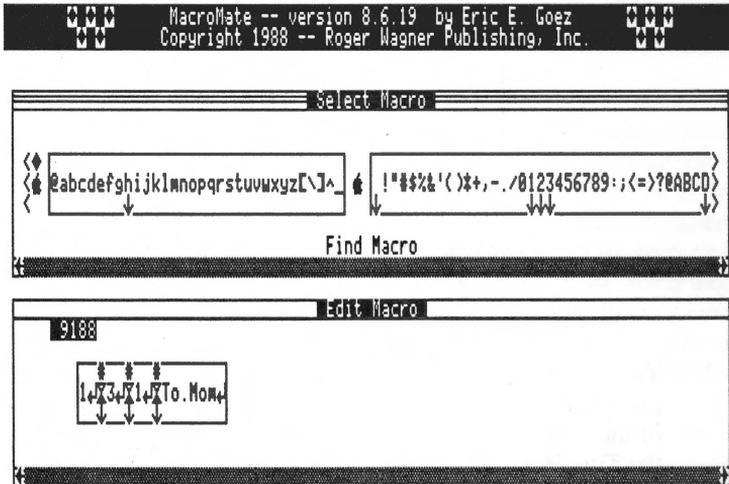


To enter the MacroMate Editor, use the arrow keys to select MacroMate and press Return. The display that greets you consists of a Title Bar at the top of the screen, the Select Macro Window, and the Edit Macro Window. On the Title Bar the program and author name, version number, and copyright notice are shown.

The Select Macro window has inside it a scrolling representation of the 384 possible definable macro keys. The 384 macros keys are grouped in 6 boxes. Each box contains the possible keys that can be pressed with a given combination of Option, Control and Apple keys. By scrolling to, or just directly selecting, the key of your choice, you can easily select the macro to be examined or edited as your needs or fancy dictate.

In this window the characters to the left of a box show which *modifier* keys were pressed. Modifier keys are those keys that modify the primary alphabetic character on the keyboard. The modifier keys include the shift, Apple, Option and Control keys. The diamond character represents the Control key. The Solid-Apple character represents the Option key, and the Open-Apple character represents the Apple key. An Apple character is shown on the Apple keytop along with that of a propeller-like graphic symbol. This key is also sometimes called the *command* key. Every macro key must have at least the Option- or Apple-key as a modifier.

Try pressing different Apple- and Option-keys now, such as Apple-1, or Option-L, to see how the display immediately jumps to the key you have pressed. You can also press the left-arrow or right-arrow keys to scroll through the definable keys.



The window below is called the Edit Macro window, because it is in this window that you will actually enter and edit the definitions for a given macro key.

In both windows you will sometimes find that certain characters have down-arrows beneath them. In the Select Macro window, this indicates a macro has been defined for that character. In the Edit Macro window this indicates that another macro key has been included in the definition of the current macro (often called a *nested macro*). Above the characters in the Edit Macro window you will occasionally find a number sign (#). This means that character was pressed on the keypad (the additional number keys on the right of the GS keyboard) instead of the main keyboard. The keypad characters are used as function keys in some applications and so are identified in a way that you can tell them apart from the similar keys on the main keyboard.

There are often messages at the bottom of the active window to help you keep track of what's going on. In the Select Macro window the only messages are "Find Macro" or "You are already here." In the Edit Macro Window there are messages to indicate overstriking or inserting characters, finding a character, cut, copy, paste and more. Remember to keep an eye on the messages as they change – they are there to help!

The Edit Macro window has inside it the macro's current definition. While editing macro definitions you can also scroll to the left and right. To distinguish a command key like the arrow keys from the intention of actually putting the arrow key in the macro, you must also press the shift key at the same time as the arrow keys. Inside the definition boxes can be almost anything. We have provided predefined macros for AppleWorks and BASIC. With the editing capabilities available in MacroMate you can add, change or delete to your heart's content. If what you want is not there, then create it. After all, MacroMate is only a tool to do with as you wish!

Note: *When in the Macro Editing Window, the Shift key is the special key that MacroMate uses to identify a command meant for it. For example, when you press the Delete key, how would MacroMate know whether you wanted to use the Delete key as part of a macro definition, or instead, wanted to actually delete a character in the definition? The answer is the use of the Shift key. If you press the Shift key with another key, MacroMate will try to match what you press to one of its own commands. If it is not a MacroMate command, it either assumes you just want the key you typed, or will possibly "beep" at you to tell you it doesn't recognize what you pressed as either a macro key or a MacroMate command.*

Defining a Macro within the MacroMate Editor

Let's see how to define a macro by creating a macro you can use in any application program you use. We'll suppose that you want to define the macro key Option-n to automatically type your name in a program.

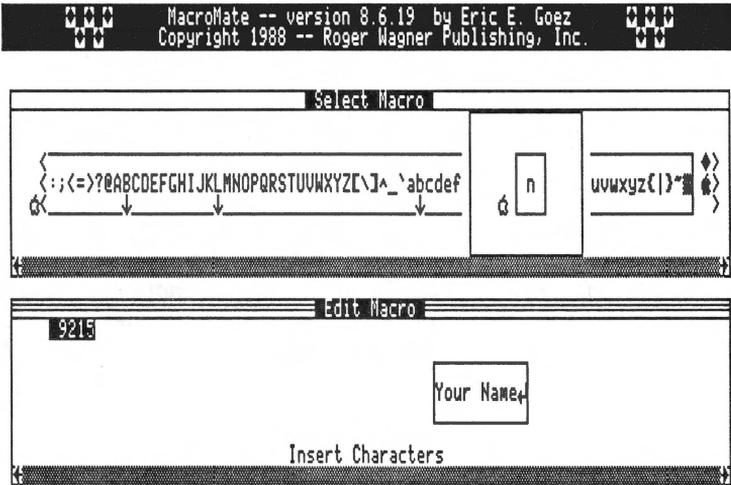
First, select the key to be defined. This time (if you've been following this tutorial), we'll define Option-(lower case)n. Do that now by pressing Option-n. The letter "n" should now be blinking, and the box that it's in should have a Solid-Apple character at the left. This indicates that you have selected Option-n.

To move to the Edit Macro window, press Shift-down-arrow. Immediately Solid-Apple-n is shown in a box, and the cursor moves to the lower window. You are now in the Edit Mode. Moving back is easy. Just press Shift-up-arrow to return to the Select Macro window. Press Shift-down-arrow and Shift-up-arrow a few times to get the feel for this. You'll also notice that MacroMate changes the screen border color to help indicate that you are in different windows. Now press Shift-down-arrow again to go back to edit Option-n.

When defining a macro in the editor, you want to type in exactly the same keys that you would manually type at that point in a given program. For our example, we'll pretend that you want to use the characters:

Your Name

To create this macro, just type your own name. If for whatever reason you wanted this to be the end of a line of text, you would also press Return here. Press Return now. You'll notice that the Return character is shown as a bent arrow character within the macro definition. If you make an error while entering the text, remember to hold down the shift key to use the arrow keys or Delete key for editing. If you get things really messed up and want to start fresh, press Shift-Clear to erase all text in the macro definition.



That's it! The macro has now been defined. To move back to the Select Macro window, just press Shift-up-arrow now. You'll notice that when you do, a down-arrow is now shown under the "n" character, indicating a macro has been defined for it. In addition, the macro definition is shown in the Edit Macro window. Whenever you scroll through the macro key list, or jump to a specific macro key, any existing definitions are continuously displayed in the lower Edit window so that you can see how the keys have been defined.

To quit MacroMate now and test your new macro, press Shift-Escape. Shift-Escape is the "Quit MacroMate" command. When you press this, you will be instantly returned back to the Classic Desk Accessory menu. Press Return once more to Quit back to AppleWorks.

Once back in AppleWorks, press Option-n, and you'll see MacroMate automatically type the remark line with your name in it.

Macro definition files can be saved to a disk, and loaded back into memory later, which is described in Chapter 4.

Summary: The MacroMate Desk Accessory is accessed by pressing Control-Apple-Escape to go to the Classic Desk Accessory Menu, and then choosing MacroMate from the list. There are two windows in the MacroMate Editor: one that shows all the possible macro keys (the Select Macro window – top) and the one that shows the particular definition for the currently selected macro (the Edit Macro window – bottom). Use Shift-up-arrow and Shift-down-arrow to move between the two different windows. A macro is defined by pressing the desired key in the Select Macro window, then pressing Shift-down-arrow, then editing the text of the macro. While editing, the Shift key is used to distinguish an edit command key, such as the left arrow (i.e., use Shift-left-arrow to move left) from an actual key to be imbedded in the macro definition. Once defined, you can return to your program by pressing Shift-Escape, and then selecting Quit from the Desk Accessory menu.

GS Bug Alert: The Classic Desk Accessory Manager on the Apple IIgs has a built-in malfunction that effects programs that use Double Hi-Res, as is the case of the DeskTop program supplied on the MM.System disk. The problem is that if your "Display" setting in the Control-Panel is set to "Color", and you interrupt a program like the DeskTop by going to the Desk Accessory Menu, when you return, the screen will look unreadable. This is because the Desk Accessory Manager has over-ridden the program, and forced the display to "Color", when in fact the program is designed to run in "Monochrome".

Therefore, when using the DeskTop program with MacroMate, we recommend that you set your "Display" to "Monochrome".

The software product "SoftSwitch", from Roger Wagner Publishing, Inc., includes an improved Desk Accessory Manager which fixes this bug and approximately five others in the Desk Accessory Manager (including problems with mouse-driven software and others). Therefore, if you are using SoftSwitch, you will not have to worry about this problem, and may make your "Display" setting either Color or Monochrome, as you wish.

Chapter 4: How to Save & Load Macro Files

The MacroMate Editor lets you save your macro definitions to disk, and to also load new definition files at any time within either ProDOS 8 or ProDOS 16 applications. Saved macro definitions are loaded automatically when a disk with MacroMate on it is started up.

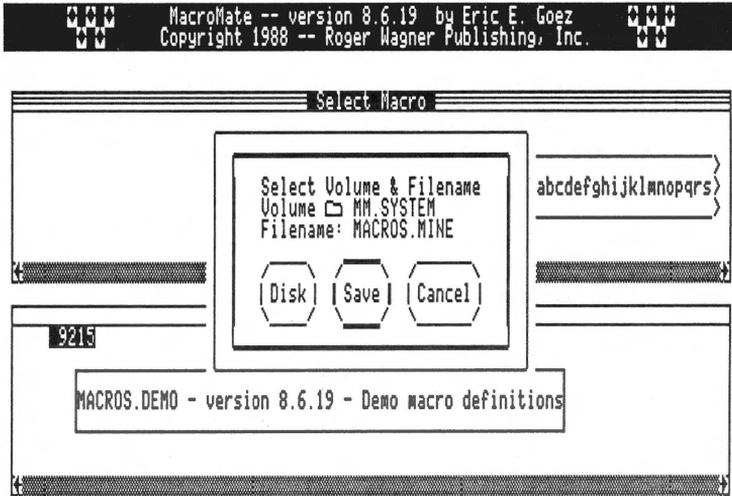
How to Save a Macro File

To Save the current macro definition file you must first be in the MacroMate Editor, which is accessed as a Classic Desk Accessory using the Control-Apple-Escape command. Try this now, and select MacroMate from the menu that appears. When in the MacroMate Editor, just insert the disk onto which you wish to save the macro definitions into any drive, and from the "Select Macro" window, press Control-S (for "Save"). A window will open giving you one of the currently available ProDOS volumes, and a default name to save the current macro definitions under.

If the disk volume and macro file names shown are the ones you wish to use, press the Return key to accept them. You can also change your mind and cancel by pressing the Escape key. If you want to save the definition file on a different volume, press the TAB key to look, one at a time, at all the available volumes. If you want to insert a different disk, just replace the current disk with the new one, and press the TAB key until you see the new disk's volume name. You can also edit the name under which the macro definitions file will be saved by using the Delete and other character keys as needed. Then press Return to complete the Save operation.

If there is an error at any time during the Save (or Load) process, an Alert Window will appear. It will indicate what the problem is and if appropriate give you alternate button choices. The default button has a somewhat thicker line and is chosen with the Return key. The CANCEL button is always the Escape key.

To Save a macros definition file, MacroMate requires that there be a folder named System, and within that a folder named Desk.Accs, on the disk that the definitions file is to be saved on. All ProDOS 16 disks will already have these folders. For a ProDOS 8 disk, you will have to create them yourself.



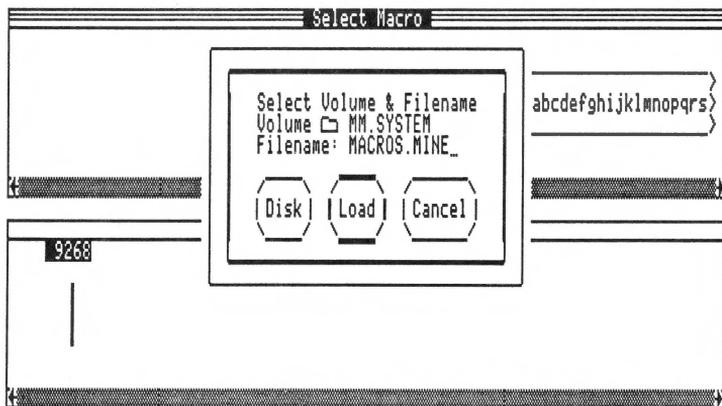
When making the Save, if a macro file is already in the Desk.Accts folder in the System folder on the selected disk then MacroMate will ask if you want to replace the Macros Definitions file currently saved on that disk volume under the given name. If you press Return, it will go ahead and replace the existing file; otherwise, you can cancel the request with Escape. Remember that when saving, you must save to a ProDOS volume with a System folder within which is a Desk.Accts folder, as this is where MacroMate saves your macro definitions.

By using different names for the macro definition files, you can have as many individual sets of macros for many different programs. As an example, the MM.System disk has four different macro definition files, including one each for BASIC (Macros.BASIC) and AppleWorks (Macros.Awks).

How to Load a Different Macro File

To load a different Macro File, just insert the disk with the macro files you want into any drive and from the Select Macro window press Control-L. A window will open giving you one of the currently available ProDOS volumes. If it is the desired volume, press the Return key to accept it. You can also change your mind and cancel by pressing the Escape key. If you want to load from a different volume press the TAB key to look, one at a time, at all the available volumes. You can also edit the name which will be used to load the macro definition file by using the Delete and other character keys as needed. Press Return to complete the Load operation.

```
MacroMate -- version 8.6.19 by Eric E. Goetz
Copyright 1988 -- Roger Wagner Publishing, Inc.
```



Be aware that loading a macro file replaces any existing definitions in the computer's memory at that point, and after the Load is complete you will no longer have the macros in memory that were present before the Load, unless of course they were also in the Loaded file. So, if you want to keep the macros you have defined prior to a Load, Save them. Also remember that backup copies can often save a lot of work and trouble.

If you are putting a macros definition file on a ProDOS 8 disk, remember that this will not cause MacroMate to be installed on that disk as a CDA. It only makes the macros definition file available in a convenient place, i.e., the disk with a particular application on it.

If you wish to put MacroMate, or any other CDA, on a ProDOS 8 disk, and have the CDA loaded when the disk is started up, you will need the utility program P8CDA. P8CDA installs CDAs during the startup of a ProDOS 8 disk, and is described in Appendix D. There is also a coupon which offers a significant discount on P8CDA to MacroMate owners located at the back of this manual.

Summary: To load or save a macro definition file: Enter the MacroMate Editor by pressing Control-Apple-Escape. Make sure you are in the Select Macro (top) window. Press Control-L to load a definition file, or Control-S to save the current file. Use the TAB key to change disk volumes, Escape to cancel, Return to accept. The definitions file name may be edited to load and save many different files for different applications. You may wish to put the macro file for each application on that application's program disk. For example, you could put Macros.Awks in a Desk.Accts folder in a System folder on your AppleWorks program disk.

Chapter 5: MacroMate Editor Features

Previous chapters have introduced the main concepts and features of MacroMate. The MacroMate Editor lets you create new macros from scratch, or edit those that you have created with the Record Mode. These additional features are described in the following sections.

Cursor Movement Functions

The **left- and right-arrow** keys are used to move the cursor to the left and right in both the Select Macro and Edit Macro windows. While in the Select Macro window, a particular definable keyset (for example, Control-Option-a) can be moved to by just pressing the keyset you want to examine, edit or define. **Shift-left-arrow** and **Shift-right-arrow** must be used with the arrow keys for cursor movement while in the Edit Macro window.

In Edit Macro window, you can tell the Editor to find a particular character within the macro definition by pressing either Shift-TAB or **Shift-Control-F** (for "Find) followed by the character to search for. If there is more than one occurrence, press the search key again to jump to successive occurrences. **Find** also works during the Edit Macro Cut and Copy commands as well (see description of these functions later).

In the Select Macro window you can press the **numbers 1 through 9 on the keypad** to move to equal-spaced intervals in the window. Pressing keypad-1 moves to the first definable macro, keypad-9 moves to the last position. Keys 2 through 8 move to equal-spaced intervals in-between. You can also press Control-B to move to the beginning of the window, and Control-N to move to the end.

In the Edit Macro window, you can press Shift-numbers 1 through 9 *on the keypad* to move to equal-spaced intervals in the window. Pressing Shift-keypad-1 moves to the first definable macro, Shift-keypad-9 moves to the last position. Keys 2 through 8 move to equal-spaced intervals in-between. You can also press Shift-Control-B to move to the beginning of the window, and Shift-Control-N to move to the end.

Window Functions

Shift-down-arrow and **Shift-up-arrow** are used to move from the top window to the bottom, and vice versa. If you are in the Select Macro (top) window, pressing Shift-up-arrow will quit MacroMate. You can also switch from any window to the other **Shift-Control-W**.

Note: If you are in the Edit Macro window, pressing Shift-down-arrow will cause the character at the cursor to become a nested macro call if it is an Apple- or Option-character.

Quit MacroMate from the Select Macro window with **Escape** alone, **Shift-Escape** or **Shift-up-arrow**. This quits MacroMate and returns to your application. When in the Edit Macro window, press Shift-Escape (or press Shift-up-arrow twice) to quit.

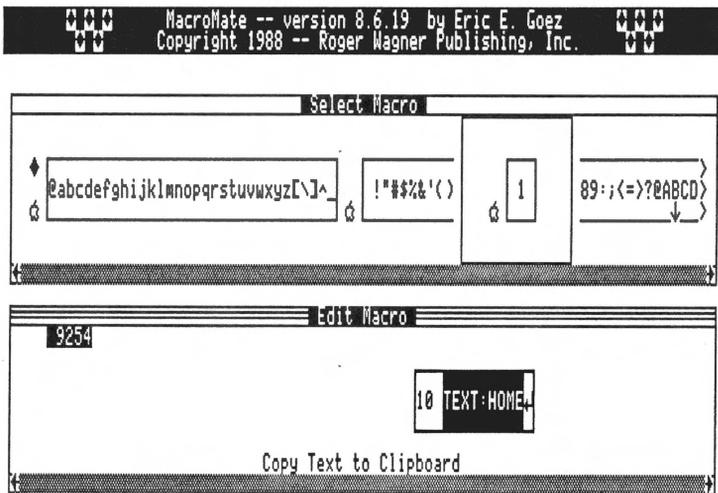
Editing Functions (Edit Macro Window Only)

While in the Edit Macro window, characters are added by just typing the desired text or Apple/Option keys. You can change between an **overstrike** and **insert** mode with **Shift-Control-I**, which toggles between inserting and overstriking characters when editing macros. The current insert/overstrike status is indicated by a message at the bottom of the Edit Macro window.

Remember to use **Shift-Delete** if you want to delete the character to the left of the cursor. Pressing **Shift-Clear** erases the entire macro definition for just that key.

The MacroMate Editor has a "clipboard", onto which text can be copied, and later "pasted" into another part of the same or different macro definition. The clipboard is also maintained between load and save operations, so it can also be used to copy a macro definition (or a part of) from one macro definition file to another.

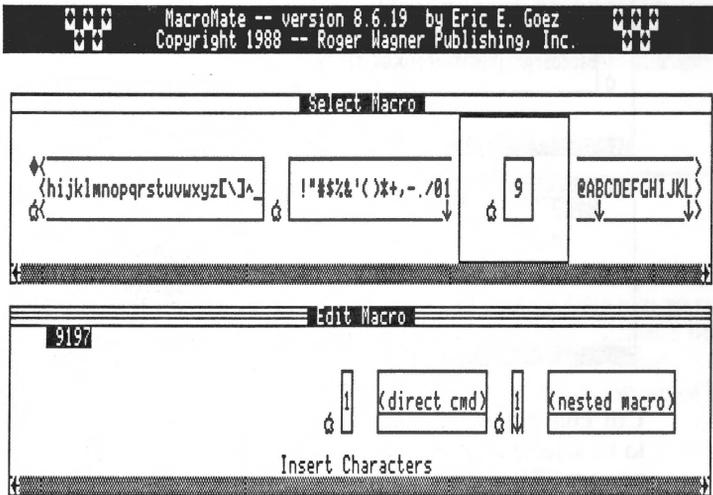
Copy characters by positioning the cursor on the first character of the text to be selected. Then press **Shift-Control-C** which starts the selection process. Then use the find function, the arrow keys, keypad-1 through keypad-9, or Control-B or Control-N to move to the last character of the text to be selected. Then press Shift-Return to complete the "copy" operation. Pressing Shift-Escape cancels the procedure at any point. The selected characters will be copied from the macro and placed on the Clipboard, without effecting the text selected.



Cut characters by positioning the cursor on the first character of the text to be selected. Then press **Shift-Control-X** which starts the selection process. Then use the find function, the arrow keys, keypad-1 through keypad-9, or Control-B or Control-N to move to the last character of the text to be selected. Then press Shift-Return to complete the "cut" operation. Pressing Shift-Escape cancels the procedure at any point. The selected characters will be cut out of the macro and placed on the Clipboard.

Paste characters from the Clipboard with **Shift-Control-V** which pastes characters from the Clipboard to the cursor's position when editing macros. Note that the Clipboard retains its contents between the loading and saving of different macro definition files with the MacroMate Load and Save commands. This means that you can use the Clipboard to transfer an existing macro definition (or a portion of one) from one definition file to another.

Imagine a case where you wanted to include an already-defined macro (such as Option-1) in the definition for another macro. The reference to an existing definition within a new definition is called a **nested macro**. A nested macro call is made by first typing the Apple- or Option-key command while entering the macro text. Then position the cursor back on the character to be specified as a macro call and press **Shift-Control-M** (for "Macro") or **Shift-down-arrow**. As an example, Option-1 with a down arrow below it in the Edit Macro window would send out whatever macro had been defined for Option-1 when the larger macro was executed. Without a down-arrow, Option-1 in a definition would simply behave as though you were pressing a non-macro Option-1 in the program.

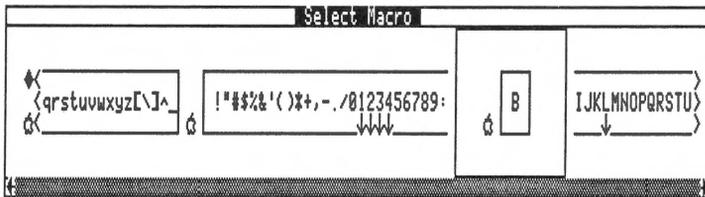


As an aside, it should be noted that this feature makes it possible to **re-assign one Apple- or Option-key command in a program to another macro in MacroMate**. For example, in the DeskTop program supplied on the MacroMate disk, there is a program selector that normally uses Apple-1 to run Applesoft BASIC. However, pressing Apple-1 with the default Macros file loaded doesn't work as expected since Apple-1 has been redefined in the Macros definition file to output a line of a BASIC program.

You could, however, redefine Apple-B to output an Apple-1 (of the non-macro kind) to the DeskTop, which would then run BASIC. This, in fact, has been done in the Macros (and Macros.Demo) file, and you may wish to try this out to see how it works. This situation and its implications are not blindingly obvious, so we recommend you think about what has just been said here for a moment before reading on...

Comments can be added to macro definitions in MacroMate. Comments are text that is added to a definition, but which is not sent out to the application when the macro is used. This is so that you can add a note of explanation to all (or even just a portion of) a macro definition. That way you'll know what that macro does when you look at the definition at a later time. You can also turn an actual functioning part of a macro into a "comment" to temporarily deactivate a certain portion of a defined macro without losing the text that made up that part of the definition. Text is turned into a comment in a manner similar to that used for Copy and Cut. First, position the cursor on the beginning of the text to be commented in your macro, using the usual cursor movement commands in the Edit Macro window. Then press Shift- (Shift-underscore). Then use the cursor movement commands to highlight the text you want commented. Finally, press Shift-Return to accept the selection, or Shift-Escape to cancel it. If you accept the selection, the entire text will be underlined, indicating it is a comment. Repeating the comment selection and acceptance process reverses the comments back to active text.

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Special Macro Characters (Edit Macro Window Only)

While creating a macro, you can tell MacroMate to use the current time and/or date from the built-in clock as part of the output text. When entered into the macro from the Edit Macro window, these special macro characters output a formatted date such as 4/2/88 or a formatted time such as 10:58:23 PM. The date and time are not output into the macro itself, but into your application, giving you the current values for each. In the macro you will see a graphic text character with a number sign above (indicating a keypad character) and a down-arrow below.

Display Time with Shift= **on the keypad which places a "diamond" character in your macro to cause the current time to be output when your macro is requested.**

Display Date with Shift-/ on the keypad which places a "checkmark" character in your macro to cause the current date to be output when your macro is requested.

Although the TAB key is generally equivalent to the character Control-I, for those Apple IIgs applications that specifically recognize the TAB key, MacroMate distinguishes between Control-I and The TAB key within the text of a macro definition. The TAB key is indicated by an arrow-tip point up and to the left.

There are occasions where you will want a macro to pause for a certain period of time before outputting the next character in the definition. You can specify an **Output Delay** with Shift-* on the keypad, which places an "hourglass" character with a number-pad symbol above it in the macro. The delay character will cause the output of the requested macro to delay output for 1/2 of a second for each hourglass character in the macro.

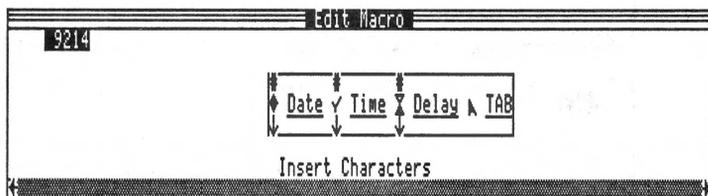
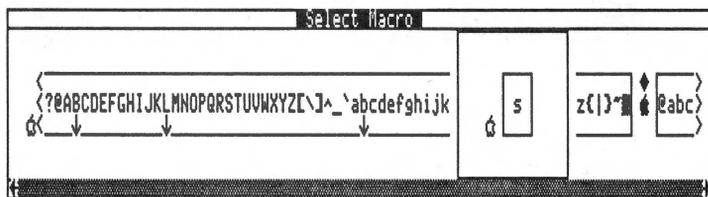
The delay character is a "sign of the times." Some programs delete buffered keystrokes thinking them perhaps accidental keystrokes or just forcing users to wait for menus to be displayed before entering more choices or information. Many programs do not clear out buffered keys, but some do, trying to protect the person who presses keys inadvertently or absent-mindedly while the computer is busy processing the last request. To overcome this problem when using macros one must either patch individual application programs or somehow skip over the application's throw-away nature.

MacroMate skips these character deletions by providing for a delay character. When you find that an application is eating part of your macros, try entering one or more delay characters to allow the application time to get to where it wants to go before taking more input. This is necessary when outputting a macro in a program that discards characters in a buffered keyboard (for example, AppleWorks discards characters before displaying most menus or when requesting many of its functions).

The use of the delay character in your macros is the real "art" in the use of MacroMate. There isn't any clear guideline for when to use the delay character other than to suggest that you try using the delay character whenever portions of a macro you've defined seem to get lost by the application that your macro is being sent to.

See Appendix C for additional tips on using the delay character in macro definitions.

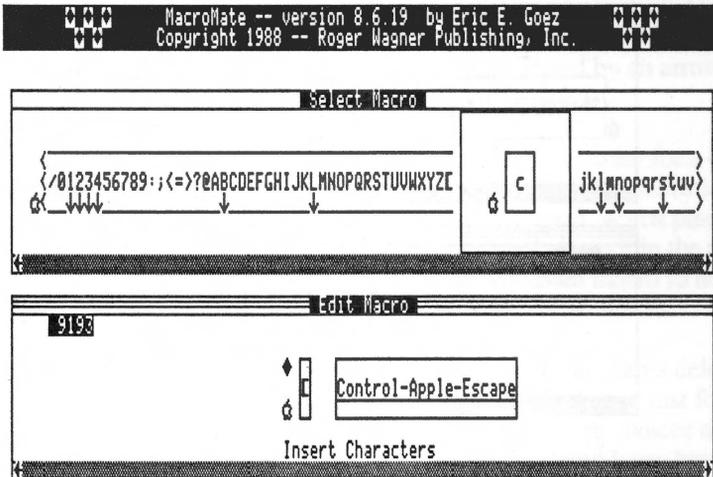
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```



The special case of "Control-Apple-Esc"

To call the Desk Accessory Menu that is built into the Apple IIgs you must press the Control-Apple-Escape keys. MacroMate macros can include Control-Apple-Escape as part of any macro. By using this as part of a macro many interesting things can be done. For instance, you can create a macro to automatically enter any Classic Desk Accessory of your choice with a simple macro call, and then execute any commands as appropriate. For example, if you have SoftSwitch, it is possible to define macros that will automatically switch you from one program to another with just a single macro key. (SoftSwitch is a program switcher that allows several programs to be present in your Apple IIgs at one time. See the RWP Product Catalog that was enclosed in your MacroMate package for more information).

When you wish to enter the Control-Apple-Escape keys as part of a macro definition, just press Shift-Control-Escape. You will see the Control-Apple-Escape character appear in the macro that you are editing. This alternate keying is required because the Apple IIgs firmware itself would intercept an actual Control-Apple-Esc before MacroMate could even see it.



Special Characters During the Record Mode

During the Record Mode, you can enter the special characters like time, date, delay, etc., by just pressing the Shift key and =, /, or * (time, date, delay). For time and date, the current time or date will be typed on the screen as well. If you press an Apple- or Option-key that has already been defined as a macro, that definition will be output by MacroMate at that point, and entered into the new macro definition as a nested macro. During the Record Mode, the Desk Accessory Menu is accessed by pressing Shift-Control-Escape. This is recorded by MacroMate as Control-Apple-Escape, and will let you record actions using Classic Desk Accessories like the Control Panel and SoftSwitch.

Turning MacroMate On and Off From the Keyboard

There may be times when you will want to turn off MacroMate. For example, MacroMate's use of interrupts in the Apple IIgs prevents the "Startup" function in the DeskTop menu from working with floppy (5.25") disks. It also interferes with the fast disk copy function in Copy II Plus, a disk utility from Central Point Software. This is not a flaw in MacroMate, but rather a design limitation in the 5.25" disk controllers. In any event, it is a simple matter to turn off MacroMate at any time in your program by simply pressing **Control-Apple-spacebar**. This turns MacroMate off and allows your program to operate without MacroMate looking at the Apple and Option keys. When MacroMate turns off, you will see the screen border flash through a rainbow pattern to tell you it has been disconnected. This command is normally entered directly from the keyboard by the user, while in a running program, but may be included in a macro definition if you wish that macro to turn off MacroMate as part of the macro.

To have a macro disconnect MacroMate, simply enter Control-Apple-space as part of the macro definition. Now here's the important part. To tell MacroMate that this is really the "disconnect" command, there is the added requirement that Control-Apple-space be flagged as a "macro" within the definition. That is, you want to add the down-arrow indicator that would otherwise indicate a macro call within a macro definition ("nested macros"). In this case, it's not a nested macro, but it does tell MacroMate that you really *do* want to turn the system off. Remember, to flag a character as a macro within the definition, you need to put the cursor on the Control-Apple-space character, and then press Shift-down-arrow.

The main reason for this function is so that you can set up the "Auto-Activate" function to load a given application and possibly document on startup, and then turn off MacroMate so that it's not active when you don't expect it.

Note: If you have told MacroMate to ignore the Apple key, you can also use either Control-Option-space or Control-Option-Apple-space to turn off Macromate.

MacroMate can be re-activated at any time by simply pressing **Control-Apple-Delete**, or alternatively by just entering the MacroMate Editor from the Desk Accessory Menu. When you exit the MacroMate Editor, the keyboard macro will be automatically activated. It is not necessary to use any particular function within the MacroMate Editor once you enter it, as it is simply the act of entering and then exiting that activates the macro function. MacroMate is a Classic Desk Accessory and can be accessed from any program that can access the Desk Accessory Menu. Also see "Auto-Activate."

Chapter 6: Special MacroMate Functions

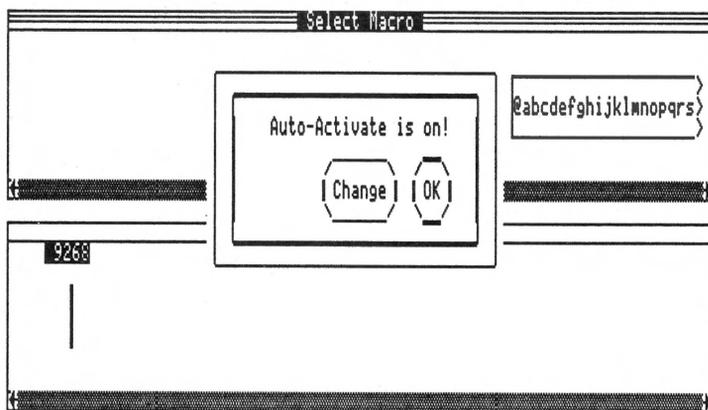
Auto-Activation

When a system disk with MacroMate is started up, the default setup is that MacroMate will be active during and after the startup. This means that any defined macros will be instantly available. It also means that the interrupts that MacroMate requires will be enabled, and that the Option- and Apple-Key intercept routine will be active.

You may wish to *not* have MacroMate active on boot so as to not interfere with a particular program, and this startup preference can be defined within a MacroMate macro definition file.

To see how this is changed, go to the MacroMate Editor with the usual Control-Apple-Escape sequence. When the MacroMate program screen appears, make sure you are in the Select Macro window (the top window), and press Control-A (for "Auto-Activate"). This will bring up a dialog box that displays "Auto-Activate is on! (or off!)".

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```



If you press the spacebar key, the setting will change between on and off. Press Return to accept the displayed setting. When the Auto-Activate flag is set to "off", MacroMate will not be active when the disk is started up. Press the space bar several times, and notice how the setting changes. For now, leave Auto-Activate "on", and press Return to close the dialog box.

Important: This setting is not saved back to the disk until you use the Control-S (for "Save") command. Remember to save the macro definition file whenever you change the Auto-Activate setting. Since only the definitions file named MACROS is loaded during the startup, this setting is only really relevant in the file of that name on your disks.

Auto-Macro Function

When Auto-Activate is "on", MacroMate is immediately active when the disk it has been installed on is started up. MacroMate includes a special function called the "Auto-Macro" that will automatically execute a defined macro during the startup process. This means that you can totally automate the startup process for any Apple IIgs to not only run a particular program, but to execute specified commands as though you were there at the keyboard typing them yourself.

You could, for example, create a disk that when started up, automatically ran AppleWorks, loaded an existing word processing document from the disk, and then jumped to a particular position in the file (for example, right after "Dear..." to begin a letter). Additional macros could also be defined for saving and printing the file that would let the most inexperienced user imaginable start the disk, type in a letter, and then print and save the letter with just a few keystrokes beyond those of the text of the letter itself.

To create the Auto-Macro, you simply define the macro for Control-Apple-Option-@. This was chosen as the most unlikely key to be used by any other program. When this is defined, *and* Auto-Activate is "on", MacroMate will automatically execute this macro during the startup process.

To try this out, go to MacroMate and choose Control-Apple-Option-@ in the Select a Macro window. Then press Shift-down-arrow to move to the edit window.

For this example, we'll define a macro that selects Applesoft BASIC from the DeskTop, and then runs a program called "Sweeper" that is provided on the MacroMate disk. Sweeper is just an example Hi-Res Applesoft program, but the technique used in this macro could be used to run AppleWorks, MouseWrite, or any application on startup.

When defining a macro, remember that you must imagine the exact keystrokes you would use if you were doing the operation manually, and then enter those as your macro definition. In addition, you must often take into account the specific program that the macro will be interacting with. For example, AppleWorks "gobbles" extra characters at the beginning of many menus, and therefore requires that delay characters be used in the macro definitions to skip over this built-in annoyance to AppleWorks.

To properly construct a startup macro, first imagine every single keystroke you would normally type as the disk is starting up. In the case of the MM.System disk, the first key typed during startup is the pressing of Return at the title screen, so in our startup macro, the first defined character should be Return.

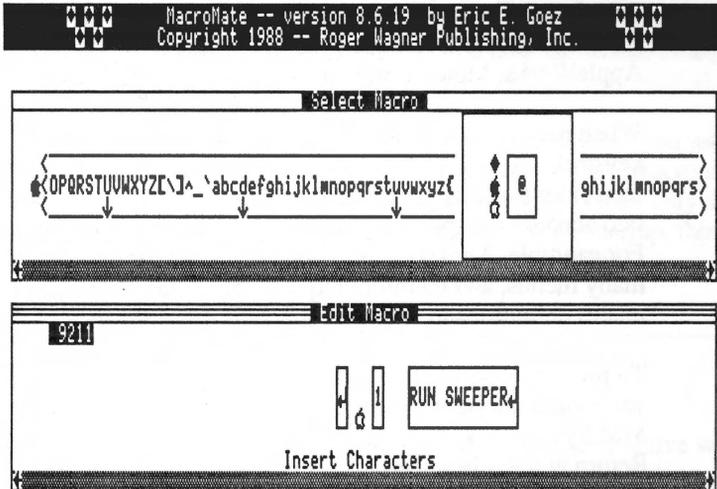
Once the DeskTop screen appears, we will want to run the Sweeper program. To manually run Sweeper from the DeskTop, you might normally use the mouse to double-click on the Sweeper icon. Since we have to use the keyboard, an alternative approach would be to use the DeskTop Selector menu and to press Apple-1 to select Applesoft. This starts up Applesoft BASIC, at which point you would type RUN SWEEPER (and Return) to run the Sweeper program.

To create the startup macro, go to the MacroMate Editor and press Control-Option-Apple-@. This will select the Auto-Macro definition. Now press Shift-down-arrow to start the definition. Type in:

```
Return, Apple-1, RUN SWEEPER, Return
```

In this definition, the commas are shown only for clarity, and should not be included in your definition.

Properly entered, your macro definition should look like this:



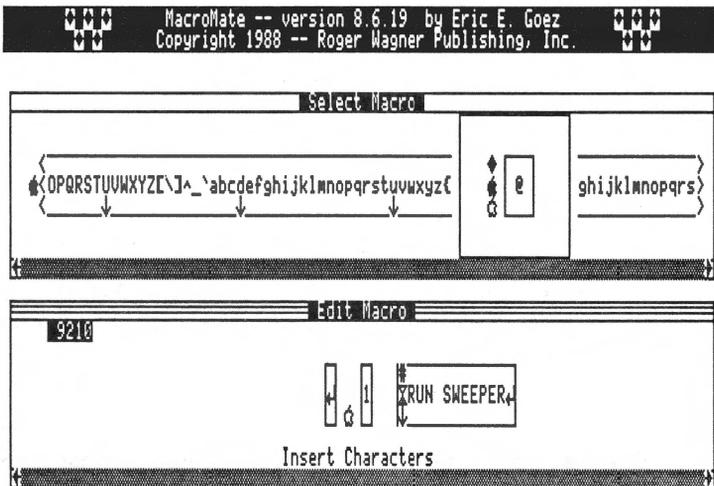
Once defined, go back to the Select Macro window, and use Control-A to make sure that Auto-Activate is "on". That is, the prompt in the window should be "Auto-Activate On!", and you should press the Return key to accept. If it is not "On", press the space bar once to change the setting, then press Return to accept.

Finally, use Control-Shift-S to save the macro definition file back to the MacroMate disk.

Then leave MacroMate (press Shift-Escape) and go back to the DeskTop, Applesoft, or wherever you were when you entered MacroMate. Then restart the computer with Control-Apple-Reset. When the MacroMate disk starts, it should automatically go to the DeskTop, then to BASIC. However, at that point, you'll notice something strange. Instead of the words RUN SWEEPER appearing on the screen, only the word SWEEPER (if even all of that) appears, and you get a SYNTAX ERROR.

The error is generated because the command RUN got lost when BASIC.SYSTEM started up. This is a good example of where the delay character will come in handy.

Go back to the MacroMate Editor, and re-select Control-Option-Apple-@. Now press Shift-down arrow to start editing. What you want to do is to insert a delay character into the definition just before the words RUN SWEEPER. Do this by first pressing the Shift-right-arrow key until the cursor is on the R in RUN. Now press Shift-* (* on the keypad). Notice that the delay character is inserted *in front* of the R. The insert mode (indicated at the bottom of the screen) always inserts characters in front of the current cursor position. Now the screen should look like this:



Now press Shift-up-arrow to go back to the Select Macro window, and use Control-Shift-S to again save the new macro definition file back to the MacroMate disk.

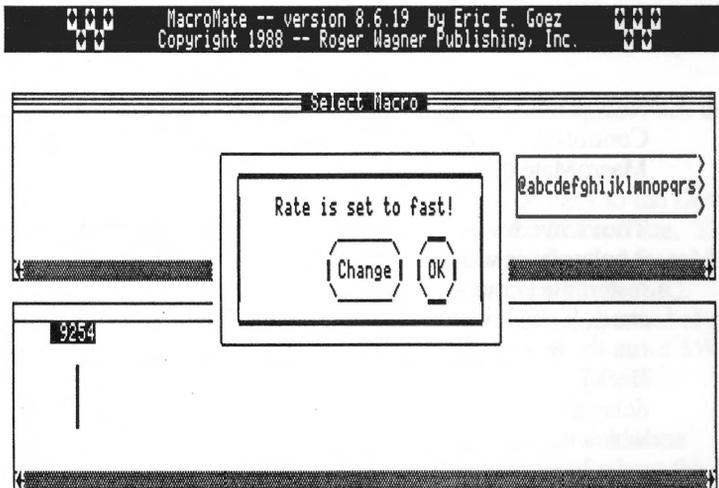
Then leave MacroMate (press Shift-Escape) and go back to the DeskTop, Applesoft, or wherever you were when you entered MacroMate. Then restart the computer with Control-Apple-Reset. When the MacroMate disk starts, it should automatically go to the DeskTop, then to BASIC, and then run the Sweeper program. When Sweeper runs, you can return to the DeskTop by pressing any key while the program runs. In this example, the delay character is used to pause briefly while BASIC is started up, after which the RUN command is issued.

To "undo" the Auto-Macro, which you should do once you've tested it (we assume you don't want to really run Sweeper every time you start up the disk), go back to MacroMate, select Control-Option-Apple-@ to edit, and clear the macro using Shift-Clear. Finally, go back to the Select window and save the file back to the disk.

The general rule for the Auto-Macro is that whenever Control-Option-Apple-@ is defined, and Auto-Activate is "on", the macro is issued during startup. If Control-Option-Apple-@ is empty, or Auto-Activate is "off", then no macro is issued during the startup.

Rate Control

Some application programs cannot accept characters as fast as MacroMate can output them, even with keyboard buffering (a Control Panel feature) turned on. This problem usually only appears when you are outputting a macro with more than 50 characters. If you do experience this problem, you can set the rate at which MacroMate will send out characters in that definition file to your application.



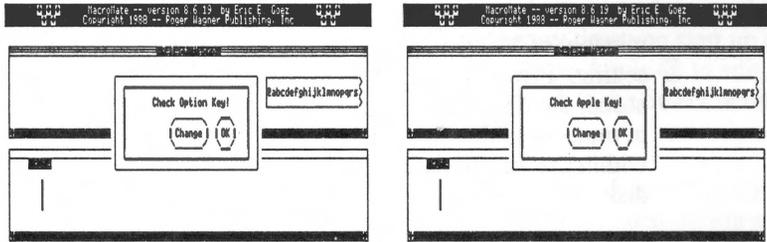
To set the rate, press Shift-Control-R (for "Rate") in the Select Macro window of MacroMate. A dialog box will appear showing the current setting. Press the space bar to change the setting. Then press Return to accept the displayed setting. Remember, this setting only changes what is in memory at that time. If you want to make the new setting permanent within that macro definition file, you will have to save the file back to a disk.

Option/Apple Keycheck Control

Normally MacroMate halts your application program when you press the Option or Apple keys while it waits to see if the next keypress is a macro definition. In some programs, like AppleWorks, however, you may find that you prefer to tell MacroMate to immediately pass through either the Apple or Option key (or both individually) without halting your application. The trade-off here is that this will make whichever key you choose totally unavailable for macros. This is actually not as big a problem as you might first suppose. For example, in AppleWorks, there are already many Apple-key commands for AppleWorks itself, and no Apple-key sequences are defined in Macros.Awks. On the other hand, there are no Option-key commands in AppleWorks, and Macros.Awks uses only the Option key in its macro definitions. In this case, it makes perfect sense to tell MacroMate to ignore the Apple-keys as macros, and to only look at the Option key.

These options are controlled from the Select Macro window within MacroMate in the same way that the Auto-Activate and other MacroMate functions are used.

To control the Option-key, press Control-O (for "Option") in the Select Macro window. This will bring up a dialog box that displays "Check Option Key". If you press the space bar key, the setting will change to "Do Not Check Option Key". Each time you press the space bar key, the setting will alternate between these two states. Press Return to accept the displayed setting. When the setting is "Do Not Check Option Key", MacroMate will not halt your program when the Option key is pressed. This also means that no Option-key macro definitions are available. You can define them in the MacroMate editor, but they will not be output with the Option key ignored. For now, leave the Option keycheck setting to "Check Option Key".



The Apple-keys are controlled with a similar dialog box, which is brought up by pressing Control-P (next to the "O" for Option key). This box works identically to the Option control box. In most cases, this is the function you will want to set to "Do Not Check Apple Key". In particular the `Macros.Awks` definition file is already set up to ignore the Apple-key, i.e., not to halt AppleWorks when the Apple key is pressed, and to immediately pass through any Apple command keys that you press for AppleWorks. Meanwhile MacroMate will respond as expected to Option-keys by halting the program while it waits for an Option-key defined macro.

Although it is more inconvenient to hold down *both* the Apple and Option keys *together* to execute a macro, setting both Apple and Option keychecks to "ignore" lets MacroMate operate virtually 100% transparent to your application, and still lets you define a large number of macros.

Remember to save the macro definition file whenever you change either of the Keycheck settings if you want the changes to be a permanent feature of that definition file.

Note: If you do turn off Apple-key checking, remember that this will also set MacroMate to ignore the Control-Apple-space command to turn off MacroMate from the keyboard. However, you can also type Control-Option-space (or even Control-Apple-Option-space) to turn off MacroMate, so this is not a real problem. Any use of Control-Apple-space *within* a macro to turn off MacroMate will work properly, regardless of the Apple Keycheck status.

If the Option keycheck is turned off, then Option-key macros will not be available. More importantly, this will also make the Record Mode command (Control-Option-Escape) unavailable. In practice, you probably will not find many occasions where you will need to turn off the Option keycheck.

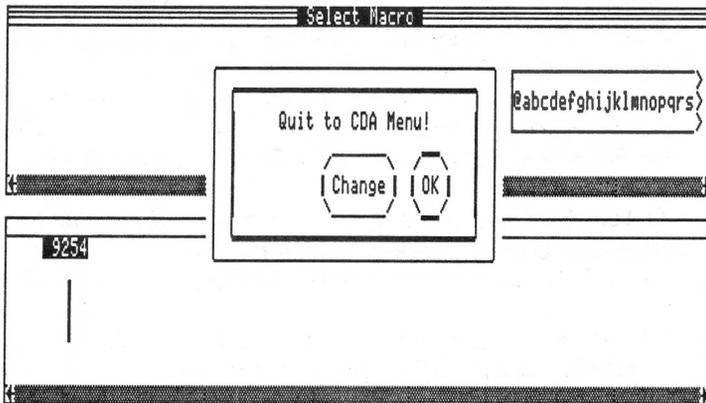
Auto-Quit Function

Normally, when you quit MacroMate with either Escape at the Select Macro window, or with Shift-Escape in either window, you simply return to the Classic Desk Accessory menu. However, if you would like MacroMate to automatically generate the extra Return character needed to take you all the way back to your main application program, this can be selected as part of any or all macro definition files. Simply press Control-Q (for "Quit") in the Select Macro window. This will bring up a dialog box that displays "Quit to CDA Menu".

If you press the space bar key, the setting will change between that and "Quit to your Program". Press Return to accept the displayed setting. When the Auto-Quit flag is set to the CDA menu, MacroMate will not generate the automatic Return to quit the Desk Accessory menu when you leave the MacroMate accessory. Press the space bar several times, and notice how the setting changes. For now, change Auto-Quit to "Quit to your Program", and press Return to close the dialog box. Then quit MacroMate by pressing Shift-Escape to see how this works. Remember to save the macro definition file whenever you change the Auto-Quit setting if you want the change to be a permanent feature of that definition file.

Note: An early version of ProDOS 16, vers. 1.1, interferes with the Auto-Quit function, and MacroMate will not complete the quit operation.

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```



Summary:

1) **Auto-Activate** is used to tell the Macros file (the default file loaded by MacroMate when a disk starts up) whether MacroMate should be active after the startup. Change this setting with Control-A from the Select Macro (top) window within the MacroMate Editor.

2) The **Auto-Macro** function refers to MacroMate's ability to output a predefined sequence of text and/or program commands (i.e., a macro) when a disk is first started up. This macro is output only if it is defined for Control-Option-Apple-@, and Auto-Activate is "on". This can be very useful for creating a truly automatic program disk for yourself or another user of your computer. This automatic operation can include launching a specified program, and is not hindered by the switching from one operating system to another (such as from ProDOS 8 to 16 or vice versa).

3) **Rate Control** is used to tell MacroMate to output the text and/or program controls at a slower rate. This is for those cases where the application cannot accept the complete macro at the faster output rate, and is generally only required when macro definitions exceed 50 characters. Set the Rate Control by pressing Control-R from the Select Macro window.

4) **Option/Apple Keycheck Control**. MacroMate normally stops program operation each time either the Apple or Option key is pressed. If the final keypress is not a defined macro, it is passed on to the application. You can, however, tell MacroMate to ignore either the Option or Apple key. If both are ignored, MacroMate can still be used with macros defined with both keys (such as Apple-Option-1). If the Option key is ignored by MacroMate, this precludes use of the Record Mode (the Record mode uses Control-Option-Escape to initiate the recording). You can still enter macros directly within MacroMate, or alternatively, you can turn the Option key back on while you record a new macro, and then turn it back off when you're finished. Press Control-O from the Select Macro window to set the Option keycheck status. Press Control-P to set the Apple keycheck status.

5) **Auto-Quit** is used to automate the process of pressing Return in the Desk Accessory menu when you exit the MacroMate Editor. Auto-Quit is controlled by pressing Control-Q from the Select Macro window.

Remember, these changes are not saved to disk unless you use the Save (Control-S) command for a particular macro file.

Appendix A: Installing MacroMate on a disk

The MM.System disk provided with this documentation already has MacroMate installed on the disk. The disk itself is a standard ProDOS 16 startup type disk, with the file ProDOS and the folder System on it. In the Desk.Accs folder, is the file MacroMate, which is the MacroMate program. When MacroMate runs, it looks for a file called Macros, which is the macros definition file. This file is separate from MacroMate so that you can save and load macro definitions from different disks.

To try out MacroMate, you can just startup the MM.System disk, and from there launch Applesoft BASIC, AppleWorks, MouseWrite, or any other application you want to try MacroMate with.

If you want to install MacroMate on your own disks (and we recommend you do), just copy the files MacroMate and any of the Macros files from the Desk.Accs folder in the System folder to the corresponding folders on whatever ProDOS 16 startup disk you wish. The next time you start up that disk, MacroMate will be automatically placed in the Desk Accessory Menu of the GS, and will be available in any program that allows access to the Desk Accessory Menu.

You can tell if a particular disk is a ProDOS 16 startup disk by looking for the words "PRODOS 16" on the screen when the disk is started up. If these words do not appear on the screen when you boot a particular disk, then MacroMate cannot be installed on that disk until you either add the appropriate system files, or unless you use P8CDA, an accessory product from Roger Wagner Publishing, Inc.

If you want to start an empty macros file, just put the file MacroMate in the Desk.Accs folder *without* the file Macros. When this disk is started, MacroMate will be installed without any defined macros. You can then define just the macros you want, and then save the new Macros file to the startup disk, or any other disk you wish.

The following sections give specific information on setting up MacroMate on different configurations of Apple IIgs startup disks. Refer to the appropriate section for specific details on setting up the particular type of system disk you want.

Putting MacroMate on Your GS System Disk

An easy way to use MacroMate is to just install it on your Apple IIgs System Disk. Most likely, you are probably already using a backup copy of your System Disk for your daily work, and it is on that disk that you can install MacroMate. If you are using your original System Disk that came with your Apple IIgs for your daily work, we suggest you make a working backup now (see Chapter 2 for the general procedure of making a duplicate disk), and then install MacroMate on your backup copy. Then put the originals of both MacroMate and your System Disk aside in a safe place, so that they will always be available in the event something happens to your daily work disks.

If you are already familiar with using the Apple System Utilities, Copy II Plus or any other file copy utility, it is sufficient to say here that you need only copy the files *MacroMate* and the particular macro definition files you want (such as *Macros*, *Macros.Awks*, *Macros.Basic*, etc.) from the source pathname `/Mm.System/System/Desk.Accs` to your target disk using the same folders, for example, `/System/System/Desk.Accs`.

If you are not familiar with using a file copy utility, there are upcoming instructions on how to copy the MacroMate files that will guide you through the process.

Putting MacroMate on a Hard Disk (or RAM/ROM disk)

There really isn't any difference to ProDOS or MacroMate between a 3.5" disk, a hard disk, a RAM disk, a ROM disk, or any other type of disk device. The Apple disk operating system is intentionally designed so that all storage devices look like disk drives. This means that the procedure for installing MacroMate on a hard disk (or any other disk device) is identical to that for installing it on a "normal" 3.5" disk.

The only requirement is that the disk it is installed on be a ProDOS 16 startup disk, with the usual System folders on it. If the words "ProDOS 16" appear on the screen when you start up a disk, then you can put MacroMate on the disk (assuming there is enough free space on the disk!).

See the are upcoming instructions on how to copy the MacroMate files for guidance on installing MacroMate on your own disks.

MacroMate can be put on a ProDOS 8 disk if you have David Lyon's utility, P8CDA, from Roger Wagner Publishing, Inc. This utility lets you install almost any Classic Desk Accessory into memory during the startup of a ProDOS 8 disk. See Appendix D for specific details on using P8CDA with MacroMate.

If you are unsure of the distinction between a ProDOS 8 startup disk versus a ProDOS 16 startup disk, you may find Appendix G interesting, as it discusses the differences between these setups, and the function of the various files on each type of diskette.

One Drive Copy

If you have only one 3.5" disk drive, these instructions will explain how to move MacroMate and the associated macro definition files to the 3.5" destination disk of your choosing. If you have two disk drives, or are copying MacroMate from the 3.5" disk to a hard disk, floppy 5.25" disk, or RAM/ROM disk, skip to the next section, "Two Drive Copy".

If you're still reading along here, we assume you have only one 3.5" disk drive, and wish to copy MacroMate to another 3.5" disk. To make the copy process easier, we'll use the RAM disk available on your Apple IIgs as a temporary "parking place" while we move the files from one disk to another.

First, start up the MM.System disk (or a backup). After the title screen, the DeskTop will appear. The MM.System disk will appear at the right of the screen as an "icon", that is, a graphic image of a disk, with the name "MM.System". You should also see an icon named "RAM5". If you do, skip the "Special Help: RAM5" box coming up next, and continue with the copy instructions.

Special Help: RAM5

If the icon RAM5 did not appear on the DeskTop when you started up the MM.System disk, it means you have not allocated any RAM in your Apple IIGs for use as a RAM disk. This allocation process, however, is very easy. Assuming you are at the DeskTop on the MM.System disk, press Control-Apple-Escape. This should bring up the Desk Accessories menu in the GS. Use the arrow keys to highlight "Control Panel", and press Return. Now press the up-arrow again to select RAM Disk, and press Return again.

At the top of the window that appears should be the text "Minimum RAM Disk Size:", which for your system probably reads "ØK". If the "Largest Selectable:" line shows a number smaller than "512K", then you do not have enough expansion RAM to support a RAM disk. If this is the case, you can use a floppy 5.25" disk (or hard disk, other RAM disk, etc.) in place of RAM5 in the following instructions. If you do not have any other disk drive, nor enough RAM to support the RAM disk, you should consult the manual that came with your Apple IIGS regarding the System Utilities software for copying a file, or call the Technical Support department at Roger Wagner Publishing, Inc., at the phone number listed at the front of this manual.

Control Panel	
RAM Disk	
Minimum RAM Disk Size:	256K
Maximum RAM Disk Size:	256K
-Largest Selectable:	1024K-
-RAM Status-	
RAM Disk Size:	ØK
Total RAM in Use:	750K
Total Free RAM:	521K
Select: ← → ↓ ↑ Cancel:Esc Save: ↵	

Assuming the "Largest Selectable" value in the RAM disk window is at least 512K, press the right arrow, (Minimum RAM Disk Size should still be highlighted), until the value reads "256K" for both Minimum and Maximum RAM Disk Size values (both will change at the same time as you press the right arrow key). When both values read "256K", press Return to accept the setting, and return to the Control Panel menu. Select Quit and press Return, then press Return once more to go back to the DeskTop.

RAM disk changes do not take effect until the computer is turned off and turned back on, so turn off the Apple IIgs now, and then turn it back on with the MM.System disk in the drive. When the DeskTop appears again, RAM5 should be shown as a disk icon on the screen, and you can resume the copying instructions below. If RAM5 does not appear on the DeskTop, go back to the Control Panel, and repeat the previous instructions for setting up the RAM disk. If you still have problems, call the Technical Support department at Roger Wagner Publishing, Inc., at the phone number listed at the front of this manual.

After copying the MacroMate files, the RAM disk setting can be restored to ØK by going back to the Control Panel, setting both Minimum and Maximum values back to Ø, and then quitting as before, and finally turning the power off, and then back on.

Before starting the copy process, let's verify that the disk you wish to install MacroMate onto is in fact a properly organized ProDOS 16 startup disk.

Press the eject button to remove the MM.System disk, and insert the System disk in the drive. The disk icon for "System" (or whatever is the name of your disk) should appear.

Use the mouse pointer now to double-click on the icon for your System disk, which we'll refer to from here on as the "destination disk". A window should open up showing the files ProDOS, a folder called System, and various others. If you do not see the file ProDOS and the folder System, your target disk is not a startup disk, and you will have to choose another disk to install MacroMate on. If you are not sure how to create a ProDOS 16 startup disk, see the section later in this chapter titled "Creating a ProDOS 16 Startup Disk".

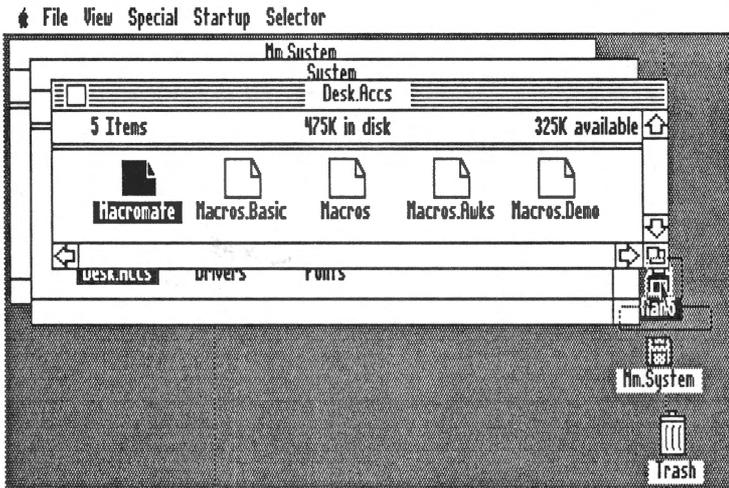
Now is a good time to check to make sure there is enough room on the destination disk for MacroMate. In the upper right corner of the window should be some text that indicates how much free space is available on your destination disk. MacroMate takes about 25K on a disk, and each macro definition file is about 10K, although this can vary considerably, depending on how many macros have been defined. For now, just make sure that there is at least 50K available on your destination disk (70K if you intend to move MacroMate plus all four macro definition files.) If there is not enough space on your destination disk, you will have to delete some files before moving MacroMate. This can be done by dragging the icon for a file or folder to the trash can on the DeskTop. Which files you wish to eliminate are up to you, and depend on which programs on your System disk you are not using. Likely candidates are the System Utilities folder (since the functions of this program is duplicated by the DeskTop or Finder), or the AppleTalk folder.

Assuming the folder System is present, double-click on the folder icon to open it up. A new window should open, and in it you should see the files P8, P16, and several other folders, among which is one named Desk.Accs (for "Desk Accessories"). This is where you will want to put the MacroMate files. If you do not see the files P8, P16, System.Setup, and Desk.Accs, then your destination disk is not a startup disk, and you will have to choose another to install MacroMate on.

If all still appears ok, use the mouse to pull down the File menu, and choose Close All to close all the open windows. Having verified the destination disk is a properly organized ProDOS 16 startup disk, we'll now begin the file copy process. Press the eject button to remove the destination disk, and re-insert the MM.System disk.

To begin the file copy process, double-click on the MM.System icon to open up the disk. The second icon in the top row should be a folder named System. Double-click on System to open the folder. In the lower-left of the window, you should see the folder Desk.Accs. Double-click on Desk.Accs to open this folder. If you make a mistake, you can always choose "Close" to close a folder, or "Close All" to start over. When the Desk.Accs folder opens, you will see MacroMate and at least four other Macros (macro definitions) files. The icon for RAM5 should also still be visible to the right of the screen.

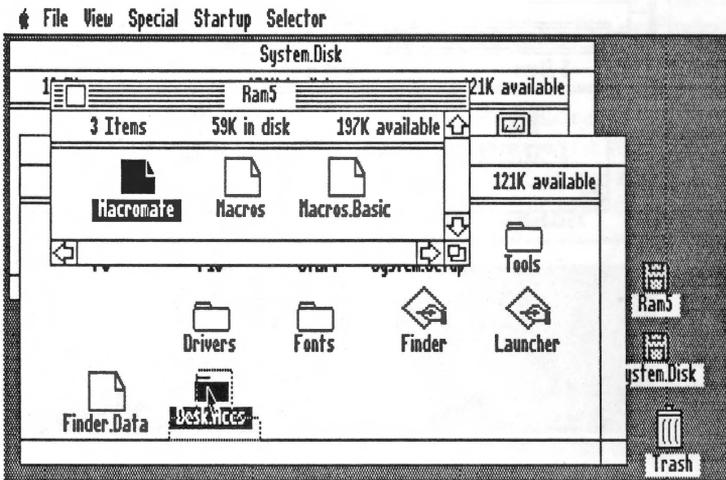
To copy the files to RAM5, position the mouse cursor on top of the file MacroMate, and press down on the mouse button until the file icon darkens, indicating it is selected. While still holding the mouse button down, move the mouse until the mouse pointer and the file outline is directly over the icon for RAM5, at which point RAM5 will darken, indicating the destination is RAM5. Release the mouse button. A dialog box saying "Copy..." should then open while the file is being copied from MM.System to RAM5. If nothing seems to happen when you release the mouse button, it is because you moved the pointer off RAM5 as you were releasing the mouse button. Try the process again to copy the MacroMate file.



When MacroMate has been copied to RAM5, it is now up to you to decide which of the Macros definition files you wish to move to your destination disk. If you don't put a file named Macros on the destination disk, then MacroMate will automatically create an empty file on your disk the first time you start it up. If you want to have one of the definition files such as Macros.BASIC or Macros.Awks available, then you should move them to RAM5 now. If you want a macros definition file to be the startup set of macro definitions, we'll need to rename it Macros before the final move to your destination disk, but we'll have time for that later.

Once you've moved MacroMate and any of the definitions files that you want to RAM5, press the eject button on the disk drive to remove the MM.System disk. The windows open at that point will close automatically.

Now insert the destination disk (presumably System) that you want to put MacroMate on, and then double-click on the icon to open the disk up. Now double-click on the System folder to open it. You should now see the folder Desk.Accs in the window. Use the mouse pointer to drag the icon Desk.Accs to an open space at the bottom of the window. Now double-click on the RAM5 icon to open up the RAM disk. You should see the files MacroMate, plus any macro definition files that you copied to RAM5 earlier. Now use the mouse to drag the icon MacroMate from RAM5 to Desk.Accs. When the mouse pointer is directly over the Desk.Accs folder, it should light up, indicating the destination directory has been selected. Release the mouse button to start the copy process.



When MacroMate has been copied, repeat the process of dragging the icons for the macros files you wish to copy. If you want to make one of the definition files the default (startup) set of macro, rename the file (for example Macros.Awks) to simply "Macros" *before* you move it to the System disk. (The file can actually be renamed at any time, it's just easier to do it now before you move it). To rename a file, simply click on the file once to select it, then choose "Rename an Icon" from the Special menu at the top of the DeskTop screen, and enter the new name for the file.

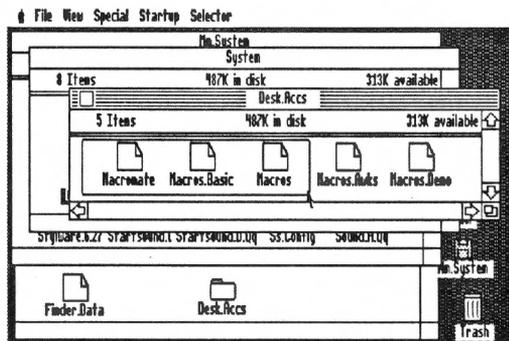
That's it! Once the files have been copied, MacroMate will be automatically installed in the Desk Accessory menu when you start up the destination disk. If you want to check to see if the installation was done correctly, you can just double-click on the Desk.Accts folder for your destination disk. When the window opens, you should see the file MacroMate there, plus any of the macro definition files that you decided to copy.

DeskTop Tip: You can copy several files at once by either:

a) Hold down the Apple key while you successively click once on each file to be copied. All the icons will stay darkened as you click on each new file. When all the files are selected, release the Apple key, then put the mouse on one of the selected files and press and hold down the mouse button. Drag all the files to the destination disk or directory by positioning the mouse pointer over the destination and releasing the button.

Note: You will have to turn off MacroMate (or tell MacroMate to ignore the Apple key) to use this feature if MacroMate is active. Press Control-Apple-space to turn off MacroMate.

b) Select a group of files by first drawing a box around them. To draw the box, position the mouse pointer to the upper left of the rectangle to be drawn. This should not actually be on a file icon, but rather slightly to the upper-left. Hold down the mouse button and move the pointer to the lower-right corner of the group, and release the mouse button. The mouse pointer can be over a file when releasing the button. With all the files selected, put the pointer on any of the highlighted files and hold the mouse button down while you drag the group to the destination. Only the mouse pointer needs to be over the destination icon for all the files to be copied.



Two Drive Copy

First, start up the MM.System disk (or a backup). After the title screen, the DeskTop will appear. The MM.System disk will appear at the right of the screen as an "icon", that is, a graphic image of a disk, with the name "MM.System".

If you have a second 3.5" disk drive, put your GS System Disk onto which you want to install MacroMate into the second drive. A disk icon should appear for this disk as well, most likely with the name "System", but the name can be anything you wish. If you are copying MacroMate onto a hard disk, RAM/ROM disk, or some other disk device, the icon should already be on the DeskTop for this device.

Before starting the copy process, let's verify that the disk you wish to install MacroMate onto is in fact a properly organized ProDOS 16 startup disk.

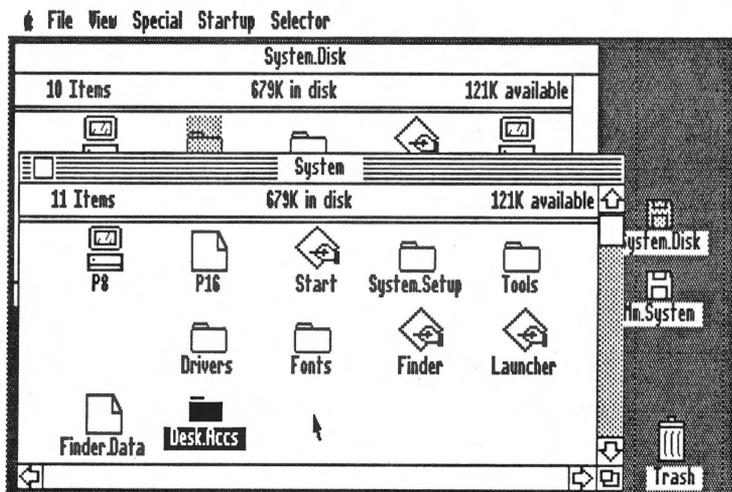
Use the mouse pointer now to double-click on the icon for your System disk, which we'll refer to from here on as the "destination disk". A window should open up showing the files ProDOS, a folder called System, and various others. If you do not see the file ProDOS and the folder System, your target disk is not a startup disk, and you will have to choose another disk to install MacroMate on. If you are not sure how to create a ProDOS 16 startup disk, see the section later in this chapter titled "Creating a ProDOS 16 Startup Disk".

Now is a good time to check to make sure there is enough room on the destination disk for MacroMate. In the upper right corner of the window should be some text that indicates how much free space is available on your destination disk. MacroMate takes about 25K on a disk, and each macro definition file is about 10K, although this can vary considerably, depending on how many macros have been defined. For now, just make sure that there is at least 50K available on your destination disk (70K if you intend to move MacroMate plus all four macro definition files.) If there is not enough space on your destination disk, you will have to delete some files before moving MacroMate. This can be done by dragging the icon for a file or folder to the trash can on the DeskTop. Which files you wish to eliminate are up to you, and depend on which programs on your System disk you are not using. Likely candidates are the System Utilities folder (since the functions of this program is duplicated by the DeskTop or Finder), or the AppleTalk folder.

Assuming the folder System is present, double-click on the folder icon to open it up. A new window should open, and in it you should see the files P8, P16, and several other folders, among which is one named Desk.Accs (for "Desk Accessories"). This is where you will want to put the MacroMate files. If you do not see the files P8, P16, System.Setup, and Desk.Accs, then your target disk is not a startup disk, and you will have to choose another to install MacroMate on.

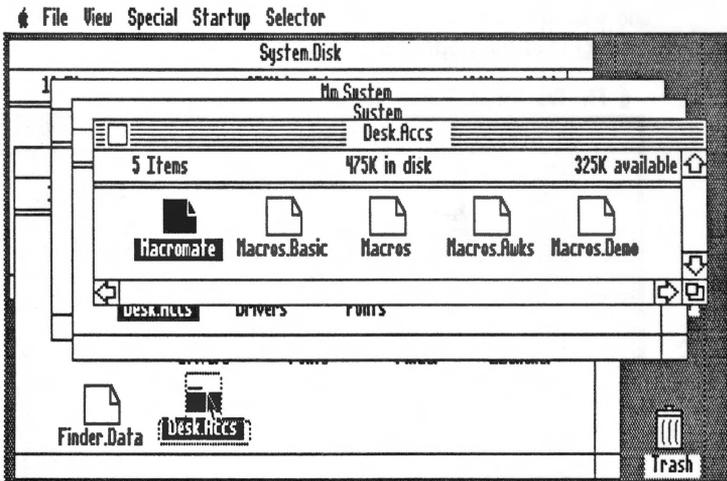
If all still appears ok, use the mouse to pull down the File menu, and choose Close All to close all the open windows. Having verified the destination disk is a properly organized ProDOS 16 startup disk, we'll now begin the file copy process. If you have only one 3.5" disk drive, press the eject button to remove the target disk, and re-insert the MM.System disk. If you have two 3.5" disk drives, both disk icons should be visible on the screen (i.e., MM.System and System (or whatever)).

To begin the file copy process, double-click on the destination disk (presumably System) that you want to put MacroMate on, and then double-click on the System folder to open it. You should now see the folder Desk.Accs in the window. Use the mouse pointer to drag the icon Desk.Accs to an open space at the bottom of the window. Now put the mouse pointer on the title System at the top of the open window, and draw the window down so that the bottom of the window (and the Desk.Accs folder) is at the bottom of the screen.



Now double-click on the MM.System icon to open up the disk. The second icon in the top row should be a folder named System. Double-click on System to open the folder. In the lower-left of the window, you should see the folder Desk.Accs. Double-click on Desk.Accs to open this folder. If you make a mistake, you can always choose "Close" to close a folder, or "Close All" to start over. When the Desk.Accs folder opens, you will see MacroMate and at least four other Macros (macro definitions) files. The icon for Desk.Accs should also still be visible at the bottom of the screen.

To copy the files to Desk.Accs on the destination disk, position the mouse cursor on top of the file MacroMate, and press down on the mouse button until the file icon darkens, indicating it is selected. While still holding the mouse button down, move the mouse until the mouse pointer and the file outline is directly over the icon for Desk.Accs, at which point Desk.Accs will darken, indicating the destination is selected. Release the mouse button. A dialog box saying "Copy..." should then open while the file is being copied from MM.System to Desk.Accs on the destination disk.



If the file named MacroMate appears in the window *with* the Desk.Accs folder when you release the mouse button and the copying finishes, it is because you moved the pointer off Desk.Accs as you were releasing the mouse button. If this has happened, drag the wayward MacroMate file to the trash can, and try the process again to copy the MacroMate file. (You could at this point just drag the new copy of MacroMate from the System window to the Desk.Accs folder, and delete the extra copy afterwards, but it is important to go through the operation properly at least once.

When MacroMate has been copied, repeat the process of dragging the icons for the macros files you wish to copy. It is now up to you to decide which of the Macros definition files you wish to move to your destination disk. If you don't put a file named Macros on the destination disk, then MacroMate will automatically create an empty file on your disk the first time you start it up. If you want to have one of the definition files such as Macros.BASIC or Macros.Awks available, then you should move them to Desk.Accs now. If you want a macros definition file (for example Macros.Awks) to be the startup set of macro definitions, we'll need to rename it Macros *after* the final move to your destination disk. To rename a file, double-click on the Desk.Accs folder to open it, and then click on the file to be renamed once to select it. Then choose "Rename an Icon" from the Special menu at the top of the DeskTop screen, and enter the new name for the file.

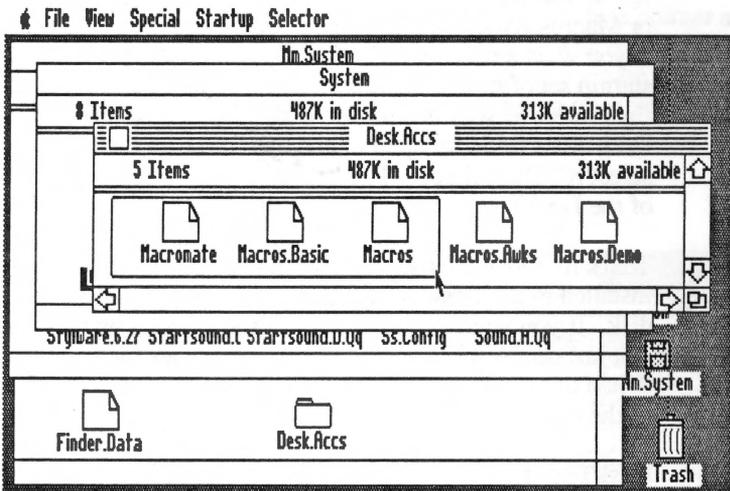
That's it! Once the files have been copied, MacroMate will be automatically installed in the Desk Accessory menu when you start up the destination disk. If you want to check to see if the installation was done correctly, you can just double-click on the Desk.Accs folder for your destination disk. When the window opens, you should see the file MacroMate there, plus any of the macro definition files that you decided to copy.

DeskTop Tip: You can copy several files at once by either:

a) Hold down the Apple key while you successively click once on each file to be copied. All the icons will stay darkened as you click on each new file. When all the files are selected, release the Apple key, then put the mouse on one of the selected files and press and hold down the mouse button. Drag all the files to the destination disk or directory by positioning the mouse pointer over the destination and releasing the button.

Note: you will have to turn off MacroMate (or tell MacroMate to ignore the Apple key) to use this feature if MacroMate is active. Press Control-Apple-space to turn off MacroMate.

b) Select a group of files by first drawing a box around them. To draw the box, position the mouse pointer to the upper left of the rectangle to be drawn. This should not actually be on a file icon, but rather slightly to the upper-left. Hold down the mouse button and move the pointer to the lower-right corner of the group, and release the mouse button. The mouse pointer can be over a file when releasing the button. With all the files selected, put the pointer on any of the highlighted files and hold the mouse button down while you drag the group to the destination. Only the mouse pointer needs to be over the destination icon for all the files to be copied.



Appendix B: Creating a New Disk with MacroMate & the DeskTop

Appendix A discussed how to install MacroMate on an existing ProDOS 16 startup disk, such as your Apple IIGS System Disk. This Appendix will show you how to create a new ProDOS 16 startup disk that has the DeskTop program as the startup environment, and which also has MacroMate installed as a Classic Desk Accessory during the startup.

Using the DeskTop as a startup program has several advantages. First, the DeskTop program has a built-in program selector, which allows programs to be launched by typing directly from the keyboard, as opposed to the necessity of the mouse, as is the case with the Finder program. The Finder is the desktop-like program used on Apple system disks that has a color interface, as opposed to the black & white screen of the DeskTop.

The Finder is also slower to load, and to run programs from, and so you may find the DeskTop more convenient in that regard.

Lastly, the DeskTop is a switchable program if you have the program SoftSwitch, which is another program from Roger Wagner Publishing, Inc. SoftSwitch is a program switcher that lets you have several computer programs loaded simultaneously in the computer, and you can switch between them with very few keystrokes, in mid-operation of any of the switched programs. At this writing, however, SoftSwitch only switches ProDOS 8, DOS 3.3 and PASCAL programs. The DeskTop is switchable by SoftSwitch, the Finder is not. The Finder also "fragments" memory, which the DeskTop does not, and this means that if you are using SoftSwitch, you'll have more memory available for programs to switch if you use the DeskTop, rather than the Finder.

The Finder is pretty in color, but that seems to be its only advantage.

One last note: When using the Finder, it gives the illusion that you can move icons to change the order of the files in any given directory. This is, however, just that, an illusion. The actual order of the files on the disk is not changed, only the Finder's image of them, and changes in the window image under the Finder does not meet the requirement for the locations of System files when the disk starts up, as is related to P8CDA, or the general setup required to make a given application the startup program on a disk.

Creating a New Disk

This discussion assumes you have a freshly-formatted disk, currently empty of any other files, and which you want to turn into a startable ProDOS 16 disk. This may be a 3.5" disk, but can also be a hard disk, RAM disk, ROM disk, or any other standard ProDOS disk device. The Format a Disk function in the DeskTop is found in the Special Menu. We will also assume that you are reasonably comfortable with moving files around using the DeskTop, Finder, System Utilities, Copy II Plus, MouseFiler, or some other file-handling utility.

The disk you create will be set up so that when it starts up, it will go to the DeskTop, from where you can run programs, copy files, format disks, etc.,. In addition, MacroMate will have been automatically loaded during the startup process.

To create your new disk, which we'll refer to as the "target disk", you'll need to do the following:

- 1) Copy the file Prodos and the folder System from your most recent Apple IIGS System Disk, or whatever ProDOS 16 startup disk of your own that has the Toolsets, device drivers, etc. on it that you wish to have on your disk.
- 2) From the MacroMate disk (MM.System), copy the file Desktop.Sys16 and the folder Desktop to your target disk. You will probably also want to copy the file Basic.System.
- 3) Open the disk icon for your target disk, and then open the folder System. Delete the files Start, Launcher, Finder, and Finder.Data (if present) by dragging their icons to the DeskTop trash can.
- 4) Follow the instructions in Appendix A for copying the files MacroMate, Macros, and whatever other macro definition files you want from your MacroMate disk to the Desk.Acce folder on your target disk.
- 5) Move whatever other applications, utilities, etc. you wish to your target disk. For example, you might want to move your AppleWorks files, or any other applications that you frequently use.

That's it! This disk, when started up, will go directly to the DeskTop program, from where you can launch any other programs you wish. If you want to automate the startup process with MacroMate, use the Add an Entry function in the Selector menu of the DeskTop to specify a keyboard command, such as Apple-1 through Apple-8 (and the Option key works as well here), for each program you wish to run from the DeskTop Selector menu.

If you have more than 8 programs to assign, the DeskTop will create a second "run list" that the additional programs will be listed in.

If you would like a keyboard-driven selector menu to come up when you first startup the disk, and before the DeskTop itself appears, rename the file Selector.X in the Desktop folder to Selector.

Appendix C: Tips on Using MacroMate

Most software manuals provide you with the specific details of a program's operation. Few provide those kind of helpful "tricks" or techniques that are useful, but usually require many hours of using a program to acquire.

This section presents some of the techniques and pointers that will help you use MacroMate to its fullest potential.

Nesting Macros

When defining a lengthy macro, you may find it easier to first define small parts of your macro, and test those independently. Once you know those work the way you want, you can then use the nested macros feature of MacroMate to create larger macros to do an entire operation. Defining larger functions with nested macros also makes those smaller components available to several different macros without having to re-enter certain commands in many different definitions.

For example, suppose you were defining a single macro that would end a letter-writing session on your favorite word processor by adding a close and your name to the bottom of a letter, then save the file under the name "Draft", and then print a copy in the draft mode of your printer for you to review.

You just use the MacroMate Editor, or the Record Mode, to create the entire macro at once, but if you made a mistake along the way, you'd have to start over, or leave the correcting keystrokes (such as a Delete key or back-arrow) in the final definition, to be repeated every time you used the macro. Also, if you wanted to create another macro that, for example, printed a file, you'd have to retype that part of the macro all over again in the new definition (or at least use MacroMate's Copy command to copy the existing text to the new definition).

Another approach would be to first create a macro which prints a file, perhaps Option-P. Once that's working, you can then create two other macros, one which saves a file named "Draft", (Option-S) and one which types the close to a letter (Option-C). Once these three components are created and working, it's a simple matter to combine them into a new macro which consists of the nested macro commands Option-C, Option-S, and Option-P. Better still, you can then use Option-P (print) in any new macros you create that need a print function.

Subtleties of the Delay Character

Ordinarily, you might think that the delay character provides a specified amount of time between a given character and the next character that follows it. However, because MacroMate uses the keyboard buffer function in the Apple IIGS, this is not always the case.

The keyboard buffer is an additional amount of RAM (memory) in the computer that is used specifically to store keys you type *before* the application actually asks for them. For example, imagine a program that required you to press the "L" key to load a file, and then after the program displayed the list of available files, you typed the name of the file to be loaded, such as "REPORT.CH.1". Without a keyboard buffer, you would have to wait until the list of files had been shown on the screen before typing the filename.

With a keyboard buffer, however, you could press the "L" key, and then immediately type the name of the file before the list of files was put on the screen. The keyboard buffer stores everything you type (up to a limit of 16 characters), and then gives them to your application program only as it can accept them.

For MacroMate to work its best, keyboard buffering should be turned on in the Control Panel of your Apple IIGS. This option is controlled in the "Options" menu of the Control Panel. Here's where the delay character behavior comes in. Imagine that this time there were two commands to be sent to your application before typing the file name. Perhaps the letter "F" for a File Menu, at which point the computer loaded a new part of the program from disk to show the File Menu. At that point you press the "L" command to load your file, followed by the file name "REPORT.CH.1".

Further suppose that a delay, perhaps of 1 second, between the "L" command and the outputting of the file name was required.

You might think that the proper macro definition using the MacroMate Editor would be the letters "M", "L", two hourglass characters (two half-second delays), "REPORT.CH.1".

Here's the problem, though. Because the computer can accept all the characters at once, MacroMate sends out both the "M" and the "L" characters virtually at once, before the application has even had a chance to put the File Menu on the screen. Thus, while the File Menu is loading, the delay character time is already being used up, before the Load command even begins to show the list of file names on the screen.

The answer is fairly simple. Just keep in mind, when creating a macro with the delay character, that the delay characters should be counted from the beginning of the macro, *not* from any particular character that precedes them.

In our example, this means that you would need to estimate the amount of *total* time the application would take from when the macro started to when the keypress after the delay needed to be output. For example, suppose that the example program took 2 seconds to load the File Menu before the L command showed the list of file names, which took an additional 1 second. Remember, also, that we're working under the assumption that this program can only accept the file name when after the file list has been completely displayed. Since a total of three seconds needs to elapse before the file name can be entered, you would need a total of *six* hourglass characters for a total three-second delay before outputting the file name "REPORT.CH.1".

In this case, because only the filename output itself is time-dependent, you could define the macro as either:

"M", (four hourglasses), "L", (two hourglasses), "REPORT.CH.1"

or,

"M", "L", (six hourglasses), "REPORT.CH.1"

This is because the only real issue is the total amount of time that has elapsed between the start of the macro, and when the file name is output, not how that time is broken up in between.

Disk Access and the Delay Character

In the interest of making MacroMate more user-friendly to those who don't read manuals, MacroMate is set up to make its own adjustments to the Delay character in the interest of compatibility with the largest number of programs. This adjustment is simple: When a disk drive is on, either reading or writing to a file or directory, MacroMate suspends the "countdown" on the delay character.

Thus, in the previous example, it probably wouldn't be necessary to put in all of the delay characters indicated by just seeing how much time it took for the application to be ready for the file name. Because much of the time spent by the application between the start of the macro and when the file name is needed is used in disk access, MacroMate would automatically delay some of its output. In fact, in the example given, it's quite possible that only a single hourglass character just before the filename would be needed.

The extra delay characters don't hurt anything, the macro will work in either case. However, having the minimum amount of delays in the macro will make it more efficient when you use the macro.

Starting up ProDOS 16 Programs

When a ProDOS 16 program starts up (like the Finder, the Launcher, PaintWorks Plus, Music Studio, or virtually any Apple IIGS program that uses the menu bar and windows), the keyboard buffer is cleared as the new application starts up. This means that any text that has already been output by MacroMate up to the instant the ProDOS 16 program starts up will be "thrown away". Any remaining characters in the macro definition will continue to be output.

This means that if you had defined a macro that ran a ProDOS 16 program, and which then issued another command within that program, a sufficient number of delay characters *must* be included in the macro between the program startup and the command for that program to allow for the time it takes a given program to start up. MacroMate does minimize the number of delay characters needed by temporarily waiting while the disk drive is on, but a certain number of delay characters will still be needed. When running a program from a 3.5" disk, start with 15 delay characters between startup and the first program command. If you are running your program from a hard disk, try 10 delay characters. A RAM or ROM disk usually requires about 8 delay characters.

"Tuning" the Delay Characters in a Macro

With the previous discussions in mind, you may want to use the following technique when creating a macro where a significant delay period is required, for example, when creating an auto-start macro that involves Apple's program selector, Launcher, or any other ProDOS 16 program.

First, create a simple macro that just starts up your intended application, and test it. Presuming it works, also use a watch to time how long it takes the program to start up and get to the point at which you want to issue the first command. For example, we'll suppose your application takes 15 seconds to start up from a 3.5" disk before the main screen and menu bar appear. Then go back and edit the macro definition to insert enough delay characters for the total observed delay time. In our example, this would be 30 delay characters. Now test the new macro definition to see if it works at all. It should, although the main screen may appear to just sit there for a few seconds before the macro command sends out its text.

Assuming the macro works, you can now arbitrarily delete a few delay characters, and try again. Keep in mind the minimum delay times suggested in the previous section, and try not to use fewer delay characters than recommended on your first editing of the macro. If you want to be more scientific about the process, you can also use your watch again to time that amount of time between when the menu bar and main screen of your program appears, and when the macro command is actually output.

In our case, we'll pretend that there is a delay of 7 seconds between when the main screen appears and when the macro command is issued. At one-half second per delay character, this tells us we have 14 extra delay characters in our definition. You could then edit the macro from the current 30 delay characters to just 16.

Programs with Interrupts

MacroMate uses an Apple IIGS feature called "interrupts" to make it work. Simply put, interrupts are a continuous series of signals, generated by the computer 60 times a second. When each signal, or interrupt, occurs, the computer stops whatever it is doing and can temporarily do something else. This is how MacroMate can watch for an Apple- or Option-key while your application program also runs. Every 60th of a second, the computer generates a signal that tells it to briefly go to the MacroMate routines to see if the Apple or Option keys have been pressed. If so, it halts your application program until you finish typing the macro command key.

Interrupts are not always turned on. When MacroMate starts up, it turns on interrupts so that it can watch the keyboard. If you are in Applesoft BASIC, and you press RESET, this turns off interrupts, as can be seen by the fact that MacroMate will no longer respond to a macro command key until you turn it back on by either pressing Control-Apple-Delete, or by going to the MacroMate CDA.

Not all programs and computer operations are compatible with interrupts. A good example of this is starting up a 5.25" floppy diskette. The disk controller card for the 5.25" disks was not designed to be able to boot a disk with interrupts on, because when it was first designed, the Apple II did not support interrupts.

What all this means, is that if you want to use the "Startup" function in the DeskTop program for a 5.25" floppy disk drive, or a program like Copy II Plus that uses certain features of the disk controller card, you must first turn off MacroMate. As an experiment, you can try starting up a disk in slot 6, which is probably your floppy disk drive. The disk will just spin, and not "catch" starting the boot process. Now press Control-Apple-space to turn off MacroMate. You'll see the disk immediately complete the startup process.

Once the disk itself is started, and the program on it running, you can turn MacroMate back on with Control-Apple-Delete. Interrupts only interfere with the startup process itself.

Turning off MacroMate in some programs may cause problems, although they are easily remedied. If you have a program that uses the Apple MouseText Toolkit, i.e., a text-screen display, mouse-based program such as AppleLink, MouseFiler, the Chooser, or MouseWrite, turning off MacroMate while in the program may also turn off the ability of the program to respond to further keypresses or mouse movements. If this happens to you, don't panic, just turn MacroMate back on with Control-Apple-Delete, and the program should resume its normal operation. Sometimes turning off MacroMate in a DOS 3.3 or ProDOS 8 program that uses interrupts turns off the program's own interrupts as well.

Termination of the Record Mode & Macro Operation...

The other side of the interrupt coin is that MacroMate requires that interrupts be enabled for it to operate at all. Some programs turn off interrupts, and as such, you may experience some unexpected problems in these programs.

If your macro suddenly stops being output, or the Record Mode seems to suddenly terminate, try pressing Control-Apple-Escape. If you can no longer access the Desk Accessory Menu and Control Panel features of your Apple IIGS, then the current application program itself has turned off interrupts, and thus temporarily turned off MacroMate. If you wish to use MacroMate with these types of program, we suggest you contact the publishers of the program in question, and request that a version be made available that supports access to the Control Panel during the operation of the program. As an aside, this limitation also prevents programs like SoftSwitch, or any CDA, from being used as well.

Fatal Error 0911...

The Apple IIGS keyboard is linked to the computer with a system that involves a dedicated microprocessor to handle keyboard input. On occasion, you may encounter this error message, which translates to saying there is a "synchronization problem" between the computer and keyboard. Unfortunately, the problem is related to shortcomings in the Apple IIGS, and is not the fault of MacroMate. If you do get this error, simply turn off the computer for a few minutes, and then restart normally.

Appendix D: Using MacroMate with P8CDA

P8CDA is a special utility, written by David Lyons, that lets you put Classic Desk Accessories like MacroMate or SoftSwitch on a ProDOS 8 disk. P8CDA is a product available separately from MacroMate, and is produced by Roger Wagner Publishing, Inc. This section discusses how to use P8CDA with MacroMate.

From earlier discussions, you'll recall that a ProDOS 16 disk is set up to have a loader file named Prodos on it, along with a folder named System that has additional files within it. These files include P8 (the "real" ProDOS 8, the file Prodos is just a loader), P16 (the ProDOS 16 file), and many folders with additional device drivers, desk accessories, tools, fonts, and other system software used by the Apple IIGS.

A ProDOS 8 disk, on the other hand, is set up differently. First, the file Prodos is the "real" ProDOS 8, i.e., the file P8 on a ProDOS 16 disk has been moved to the main directory and named Prodos. When ProDOS 8 starts up, it looks for the first file that ends in the name ".System" in the main directory (also called the "root directory"), and runs that file. This system file can be Basic.System, which then runs an Applesoft program named "Startup", or it could be any application system file, such as Aplworks.System (AppleWorks), Mw.System (MouseWrite), or any other application system file.

P8CDA lets a ProDOS 8 style disk load system files during the startup process by making the program P8cda.System the first system file in the main directory. When P8cda.System is run during the startup process, it looks for a folder named System on the disk, and within that folder another folder named Desk.Accs. It then loads any files with the filetype \$B9 ("CDA") into the Classic Desk Accessory menu of the Apple IIGS it is running on. P8CDA does not work on an Apple IIe or IIc.

Appendix A of this manual explained how to install MacroMate on an existing ProDOS 16 disk. To put MacroMate and P8CDA on an existing ProDOS 8 disk, such as an AppleWorks disk, requires a different approach.

The idea behind the technique is simple: First, to create a folder named System on the disk, in which is another folder named Desk.Accs, and in which is finally the files MacroMate, Macros, and any other macro definition files you wish to add. Second, to replace the existing startup

.System file on your disk (in the case of an AppleWorks disk, `Aplworks.System`) with the file `P8cda.System`, and to move `Aplworks.System` to a "later" position in the directory.

Adding MacroMate and P8CDA to an Existing Disk

In this first case, we'll assume that you have an existing ProDOS 8 style disk that you want to add MacroMate and P8CDA to. A later example will show how to create a new ProDOS 8 disk that not only has MacroMate and P8CDA on it, but also starts up directly into the DeskTop program, from which you can run any other program you wish, along with having all the file handling abilities afforded by the DeskTop program.

Assuming you have an existing ProDOS 8 disk on which you want to install MacroMate, first start up the MacroMate disk so that you are in the DeskTop environment. Then insert your existing disk (we'll call it the "target disk") into your disk drive. Remove the MacroMate disk first if necessary.

Now double-click on the icon of your target disk to open a window showing the files on that disk. If this is a usual ProDOS 8 style disk, there should *not* already be a folder named System visible in the window. If there is a folder named System, it is probably a ProDOS 16 style disk, and MacroMate should be installed in the manner described in Appendix A.

Assuming there is no current folder named System, pull down the File menu of the DeskTop, and select New Folder. When prompted, enter System as the new folder name, and press Return. The disk will come on for a moment, and the window for the target disk should reappear with the folder System now visible. Now double-click on the System folder to open it up (the window will be empty), and again go to the File menu and select New Folder. This time, enter Desk.Accs as the name for the new folder, and press Return.

A new folder named Desk.Accs will appear in the System window. Go to the File menu, and select Close All to close all the open windows. Now go back to Appendix A, and follow the instructions for installing MacroMate on a disk. You will be installing the files MacroMate, Macros, and whatever other macro definition files you want into the Desk.Accs folder on your target disk. When that is finished, return here and resume these instructions...

Now that you have installed MacroMate on the disk, the only thing remaining is to make P8CDA the first system file in the main directory of your target disk, and to put the actual application system file for that disk in the second position to be loaded when the disk starts up.

By now, we will assume that you are reasonably comfortable with moving files around using the DeskTop, Finder, System Utilities, Copy II Plus, MouseFiler, or some other file-handling utility.

What you want to do now is to first move the first file that ends with ".System" from your target disk to a temporary holding disk. This can be /RAM5 if you have set this up, or it can be any other ProDOS disk you have with sufficient room on it to hold a few files.

After you have moved the first system file (for example, Aplworks.System) from your target disk to a temporary holding disk, you will also want to move the next system file, if any, in the main directory also to the holding disk. If there is no other file in the main directory that ends with .System (such as Basic.System), you can skip this step.

For purposes of example, we'll suppose at this point that you have moved the files Aplworks.System and Basic.System to a holding disk. Now go back to the target disk, and drag these two files to the trash can on the DeskTop. This will delete these two files from the disk, and make room for P8CDA in the first position. It will also clear the second available position for a system file for when your main application file is brought back to the target disk.

Now go back to the holding disk, and copy the main application program, for example, Aplworks.System from the holding disk to the target disk. When this file is transferred, copy the second system file (for example, Basic.System), if need be, from the holding disk to the target disk. When both files are copied back to the target disk, you can delete them from the holding disk by dragging the file icons on the holding disk to the trash can on the DeskTop.

Now when you open the window for the target disk, you should see the following. The first file on your target disk should be the file ProDOS, with an icon that looks like a computer with monitor. The first system file, looking from left-to-right, should be the file P8cda.System, with an icon showing a hand writing on a piece of paper. The next file, reading across

and from top-to-bottom should be your startup application program, for example, `Aplworks.System`. Finally, any other system files, such as `Basic.System`, can be located anywhere in the main directory. You should also see the folder `System` somewhere in the window, and into which you have presumably installed `MacroMate` in the `Desk.Accs` folder.

When you start up this disk, your application program will start up as before, but now when you press Control-Apple-Escape, you'll see `MacroMate` and any other CDA's you've put in the `Desk.Accs` folder automatically there in the Desk Accessory menu.

Creating a new ProDOS 8 Disk with MacroMate and the DeskTop

With `MacroMate` and `P8CDA`, you may wish to create a new 3.5" disk (or hard disk, RAM disk, ROM disk, etc.) that starts up directly into ProDOS 8 with `MacroMate` loaded, and which then goes to the `DeskTop` from where you can run programs, copy files, format disks, etc.

We'll start off assuming you have a blank disk that you have just formatted for ProDOS using the `DeskTop`, or other file utility. The `Format a Disk` function in the `DeskTop` is found in the "Special" Menu.

To create a new disk with `MacroMate`, `P8CDA` and the `DeskTop`, you want to copy certain files in the following order:

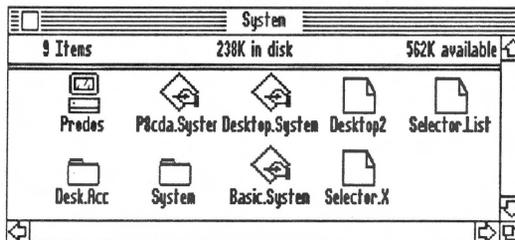
- 1) Copy the file `P8` from the `MacroMate` disk (in the `System` folder), or from your `GS System` disk (or any other ProDOS 16 disk with a recent version of ProDOS 8 on it) to the main directory of your target disk. Rename the file from `P8` on your new disk to `Prodos` (use `Rename an Icon` in the `Special` menu). If you have a recent version of ProDOS 8 on some other disk, you can also use it here.
- 2) Copy the file `P8cda.System` from the `P8CDA` disk to your target disk.
- 3) Open the folder `DeskTop` on the `MacroMate` disk, and copy the files `Desktop1`, `Desktop2`, `Selector.List`, and the folder `Desk.Accs` to the target disk. The folder `Desk.Accs` in the `Desktop` folder is different than the "real" `Desk.Accs` folder in the `System` folder. These desk accessories are only for use by the `DeskTop` program, not CDAs usable by your Apple IIGS.

- 4) Rename the file Desktop1 on your target disk to Desktop.System.
- 5) Create a folder named System on your target disk (use New Folder in the File menu), and within that a folder named Desk.Accs. Copy the files MacroMate, Macros, and any other macro definition files you wish to your target disk.
- 6) Finally, copy any remaining application programs, such as Aplworks.System, Basic.System, etc. that you want to use on your new disk. From here on, files may be added to this disk as you would any other disk.

That's it! This disk, when started up, will go directly to the DeskTop program, from where you can launch any other programs you wish. If you want to automate the startup process with MacroMate, use the Add an Entry function in the Selector menu of the DeskTop to specify a keyboard command, such as Apple-1 through Apple-8 (and the Option key works as well here), for each program you wish to run from the DeskTop Selector menu. You will also want to use the Delete an Entry function to remove the Selector choices already there from the MM.System disk. Adding and deleting items in the Selector menu only changes the names available, it does not actually add or delete the program files themselves.

If you have more than 8 programs to assign, the DeskTop will create a second "run list" that the additional programs will be listed in.

If you would like a keyboard-driven selector menu to come up when you first startup the disk, and before the DeskTop itself appears, copy the file Selector.X in the Desktop folder of the MacroMate disk to the main directory of your target disk, and then rename the file Selector.X to Selector.



Appendix E: Using MacroMate With SoftSwitch

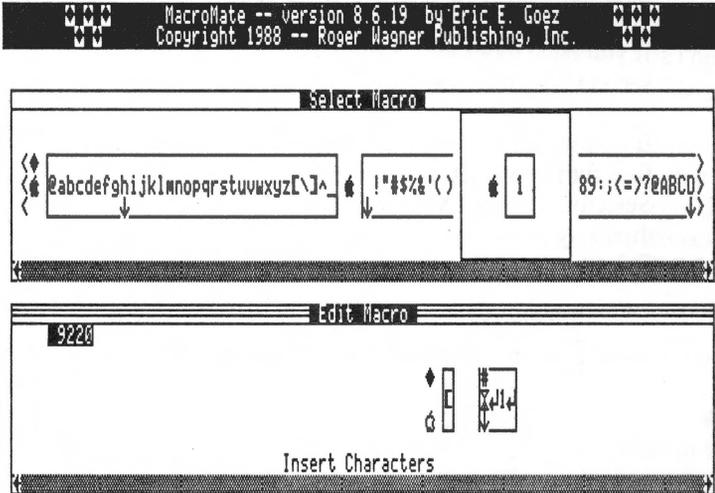
If you have SoftSwitch and are interested in trying the Auto-Switch macro, you will need to first define the macros Option-1, Option-2 and Option-3. This is preferable to using the Apple-number keys in order to leave the Apple-keys available for their usual functions in the DeskTop program selector menu, and also to avoid a conflict in SoftSwitch itself if you were to try to use Apple-1, -2 or -3 to clear a Workspace.

Define the following macro keys:

Option-1: Ctrl-Apple-Esc, hourglass, Return, 1, Return, Return
 Option-2: Ctrl-Apple-Esc, hourglass, Return, 2, Return, Return
 Option-3: Ctrl-Apple-Esc, hourglass, Return, 3, Return, Return

Note: The commas between characters are shown only for clarity, and should not be actually included in the macro definitions.

The hourglass character is a delay character to skip over an occasional character "gobbling" by the Desk Accessory Menu.



These macros assume you are using version 7.11 or later of SoftSwitch wherein SoftSwitch is always automatically highlighted when you enter the Desk Accessory Menu. If you are using a previous version of SoftSwitch, you will have to add the proper number of up-arrow keys (probably "one") at the beginning of the definition to select SoftSwitch before the Return chooses it.

When defined, go back to the DeskTop and set up SoftSwitch with three programs to be switched. When setup, turn on SoftSwitch's Auto-Save. This is important. Auto-Save eliminates the dialog questions from SoftSwitch when switching. You could expand the macro definition to include the "Y" answer to the Auto-Save "Off" switch, but this is probably simpler.

Finally, just return to any of the SoftSwitch workspaces and press Option-1, 2 or 3. MacroMate will automatically select SoftSwitch, "type" the appropriate number key, and switch you to the desired program. If this doesn't seem to work this way, go back to MacroMate and check your macro definition to make sure you've properly defined the Option macro keys, and that your definition matches what would be required by SoftSwitch if you were doing it manually.

Individual Workspace Auto-Save: Normally in SoftSwitch, Auto-Save applies to all the Workspaces. By using MacroMate to automate the switching process, you can selectively create the equivalent of Auto-Save for some, and not others.

This is done by setting up some Workspaces to automatically do the Apple-# key to clear a workspace, followed immediately by the number key again to save the new image of the saved Workspace. For other Workspaces, you would just switch, and answer "Y" to the question about "is it ok to switch?"

Appendix F: Specialized Macro Definition Files

There are four MACROS definition files provided on the MacroMate disk. Each definition file has been set up for a particular application. These files are as follows:

MACROS	Default Macros definition file
MACROS.BASIC	Macros for Applesoft BASIC
MACROS.AWKS	Macros for AppleWorks
MACROS.DEMO	Copy of Macros file as used for the demonstrations

Following is a description of each macro definition file, and the keyboard text generated by each macro file.

MACROS.BASIC

The Macros.BASIC file comes with two major groups of definitions. The Apple-keys have been defined to produce helpful functions while programming. For example, pressing Apple-1 will CATALOG whatever disk is in Drive 1. Using the Option-keys, we've defined the BASIC macros to instead be a built-in help list. When you press Option- and a letter key, you'll be presented with a list of all the commands that begin with that letter. However, no actual text will be entered into your program. The display looks best in the 80 column mode.

To use Macros.Basic as your startup macro definitions, first load Macros.Basic (Control-L in MacroMate's Select Macro window), then save it as "Macros" (Control-S). Remember that this will replace whatever Macros file was already on the target disk, so if you don't have those definitions saved elsewhere, you will want to first rename the existing Macros file to something else before putting the new Macros (.Basic) on the target disk. This is easily done by first loading the "Macros" file, and then immediately re-saving it to the same disk with a new name of your own choosing. If you're replacing the Macros file that is already on the MacroMate disk, don't worry – this file is backed up already in the Macros.Demo file on your MacroMate disk.

For convenience, there have been certain macros which have been defined in Macros.Basic, and these are as follows:

Macro key	Function	Description
Option-{lower case letter}	Help	Various comments on available Applesoft BASIC commands. For example, pressing Option-r will print help information on the commands READ, REM, RESTORE, RESUME, RETURN, RIGHT\$, ROT, RND and RUN. (best used in 80 column display mode)
Option-Return	LIST	Lists current BASIC program.
Option-*	Monitor	Goes to Monitor.
Option-1	Catalog,D1	Catalogs disk in drive 1.
Option-2	Catalog,D2	Catalogs disk in drive 2.
Option-?	PRINT	Types PRINT CHR\$(4);" for disk command lines.
Option-A	AD	Variable name for memory address used with other macros.

Option-B	BLOAD	Types PRINT CHR\$(4);"BLOAD {Filename\$}":
Option-C	CLOSE	Types PRINT CHR\$(4);"CLOSE {Filename\$}":
Option-F	Filename\$	Name for filename used in DOS commands.
Option-L	LOAD	Types LOAD for use when loading a new program.
Option-O	OPEN	Types PRINT CHR\$(4);"OPEN {Filename\$}":
Option-P	PEEK	Sets variable V equal to 2-byte address value stored at location indicated by the variable A.
Option-R	READ	Types PRINT CHR\$(4);"READ {Filename\$}":
Option-S	BSAVE	Types PRINT CHR\$(4);"BSAVE {Filename\$},A\$
Option-T	TEXT	Types TEXT: HOME: POKE -16300,0
Option-V	Variable	Variable name used by PEEK and POKE macros.
Option-W	WRITE	Types PRINT CHR\$(4);"WRITE {Filename\$}":
Option-[POKE	POKES 2-byte value of variable V into memory addresses indicated by variable AD. (See Option-P also). Chosen because it is next to "P" on the keyboard.

MACROS.AWKS

Since there are several existing commercial programs that add keyboard macro functions specifically to AppleWorks, the definitions in Macros.Awks have been defined to be as similar as possible to existing macro packages such as MacroWorks, Super MacroWorks, Ultra MacroWorks, Key Player, AutoWorks and others. Remember that in MacroMate, any macro can be easily re-defined, and you are welcome to modify these definitions to best suit your own needs.

To use Macros.Awks as your startup macro definitions, first load Macros.Awks (Control-L in MacroMate's Select Macro window), then save it as "Macros" (Control-S). Remember that this will replace whatever Macros file was already on the target disk, so if you don't have those definitions saved elsewhere, you will want to first rename the existing Macros file to something else before putting the new Macros (.Awks) on the target disk. This is easily done by first loading the "Macros" file, and then immediately re-saving it to the same disk with a new name of your own choosing. If you're replacing the Macros file that is already on the MacroMate disk, don't worry – this file is backed up already in the Macros.Demo file on your MacroMate disk.

Macro key	Function	Description
Option-Delete	Delete a character	Deletes the character <i>under</i> the cursor.
Option-Period	Insert 4 spaces	Inserts four characters and then moves the cursor down one line.
Option-Comma	Delete 4 characters	Deletes four characters to move the line to the left, and then moves the cursor down one line.
Option-left-arrow	Beginning of line	Move cursor to beginning of line.
Option-right-arrow	End of line	Move cursor to end of line.
Option-down-arrow	Go to page break	Move the cursor to the next forced page break.
Option-Return	Force page break	Creates a forced page break at the cursor location. AppleWorks only allows forced page breaks immediately following carriage returns.
Option-TAB	Move to rt. margin	Jumps 26 items to the right in the database and spreadsheet. Used to create a vertical line in the printout.

Option-space	Alternate space	If you are in the insert mode, this will type an <i>overstrike</i> space. If you are in the overstrike mode, this will type an <i>insert</i> space.
Option-A	Add files	Leaves an open file and allows access to new files to load.
Option-C	Center	Sets current printer mode to "center-text".
Option-D	Delete word	Deletes word that cursor is anywhere within.
Option-F	Find new word	Does a word search, but clears the old default word before starting.
Option-G	Go to marker	Moves cursor to first text marker. (See Option-M)
Option-I	Set indent	Sets printer indent to 3 characters. (See Option-O)
Option-J	Set fill justify	Sets printer mode to fill justification.
Option-K	Calculate/go to page	Equivalent to Apple-K, but goes to a specified page thereafter.
Option-L	Set left justify	Sets printer mode to left justification.
Option-M	Set marker	Sets printer marker #1. (See Option-F)
Option-N	Print name	Prints your name and address. You will obviously have to define this macro.
Option-O	Cancel indent	Sets printer indent to 0 characters. (Cancels Option-I)
Option-P	Print file	Prints entire file.
Option-Q	Switch files	Switches to next file on desktop.
Option-S	Save & remove	Saves current file and removes it from the desktop.
Option-U	Undo	Reverses (undoes) last delete command. Puts clipboard at current position.
Option-Y	Delete a line	Deletes whatever line the cursor is on.
Option-Z	Clear to end of file	Deletes all text from cursor to the end of the file.

MACROS.DEMO (MACROS)

The macro definitions in these two files (Macros.Demo and Macros) are identical. The file Macros is provided as a startup set of definitions for use in the examples in Chapter 3. Remember that any file with the name Macros in the Desk Accs. folder will be automatically loaded by MacroMate when the disk is started up. The file Macros.Demo is just a backup of the Macros file so that you won't have to worry about overwriting the Macros file as you experiment with MacroMate's Load and Save commands.

Macro key	Function	Description
Apple-1	Line 10	Types 1st line of demo BASIC program.
Apple-2	Line 20	Types 2nd line of demo BASIC program.
Apple-3	Line 30	Types 3rd line of demo BASIC program.
Apple-4	Entire program	Types entire demo program.
Apple-L	List	Lists current BASIC program.
Apple-l	List	Lists current BASIC program.
Option-1	Letter	Starts "Letter To.Mom"
Option-2	Letterhead	Types address & salutation.
Option-3	Body	Types body of letter.
Option-left-arrow	Beg. of line	Moves cursor to beg. of line.
Option-space	Space replace	Replaces current character with space.
Option-D	Delete	Deletes word that cursor is on 1st char. of.
Option-d	Delete	Deletes word that cursor is on 1st char. of.
Option-U	Undo	Undoes last action.
Option-u	Undo	Undoes last action.

Appendix G: Overview of ProDOS Disks

Once upon a time, when the only disk operating system for the Apple II was DOS 3.3, things were pretty simple, you just formatted a disk with a BASIC program in memory, and that program automatically became the startup program for that disk, and DOS itself was imbedded in the disk itself, and not visible, or usable, as an individual file.

With ProDOS 8, and later ProDOS 16, things changed. There are far more options for you, as a user, in setting up your disks for use on your Apple IIgs computer. With these options, however, comes an added degree of possible confusion when trying to understand exactly how a disk starts up, how to make a given program be the startup program, and what files are even necessary on a new disk that you create. This section will give you a brief overview of the differences between a ProDOS 8 and a ProDOS 16 startup disk.

Both ProDOS 8 and ProDOS 16 disks are formatted the same way. What is different is the files that go on a particular disk, and how those files are set up to operate during the startup process. When you format a disk using the DeskTop, Finder, or any ProDOS file utility, it completely re-writes the entire disk with an empty file structure, onto which you can place new files. After formatting, there are no files on the disk, including ProDOS itself, and as such, the disk is not yet usable as a startup disk. If you simply format a disk, and then immediately try to start up that disk, you'll get the message "Unable to Load ProDOS", indicating that the computer could not locate the file ProDOS on the disk, which is the very minimum requirement of any startup (or "bootable") disk.

You're probably wondering, "why are there two operating systems, and is there any advantage in one over the other?"

The answer is somewhat historical: ProDOS 8 was the first version of ProDOS for the Apple II computer, and was used on the Apple IIe and IIc. ProDOS 16 is a later version that will only run on the Apple IIgs. ProDOS 8 has the advantage of starting up very quickly (about 7 seconds on a 3.5" disk). The disadvantage is that ProDOS 8 is designed primarily for the Apple IIe and IIc, and as such, makes no provision for loading Classic Desk Accessories, handling fonts for Super Hi-Res displays, or any other Apple IIgs feature. In addition, if the computer is started up using only

ProDOS 8, programs like the DeskTop cannot afterwards launch ProDOS 16 programs. However, if all you are using is AppleWorks, Applesoft BASIC, or any number of programs which do not require ProDOS 16, this is quite adequate. In fact, one of the disadvantages, the inability to load CDAs, can be removed by the use of P8CDA, which is described in Appendix D.

ProDOS 16, on the other hand, takes much longer to start up, but also does much more during that startup. It initializes the Apple IIgs expansion memory, loads system fonts for desktop style programs, and allows the computer to automatically change between ProDOS 8 and ProDOS 16 as needed by any particular application.

The following sections describe how each style of disk is created, what files are required, and how the computer operates as each type of disk starts up.

ProDOS 8 Disks

A ProDOS 8 disk is set up by putting a file named Prodos on the disk. This file exists originally under two possible names, depending on your source of the file. It may exist already on another ProDOS 8 disk you have, where the file ProDOS is, in fact, the ProDOS operating system. This is loaded into the computer during the startup process.

The other possible source of this file is on a GS System Disk, which is set up as a ProDOS 16 startup disk, not a ProDOS 8 startup disk. In this case, the file you require is in the System folder, and is named P8. To set up a ProDOS 8 startup disk, you would copy the file P8 from your System disk (or even the MM.System disk), and put it in the main directory of your target disk. Then rename it Prodos. The file named Prodos on your GS System disk, or any other ProDOS 16 startup disk, is *not* the same as Prodos on a ProDOS 8 startup disk. On a ProDOS 16 startup disk, the file Prodos is simply an intermediate "loader" program, that in turn loads ProDOS 16 or ProDOS 8 (available in the files P16 and P8) as required for a particular application.

When a ProDOS 8 disk starts up, it will first load and run the file named ProDOS, which will then look for the first file on the disk, in the main (or "root"), directory, with the filetype SYS, and whose name ends with the

suffix ".System". Sometimes this system file is Basic.System, but it can also be any application program, such as APlworks.System (AppleWorks), Ptp. System (Point-to-Point), Mw. System (MouseWrite), or any other system file you wish. Sometimes these programs load other files themselves that are required for the total program operation. For example, Basic.System looks for an Applesoft program named Startup on the disk. Programs like AppleWorks often have other program segment files that are used during the operation of the program.

For example, when a ProDOS 8 disk is set up to start up beginning with the DeskTop program provided on the MacroMate disk (MM.System), the file DeskTop1 has to be placed in the main directory before any other ".System" files, and renamed Desktop.System, for ProDOS to properly load and execute the DeskTop as the startup program.

Changing the startup program of an existing disk is not difficult, but can be somewhat clumsy in doing. Since ProDOS 8 looks for the *first* system file in the directory, changing the startup program usually requires deleting the existing system file, and replacing it with the new startup program. If you want to keep the original program available on the disk, then it can be recopied to the disk in a "later" position in the main directory.

Thus, when Appendix D explained how to install P8CDA on a disk as the startup program, the instructions required that you delete the first *two* system files on the disk, and to put P8cda.System in the first one's place, and to then recopy the original system files back to the disk. This established P8cda.System as the "startup" program. After P8cda.System finishes, it then looks for the *second* system file, thus duplicating what ProDOS would have done if P8CDA were not present.

The main reason for these convolutions is that an Apple disk requires that system files be in a certain order, yet no utility is provided by Apple for manipulating the order of the files in a directory. Although the Finder program gives the illusion of moving files in a directory, it is only the visual image that changes, not the actual file positions on a disk. At this writing, we are only aware of one utility, ProSel, by Glen Bredon, that allows a user to easily edit the order of files on a disk without actually deleting and recopying files to achieve the desired result. Information about ProSel can be obtained from: Glen Bredon, 521 State Rd., Princeton, NJ 08540.

The other alternative is to put a startup program on the disk that can in turn launch other programs. Such a program is usually called a *program selector*. Program selectors are programs like the DeskTop, the Launcher, ProSel, MouseFiler, the Finder, or any other program that can start up another applications. Of the examples just given, only the DeskTop, ProSel and MouseFiler are ProDOS 8 programs that can be used on a ProDOS 8 startup disk.

In conclusion then, you can set up any disk to start up directly into ProDOS 8, with the advantage of a faster startup time. P8CDA can be used to load MacroMate and other CDAs during the startup process, but ProDOS 16 programs cannot be launched from the DeskTop or other program selectors. A ProDOS 8 startup disk will run the first program in the main directory that is a SYS type file, and which ends in the suffix ".System".

ProDOS 16 Disks

A ProDOS 16 startup disk is begun in the same way as a ProDOS 8 disk, that is, by using the DeskTop or other disk utility to format the disk. From there, though, different files are placed on the disk to make the disk startup in ProDOS 16, then load any required device drivers, fonts, etc., and finally to run a startup application determined by a slightly more complicated set of rules than that for ProDOS 8.

As mentioned earlier, on a ProDOS 16 startup disk, the file named Prodos is simply an intermediate "loader" program, that in turn loads ProDOS 16 or ProDOS 8 (available in the files P16 and P8) as required for a particular application.

When a ProDOS 16 disk starts up, it will first load and run the file named ProDOS, which will then look for a folder named System. In this folder it expects to find the file P16, which is the actual ProDOS 16 disk operating system program and file loader. There should also be a file named P8 which will be used whenever a ProDOS 8 system file is later run, such as the DeskTop program or Applesoft BASIC. As the file P16 is executed, the ProDOS 16 title screen is displayed, and the system then looks for other folders in the System folder.

If there is a folder named System.Setup, it looks for files in that folder. Typically this is Tool.Setup, which is a set of patches to the Apple IIGS built-in firmware routines. There may also be files like Atinit, which initializes the AppleTalk network related routines. After the System.Setup folder, the system also looks for Desk.Accs folder, and loads any Classic and New Desk Accessories that are in this folder. Classic Desk Accessories are those programs like MacroMate, that are accessed with Control-Apple-Escape. New Desk Accessories are programs that show up in the "Apple" menu in the newer ProDOS 16 windowed GS programs, such as the Finder. (The Apple menu in the DeskTop is an earlier implementation of the Desk Accessory system, and has its own Desk.Accs folder in the main directory. Desk Accessories for the DeskTop, and New Desk Accessories for the Finder and other GS programs are not interchangeable).

Other folders such as the Drivers, Fonts, and Tools folders may also be used during the startup process, but exactly which files are used depends on the particular programs you have on your disk. Many times these files are not required during the startup process, but you will probably want to have all of these files on a disk so that you can launch any program later that may require a particular tool, font or device driver.

Once ProDOS 16 is finished setting up the operating system, it first looks for a file named "Start" in the System folder. On the GS System disk, Start is an intermediate program that checks to see how much memory is in your computer, and which then runs the Launcher or Finder, both of which are also located in the System folder. In general, though, Start can be any ProDOS 16 System file (type \$B3 = \$16). You can make any \$16 type file your startup program by just placing it in the System folder, and naming it Start. On the MacroMate disk (MM.System), the Start program is the program that displays the title screen with copyright notice, and then runs Desktop.Sys16, regardless of where Desktop.Sys16 appears in the directory.

Helpful Tip: If you would like to skip the automatic display of the MacroMate title screen on your backup copies of MacroMate, just delete the file Start by dragging the icon to the trash can.

If the file Start is not found in the System folder, the ProDOS 16 continues with a procedure very much like that for ProDOS 8, that is, it looks for the first file on the disk, in the main (or "root"), directory, with the filetype SYS, and whose name ends with the suffix ".System" or, the filetype S16 and whose name ends with the suffix ".Sys16".

In the case of the MacroMate disk, this file is Desktop.Sys16, but it could be any application system file you wish. As with ProDOS 8, this system file can also be Basic.System, or Aplworks.System, etc.

As with ProDOS 8, changing the startup program of an existing ProDOS 16 style disk usually requires deleting the existing system file, and replacing it with the new startup program. If you want to keep the original program available on the disk, it can be recopied to the disk in a "later" position in the main directory.

In conclusion then, a ProDOS 16 startup disk must have the file Prodos, and the folder System with the files P8 and P16 in it. There can also be the folders System.Setup, Desk.Accs, and others. ProDOS 16 takes more time to start up, but once started, both ProDOS 8 and ProDOS 16 programs can be launched from the DeskTop, Finder, or other program selector, and Classic Desk Accessories like MacroMate are loaded automatically.

IMPORTANT: The files Prodos, P8 and P16 on a system disk should be treated as a "set" when creating a new ProDOS 16 startup disk. If you use the file P8 from one disk, and P16 from another, you may get strange error messages, or be able to even start up the disk at all. When creating ProDOS 16 startup disks, it is best to use as many system files from the same source disk as possible, preferably an "official" Apple Computer Co., Inc. GS System Disk.

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Special Accessory Product:

P8CDA

(ProDOS 8, Classic Desk Accessory Loader)

by David Lyons

P8CDA is a nifty accessory by David Lyons that lets you put Classic Desk Accessories on your ProDOS 8 startup disks, thus avoiding the long startup time of ProDOS 16, while still enjoying the benefit of Classic Desk Accessories like MacroMate.

Normally, CDA's can only be installed by ProDOS 16 as a disk is started up. This means that you couldn't ordinarily put MacroMate, or any other CDA on, for example, a ProDOS 8 AppleWorks disk. With P8CDA, you simply create a folder named System, and within it a folder named Desk.Accs. During a ProDOS 8 startup, a disk with P8CDA on it will then go to the System/Desk.Accs folder, and automatically install any CDA's found there, and then finish the startup process as it would normally do.

P8CDA has a usual list price of \$29.95, but if you order it with MacroMate as part of this announcement offer, you can purchase it for just \$19.95!

See the reverse side of this page for a complete order form.

Order Form

Ordering Information: MacroMate retails for \$49.95, P8CDA for \$29.95. If you order now, you can get MacroMate for just \$35.00, and P8CDA for only \$19.95. To order MacroMate, and/or P8CDA, simply remove this form, and return it completed with a check (U.S. funds drawn on a U.S. bank only), money-order, or charge card information to:

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Card Number: _____ Expiration Date: _____

Important Program Requirements: Both MacroMate and P8CDA require an Apple IIGS, and a recommended 512K of expansion RAM. MacroMate and P8CDA *cannot* be used on an Apple IIe or IIc.

MacroMate Quick Reference

You may use the Editing Functions:

Add Characters <i>examples:</i>	any regular key sequence a Shift-A Option-Control-a Option-Apple-Shift-A	
Insert/Overstrike Select	Shift-Control-I	
Delete Character	Shift-Delete	
Delete Macro Text	Shift-Clear	
Cut Characters to Clipboard	Shift-Control-C	Shift-Return to accept and Shift-Esc to cancel. Also you may use Cursor Movement keys during Cut.
Copy Characters to Clipboard	Shift-Control-C	Shift-Return to accept and Shift-Esc to cancel. Also you may use Cursor Movement keys during Copy.
Paste Characters from Clipboard	Shift-Control-V	
Nested Macro Call	Shift-Control-M	Select character to be flagged as a Shift-down-arrow nested macro first.

You may use the Special Functions:

Output Time	Shift-=	Use keypad =
Output Date	Shift-/	Use keypad /
Macro Delay	Shift-*	Use keypad *

MacroMate Quick Reference

MacroMate Editor Command Reference

How to Select a Macro to Edit

From the Select Macro window, use the Cursor Movement Keys to move to the Macro key of your choice. Press either Shift-Control-W to change windows or press Shift-down-arrow to go to the Edit Macro window. You will see the Edit Macro window become the highlighted and active window.

How to Edit a Macro

Use the Cursor Movement keys to move to where you wish to edit, just start typing and your keystrokes will either overstrike or insert, depending on which activity is indicated. This can be changed with the Shift-Control-I keys. If you want to delete a character, press the Shift-Delete keys. If you want to cut, copy, or paste just press the Shift-Control-X, Shift-Control-C, or Shift-Control-V keys.

To specify a macro call within a macro definition, often referred to as a nested macro call, position the cursor over the character that you wish to convert to a macro key and press either Shift-Control-M or Shift-down-arrow.

For the special functions date, delay, or time press the Shift-/ keys, Shift-* keys, or the Shift-= keys; the /= keys must be on the keypad. Finally if you want to erase a macro and start over, press the Shift-Clear keys.

When you're finished editing, press Shift-W or Shift-up-arrow to move back to the Select window. You can also press Shift-Escape to exit MacroMate entirely.

MacroMate Quick Reference

Select Macro Window Command Reference

While in the Select Macro window, you may use these **Cursor Movement Functions**:

Move Cusor Left	Left-arrow
Move Cursor Right	Right-arrow
Find Macro	any macro call key sequence...
<i>examples:</i>	Apple a
	Option-Shift-A
	Option-Apple-Shift \$
Move Cursor to Area	keypad-1 through keypad-9
Move Cursor to Beg.	Shift-Control-B
	or keypad-
Move Cursor to End	Shift-Control-N
	or keypad-9

You may use the **File Functions**:

Save Macros	Control-S
Load Macros	Control-L
Auto-Activate	Control-A
Rate Control	Control-R
Auto-Quit	Control-Q
OPTION Keycheck	Control-O
APPLE Keycheck	Control-P

You may use the **Window Functions**:

Go To Edit Window	Down-arrow
Change Windows	Control-W
Quit MacroMate	Esc or Up-arrow

MacroMate Quick Reference

In the Edit Macro window, you may use these **Cursor Movement Functions**:

Command	Key Sequence	Comments
Move Cursor Left	Shift-left-arrow	
Move Cursor Right	Shift-right-arrow	
Find Character	Shift-Control-F or Shift-TAB	(then press the key sequence that you want to find until you find the occurrence that you are looking for.)
Move Cursor to Area	Shift-keypad-1 (through 9)	Must use keypad!
Move Cursor to Beg.	Shift-Control-B or Shift-keypad-1	
Move Cursor to End	Shift-Control-N or Shift-keypad-9	

None of the File Functions are available in the Edit Macro Window.

You may use the **Window Functions**:

Go to Select Macro Window	Shift-up-arrow	
Change Windows	Shift-Control-W	
Quite MacroMate	Shift-Esc or Shift-up-arrow	(twice from Edit window)

