

# ON THREE

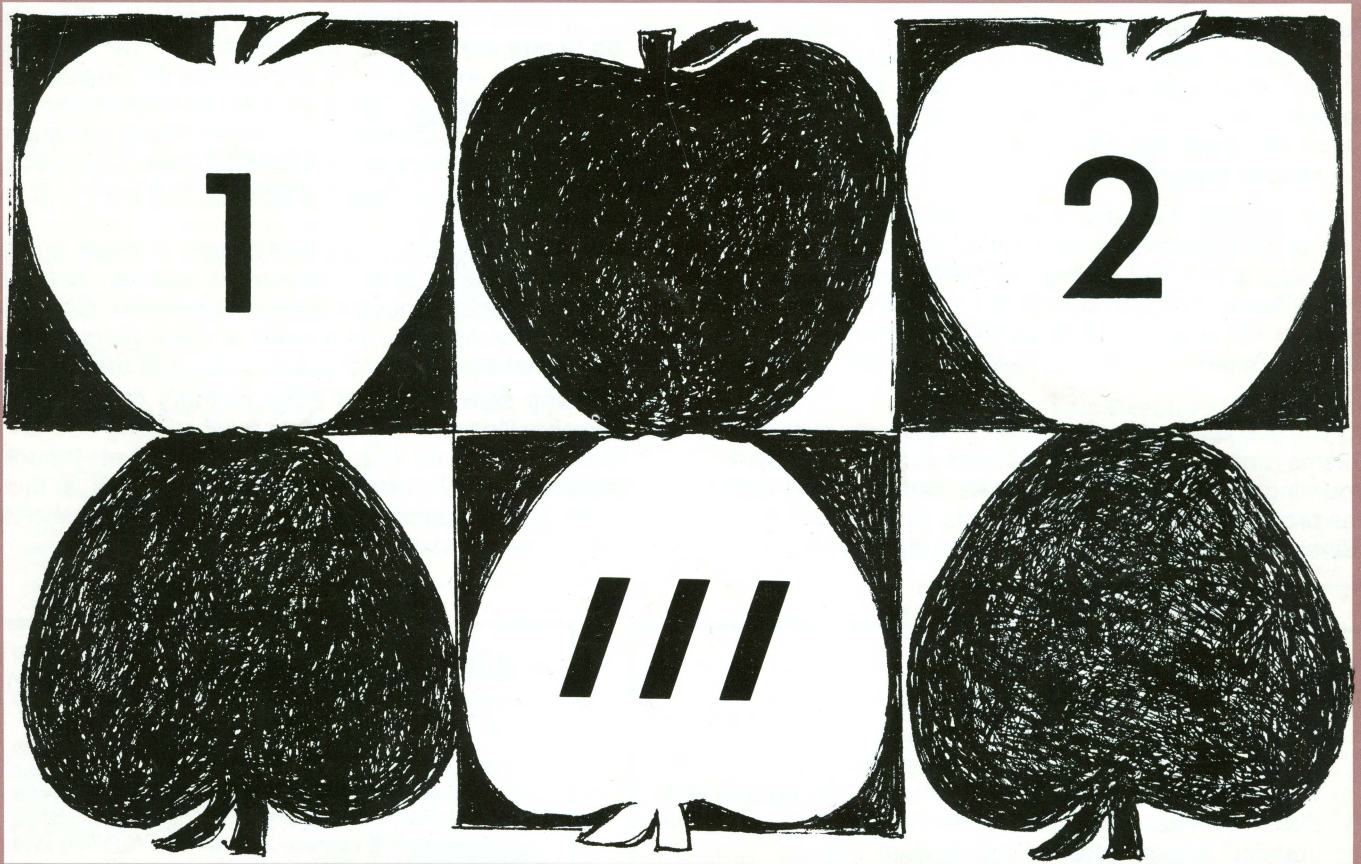
The Magazine For Apple III Owners and Users

®

Volume 3, Number 11

November 1986

\$4.00



**Graphically Speaking**

**Macro Manager**

**A-Maze-Ing**

**Converting Apple ][ Pascal**

**Printer Selection and Set-Up**

**Selector ///**

# ON THREE Presents...

## The Lowest Price Ever On The 512K Memory Upgrade

Now Specially Priced  
At Only **\$289\***

The 512K Memory Upgrade from *ON THREE* has been the ///'s best selling add-on hardware item for the last two years. And now it's even better. With the lowest price ever and a full six month warranty, *now* is the time to order your 512K Memory Upgrade.

Have you ever run out of memory in /// E-Z Pieces? Do your VisiCalc programs yearn for more memory? Have you ever had stack overflow problems with certain large programs? Do you want to use the new accessories to the Desktop Manager but can't spare the 32K of memory those utilities require?

Worry no more, because with a 512K-equipped Apple ///, all of your problems are over. Enjoy a full 414K of desktop space in /// E-Z Pieces, 442K in Advanced Visicalc, 455K in Visicalc, 456K in Apple Writer ///, 456K in Business Basic—the list goes on. Almost all\*\* programs running under the Apple /// SOS work with the 512K Memory Upgrade.

Do you use Catalyst or Selector ///? Have you ever had problems running large programs such as State Of The Art Accounting, BPI, Omnis 3, Keystroke and Draw ON ///? These programs use all available memory in a 256K Apple ///. Since Catalyst and Selector each occupy some memory

as well, certain large programs will not work on a 256K Apple ///.

A 512K Apple /// has enough memory and room to run the largest programs available today with some to spare. You can create larger spread sheets, data bases and word processing documents. Your 512K Apple /// will be able to do things few other personal computers can.

Included free with the 512K Memory Upgrade is an ultra-fast RAMDisk. This is an optional enhancement to the 512K Memory Upgrade which allows you to use a portion of your ///'s memory as a fast RAMDisk drive. One noticeable benefit is faster program utilization, but there are many more.

The 512K Memory Upgrade is easy to install and even easier to use. It is a *replacement* memory board and, therefore, doesn't need a precious expansion slot. Hidden inside your Apple /// is a 128K or 256K memory board. Simply take out the old board and put in the new one.

Using state-of-the-art 256K memory chips, the 512K Memory Upgrade is the single most exciting add-on produced for the /// in a long, long time. Even though we have many 512K Memory Upgrades in stock, at this unbelievably low price, we're expecting temporary shortages. Order yours today.

### LOOK!

The 512K Memory Upgrade includes:

- Complete 24-page instruction manual.
- Ultra-fast RAMDisk Drive with demonstration programs.
- The 512K Upgrade disk which automatically adjusts your disks to utilize the 512K of memory and contains the updated version (1.2) of the System Utilities program permitting larger SOS.DRIVER files.
- The 512K Confidence Memory Program which tests all memory and ensures your 512K Memory Board is working correctly.
- *ON THREE*'s new and improved 180 day (six month) warranty.
- And of course, an Apple /// 512K memory board with state-of-the-art, 256K memory chips.

Place your order today for the exciting, low-priced 512K Memory Upgrade.

Call toll-free: (800) 443-8877

California residents: (805) 644-3614

\* The purchase price is \$324 plus \$10 shipping and handling. After installing the *ON THREE* 512K Memory Upgrade, return your old 256K memory board for a \$25 cash rebate or a \$35 software credit.

If you have a 128K Apple ///, the cost is \$324 plus \$10 shipping and handling with no rebate. If you order a 512K upgrade for your 128K machine, please ask for the free 128K to 512K instructions. We recommend that a 128K to 512K upgrade be done by *ON THREE* or a registered Apple Dealer.

*ON THREE* will install any memory upgrade for just \$50. We offer a one day turnaround on 128K or 256K to 512K upgrades. Call for more information.

\*\* The regular Word Juggler program works with the 512K Memory Upgrade but does not offer additional lines for your documents. An upgraded version is available which allows twice as many lines in your documents. To obtain it, please send a disk with return postage to *ON THREE*. However, there is one known problem with the updated Word Juggler package. It does not work with the LexiCheck spell checker option. To check the spelling of a very large Word Juggler document, you must divide it into two smaller sections.

\*\* The program Multiplan from Microsoft does not recognize the 512K Memory Upgrade.

# ON THREE

The Magazine For Apple III Owners and Users

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Volume 3, No. 11

November, 1986

### FEATURES

**Converting Apple II Pascal** **6** **Printer Selection and Set-Up** **14**  
Allan M. Bloom Dan Martin

Converting Apple II Pascal programs to your III is made easy. PUFFIN is used as an example, but the theory is applicable to any II program.

Are you new to the III? This article is a complete how-to on printer selection and installation written especially for you.

**A-Maze-Ing** **9** **Macro Manager** **19**  
Marc R. Christofferson John R. Sollman

This fun yet simple program will amuse you. Perfect for beginners who want to dabble in programming but didn't know where to begin.

Macro Manager, a Desktop Manager module, is explained in detail. Save up to two thousand characters and retrieve them later at the touch of a key.

**Graphically Speaking** **10** **Selector III** **24**  
Melvin A. Astrahan David Ottalini

This is the third installment of a three-part tutorial on producing rapid animation like that used in the author's Sandman program.

An article about Selector III, the program-switching utility produced by *ON THREE*. You will be told what it is and how to install it.

### DEPARTMENTS

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### ON: The Cover

"Apple Three . . . Three Apples." This design was created by Pittsburgh-based artist and teacher Thomas J. Lacey.

# Disk of the Month

What is the ultimate time-saver? Why *ON THREE's* Disk of the Month diskettes, of course. Why use your precious time typing in *ON THREE* program listings when they are available on diskette for just \$14.95 (plus \$2 shipping and handling) each?

Better yet, mix and match. Any two or more for \$12.50 each (plus \$4 total shipping and handling). Best bet: the works.

Now is the time to start your collection of these program-filled diskettes from all issues of *ON THREE Magazine*. Bulk and group purchase rates are also available, call (805) 644-3514 to inquire about these super savers.

## DOM #1—Extra Disk Space Plus!

This diskette contains all programs from volume I, nos. 1 and 2 of *ON THREE Magazine*. Included: Disk Pak1 with a program to give you four additional blocks of space on your data disks, and Disk Pak2, something you can't do without if you are a Pascal user, a convenient and easy way to list the files on a Pascal directory. Plus graphics and sound demos and more.

## DOM #2—Changing Printer Characters

Here is an amazing program you won't want to miss. With it you can print to the Apple Dot Matrix and compatibles such as Imagewriter or ProWriter the same characters that are shown on your video display. Many special fonts, including fancy gothic characters, can enhance your printed output. And, it comes with complete documentation. Also on DOM #2 are the other programs from issue number 3, more graphic demos plus: a program to list files from an Apple II diskette without entering emulation mode.

## DOM #3—Redefining a Keyboard

This disk is jam-packed full with programs that appeared in Volume I, No. 4 of *ON THREE*, and includes an easy-to-use program to redefine any or all keys on the Apple /// keyboard. Of particular interest is the ability to reassign the "V" to be the delete key so it can be used on AppleWriter /// and other programs. Also included are all the WPL programs, a disk formatting utility, a graphics sketching tool and still more that we don't have room to list here.

## DOM #4—Emulation Patch

Volume II, No. 1 had so many great programs it took two disks, DOM's 4 and 5, to hold them all. DOM 4 has all of the Pascal programs and the *Apple II Emulation Patch*, a way to use any Apple /// Font in emulation. Also included is the Pascal startup program for *Access ///* that lets you autodial. Another fine utility is a Pascal program and UNIT to permit calculations from within the Pascal environment. Demos haven't been forgotten either with *Radiate Graphics Demo* and *Beatles Music Demo*. To top things off, we have included a number of *Draw ON* pictures you can view with the program on DOM #5.

## DOM #5—Access Draw ON

Here we find the BASIC startup program to autodial from *Access ///*, and *Ben's SUPER Slot Machine*, along with all of the *VisiCalc* and WPL programs, and the *Circling Graphics Demo* which will show some of the fantastic images that *Draw ON* can create, plus still more *Draw ON* pictures, along with the *Draw ON ///*Picture Demo which you use to view *Draw ON* pictures.

## DOM #6—BASIC Lister Plus!

Straight from the pages of Vol. II, No. 2 is a program which will give you perfectly formatted listings of Business Basic programs, and a Pascal program to guide and assist you in selecting noises for animation and game programs. Both the *Pascal Noisemaker* and the BASIC lister come with full documentation. We've also tossed in still more *Draw ON* pictures and some new fonts, as well. You can use the *Draw ON* viewer from DOM 5 to see them.

## DOM #7—Heap Good Stuff

From Vol. ///, Nos. 1 and 2 we present a BASIC heap sort routine and demo, *IMAGEHELPER*, a neat graphics utility to simplify graphic image design, and a menu-driven program to pre-select printer codes and parameters.

## DOM #8—Directory Sorting

Here is what you have been waiting for, a complete BASIC and Assembly program to take those old chopped up directories and sort them out in just the order you want. Included also is *Clean.Heads*, a Pascal program which exercises your disk drive at cleaning time and writes a program to remind you when you last cleaned heads, plus a simple utility to read a text file and find out what the contents are without having to write a program on the spot.

## DOM #9—Music, Music, Music

Here is a great collection of programs from April through July, 1986. *Music Maker* and *Music Player* let you create and play your own Merry Melodies with alternate sets of DATA statements in BASIC. *Energy Plotter* not only plots energy consumption graphs, but contains techniques to "roll your own." In addition you will find a space game, graphics images and an assembly language subroutine to find maximum and minimum values in an integer array.

## DOM #10—Editing Character Sets

A great Pascal program to download and modify or create new fonts, this editor makes child's-play out of designing new text characters to meet your specific needs. Special math signs, foreign alphabets, you can do them all. *Football Pool* is a BASIC program to print out a grid for that office pool. All you do is type in the teams, the scores, and the participants; it does the rest. What? 3-D Video? Yes, indeed, *Stereo Spiral* shows how, using simple Business Basic subroutines. For the more technically inclined, the assembly subroutine *Pixel Inverter* does just that. Also included is *Prompt Procedure*, a collection of Pascal and assembly demos to write to the screen, and a couple of programs in WPL (Word Processing Language) to be used with AppleWriter.

# Apple.Sauce

lynn denicola

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## Greetings!

A fond hello to all of you loyal /// users. In my first weeks here I have already spoken with many fine members of the /// community. Although at first I was wary, not knowing what kind of reception to expect, I now feel at home. Everyone has made me feel welcome and I sincerely appreciate that.

As my predecessor, Val Golding, informed you in last issue's *Apple.Sauce*, I am relatively new to the computer scene and totally new to the ///. In college I took a beginning computer course which required only rudimentary programming skills. I have worked with a non-Apple word processor while employed elsewhere and own a small-time personal computer which I use mostly as a word processor.

But I am not totally unfamiliar with the ///. I have read every issue of *ON THREE* Magazine, cover to cover, starting with Volume 1, Number 1. It is a fine publication and I plan to continue that tradition begun by Bob Consorti and ably continued by Val. I use an Apple /// plus computer with 512K memory while on the job and am learning something new every day, thanks to not only my desire but also my coworkers' patience. It feels like Christmas every day as I open new gifts of brightly-wrapped software programs. I am astounded by what the Apple /// can do.

Because I have a B.A. in writing and experience as a writer and editor, I encourage anyone who has not contributed articles because they fear their grammar is inadequate to do so. Our readers will never know how much time it takes me to edit an article. All they will see is an interesting, well-written article with *your* name on the byline.

## Another New Face

Mine is not the only new body to appear in the halls of *ON THREE*'s offices in August. **Tim Harrington** is now working here as a programmer. To accept this position, Tim moved from San Jose, CA where he attended De Anza Junior College and Cal Poly San Luis Obispo. His first computer was an Apple /// which he bought in 1982. With him, Tim brings a wealth of programming experience and he is already working on several new projects. Welcome Tim!

## Old Yet New

I empathize with those of you writing letters to and calling *ON THREE* requesting more articles geared toward the beginner. And I am not blind to the fact that many companies and individuals are abandoning their Apple /// computers in favor of others which are still receiving manufacturer's support. Many used ///'s are appearing on the market at greatly reduced prices and just as many new users are being created by the resulting transactions. Often the used computers are accompanied by incomplete literature, if any is provided at all. Where can the new owner turn for help? If they are fortunate, they will have a user group in their area. If not, must they fend for themselves? I say no. As editor, and with

your help, I hope to publish in this magazine more articles written specifically for the beginner. And so far, the /// community is rising to the occasion.

For example, in this issue is the first of what I plan to be many articles for users who are not programmers. It is titled "Printer Selection and Set-Up" and was written by Dan Martin. Originally, this article was to appear in a beginner's packet being prepared by Lavona and Richard Rann of Third Apple Users (TAU), a Chicago-based Apple /// user group. I spoke with Lavona and she and her husband have agreed to publish the articles in *ON THREE* Magazine first, as a beginner's series. This kind of cooperation and sharing is what keeps the /// community alive and makes it so special and endearing.

## Stay Tuned!

Whether you're a new user or experienced programmer, this issue has something in it for you.

In addition to Dan Martin's article for the newer user, a fun game program is included in this issue. The program by Marc R. Christofferson is titled "A-Maze-Ing" and it is just that. This game program, written in BASIC, may be easily altered and provides an excellent way for beginners to dabble in programming.

As you may have already read in our fall flyer, *ON THREE* and First Class Peripherals are now making hard disk drives and the related software for the /// available at reduced prices. However, if you *still* can't find room in your budget for one, David Ottalini's "Selector ///" is for you. His article takes you through a step-by-step outline of how you can use Selector /// with your UniDisk so as to make your Apple /// think it is attached to a hard disk. Sounds incredible, doesn't it?

One of the joyful discoveries I have made in my new position is the Macro Manager and I am delighted to share that with you in the form of John R. Sollman's detailed article, "Macro Manager." This handy time-saver is so thoughtfully explained that you will wonder how you ever survived without it.

Lest the more advanced programmer and user should feel neglected, there are several articles included in this issue of a more technically-oriented nature.

For example, Melvin A. Astrahan's "Graphically Speaking" series on animation techniques is concluded in this issue. In this third installment, he explains how to convert the information presented in October's issue to machine code and then make the animated characters thereby created appear on the screen.

Also, Allan M. Bloom presents, in "Converting Apple ][ Pascal," a way to convert Apple ][ programs for use on the ///.

Enjoy!



# PRODUCTS FOR APPLE /// OWNERS AND USERS...

## The UnCopyProtect Driver

Do you have Apple Writer, Visicalc or Advanced Visicalc? Who do you call when your disks go bad? Apple? Guess again. Why not call *ON THREE* before they go bad and order the UnCopyProtect driver? This little gem allows you to use the regular System Utilities program to make back-up copies of these programs.

After making the copies, they will look and work exactly like your original, master copy-protected disks. There is no need to fuss with expensive bit-copiers on an Apple //e when you can do it faster, better, more reliably and less expensively on your Apple ///.

## Lazarus /// File Restoration

It's been a long day and you're tired. Just a few more sentences and you'll be finished with that mammoth report your boss wants on his desk tomorrow morning. You lift your weary fingers to execute the save command. But you accidentally press the wrong key and your last 10 hours of work are erased from the disk! What do you do?

If you have Lazarus /// there is no need to worry. Just press a few more keys and *presto*, your file is restored to its original condition. If you have ever mistakenly erased a file and wished for a little magic to bring it back, Lazarus is your fairy godmother.

The type of disk you use is irrelevant. Lazarus works with all Apple /// disks, including ProFile, A143, Sider and UniDisk. If you can delete a file from it, Lazarus can restore it. Order now and save yourself overnight delivery charges later.

## Selector /// Program Switcher

Are you doing the floppy disk shuffle? Do you have a large capacity disk drive such as ProFile, Sider, UniDisk or A143? Are you still spending your time booting each disk separately, then waiting what seems like an eternity to start a new application? As the disk spins, think for a few minutes about the time you could be saving using Selector ///.

Selector /// lets you place all of your programs on your large capacity drive. What's even better is that you only need to start your Apple /// once each morning. From the Selector Menu you can select and run any of over two dozen programs, such as Apple Writer, /// E-Z Pieces, Basic, Visicalc, System Utilities and even your own. Quit a program and you return to the Selector Menu. Select another program, sit back and appreciate the time, effort and disk wear you are saving. At only \$99, Selector is a must for all /// owners.

Special Limited Offer: After purchasing Selector, trade in your Catalyst disks with manual and get a \$15 rebate. Smart users are switching to Selector ///.

## Fortran Compiler

Those of you who are engineers may wish that your Apple /// could utilize those powerful Fortran programs you've successfully used on much larger computers. Well, wish no more. Here's the original, unreleased Apple version of Apple /// Fortran, a very good subset of ANSI Fortran 77.

This program is accompanied by a three-ring binder containing complete documentation. Operation requires a 256K Apple /// with the Pascal language system.

## Draw ON /// Graphics Tool

A powerful and versatile graphics tool designed exclusively for the Apple /// and /// plus. This best-seller transforms your Apple /// into a combination drafting table, easel and sketch pad. Color and black and white graphics can easily be created with a //e mouse, joystick or the keyboard.

Adjustable grids, built-in help screens, rubber banding of lines and easy-to-follow menus make Draw ON easy to learn. An excellent instructional/tutorial manual complements this fantastic program.

Use Draw ON to enhance or create bar, pie or scatter charts. Add colors, fill areas with a textured pattern and even add text in a variety of fonts and sizes directly to your image. Powerful cut and paste facilities allow you to pick up a piece of your drawing and move it to a new position. You can expand, shrink, rotate and invert images you've picked up. If you need to do detailed work on one part of the image, simply zoom in, change a few dots and your creation is complete.

And if you don't like any of the fonts that come with Draw ON, you can design your own. Complete font templates and samples are provided with Draw ON /// - The Apple /// Graphics Tool. After creating your masterpiece you can print it to an Apple DMP, ProWriter or ImageWriter. All Epson printers (MX, RX and FX) are supported as well. If you have the Pkaso or Pkaso/U interface card, Draw ON will print to your Centronics, NEC, OkiData, IDS Prism and all others.

Draw ON requires a 256K Apple ///, may be installed under both Selector /// and Catalyst, and as with all other *ON THREE* products, is not copy protected. When ordering, please note the type of printer and interface card, if any, you are using.

## The Graphics Manager™

This remarkable utility allows you to send graphic images you create with any Apple /// or Apple //e program to your printer and will also directly load Apple ][ DOS 3.3 and PrintShop graphics images. You can insert a picture in the middle of your word processing document at any point and in any size with Graphics Manager's automatic rotation and image enlarging/shrinking features.

Graphics Manager, the ultimate graphics utility program, operates as a Desktop Manager accessory or a stand-alone program. Use it to layout newsletters, combining text and graphics on the same page. Create a personalized letterhead with Draw ON and use the Graphics Manager to merge it with your word processing document.

The Color Graphics Manager supports the ImageWriter //, IDS Color Prism, Epson JX and the IBM PC Color Printer. This utility works with any interface card and graphics-compatible printer.

## UniDisk ///.5 800K Drive

The UniDisk ///.5 is an 800K 3.5 inch disk drive for the Apple ///. If you have a hard disk and despise making back-ups, the UniDisk is the ideal solution. You can back-up an entire ProFile with just seven UniDisk micro-floppies.

Perhaps you don't have a hard disk. Wouldn't it be great to say goodbye to your regular floppy disks? The new 3.5 inch disks are smaller and more convenient. They fit into purses, briefcases and even shirt pockets. With their hard plastic shell, they can take much more punishment than regular 5.25 inch disks.

If you have an Apple //e or //c as well as a ///, you can use the same disks on all machines. You can also use one of the popular file conversion programs on the Macintosh to transfer your word processing and other files from a UniDisk ///.5 disk to the Mac, and back.

*ON THREE* offers the UniDisk ///.5 complete with drive, interface card, cabling, documentation and driver disk for only \$499 plus shipping. If you already have a UniDisk 3.5 for your //e or //c, simply order the documentation and driver disk for only \$50 plus shipping.

## ON THREE O'Clock

Calling all time-conscious Apple /// owners. How would you like a working clock and calendar for your Apple ///? Did you know that your Apple /// has provisions for a built-in clock and calendar? With a clock your Apple /// can function more efficiently, just as it was originally intended, and make your life easier. The *ON THREE* O'Clock kit comes complete with a plug-in clock chip with battery back-up and easy-to-follow instructions.

With an *ON THREE* O'Clock installed, each time you save or modify a file, the current time and date will be stored on disk. Thus, you will be able to tell which file you last modified. Your programs will automatically use the Apple ///'s built-in time and date routines to give you an up-to-the-second read out of the time.

Extremely easy to install and adjust, it is completely compatible with SOS and doesn't use a precious slot. This is the one you have been anticipating. The package contains comprehensive instructions and a six month warranty. Try to get that deal anywhere else. For the special price of only \$39.95 (plus \$3.00 for shipping and handling) you can own the best little clock in town.

## Fun And Games

**Apple /// Fruit Machine**, by Dr. Mel Astrahan. Lots of excitement with full color graphics and slot machine sound effects.

**Apple /// Card Machine**, by Dr. Mel Astrahan. Realistic simulation of the authentic blackjack game played by high rollers around the world. The game uses beautiful, full color playing cards created with Draw ON ///. You can control the action with a mouse, joystick or the keyboard.

**Crossword Scrambler**, by David Cortopassi. Musical interludes and great text/graphic displays make this educational program stimulating and challenging.

**Mr. SandMan**, by Dr. Mel Astrahan. A fast-paced game modeled after one of the most famous arcade games of all time (xxx-Man!). Not only is it enjoyable, it can be used as a Desktop Manager accessory.

**Game Card ///**. This small interface card allows you to run almost all Apple ][ game programs on your ///.

# Block Write

bob consorti

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## Apple Happenings

On September 15th Apple introduced a new computer. The //GS (Graphics-Sound) the latest in the Apple // family, is a very interesting machine; interesting in that Apple has finally produced a machine more powerful than the ///.

Running at 2.8 MegaHertz compared to the Apple ///'s maximum speed of 2 Meg. (and the //e's 1 Meg.), the //GS is in many ways a great machine. It brings together for the first time the best of all the Apple computers in a very affordable package. It combines the graphics of the Macintosh, the openness of the //e and the powerful operating system of the /// in one computer.

It also offers a complete Apple //e simulation mode. Simply start up the machine with *any* Apple //e program and it will work. Newer programs can easily use the additional features of the machine, such as the new high resolution graphic modes. The //GS can produce 640X200 graphics with 4 colors, 320X200 with 16 colors and all of the regular Apple //e modes. It even has built-in AppleTalk to connect to the LaserWriter printer and/or Macintoshes.

By now you've probably heard about the new machine and possibly even seen one. Perhaps you're wondering why I'm mentioning it here, in an Apple /// magazine. Well, we at *ON THREE* have been working with the //GS for some time and feel that while some of you will not purchase another Apple product because of the /// debacle, many of you will once you discover the new machine's capabilities. Because of this we plan to include articles in the magazine about transferring information from the /// to the //GS.

Additionally, articles may appear from time to time about the //GS. We will do this per your requests. If enough readers ask for information on a specific subject, we will oblige them. *ON THREE* Magazine won't turn into another Apple // magazine, but will remain a /// magazine for as long as there are /// owners reading it. I'm sure that will be a long time.

To entice /// people back into the fold and persuade them to buy the //GS, Apple is planning a number of things. Apple //e owners will be able to purchase a //GS retrofit kit for only \$499. The kit is a replacement logic board which gives old //e's the newer //GS capabilities. Another rumor, possibly substantiated by the time you read this, is that Apple may offer an exchange rebate if you trade your /// for a //GS.

Unless Apple offers a great deal more than I think they will, I recommend keeping your /// or, if you are looking for a new machine, donating your /// to charity and use it as a tax write-off. That is if you want to get rid of your ///. I think that most of you don't.

Another thing Apple will be doing is converting some of the programming languages from the /// to the //GS. Business BASIC and Pascal will both be available shortly. Unless your programs exploit quirks within the ///, they should run on the //GS with only minor modifications.

For these and other reasons, *ON THREE* encourages people wishing to get rid of their ///'s to buy a //GS. Even if you just want a new computer, buy a //GS. It's a great machine.

## Changes At *ON THREE*

Over the last four years, I've had the pleasure of helping put together all of *ON THREE*'s products for the Apple ///. With the introduction of the //GS, *ON THREE* has become a multi-computer company. Some of you may be cursing under your breath, thinking *ON THREE* is going to abandon you as so many other /// companies have. We will not go the way of Quark, Brock Software, Haba Systems or Titan Technologies by abandoning the ///.

As you read this we are selling our premier product, The Desktop Manager, adapted for the //GS. The Desktop Manager was designed for the Apple ///. The similarities of the two machines permitted us to easily convert the /// version to run on the //GS.

This means that while the products we develop in the future will be developed for the //GS market, we will make them available for the /// as well, not only because it's so easy to do, but also because the /// has helped make us who we are today.

Although it's been discussed a number of times before, a clarification of the distinction between *ON THREE Magazine* and the company *ON THREE* is necessary. This magazine is a small part of *ON THREE*, Inc. Our Apple /// software and hardware products are another part of *ON THREE*.

My main point is this: the /// lives on! *We* aren't going away and our products aren't either. It's actually better that *ON THREE* as a company diversifies; by doing so we can continue helping our /// customers. While it's difficult to admit, many people have dropped their ///'s over the last two years. With ownership declining, our future Apple /// product sales won't be able to support new product development for the ///. Without our diversifying, you would not see any new products for the /// from *ON THREE*. Our revenues from other sources let us continue introducing timely products for the Apple ///.

## Magazine Notes

Since you've read all the way through my column, I'm sure you read this month's **Apple.Sauce** column. If not, please do, and introduce yourself to our new editor, Lynne Denicola. She's doing a great job and deserves the support and guidance of all.

Since there are many new Apple /// users, we're making a special effort to include information for them in the magazine. If you want or have information of interest to the novice, please call or write Lynne.

Last issue we published an article on Desktop Publishing. Ken Johnson showed us how to connect our ///'s to the LaserWriter printer and create publication-quality text. We liked the idea so much that we bought a LaserWriter!

Starting with the December issue, the entire magazine will be typeset and produced via a LaserWriter. Just for fun, I've typeset my column this issue with the LaserWriter. Since many of you are using ///'s in an office environment, you may be sharing office space with one of these astounding printers. In future issues we'll keep you informed about the fantastic field of Desktop Publishing and show you more uses for your /// and the LaserWriter.



# Converting Apple II Pascal

allan m. bloom

A wealth of Apple II Pascal programs is available in the public domain and very little stands in the way of turning those programs into native Apple III Pascal programs. This article shows you how, using a real program conversion as an example.

Though PUFFIN III is useful, of greater value are the processes involved in converting the Apple II program to native mode. The following procedures are applicable to any Apple II Pascal program conversion.

## Correcting the Screen Control Commands

The Apple II screen control commands are different than those of the Apple III, as you can see in Figure 1.

Note that some Apple II codes don't have Apple III counterparts. Fortunately, they are rarely used. If you find a converted Apple II Pascal program's screen going haywire, check the screen control codes first.

The screen control commands PUFFIN uses are written at the beginning of the program as constant values (see Figure 2).

Note that the Apple II CLEOLN command will clear an Apple III screen and the Apple II CLEOS moves the Apple III cursor up a line. You might be able to live without the changes, but they are so simple that it is worth the time invested.

## Combining the Parts of the Program

Apple II Pascal must run in a 64K machine and therefore cannot edit as large a file as Pascal III can. PUFFIN is an example. The diskette contains the program in two text files, PUFFIN.

Figure 1

| Ap2    | Screen Command        | Ap3    | Ap2    | Screen Command       | Ap3    |
|--------|-----------------------|--------|--------|----------------------|--------|
| 11 VT  | Clear To End of Scrn  | GS 29  | 12 FF  | Clear Screen         | FS 28  |
| 14 SO  | Normal Text           | DC1 17 | 15 SI  | Inverse              | DC2 18 |
| 17 DC1 | 40-Column             | DLE 16 | 18 DC2 | 80-Column            | DLE 16 |
| 19 DC3 | Suspend Screen Output |        | 21 NAK | Quit                 |        |
| 22 SYN | Scroll Down           |        | 23 ETB | Scroll Up            |        |
| 25 EM  | Cursor Home           | FF 12  | 26 SUB | Clear Line           | RS 30  |
| 28 FS  | Cursor Right          | HT 09  | 29 GS  | Clear to End of Line | US 31  |
| 30 RS  | Goto XY               | SUB 26 |        |                      |        |

The example program is called PUFFIN, a public domain Pascal II program by Tom Woteki of Washington Apple Pi. I became interested in it because of my wife's disliking Apple Writer Utilities (even the second version). To use the family's letter quality printer, she has to convert her DOS files to SOS. Apple Writer Utilities will not catalog a DOS disk and she has no memory for file names. PUFFIN copies DOS 3.3 files to Pascal formats and allows cataloging the DOS disk. For my wife's sake, I decided to adapt PUFFIN's input and catalog display routines as the core of a DOS/SOS conversion program.

I anticipated a major programming effort but was pleasantly surprised when I loaded the program and compiled it. It worked. It wasn't perfect by any means, but the core of the program operated perfectly. PUFFIN III needs only minor alterations to become PUFFIN III.

If you'd like to follow the examples here, you should obtain a copy of PUFFIN. It is mentioned in *Call-A.P.P.L.E.'s* book, "In Depth Number Two: All About Pascal." The book and program diskette are available to A.P.P.L.E. members. The program is also available to anyone from Washington Apple Pi as public domain software.

## Starting Up

The Apple II Pascal disk format is different than Apple III SOS. However, this poses no problem to Apple III Pascal as it can directly read Apple II Pascal diskettes. The filer L)ists the disk directory and the editor retrieves a text file automatically. Be sure to note the name of the Pascal II file before getting it because the editor does not allow file selection on Apple II Pascal disks.

Figure 2

| Screen Command         | Variable | Procedure  | Required Correction  |
|------------------------|----------|------------|----------------------|
| Clear to end-of-line   | CLEOLN   | PRINTMENU  | Change from 29 to 31 |
| Clear to end-of-screen | CLEOS    | DISPLAYDIR | Change from 11 to 29 |

Once you read the text file into the editor, save it as SYSTEM.WRK.TEXT and compile it. Many Apple II Pascal programs compile without a hitch, and PUFFIN is one. That a program compiles does not mean it will execute properly or that it cannot be improved upon. PUFFIN, for example, has some quirks that the non-fussy may be able to overlook. And it has a bug or two. Thus, it is a good example for converting to Apple III Pascal.

TEXT and TRANSFER.TEXT. Near the end of PUFFIN.TEXT is the following "include" command (A.P.P.L.E. version):

```
(*I DPTH2.1:TRANSFER.
TEXT*)
```

This logically copies the TRANSFER file into PUFFIN during compilation. You can delete that line and simply use the Pascal editor's "C)opy F)ile"



command to insert the TRANSFER.TEXT module into PUFFIN at the same place. The Apple /// can certainly handle the resulting 44-block TEXT file, and it's handier having everything in one place.

### Other Apple ][ Things To Look For

Many programs are written for the Apple ][ and ][+. Those precursors of the //e didn't have vertical arrow keys. If the program you are transforming has cursor control from the keyboard, look for how the program handles up and down motion. Because the arrows are so convenient, you may wish to replace the original keyboard input characters with chr(11) for the up arrow and chr(10) for the down arrow.

Also recall that many Apple ]['s do not know about upper- and lower-case letters. It is frustrating answering a "Continue?" question with "y" and then being blown out of the program because the response was not capitalized. The easiest way to handle this problem is to insert an UPPERCHR and an UPPERSTR procedure after the VAR declarations in the program. Those procedures may look like the ones in Figure 3.

Figure 3

```

procedure UPPERCHR (var ch1: char);
begin
  if ord(ch1) in [97..122]
    then ch1 := chr (ord (ch1) - 32);
  (endif)
end; {UPPERCHR}

procedure UPPERSTR (var strg:string);
var i: integer;
begin
  for i := 1 to length (strg) do begin
    upperchr (strg [i]);
  end; {for i}
end; {UPPERSTR}

```

It's easy to find where the program reads from the keyboard. Just uppercase each response character or string after it has been read. The program will never know you didn't have the alpha lock key depressed.

### Enhancing the Program

Are you one of those people who leaves a picnic ground a little cleaner than you found it? That attitude can influence your programming. Even though a program was written by a reputable person and published in a reputable magazine, it doesn't mean you can't find some trash to pick up. Even commercial programs can have

Figure 4

```

write (chr(cleos));
gotoxy (6,2);
write('
                                     Welcome to PUFFIN!');
gotoxy (6,5);
write('
                                     Written by "Dr. Wo" of Washington Apple Pi. ');
gotoxy (6,7);
write('
                                     Modified by Al Bloom for the Apple ///. ');
gotoxy (6,10);
write('The program performs three functions: ');
gotoxy (6,12);
write('1. CATALOG    Presents a catalog of a DOS 3.3 diskette. ');
gotoxy (6,14);
write('2. DISPLAY    Displays the most recently requested catalog. ');
gotoxy (6,16);
write('3. TRANSFER   Converts a DOS 3.3 file to a file of type: ');
gotoxy (6,17);
write('
                                     "T" PASCAL text file. ');
gotoxy (6,18);
write('
                                     "F" PASCAL foto file. ');
gotoxy (6,19);
write('
                                     "D" PASCAL data (binary) file. ');
gotoxy (55,23);
write('Press any key to begin. ');
read(keyboard, ch);
page(output);
write (chr(cleos));

```

bugs. While you are in the program you can look for ways to improve it. PUFFIN is an example of a program that profited from enhancement.

If you want to use the "DOS Catalog" feature of PUFFIN, there are changes you should make. As written, PUFFIN presents a problem. Just as it finishes displaying the last screen of the DOS catalog listing, it returns you to the main menu in a flash. It takes eyes younger than mine to read that last (or first and only) directory listing as it flies past.

The solution to this problem is simple. The program pauses after all but the last page of the directory list, so you need only revise the last screen. Find "PROCEDURE displaydir," then go to the line that reads:

```

"write(dosdir[0].dnumentries,'files
on disk,',cumsectors,'sectors in use');"
```

Right after this line, insert the following five lines of text:

```

gotoxy (0, 23);
write ('Press any key to return to
the PUFFIN menu');
read (keyboard, ch);
gotoxy (0, 0);
write (chr (cleos));
```

This puts the "Press Any Key" message in the lower left corner of the screen as the program awaits your keypress. Now you may view the last screen of the catalog to your heart's content. Simply press any key to clear the screen and return to the menu.

While you're in "displaydir," you can also improve the display. One problem in PUFFIN is that the option menu is still on the screen during the catalog display. To rectify this situation, go back to the beginning of the "displaydir" procedure and find the line that reads "gotoxy (0,1)" right after the "page (output)" line. Replace that "gotoxy (0,1)" with "write (chr(cleos))" to leave the cursor at the top of the screen and to erase any remaining garbage. (This also leaves the column titles on the screen if your catalog listing covers more than one page.) Then move down four program lines to the "displayheader" procedure call. Right after that line insert a "gotoxy (0, 2);" command. This creates a blank line separating the column titles from the actual catalog listing and conforms with what the program does when a catalog display fills the screen.

### A Professional Greeting

Many programs fail miserably in the crucial start up screen. PUFFIN again provides an example. It flashes "Welcome to PUFFIN!" and then immediately displays the menu at the top of the screen. My first thought was "What?" That instantaneous message adds nothing to the user's knowledge or feeling of well-being. I replaced the program's start up screen with a full-screen greeting giving the user an idea of the program's features before presenting the option menu. To do this, go to the main program body and remove the

*(Continued on p. 18)*

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This program is the Apple /// version of the Apple ][ hit known as AppleWorks. It combines a word processor, data base and spread sheet in one integrated program. All sections use similar commands and easy-to-follow pop-up menus.

The spread sheet, while not as powerful as Advanced Visicalc, is much faster. For example, loading and saving files is 20 to 30 times faster. Even recalculation times are much quicker. And you can access your existing VisiCalc or DIF files, eliminating the need to re-type. Up to 999 rows and 127 columns are available.

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The word processor rivals programs like Apple Writer and Word Juggler in speed and ease of use. Advanced options such as the ability to cut and paste information between your data base, spread sheet and word processor make the program a must for all /// owners.

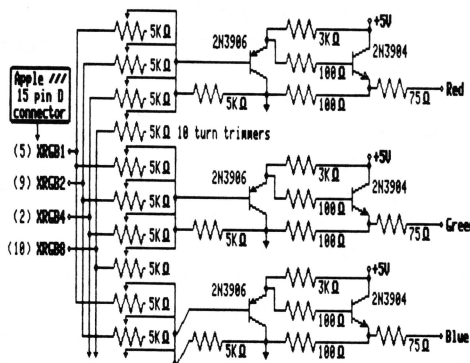
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# A-Maze-ing

marc r. christofferson

Do you need a little break from number-crunching? Here is the perfect diversion for you. This is a Business BASIC program for a game called "MAZE," developed by Marc R. Christofferson of Sioux City, Iowa. The object is to eat the apples numbered one through eight in order. The apples are scattered throughout a labyrinth and reaching them is not as easy as it looks. Once you master playing the game that way, make the walls invisible and then try negotiating the maze!

While playing the game, the cursor moves continuously and can only be stopped by hitting the space bar. You can make the

cursor stop automatically after each move by changing line 4050 of the program to "GET A\$". Also, changing the values for A\$ in lines 200 through 330 in the beginning of the program allows you to place walls wherever you wish.

For example, line 200 reads:

```
A$="03010405":GOSUB 5000
```

The first four numbers within the quotes are the coordinates for the upper left corner of the rectangle forming the wall. In this case, the corner begins three spaces over and one space down (0301) from the upper

left corner of the screen. The second four numbers are the coordinates for the wall's lower-right corner. The rectangle ends four spaces over and five down from where it began (0405). "GOSUB 5000" tells the computer to use the preceding coordinates in A\$ in the loop at line 5000. This loop prints the wall, constructing a rectangle based on the given coordinates.

Marc's program is also spiced with REM statements telling you the purpose of each section of the program. Experiment. Make a few changes in the program and discover what you can do.

```

10 REM +-----+
20 REM + Maze by Marc Christofferson +
30 REM +      8/28/86                  +
40 REM +                               +
50 REM + Copyright (c) 1986 by      +
60 REM +      ON THREE              +
70 REM +-----+
80 TEXT:HOME:GOSUB 8000:HOME:B$=" "
90 REM ARRAY FOR EACH LOCATION ON THE
   SCREEN
100 DIM A$(81,25)
160 INVERSE
190 REM SET UP WALL AREAS. THE ROUT
   INE IN 5000 DRAWS THE WALLS AND
   TURNS ON THE ARRAY VARIABLE
200 A$="03010405":GOSUB 5000
202 A$="03080510":GOSUB 5000
205 A$="05100614":GOSUB 5000
207 A$="03150916":GOSUB 5000
208 A$="07130914":GOSUB 5000
209 A$="03180419":GOSUB 5000
210 A$="03200324":GOSUB 5000
212 A$="07180823":GOSUB 5000
214 A$="09031106":GOSUB 5000
216 A$="09071209":GOSUB 5000
217 A$="11101212":GOSUB 5000
219 A$="10141223":GOSUB 5000
221 A$="12031703":GOSUB 5000
222 A$="17011703":GOSUB 5000
225 A$="19022011":GOSUB 5000
227 A$="16112213":GOSUB 5000
229 A$="19142020":GOSUB 5000
231 A$="16212222":GOSUB 5000
233 A$="25022505":GOSUB 5000
234 A$="25062808":GOSUB 5000
236 A$="25112614":GOSUB 5000
238 A$="23152917":GOSUB 5000
240 A$="27182924":GOSUB 5000
242 A$="40014406":GOSUB 5000
243 A$="35134016":GOSUB 5000
245 A$="40084412":GOSUB 5000
250 A$="33034004":GOSUB 5000
255 A$="45095011":GOSUB 5000
260 A$="45094603":GOSUB 5000
265 A$="77027908":GOSUB 5000
266 A$="77147923":GOSUB 5000
270 A$="52205922":GOSUB 5000
275 A$="49035106":GOSUB 5000
280 A$="66126818":GOSUB 5000
285 A$="40236024":GOSUB 5000
290 A$="50205123":GOSUB 5000
300 A$="40164320":GOSUB 5000
310 A$="55056505":GOSUB 5000
315 A$="55076507":GOSUB 5000
320 A$="48127212":GOSUB 5000
330 A$="55146015":GOSUB 5000
400 NORMAL:TEXT
450 REM THIS SECTION PLACES THE
   OPEN-APPLES AND NUMBERS
   ON THE SCREEN
455 REM ALSO STORES THE VALUE IN
   THE ARRAY
500 X=12:Y=20:GOSUB 6000
510 X=6:Y=2:GOSUB 6000
520 X=45:Y=4:GOSUB 6000
530 X=20:Y=15:GOSUB 6000
540 X=75:Y=2:GOSUB 6000
550 X=64:Y=20:GOSUB 6000
560 X=75:Y=23:GOSUB 6000
570 X=45:Y=8:GOSUB 6000
3800 REM ROUTINE TO CHANGE DIRECTION
   OF MOVEMENT
3900 X=1:Y=1
3950 CT=1
4000 HPOS=X:VPOS=Y:PRINT"+";
4050 ON KBD GOTO 10000:REM CHANGE
   THIS LINE TO "GET A$" FOR SINGL
   E MOVES
4060 IF ASC(A$)=11 THEN GOSUB 4300
4065 IF ASC(A$)=10 THEN GOSUB 4200
4070 IF ASC(A$)=21 THEN GOSUB 4400
4075 IF ASC(A$)=8 THEN GOSUB 4500
4080 IF ASC(A$)=27 THEN GOTO 50000
4090 REM ROUTINE TO SEE IF AN APPLE
   WAS FOUND
4100 IF CUMPOINTS<POINTS THEN WINDOW
   40,12 TO 50,13:HOME:PRINT"YOU
   SCORED";:FOR WAIT=1 TO 500:NEXT
   :CUMPOINTS=POINTS:IF INVISIBLE$
   ="ON" THEN HOME:TEXT:ELSE INVER
   SE:HOME:NORMAL:TEXT
4110 IF WALL=1 THEN WINDOW 40,12 TO
   55,13:HOME:PRINT"THAT'S A WALL"
   ;:FOR WAIT=1 TO 250:NEXT:WALL=0
   :IF INVISIBLE$="ON" THEN HOME:T
   EXT:ELSE INVERSE:HOME:TEXT:NORM
   AL
4120 IF CUMPOINTS=36 THEN GOTO 50000
4130 IF X<1 THEN X=1
4135 IF X>80 THEN X=80
4140 IF Y<1 THEN Y=1
4150 IF Y>24 THEN Y=24
4170 GOTO 4000
4200 IF A$(X,Y+1)=1 THEN WALL=1:RETU
   RN
4210 IF A$(X,Y+1)=CT*2 THEN POINTS=P
   OINTS+CT:CT=CT+1:A$(X,Y+1)=0:GO
   TO 4215
4212 IF A$(X,Y+1)>1 THEN RETURN
4215 GOSUB 4900
4220 Y=Y+1:RETURN
4300 IF A$(X,Y-1)=1 THEN WALL=1:RETU
   RN
4310 IF A$(X,Y-1)=CT*2 THEN POINTS=P
   OINTS+CT:CT=CT+1:A$(X,Y-1)=0:GO
   TO 4315
4312 IF A$(X,Y-1)>0 THEN RETURN
4315 GOSUB 4900
4320 Y=Y-1:RETURN
4400 IF A$(X+1,Y)=1 THEN WALL=1:RETU
   RN
4410 IF A$(X+1,Y)=CT*2 THEN POINTS=P
   OINTS+CT:CT=CT+1:A$(X+1,Y)=0:GO
   TO 4415
4412 IF A$(X+1,Y)>0 THEN RETURN
4415 GOSUB 4900
4420 X=X+1:RETURN
4500 IF A$(X-1,Y)=1 THEN WALL=1:RETU
   RN
4510 IF A$(X-1,Y)=CT*2 THEN POINTS=P
   OINTS+CT:CT=CT+1:A$(X-1,Y)=0:GO
   TO 4515
4512 IF A$(X-1,Y)>0 THEN RETURN
4515 GOSUB 4900
4520 X=X-1:RETURN
4900 HPOS=X:VPOS=Y:PRINT B$;
4910 RETURN
5000 X=VAL(LEFT$(A$,2))
5100 Y=VAL(MID$(A$,3,2))
5200 Z=VAL(MID$(A$,5,2))
5300 Q=VAL(RIGHT$(A$,2))
5400 FOR J=X TO Z
5410 FOR JJ=Y TO Q
5420 A$(J,JJ)=1
5430 NEXT JJ
5440 NEXT J
5500 IF INVISIBLE$="ON" THEN RETURN
5510 WINDOW X,Y TO Z,Q:HOME:RETURN
6000 CT=CT+1
6050 A$(X,Y)=CT*2
6100 HPOS=X:VPOS=Y:PRINT CHR$(255);C
   T:RETURN
8000 REM INSTRUCTIONS ETC
8010 HOME
8020 PRINT TAB(15);"WELCOME TO MICRO
   MAZE"
8025 PRINT:PRINT"THIS IS A GAME THAT
   DEMONSTRATES HOW A MAZE CAN BE
   CREATED IN BUS. BASIC"
8027 PRINT
8030 PRINT"USE THE ARROW KEYS TO MOV
   E THE <+> SIGN ABOUT THE MAZE."
8032 PRINT
8035 PRINT"THE OBJECT IS TO EAT THE
   APPLES IN NUMERIC ORDER."
8037 PRINT

```

(Continued on p. 18)

# Graphically Speaking

melvin a. astrahan

## Animation Techniques: Part III

In Part II of this series on animation techniques, I presented the concepts behind high speed animation using preshifted images. In this article I will describe how to convert those concepts into machine code and display the object on the screen.

### A Hex on You

In the previous article, I used the two-byte-wide ghost figure from my Sandman game as an example of an object to animate. I will continue with that same ghost in this article as well. For that particular object, a solution to complex animation and horizontal movement was to draw the ghost on a matrix three bytes wide as illustrated below. Using this technique, the ghost automatically erases his old image each time he is moved horizontally by seven or fewer pixels.

The first thing you must do is convert the ghost into a form the assembler can understand. To do this, take each byte of the ghost and convert the pixel pattern into a hexadecimal value. Converting the ghost pattern is actually rather easy, since you only need to

recognize 16 pixel patterns (all possible conversions of four bits). To convert from binary to hexadecimal, you normally take each byte and break it into two, four-bit segments. Each four-bit segment is then converted into a hexadecimal character.

For example, to convert the binary pattern 00001111 into a hex value, take the first four bits (0000) and convert to hex value "0". Then consider the last four bits (1111) and convert to hex value "F" to produce the hex number \$0F. The pattern 00100111 is broken into 0010 and 0111, and converted to \$27.

To convert the ghost, consider each "\*" to be a 1 and each "." to be a 0. It is important to remember that image data is displayed in bit-reversed form (see previous articles) and that only the lower seven bits are used. Thus, as is illustrated in Figure 1, the first byte of row 01 of the ghost (.....\*\*) must be reversed to become (\*\*.....) and then the highest-order bit must be added to form the pattern (.\*\*.....) which is stored as the binary pattern 01100000, or \$60. The middle byte of row 01 would be stored as 00000011, or \$03. The last byte is \$00.

This procedure is then applied to each of the seven preshifted ghost

images, resulting in the database shown in Figure 2. The hex description of the ghost at its unshifted (base) horizontal position starts at label JOBS0. The preceding label, JOB0, and the following label, JOB1, are blank lines of three bytes used for erasing during vertical movement. The label JOBS1 begins the data for the ghost shifted one bit position to the right (as discussed in the previous article). The label JOBS2 begins the data for the ghost shifted 2 bit positions, and so on.

The arrays JOBADR and JOBADR0 record the starting memory address of each of the pre-shifted data bases for horizontal and vertical movement, respectively. In the Sandman game there are three ghosts, so the variable JOBNUM determines which ghost to draw. The XPOS and YPOS arrays are the current screen positions of the three ghosts.

### The Color Purple

The Sandman game runs in the unique Apple /// 280X192 16-color graphics mode (described in previous articles) in which bit-image data is stored in the lower 8K memory segment and color data for each seven-pixel hori-

Figure 1

|         | byte 0   | byte 1   | byte 2 | Apple /// TLA assembler |
|---------|----------|----------|--------|-------------------------|
| Row 01: | .....**  | **.....  | .....  | .BYTE 60,03,00          |
| Row 02: | ...****  | ****...  | .....  | .BYTE 78,0F,00          |
| Row 03: | .*****   | *****.   | .....  | .BYTE 7C,1F,00          |
| Row 04: | .*****   | *****.   | .....  | .BYTE 7E,3F,00          |
| Row 05: | .**..**  | *.***.   | .....  | .BYTE 66,39,00          |
| Row 06: | *****    | *****.   | .....  | etc...                  |
| Row 07: | *****    | *****.   | .....  |                         |
| Row 08: | *****    | .*****.  | .....  |                         |
| Row 09: | *****    | .*****.  | .....  |                         |
| Row 10: | .*****   | .*****.  | .....  |                         |
| Row 11: | .*****   | .*****.  | .....  |                         |
| Row 12: | .***..** | .*****.  | .....  |                         |
| Row 13: | .****..  | *****.   | .....  |                         |
| Row 14: | *****    | *****.   | .....  |                         |
| Row 15: | *****    | *****.   | .....  |                         |
| Row 16: | .***...  | ...****. | .....  |                         |

Figure 2

```

JB0      .BYTE      00,00,00
JOBS0    .BYTE      60,03,00,78,0F,00,7C,1F,00,7E,3F,00
          .BYTE      66,39,00,7F,1F,00,7F,1F,00,7F,1E,00
          .BYTE      7F,3E,00,7E,3E,00,7E,3E,00,6E,3E,00
          .BYTE      1E,7F,00,7F,7F,00,7F,7F,00,0E,38,00
JB1      .BYTE      00,00,00
JOBS1    .BYTE      40,07,00,70,1F,00,78,3F,00,7C,7F,00
          .BYTE      4C,73,00,7E,3F,00,7E,3F,00,7E,3D,00
          .BYTE      7E,7D,00,7C,7D,00,7C,7D,00,5C,7D,00
          .BYTE      3C,7E,01,7E,7F,01,7E,7F,01,1C,70,00
JB2      .BYTE      00,00,00
JOBS2    .BYTE      00,0F,00,60,3F,00,70,7F,00,78,7F,01
          .BYTE      18,67,01,7C,7F,00,7C,7F,00,7C,7B,00
          .BYTE      7C,7B,01,78,7B,01,78,7B,01,38,7B,01
          .BYTE      78,7C,03,7C,7F,03,7C,7F,03,38,60,01
JB3      .BYTE      00,00,00
JOBS3    .BYTE      00,1E,00,40,7F,00,60,7F,01,70,7F,03
          .BYTE      30,4E,03,78,7F,01,78,7F,01,78,77,01
          .BYTE      78,77,03,70,77,03,70,77,03,70,76,03
          .BYTE      70,79,07,78,7F,07,78,7F,07,70,40,03
JB4      .BYTE      00,00,00
JOBS4    .BYTE      00,3C,00,00,7F,01,40,7F,03,60,7F,07
          .BYTE      60,1C,07,70,7F,03,70,7F,03,70,6F,03
          .BYTE      70,6F,07,60,6F,07,60,6F,07,60,6D,07
          .BYTE      60,73,0F,70,7F,0F,70,7F,0F,60,01,07
          .BYTE      00,00,00
JB5      .BYTE      00,78,00,00,7E,03,00,7F,07,40,7F,0F
          .BYTE      40,39,0E,60,7F,07,60,7F,07,60,5F,07
          .BYTE      60,5F,0F,40,5F,0F,40,5F,0F,40,5B,0F
          .BYTE      40,67,1F,60,7F,1F,60,7F,1F,40,03,0E
          .BYTE      00,00,00
JB6      .BYTE      00,70,01,00,7C,07,00,7E,0F,00,7F,1F
          .BYTE      00,73,1C,40,7F,0F,40,7F,0F,40,3F,0F
          .BYTE      40,3F,1F,00,3F,1F,00,3F,1F,00,37,1F
          .BYTE      00,4F,3F,40,7F,3F,40,7F,3F,00,07,1C
          .BYTE      00,00,00
JB7      .BYTE      00,60,03,00,78,0F,00,7C,1F,00,7E,3F
          .BYTE      00,66,39,00,7F,1F,00,7F,1F,00,7F,1E
          .BYTE      00,7F,3E,00,7E,3E,00,7E,3E,00,6E,3E
          .BYTE      00,1E,7F,00,7F,7F,00,7F,7F,00,0E,38
          .BYTE      00,00,00
JOBADR    .WORD      JOBS0, JOBS1, JOBS2, JOBS3, JOBS4, JOBS5, JOBS6, JOBS7
JOBADR0   .WORD      JB0, JB1, JB2, JB3, JB4, JB5, JB6, JB7
JOBNUM    .BYTE      00
XPOS      .WORD      74, 74, 74
YPOS      .WORD      48, 48, 48
JCOLOR    .BYTE      00
JCOLOR    .BYTE      0B0, 0B0, 0B0, 0B0, 0B0, 0B0, 0B0, 0B0, 0B0, 0B0, 0B0, 0B0, 0B0, 0B0, 0B0, 0B0
JCOLOR1   .BYTE      00
JCOLOR1   .BYTE      0E0, 0E0, 0E0, 0E0, 0E0, 0E0, 0E0, 0E0, 0E0, 0E0, 0E0, 0E0, 0E0, 0E0, 0E0, 0E0
          .BYTE      0E0, 0E0, 0E0
JCOLOR2   .BYTE      00
JCOLOR2   .BYTE      0D0, 0D0, 0D0, 0D0, 0D0, 0D0, 0D0, 0D0, 0D0, 0D0, 0D0, 0D0, 0D0, 0D0, 0D0, 0D0
          .BYTE      0D0, 0D0, 0D0
          .BYTE      00
JCLR0     .WORD      JCOLOR, JCOLOR1, JCOLOR2
JCLR      .WORD      JCOLOR, JCOLOR1, JCOLOR2
STDJCLR   .WORD      0B0, 0E0, 0D0
XLOC      .BYTE      00
YLOC      .BYTE      00
NUMLINS   .BYTE      00
XCOUNT    .BYTE      00
YCOUNT   .BYTE      00
XPTR      .BYTE      00
ZPTMP     .BYTE      00

```

zontal region is stored in the upper 8K segment. The various JCOLOR (and JCOLOR) arrays contain information on the current color of the ghosts (each of the three ghosts is a different color, but they all turn blue for a while when Sandman is energized by the WOZ). A separate color byte is maintained for each three-byte "row" of the ghost database. If you have played Sandman, you may recall how the ghost's color "fades" from blue, or whatever the ghost's normal color is (i.e. the STD-JCLR), to pink as Sandman's power wears off. This effect is accomplished by simply changing various bytes in the JCOLOR arrays.

The JOBAT subroutine in Figure 3 draws a ghost at a particular X,Y coordinate on the playing field. The number of the ghost multiplied by two is stored at JOBNUM prior to calling the routine. LOBFR and HIBFR are each two-byte, zero-page pseudo-registers used for indirect addressing with X-Bytes set to 0. LOSRCE and HISRCE are zero-page registers with X-Bytes set to 8F for access to the graphics bank.

The arrays YTABLLO, YTABLH2, YTABLH4, and XTABLO are the standard screen left-edge and horizontal offset arrays used to determine in which byte in graphics memory a particular X,Y coordinate in 280X192 mode is

stored. To speed up the code, the ghosts may only be placed at horizontal coordinates ranging from 0 to 255 rather than 280. This permits all horizontal and vertical position array look ups to be handled through the 6502's X and Y index registers.

To quickly move the ghost horizontally or vertically, the routines may be a bit shorter since we can reuse the DRWJOB portion of the previous code. Shown in Figure 4 is the JOBLFT routine which quickly moves the ghost one bit position left from his current screen position. The JOBUP routine illustrates rapid vertical movement.

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Figure 3

```
JOBAT  LDY      JOBNUM    ;get number of ghost to draw (X2)
         LDA     JCCLR, Y    ;get color array address low byte
         STA     HIBFR
         LDA     HIBFR+1, Y  ;get color array address hi byte
         STA     HIBFR-1    ;HIBFR points to color array for ghost JOBNUM
         LDA     YPOS, Y     ;get Y coordinate of ghost
         STA     YLOC       ;store it at YLOC
         LDY     XPOS, Y     ;get X coordinate of ghost
         LDA     XTABLO, X   ;look up byte offset from left edge
         STA     XLOC       ;and store it at XLOC
         LDY     JOBPOS, X   ;get the bit shifted position for X coordinate
         LDA     JOBADR, Y   ;determine the starting address of the
         STA     LOBFR      ;image database
         LDA     JOBADR+1, Y ;LOBFR points to start of image data to use
         STA     LOBFR+1

DRWJOB  LDA     #10          ;get ready to write 16 rows of data
         STA     NUMLINS    ;NUMLINS is the line counter
         LDA     #00
         STA     XCOUNT   ;initialize the byte counters
         STA     YCOUNT

NXTLIN  LDA     XLOC       ;copy X offset to XPTR
         STA     XPTR
         LDY     YLOC
         LDA     YTABLLO, Y  ;get the address of the left edge of screen
         STA     LOSRCE     ;for the bit image data
         STA     HISRCE     ;and the color data
         LDA     YTABLH2, Y
         STA     LOSRCE+1
         LDA     YTABLH4, Y
         STA     HISRCE+1

         LDY     YCOUNT    ;determine which row of the ghost
         LDA     @HIBFR, Y  ;get the color data for each row
         STA     ZPTMP      ;save it for later
         LDY     XPTR
         LDA     @HISRCE, Y ;work on leftmost byte of each row
         AND     #0F        ;get the current screen color
         ORA     ZPTMP      ;clear the foreground color
         STA     ZPTMP      ;put in the new color
         INY
         LDA     @HISRCE, Y ;and put it back on the scen
         ;get ready for middle byte of each row
         AND     #0F
         ORA     ZPTMP
         STA     @HISRCE, Y ;put new colors for middle byte
         INY
         LDA     @HISRCE, Y ;get ready for rightmost byte
         AND     #0F
         ORA     ZPTMP
         STA     @HISRCE, Y ;put new colors for rightmost byte

         LDY     XCOUNT    ;get leftmost byte of row
         LDA     @LOBFR, Y  ;get bit-image byte from data array
         LDY     XPTR
         LDA     @LOSRCE, Y ;get screen offset from left edge
         INC     XPTR
         ;put bit-image byte onto screen
         ;get ready for middle byte of each row
         LDY     XCOUNT
         LDA     @LOBFR, Y
         LDY     XPTR
         STA     @LOSRCE, Y ;and put it on the screen
         INC     XPTR
         LDY     XCOUNT
         LDA     XCOUNT
         LDY     XCOUNT
         LDA     @LOBFR, Y
         LDY     XPTR
         STA     @LOSRCE, Y ;and same for rightmost byte of row
         INC     XCOUNT

         INC     YLOC       ;go down 1 raster on the screen
         INC     YCOUNT

         LDA     YCOUNT    ;count number of rows drawn
         CMP     NUMLINS    ;done when sixteen rows are drawn
         BCS     DJFINI
         JMP     NXTLIN

DJFINI  RTS                ;loop until draw sixteen rows
                       ;done !!!

JOBPOS  .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C
          .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C
          .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C
          .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C
          .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C
          .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C
          .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C
          .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C
          .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C
          .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C
          .BYTE    0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C, 0, 2, 4, 6, 8, 0A, 0C

YTABLLO .BYTE    0, 0, 0, 0, 0, 0, 0, 80, 80, 80, 80, 80, 80, 80, 80, 0, 0, 0, 0, 0, 0, 0, 0
          .BYTE    80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 0, 0, 0, 0, 0, 0, 0, 0, 80, 80, 80, 80
          .BYTE    0, 0, 0, 0, 0, 0, 0, 80, 80, 80, 80, 80, 80, 80, 28, 28, 28, 28, 28, 28, 28, 28
          .BYTE    OAS, OAS, OAS, OAS, OAS, OAS, OAS, OAS, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28, OAS, OAS
          .BYTE    OAS, OAS, OAS, OAS, OAS, OAS, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28, OAS, OAS, OAS, OAS
          .BYTE    OAS, OAS, OAS, OAS, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28, OAS, OAS, OAS, OAS
          .BYTE    OAS, OAS, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50
          .BYTE    50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50
          .BYTE    50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50
          .BYTE    50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50, 50
```

Figure 3 (continued)

```

YTABLH2 .BYTE    20,24,28,2C,30,34,38,3C,20,24,28,2C,30,34,38,3C
        .BYTE    21,25,29,2D,31,35,39,3D,21,25,29,2D,31,35,39,3D
        .BYTE    22,26,2A,2E,32,36,3A,3E,22,26,2A,2E,32,36,3A,3E
        .BYTE    23,27,2B,2F,33,37,3B,3F,23,27,2B,2F,33,37,3B,3F
        .BYTE    20,24,28,2C,30,34,38,3C,20,24,28,2C,30,34,38,3C
        .BYTE    21,25,29,2D,31,35,39,3D,21,25,29,2D,31,35,39,3D
        .BYTE    22,26,2A,2E,32,36,3A,3E,22,26,2A,2E,32,36,3A,3E
        .BYTE    23,27,2B,2F,33,37,3B,3F,23,27,2B,2F,33,37,3B,3F
        .BYTE    20,24,28,2C,30,34,38,3C,20,24,28,2C,30,34,38,3C
        .BYTE    21,25,29,2D,31,35,39,3D,21,25,29,2D,31,35,39,3D
        .BYTE    22,26,2A,2E,32,36,3A,3E,22,26,2A,2E,32,36,3A,3E
        .BYTE    23,27,2B,2F,33,37,3B,3F,23,27,2B,2F,33,37,3B,3F

YTABLH4 .BYTE    40,44,48,4C,50,54,58,5C,40,44,48,4C,50,54,58,5C
        .BYTE    41,45,49,4D,51,55,59,5D,41,45,49,4D,51,55,59,5D
        .BYTE    42,46,4A,4E,52,56,5A,5E,42,46,4A,4E,52,56,5A,5E
        .BYTE    43,47,4B,4F,53,57,5B,5F,43,47,4B,4F,53,57,5B,5F
        .BYTE    40,44,48,4C,50,54,58,5C,40,44,48,4C,50,54,58,5C
        .BYTE    41,45,49,4D,51,55,59,5D,41,45,49,4D,51,55,59,5D
        .BYTE    42,46,4A,4E,52,56,5A,5E,42,46,4A,4E,52,56,5A,5E
        .BYTE    43,47,4B,4F,53,57,5B,5F,43,47,4B,4F,53,57,5B,5F
        .BYTE    40,44,48,4C,50,54,58,5C,40,44,48,4C,50,54,58,5C
        .BYTE    41,45,49,4D,51,55,59,5D,41,45,49,4D,51,55,59,5D
        .BYTE    42,46,4A,4E,52,56,5A,5E,42,46,4A,4E,52,56,5A,5E
        .BYTE    43,47,4B,4F,53,57,5B,5F,43,47,4B,4F,53,57,5B,5F

XTABLO  .BYTE    0,0,0,0,0,0,1,1,1,1,1,1,1,1,2,2,2,2,2,2,3,3,3,3,3,3,4,4,4,4
        .BYTE    4,4,4,4,5,5,5,5,5,5,5,5,6,6,6,6,6,6,7,7,7,7,7,7,8,8,8,8,8,8
        .BYTE    9,9,9,9,9,9,9,9,0A,0A,0A,0A,0A,0A,0A,0B,0B,0B,0B,0B,0B,0B
        .BYTE    0C,0C,0C,0C,0C,0C,0D,0D,0D,0D,0D,0E,0E,0E,0E,0E,0E
        .BYTE    0F,0F,0F,0F,0F,0F,10,10,10,10,10,10,11,11,11,11,11,11
        .BYTE    12,12,12,12,12,12,12,13,13,13,13,13,13,14,14,14,14,14,14
        .BYTE    15,15,15,15,15,15,15,16,16,16,16,16,16,17,17,17,17,17,17
        .BYTE    18,18,18,18,18,18,18,19,19,19,19,19,19,1A,1A,1A,1A,1A,1A
        .BYTE    1B,1B,1B,1B,1B,1B,1B,1C,1C,1C,1C,1C,1C,1D,1D,1D,1D,1D,1D
        .BYTE    1E,1E,1E,1E,1E,1E,1E,1F,1F,1F,1F,1F,1F,20,20,20,20,20,20
        .BYTE    21,21,21,21,21,21,21,22,22,22,22,22,22,23,23,23,23,23,23
        .BYTE    24,24,24,24

XTABHI  .BYTE    24,24,24,25,25,25,25,25,25
        .BYTE    26,26,26,26,26,26,27,27,27,27,27,27
    
```

Figure 4

```

JOBLEFT LDX      JOBNUM
        LDA      JCLR, X
        STA      HIBFR
        LDA      JCLR+1, X
        STA      HIBFR+1
        LDA      YPOS, X
        STA      YLOC
        DEC      XPOS, X
        LDA      XPOS, X
        TAX
        LDA      XTABLO, X
        STA      XLOC
        LDY      JOBPOS, X
        LDA      JOBADR, Y
        STA      LOBFR
        LDA      JOBADR+1, Y
        STA      LOBFR+1
        LDA      #10          ;draw sixteen rasters for horizontal movement
        JMP      DRWJOB

JOBUP   LDX      JOBNUM
        LDA      JCLR, X
        STA      HIBFR
        LDA      JCLR+1, X
        STA      HIBFR+1
        LDA      YPOS, X
        BNE      $05
        LDA      #0C0
        STA      YPOS, X
$05     DEC      YPOS, X
        LDA      YPOS, X
        STA      YLOC
        LDA      XPOS, X
        TAX
        LDA      XTABLO, X
        STA      XLOC
        LDY      JOBPOS, X
        LDA      JOBADR, Y
        STA      LOBFR
        LDA      JOBADR+1, Y
        STA      LOBFR+1
        LDA      #11          ;draw seventeen rasters for vertical movement!!
        JMP      DRWJOB
    
```

### /// Forever Conference

The Apple /// Forever Conference will be held sometime next fall in Chicago. Third Apple Users (TAU) has graciously volunteered to host the affair. If you are interested in attending please contact the TAU conference chairperson. Please include a list of topics you would like included or excluded from the agenda and any remarks you may have regarding the conference. Respond to:

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At two for \$12.50 or \$14.95 each, ON THREE's DOM's represent a real convenience bargain, saving the time of typing in programs and offering error-free files. See our order list/price form elsewhere in this issue.

# Printer Selection and Set-up

dan martin

Would you like to know what printer and related equipment to purchase? Perhaps you have already bought a printer but don't know how to set it up. Then brace yourself for both a learning and, at times, frustrating experience. You'll need patience to successfully set up your printer, but the pains are worthwhile. Not only will you learn how to use the printer in a wide variety of applications, you will also learn more about the Apple ///.

The reason buying and setting up a printer can be difficult is that there are so many options and combinations of options to sift through in the process. The only sensible way to handle it is to know what you want.

This overview explains the available options, helps you review your needs and constraints (if you already own equipment or software) and guides you through a methodology for making necessary decisions, gathering data and installing the printer. If specific instructions are omitted, sources of more detailed information are provided.

The key variables in this printer selection and installation equation are: the printer; the interfacing method; the physical interface; the device driver; the application software; and printer features, with corresponding command sets.

## Printers

A printer is a peripheral device. It takes text and graphics information from your Apple ///, positions to the proper area of the paper and legibly imprints the information on it.

There are many specifications for a printer which describe how it performs. Comparing these specifications between printers helps you purchase the best machine for your needs. If you already own a printer, knowing the specifications will help you install it properly.

Speed of the printer is usually stated

in characters per second (CPS). If you do a lot of printing and your time is precious, you should consider buying (and paying more money for) a fast printer of 180 CPS or more. If you print infrequently, then a more modest 120 CPS may be adequate.

Another important factor is print quality. Dot matrix printers print characters made of a matrix of easily discernible, distinct small dots. Letter quality printers print with a daisy wheel, much as a typewriter does, and therefore cannot produce graphics. Ink-jet printers form characters with a matrix of small dots by squirting ink onto the paper, thereby blending the dots together and forming a more complete, less fragmented character. And now /// owners have the option of using the Apple LaserWriter laser printer, which works as a typesetting or Xerox machine does and produces excellent quality print, but it is quite expensive.

Analyze your specific needs carefully and don't buy until you are sure the printer you select meets all of your needs with a satisfactory balance. Your time is valuable, so invest it wisely in selecting your new helper.

## Interfacing Methods

Now you know the kind of printer you want and need. One of the first questions the salesperson will ask is, "Do you want a serial or parallel interface?" But, depending on the printer you select, you may not have this option. Does it matter?

Before answering, you need to put some things into perspective. Although there are very specific and detailed technical differences between parallel and serial interfaces, most of them are insignificant in terms of their true utility to the user. Let's examine the important differences.

Serial interfaces pump the characters to your printer through a single lane

highway to your printer. Parallel interfaces are analogous to multi-laned freeways. If your printer use involves exceptionally heavy traffic, then the parallel interface is potentially more useful to you. Keep in mind, however, that few printers print fast enough to outrun a serial interface.

Also, it is easier to find long serial cables than parallel ones, so if you must have your printer far away (say more than 4 feet) from your computer, then serial may be a better choice for you.

But don't base your printer choice on interface alone. Select the features you want and need first, then decide about interfacing if options are available.

## Physical Interface Methods

Physical interfaces to the Apple /// cleanly divide into serial and parallel options. The one you need depends on whether you purchased a serial or parallel printer.

If you opted for a serial printer, you probably need nothing more than the proper cable to connect your Apple /// to the printer via the RS-232 port on the back of your computer. But if you are using the RS-232 port *already*, as you would be if you have a modem for dialing into CompuServe, ///'s Company, (804) 747-8752, *ON THREE* OnLine, (805) 644-1055, or other Bulletin Board Systems (BBS's), then you have a choice to make. (Incidentally, ///'s Company has the most comprehensive data base of printer cabling diagrams available. If you are having cabling problems, check it out!) You can unplug the modem and replace it with the printer cable each time you wish to print (a weary and bothersome task). If you have competing uses such as this for your RS-232 port, save enormous aggravation by adding a serial interface card.

Several are available: Serial Card ///, designed specifically for the ///;



Super Serial Card, which is usable in both the Apple II and the III; and other Apple II cards which will physically fit into the III's expansion slots, which are much shorter than Apple II slots, and which have a driver written explicitly for use with the Apple III (see driver section below). Sun Systems Remarketing, P.O. Box 4059, Logan, UT 84321, (800) 821-3221, has several options available on this front and I would strongly recommend dealing with them for your interfacing needs. It is very hard to find dealers that know the Apple III computer exists. Another dealer with some printer interfacing options is Ron Wallace, at AIM, in Illinois, (800) DIAL-AIM.

The RS-323 switch box may be used instead of a serial card. Contact Frank Moore, at Pair Software, 3201 Murchison Way, Carmichael, CA 95608, (916) 485-6525, for more information on its availability.

If you are going the parallel interface route, there are several options as well. This method inherently avoids competition for the III's serial port. There is the Universal Parallel Interface Card (UPIC) designed by Apple for the III, which is probably the lowest-priced option for the parallel interface for the III. It supports a wide variety of printers

very well in both text, its strong suit, and graphics.

Another excellent alternative is the PKASO/U parallel interface card for the Apple III from Interactive Structures, 218 Great Valley Parkway, Malvern, PA 19355, (215) 644-8877. Interactive Structures still actively supports its product for the Apple III and offers in the PKASO/U the most powerful printer board available for the III. It is configurable for any printer (present or future) and is well supported with driver software.

All of the above alternatives to using only the Apple III serial port, RS-232, are cards that you plug in by opening the top of the Apple III housing. Follow manufacturer's instructions religiously regarding installation and use.

### Printer Device Drivers

A device is any piece of equipment which sends, receives or stores data for the programs running on your Apple III. Some examples are the printer, keyboard, monitor, disk, mouse, joystick and modem.

A device driver, then, is a special piece of software which bridges the gap between your application program (running under the supervision of SOS)

and the device. It is written in assembler language and deals with the core aspects of controlling and transferring data through the interfaces (connectors, cables and printed circuit cards) to your devices.

Every device must have a corresponding driver in the III's SOS.DRIVER file so it may process the commands sent by the central processing unit (CPU). Devices without drivers (such as an Apple II card not offered by a manufacturer for the III) may fit into the slots of the III, but will not run on the III without the corresponding device driver. If you have a printer that is definitely compatible with the Apple III and you can't make it print, the program you're using probably doesn't have the proper driver installed or configured, especially if the device does work with other programs.

All of the device drivers on a program disk are bundled together in a file called SOS.DRIVER. When you boot the Apple III, only those devices with drivers in the SOS.DRIVER file will be recognized by SOS and your application, even though others may be electrically connected.

There are many drivers with the name .PRINTER, .PARPRINTER or .SERPRINTER. Make sure the driver

## Products & Services Available for the Apple III Current ON THREE Price List

| Product                                      | Price      | S/H    | Product   | Price     | S/H     | Product   | Price      | S/H    |
|--|------------|--------|---|-----------|---------|---|------------|--------|
| <b>Software</b>                              |            |        | <b>Hardware</b>   |           |         | <b>Other Services and Products</b>  |            |        |
| Disk of the Month                            | \$14.95    | \$2.00 | ON THREE O'Clock  | \$39.95   | \$3.00  | 512K or 256K Upgrade installation   | \$50.00    |        |
| Two or more DOM's                            | \$12.50 ea | \$4.00 | Game Card III +   | \$39.95   | \$2.00  | (by appointment only)   |            |        |
| III E-Z Pieces                               | \$135.00   | \$3.50 | Apple II/e Mouse and Interface card   |           |         | 12-issue ON THREE subscription  | \$40.00    |        |
| Apple Fortran III (requires Pascal)          | \$99.00    | \$5.00 | (Use with Draw ON and Desktop Manager)  | \$160.00  | \$5.00  | ON THREE back issues  | \$5.00 ea. |        |
| Selector III program switching utility       | \$99.00    | \$7.00 | Apple III UniDisk III.5 (800K 3 1/2" disk drive w/ interface, driver & documentation)                             | \$499.00  | \$10.00 | ON THREE magazine binder  | \$14.95    | \$3.00 |
| Lazarus III file recovery utility            | \$49.95    | \$2.00 | MicroSci A3 140K Disk Drive +   | \$225.00  | \$6.50  | Dust Cover for Apple III and Monitor III                                    | \$11.95    | \$2.00 |
| Unprotect Driver                             | \$19.95    | \$2.00 | MicroSci A143 560K Disk Drive +   | \$325.00  | \$6.50  | Dust Cover as above plus ProFile  | \$12.95    | \$2.00 |
| Desktop Manager                              | \$129.00   | \$6.00 | Reconditioned 512K Apple III w/monitor III  | \$1048.00 | \$50.00 | I ♥ My Apple III T-Shirts sm, med, lg, x-lg yellow, blue, white, beige      | \$9.95     | \$3.00 |
| Desktop Manager/ON THREE O'clock combination | \$163.95   | \$8.00 | 256K Apple III w/monitor  | \$749.00  | \$50.00 | I ♥ My Apple III Sweat Shirts sm, med, lg, x-lg yellow, blue, white, silver | \$15.95    | \$3.00 |
| Disk Manager* (utilities)                    | \$44.95    | \$3.00 | 512K Memory Upgrade, 256 to 512K (Reim \$324 and \$25 cash or \$35 credit is rebated when old board is returned.) | \$289.00  | \$10.00 | I ♥ My Apple III Caps   | \$3.95     | \$2.00 |
| Grafix Manager**                             | \$49.95    | \$3.00 | 256K Memory Upgrade, 128 to 256K, no rebate   | \$150.00  | \$10.00 |   |            |        |
| Macro Manager*                               | \$44.95    | \$3.00 |   |           |         |   |            |        |
| ASCII Conversion Table*                      | \$9.95     | \$3.00 |   |           |         |   |            |        |
| Draw ON III                                  | \$179.00   | \$5.00 |   |           |         |   |            |        |
| Draw ON III Graphics Tablet Version          | \$229.00   | \$5.00 |   |           |         |   |            |        |
| Fruit Machine (slot machine game)            | \$11.95    | \$2.00 |   |           |         |   |            |        |
| Card Machine (blackjack game)                | \$19.95    | \$2.00 |   |           |         |   |            |        |
| Fruit Machine/Card Machine combination       | \$29.95    | \$3.00 |   |           |         |   |            |        |
| Sandman* (arcade game)                       | \$19.95    | \$2.00 |   |           |         |   |            |        |
| Crossword scrambler                          | \$9.95     | \$2.00 |   |           |         |   |            |        |
| UniDisk III.5 disk and documentation only    | \$50.00    | \$3.00 |   |           |         |   |            |        |
| Sider 10, 20 mb                              |            |        |   |           |         |   |            |        |
| Driver and documentation only                | \$100.00   | \$3.00 |   |           |         |   |            |        |

To order, call Toll-Free (800) 443-8877 / in California (805) 644-3514 or write:

ON THREE, Inc. Order Dept.  
Post Office Box 3825  
Ventura, CA 93006

Visa, Mastercard, American Express accepted. 3% Surcharge on American Express orders.

Items returned without prior authorization subject to 15% restocking charge.

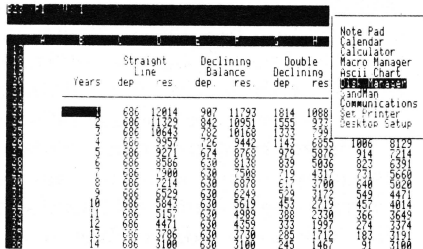
California Residents add 6% sales tax.

ON THREE Presents . . .

# The Desktop Manager™

by Rob Turner and Bob Consorti

- The most complete and sophisticated desk accessory program ever written!
- For once and for all, unclutter your desk the Desktop Manager way!



Desktop Manager main menu, shown overriding a spreadsheet.

Running in the background, the Desktop Manager places all of the desk accessory utilities you ever wanted . . . Appointment Calendar . . . Notepad . . . Calculator . . . Disk Utilities . . . Macros . . . Graphics . . . Games . . . and more, into each program you own, just like they were part of it. Instantly available from /// E-Z Pieces, VisiCalc, AppleWriter, BPI, and all other programs, the Desktop Manager will clear your desk pronto.

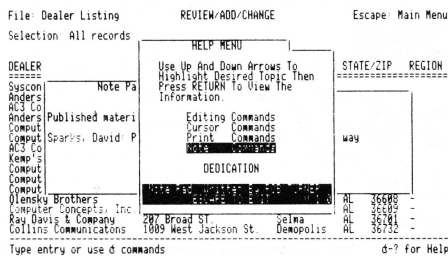
What is "Running in the background?" It is simply a program that, unlike most, "hides" from you. You are never aware of its presence, but when you need it, it is "Johnny on the spot," ready to serve you at the touch of a key.

While word processing, have you ever needed to multiply two numbers? Perturbed because you have a few thousand dollars worth of computer equipment at your fingertips and still can't multiply two figures when you want to? Or, you're entering data in a spreadsheet and can't find either a scratchpad or a pen to jot down a note. While you're digging under piles of paperwork, you probably mutter something unprintable under your breath.

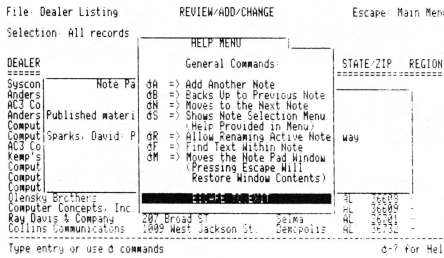
Perhaps you're entering text in a word processor document and decide it's time to do your first file save, but you can't remember if the file name you want to use already exists. Too bad the word processor has no provision to catalog a disk. Similarly, you may need to save a file and discover that you don't have a disk with enough room left on it. You have

plenty of blank, unformatted disks. If you exit the program to use the System Utilities to format a disk, all of your work will be lost.

Does this describe your situation? How about clearing your desk of that old-fashioned calculator, the pens and paper, your appointment calendar and increase your productivity? The Desktop Manager from ON THREE will do these things and a great deal more. From within any program, a keypress will override your current application and display a window into the Desktop Manager. At this point you have the entire facilities of the Desktop Manager at your beck and call. You can pause whatever you are presently doing, and select any of the following modules:



NotePad main help menu, superimposed on a NotePad memo and a database.

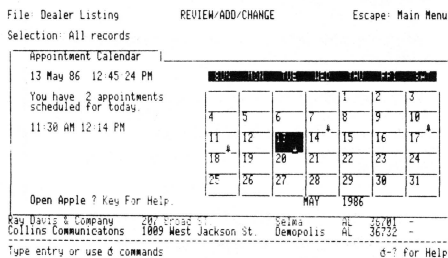


NotePad secondary help menu, superimposed on a NotePad memo and a database.

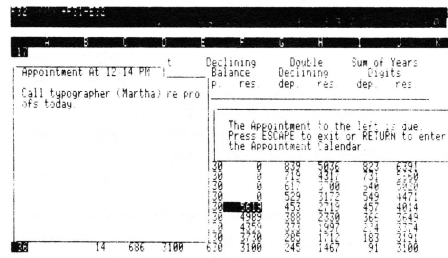
**The Note Pad:** A powerful and easy to use work processor. It lets you jot down notes for quick reference while you are entering data or for later viewing. No need to type in a file name, The Notepad does it for you, automatically. Multiple pages per note, plus the sophisticated features of word-wrap, automatic repagination, copying and more gives you the power of a word processor—available in an instant—from whatever program you are using. Instant on-line help screens (a feature of all Desktop Manager modules) make The Notepad easier to use than many word processors.

### The Appointment Calendar:

A time scheduling productivity tool that allows you to set multiple appointments for any day through December 31st, 1999. These "Appointment Events" automatically notify you of your next appointment. From within any program, no matter what you are doing, the Appointment Calendar will pop up on your screen and display your next appointment. The day and week at a glance features show the appointments for a single day or an entire week. It also provides an easy way to set your system clock. Full help screens compliment this handy and easy to use perpetual calendar.



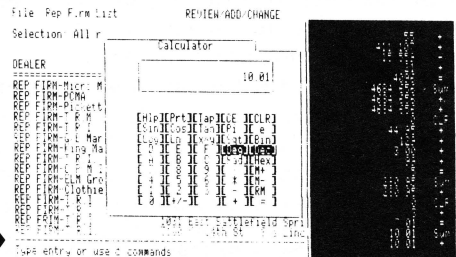
Appointment Calendar primary display.



Appointment Calendar event, showing an appointment that has just come due.

## The Calculator:

An extremely powerful electronic workhorse. Full 16-digit accuracy and multiple functions like: SIN, COS, TAN, LOG's, natural LOG's, x to a power, square roots and more. In addition to the basic add, subtract multiply and divide, The Calculator features e, pi, degrees and radians, memory, base conversions from decimal to hex or binary and back again, a simulated scrolling paper tape, hardcopy printing and of course, on-line help screens.



The Calculator, with paper tape showing last calculations. →

The basic **Desktop Manager** comes complete with all the above features and more! For the first time, **Desktop Manager** lets you use a mouse from within any program, even those not designed for a mouse. You will be able to use the mouse to move the cursor and the mouse button doubles as the ESCAPE or RETURN key. The **Desktop Manager** also offers the ClipBoard for information transfer. With the ClipBoard, you can transfer information from one screen or program to another. Say you are using the Calculator to do some calculations and want to transfer the result into your word processor. You can simply cut from the calculator and paste it into your program. Likewise, you can move an entire section of text from your program to the notepad or vice-versa.

In addition, if you are running with Selector /// or Catalyst, you can also transfer directly from one application to another. After you have used the

ClipBoard to transfer some information, you can return to your previous application by simply pressing Escape, and the cursor will even be exactly where you left it.

With our no-nonsense installation program, a few simple keypresses will quickly install the **Desktop Manager** on all of your application programs. No need to use the System Configuration Program, Desktop Manager does it all for you, and automatically! All **Desktop Manager** Modules have movable windows that can be placed anywhere on the screen that they will fit.

The complete package includes all of the features described above and a 110 page User's Guide that shows clearly how to use each function of the various **Desktop Manager** modules. Priced at only \$129 plus \$6 shipping, the **Desktop Manager** is the best thing to happen to the Apple /// in a long, long time.

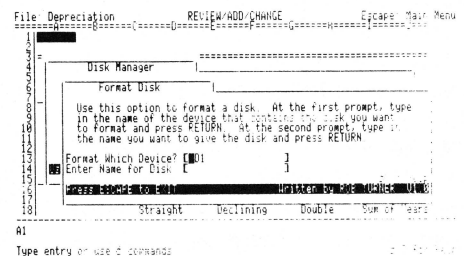
## Disk Manager:™

Provides the most frequently used features of the Apple /// System Utilities program. Formatting disks, listing, copying, deleting and renaming files and more are all available, at the touch of a button. Never again will you have to lose data when you need to exit a program to format a blank disk. On-line help screens and standard **Desktop Manager** "Ease of use" makes the \$44.95 (and \$3 shipping) price a steal.

## Optional Desktop Manager Modules Available Now!



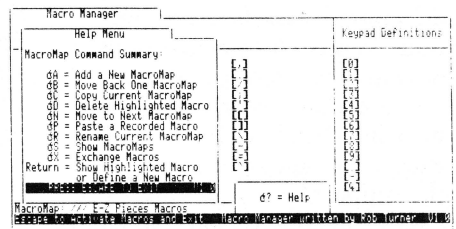
Main menu of the Disk Manager



"Format a Disk" option of the Disk Manager

## Macro Manager:™

Allows you to define a single keypress as a series of keystrokes to be played back at your command. Our innovative Record Macro mode lets you record a series of keystrokes—over 2000, if you want—right while you type them in response to prompts, etc., in an applications program. After you have finished choosing from your applications menu, you can go right back to the Macro Manager and assign the previously recorded keystrokes to a single macro definition. Up to 50 different definitions can be assigned to a single macro set. Each set of macros is called a MacroMap™ and over 200 different MacroMaps, which can be modified with additions and deletions, etc., can be selected from an easy to use menu. The Macro Manager allows you to copy macros from one key to another and to exchange or re-assign macro keystrokes. All of this and more for only \$44.95 plus \$3 shipping.



The Macro Manager's help menu, displayed over a MacroMap™

## ASCII Chart:

Lists, in an easy to understand table, the decimal and hexadecimal values for all ASCII characters. A second screen features a keypress table that shows exactly which keys to press for different ASCII codes. The keypress table can be a lifesaver when you need to know what commands to send to a printer, or to an applications program, to enable different printing modes such as bold, italic, compressed print, etc. Only \$9.95 plus \$3 shipping. As an extra bonus, the source code is included on the disk.

## Mr. SandMan:

A fast-moving, multi-level, full-color arcade game that you can play at any time. As a **Desktop Manager** background module, whenever you need a break from the tedium of entering data into your present application, you can instantly "take five" to team Mr. SandMan up with the wandering WOZ and eat up those nasty JOBS in this challenging and amusing game. For only \$29.95 and \$3 shipping, you will receive both the **Desktop Manager** and stand-alone versions. The stand-alone version allows you to play Mr.SandMan even if you don't have the **Desktop Manager**.

## Available Now!

### Graphics Manager™ and Color Graphics Manager™

Send graphic images you create with any Apple /// or Apple //e program to your printer. Insert a picture in the middle of your word processing document at any point, in any size with Graphics Manager's automatic rotation and image enlarging/shrinking features. Layout newsletters, combining text and graphics on the same page. Create a personalized letterhead with Draw ON and use the Graphics Manager to merge it with your word processing document. The Color Graphics Manager supports the ImageWriter II, IDS Color Prism, Epson JX and the IBM PC Color Printer and works with any interface card and graphics-compatible printer.

The **Desktop Manager** requires an Apple /// with 256K or 512K of memory and an external disk drive of any type or capacity. The Appointment Event feature requires an **ON THREE O'Clock**, an Apple Clock or compatible Apple /// dock chip. The **Desktop Manager** uses between 32 and 40K of memory.

- Desktop Manager** . . . . . \$129.00 plus \$6 s/h
- Disk Manager** . . . . . \$44.95 plus \$3 s/h
- Macro Manager** . . . . . \$44.95 plus \$3 s/h
- ASCII Chart** . . . . . \$ 9.95 plus \$3 s/h
- Mr. Sandman** . . . . . \$29.95 plus \$3 s/h

you use is an appropriate one for the card/interface combination you selected. Also, be sure to install that driver in the SOS.DRIVER file on *all* your application programs if you use the floppy drives, and on your driver files under Catalyst or Selector if you use a hard disk or high capacity drive such as Profile, Quick-20, Sider, A143 and UniDisk 3.5. To do this, use the System Utilities' System Configuration Program (SCP) as described in the Owner's Guide.

## The Role Of Application Software

Ultimately, you will be using your printer with a software application such as Apple Writer, /// E-Z Pieces, VisiCalc, QuickFile or BPI Accounting. All programs have different methods of processing the information they compile or create so it will print. Some programs, such as Draw ON ///, are very particular about the printer configurations they support. If you are using your Apple /// for specialized purposes, be sure to review your application software for any specific printer requirements.

Apple Writer /// is one of the most tolerant printer-using programs. It is usable with any printer having an appropriate device driver. For that reason, it is one of the best application programs to use while installing and testing your printer. Apple Writer /// permits embedded commands to control the printer's behavior, whereas /// E-Z Pieces contains elaborate, user-friendly support for printers that must be carefully configured before that shiny new printer will do all it can for you.

The main point is that your application software can radically affect the way your printer behaves (or misbehaves), so you must be sure you follow all instructions for configuring the software to your printer. Some software may even make certain features of your printer unavailable to you due to a restriction on control codes that it transfers to the printer. For this reason, review your software manuals *before* buying your printer to avoid nasty surprises.

Remember, if you are experiencing problems of any sort while trying to print, the way your application software deals with printing material may be the culprit.

## Printer Features and Commands

In operating your printer, you must be aware of not only the features your printer supports but also the manner in which you command the printer to execute those features. Some examples of printer features are bold print, condensed print, double-striking, tab settings, page width, underlining and screen dumps.

Printers are usually controlled by a series of arcane command symbol strings. Although there are a lot of similarities from one manufacturer to another, they are by no means standard. What works for you may or may not work for someone else, unless they have a configuration identical to yours. The ultimate guide to printer command strings is the printer manual which came with the printer.

Commands are frequently initiated with control characters which rarely appear in normal text. The most frequent of these control characters used is the ASCII character 27, "Escape." For this reason, command strings to printers are often referred to as "escape sequences." These commands usually are either configured into your application software, as in /// E-Z Pieces, or embedded into your text, as in Apple Writer ///.


However, some interface cards become involved by having their own commands for printer control. The PKASO/U is the best example of such command translation/interception on the Apple ///. For more detailed information on how this works, read the information which accompanies the card.

Becoming knowledgeable about printer features and adept at printer commands require a moderate degree of learning and patience, but in the end you will be delighted with the results. Remember, when all else fails, read the manual!

## Summary

Though this has been only a brief introduction to the many facets and facts of life with your printer and your Apple ///, it offers you a foundation of knowledge about selecting, purchasing, installing, trouble-shooting and using your printer with the Apple ///. The /// is flexible, accommodating a wide spectrum of printers and options. While fewer options makes printer selection and installation easier in the short term,

it is ultimately less satisfying. Not many people, other than Apple /// owners, can attach the LaserWriter or Optical Disk Storage systems to a five-year-old computer without investing a sum greater than the machine's original cost.

If you are having difficulties, be patient. Address all the variables mentioned here and *ask for help*. ON THREE is connected to a vast Apple /// user community via its BBS, letters, HotLine and Apple /// User Group listings in the back of each issue. Use them. 

(Apple Pascal cont.)


following two lines:

```
gotoxy (0, 5);
```

```
writeln('Welcome to PUFFIN!');
```


Replace them with the lines of text in Figure 4. Begin immediately after the "page(output)" line.

The new material is a succession of formatted text lines which allow the user to review PUFFIN functions. Pressing any key clears the screen and presents you with the option menu. You should find something similar to this greeting routine a useful and attractive enhancement to any program.

As I said in the beginning, many of you own Apple II Pascal programs. If you find one that performs a function you like, it is easier to convert that program to use with the /// than to write an equivalent program from scratch. There is nothing hard or terrifying about converting programs to run on the Apple ///. Why not find a copy of PUFFIN and try the changes listed in this article? It could be the start of something great. 

(A-Maze-Ing cont.)

```
8040 PRINT"WHEN YOU EAT AN APPLE A M
      ESSAGE IS DISPLAYED IN THE CENT
      ER OF THE SCREEN.":PRINT"A MESS
      AGE IS ALSO DISPLAYED WHEN YOU
      RUN INTO A WALL."
8045 PRINT
8050 PRINT:PRINT"PLAY THE GAME A FEW
      TIMES WITH THE WALLS VISIBLE."
      :PRINT"THEN FOR A REAL CHALLENG
      E, PLAY THE GAME WITH INVISTBLE
      WALLS?":
8075 VPOS=22:PRINT TAB(10);"REMEMBER
      ESC WILL TERMINATE GAME":VPOS=
      18
8100 PRINT:PRINT:PRINT TAB(10);:INPU
      T"V FOR VISIBLE WALLS OR I FOR
      INVISTBLE WALLS ":A$
8150 IF A$="I" OR A$="i" THEN INVISI
      BLES="ON"
8200 RETURN
10000 A$=CHR$(KBD)
10100 ON KBD GOTO 10000
10200 RETURN:CONT
50000 WINDOW 40,8 TO 60,12:HOME:PRIN
      T"GAME IS OVER":IF CUMPOINTS=3
      6 THEN PRINT"YOU WIN"
50050 OFF KBD
50100 PRINT"PLAY AGAIN Y/N ";:GET A$
      :IF A$="Y" OR A$="y" THEN RUN:
      ELSE TEXT:HOME:END
```



# Macro Manager

*john r. sollman*

---

Macro Manager is one of the latest modules to be released for the Desktop Manager utility. (Graphics Manager and Color Graphics Manager are two other new releases.) Macro Manager costs \$44.95 and consists of a single-sided diskette containing three files: an updated DESKTOP.DRIVER (eight blocks larger), OPTIOND and MACRO.MAPS. Also included are 15 pages of documentation to insert in the three-ring binder which came with the Desktop Manager basic package.

Those of you who have installed other Desktop modules may find adding Macro Manager slightly more complicated because, in addition to copying the program files, you must replace the old Desktop driver on your boot diskettes with the new, expanded version provided on the Macro Manager diskette.

Those using the Quark Spooler must make sure the .SPOOL driver follows the .DESKTOPMANAGER driver in the SOS.DRIVER file, otherwise Desktop will not function. To do this, create and store a driver file named SPOOL.STUFF containing the spooler and spoolstatus drivers. Then, to update the .DESKTOPMANAGER driver, read in the DESKTOP.DRIVER file from the installation diskette, read in the SPOOL.STUFF driver file you created and regenerate the system back to the installation disk as DESKTOP.DRIVER. The installation program will install the Desktop and Spooler drivers as a module.

Since the diskette supplied with Macro Manager contains only the program files and the upgraded Desktop driver, you must copy the DESKTOP.DRIVER file from the Macro Manager diskette to the Desktop installation diskette. The installation diskette is then booted. You will be prompted to insert the Desktop Files diskette. Then, from

the menu, you select Option 3, "Remove Desktop Manager Driver." In response to the prompt, insert each disk from which the Desktop Manager Driver is to be removed. After the driver has been removed from all diskettes, select Option 2, "Add Desktop Manager Driver," from the installation menu. You are first prompted for the name of the volume which will contain the Desktop Files. Then the program prompts you to insert the disk(s) to which the Desktop Driver is to be added. That's all there is to it.

When booting a diskette on which Desktop is installed, the Desktop Driver must initialize before the boot process is completed. A box appears on the screen indicating which Desktop options are available and unavailable. (Macro Manager adds a few more seconds to this process.) Following the Desktop initialization, the normal booting process is complete.

Macro Manager permits creation of up to 244 Macro Maps of up to 2,000 keystrokes each. As with the Note Pad, Macro Manager comes with one blank Macro Map. A Macro Map is simply a structured note which lists the assignment to specific keys of up to 50 macros. As many as 244 different Macro Maps can be created, each unique to a specific program or purpose.

Figure 1 is an example of the Macro Map with two macros assigned.

In Macro Manager, the Open-Apple key is used in combination with other keys to issue commands and the Closed-Apple key is used in combination with another key on the typewriter keyboard to invoke macros. Macro sequences may also be assigned to any key on the numeric keypad, in which case the sequences are invoked by a simple keypress without using Closed-Apple.

There are two ways to create macros. The first method is to enter a Macro Map, select an empty key by using the up or down arrow, press RETURN to bring up the Macro Assignment Screen, type in your macro, and press CONTROL-RETURN to accept it. This is a good way to enter text items which can be invoked at a keypress.

The second way to create macros is to record the process as you press the keys. This is a better way to record commands which might not be remembered exactly if they were to be typed directly to the Macro Assignment Screen. To record a macro, first press CLOSED-APPLE-7. There will be a beep to indicate that the record feature is on. Thereafter, each keypress will produce an audible click, indicating that it is being recorded. When everything has been recorded, press CLOSED-APPLE-8. Another beep will be heard indicating that the record feature has been turned off.

Macros recorded in this manner are temporarily assigned to the letter P. They can be played back by pressing CLOSED-APPLE-P and are immediately available for use. Ordinarily, you will want to assign the recorded macros to a permanent key. To do this, invoke Macro Manager by pressing CLOSED-APPLE-4 if Direct Access is enabled, or by selecting it from the Desktop Main Menu. When the Macro Map appears, there will be a note in the lower right corner indicating that there is a recorded macro available for assignment. Using the up or down arrow keys, select the key to which the recorded macro is to be assigned and press OPEN-APPLE-P (for paste). A note will appear at the bottom of the screen confirming the key to which you are assigning the macro. Confirm the assignment by pressing RETURN.

Macro Manager is ideally suited to command-driven programs such as Apple Writer ///. Command sequences can be assigned a macro, and program execution can be considerably simplified and accelerated.

Using Macro Manager with Word Juggler presents a slightly different situation. In Word Juggler, the Closed-Apple key is used in combination with certain keys on the numeric keypad to invoke external procedures. In addition, the Closed-Apple is used as a strike-over key. The Closed Apple key temporarily puts Word Juggler into the "Replace" mode. (It defaults to the "Insert" mode.) Any key pressed while holding down Closed Apple replaces the character under the cursor.

When Desktop Manager is used with Word Juggler, the Closed Apple key in combination with another key will invoke a Desktop Manager function if one is assigned. If no Desktop function is assigned, the Word Juggler function will be executed. Therefore, if you want to call up the Word Juggler utilities, press CLOSED-APPLE simultaneously with the 1 on the numeric keypad. Desktop does not distinguish between

**Figure 1**

| Macro Manager                            |     |       |                    |
|--|-----|-------|--------------------|
| Solid Apple Definitions                  |     |       | Keypad Definitions |
| [A]                                      | [N] | [,]   | [0]                |
| [B]                                      | [O] | [.]   | [1]                |
| [C]                                      | [P] | [/]   | [2]                |
| [D]                                      | [Q] | [;]   | [3]                |
| [E]                                      | [R] | [']   | [4]                |
| [F]                                      | [S] | [[]   | [5]                |
| [G]                                      | [T] | [)]   | [6]                |
| [H]                                      | [U] | [\] 8 | [7]                |
| [I]                                      | [V] | [_] 8 | [8]                |
| [J]                                      | [W] | [=]   | [9]                |
| [K]                                      | [X] | [`] 7 | [.]                |
| [L]                                      | [Y] |       | [_]                |
| [M]                                      | [Z] |       | [ ]                |
| *? = Help                                |     |       |                    |
| MacroMap: First MacroMap                 |     |       |                    |
| Escape to Activate Macros and Exit.      |     |       |                    |
| Macro Manager written by Rob Turner V1.0 |     |       |                    |

the typewriter and numeric keypads as does Word Juggler. Therefore, unless the Desktop Direct Access feature has been disabled, instead of getting Word Juggler Utilities you will get the Note Pad.

Desktop without Macro Manager uses 1 through 6 in combination with Closed-Apple to invoke Desktop functions. These are associated with Direct Access

and may be disabled if desired. However, 7 and 8 in combination with the Closed-Apple key toggle the Macro Manager recording feature on and off. The use of these keys is not disabled when Direct Access is disabled. This produces a conflict with Word Juggler in that 7 and 8 on the numeric keypad in combination with Closed-Apple invoke the Lexicheck (spelling checker) function.

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This seemingly difficult problem has a simple solution. Press CLOSED-APPLE-7 to record a macro. Then press CLOSED-APPLE-7 on the numeric keypad to invoke Lexicheck. Then press CLOSED-APPLE-8 to end the recording. Proceed as normal with Lexicheck. After leaving Lexicheck, enter the Macro Map and assign the macro just recorded to a key you will not ordinarily be using with Closed-Apple. On the Macro Map in Figure 1, the number 7 appears after the ' key, and the number 8 appears after the / key. This represents the assignment of these keypresses as macros. Henceforth, to invoke Lexicheck or Word Guess Plus, press CLOSED-APPLE-' or CLOSED-APPLE- / respectively.

One other suggestion regarding Word Juggler. Disabling Direct Access does not disable the use of the Closed-Apple key to invoke macros. If macros are created for use in Word Juggler, you must forgo the Word Juggler application of Closed-Apple for the keys with macro assignments.

If you want to retain the Word Juggler application of Closed-Apple, select either a blank Macro Map or one with Lexicheck functions defined after you enter Word Juggler. You may also create a special Macro Map for a specific project, such as a term paper. In addition to the Lexicheck functions, you may define other macros to include recurring words which are hard to type. When editing and correcting the document being created, instead of using Closed-Apple, simply shift in and out of the "Replace" mode using the 7 key on the numeric keypad. One final note: in Word Juggler, it is *never* advisable to assign macros to the numeric keypad.

Contrary to the apparent complexity of the Macro Map structure, Macro Manager is quite easy to use. Open-Apple commands tend to be mnemonic, as in the other Desktop options reviewed to date. If you want to delete a single macro definition, simply call up the appropriate Macro Map, move the cursor to highlight the offending macro, press OPEN-APPLE-D, and the macro

is gone. Likewise, if you want to delete an entire Macro Map, press OPEN-APPLE-S to get the Macro Map Selection Menu, highlight the offending Macro Map, press OPEN-APPLE-D, and the Macro Map is deleted.

Perhaps you would like to add or copy a Macro Map while working within a given Macro Map. Pressing OPEN-APPLE-A brings up the add screen. Simply type the name of the new Macro Map and press RETURN. The new Macro Map is added and immediately available for use. Sometimes you will want to retain some macros already developed for use in another application. Instead of adding a new Macro Map, copy an existing one. To do this, simply select the Macro Map you wish to copy by using OPEN-APPLE-S (if you are not already there). When the Macro Map is displayed, press OPEN-APPLE-C. The copy screen appears and prompts you for a name for the new Macro Map. The copy is then created and available immediately for use. If you wish to rename the current

---

Macro Map, press OPEN-APPLE-R and type the new name.

When booting the system, Macro Manager loads the Macro Map last used. Word Juggler users will especially want to load a Macro Map with the Lexicheck functions defined if this was not the last Macro Map used. When entering other applications, simply invoke Macro Manager and select the Macro Map you wish to use.

Macro Manager has some interesting possibilities. In word processing programs which are command driven, macros can be set up to issue routine commands involving several keystrokes. Macros can also be set up to enter repetitive text. In this article, for example, I could have created a macro to type the string "Open-Apple-" each time I wanted to insert it into the text. If I had assigned this macro to the letter "O," I would have had to remember that my Closed-Apple rubout key would not function for this letter.

A great deal of my work involves creating highly technical material containing many words which do not readily lend themselves to keyboard entry. Try typing "psychological" or "population" repeatedly and you will understand what I mean. A special Macro Map can be prepared before text entry is begun, assigning repetitive and/or difficult strings to individual keys. Using the Paste feature of Desktop, the Macro Map with the assignments can then be pasted into a word processing document and printed out for reference. When the work is finished, the Macro Map may be deleted. The same can be done for text formatting commands. For example, the parameters of a text inset which changes in pitch from 10 to 12, changes in font style and changes in column width can be assigned to a single key. Then, instead of remembering all of those settings, simply press CLOSED-APPLE and the assigned key. The alternative in Word Juggler or any other program, of course, is to either block load material from files on disk or copy and edit work previously entered. In each case, several keystrokes are involved. Macro Manager does it with only one. As a matter of fact, instead of entering lengthy repetitive text as a macro, a file can be set up on disk and Macro Manager can

issue the commands to block load whenever and wherever you wish.

In VisiCalc or Advanced VisiCalc, Macro Manager also has some interesting applications. VisiCalc ignores system prefixes. Therefore, the first time a file is loaded the entire pathname must be entered. This pathname then becomes the default for any further loading or storing of files until it is changed by the user. Macro Manager is just the ticket for entering the initial load command. This is most easily done by recording the load command as it is entered in VisiCalc. After the macro has been assigned to a key, the VisiCalc load command can be executed with a single keypress.

Advanced VisiCalc has a sophisticated system of Keystroke Memory Sequences (macros) which can be chained together to perform numerous program functions. However, these sequences are not available until the VisiCalc file containing them is loaded. With Macro Manager, it is possible to have a set of standard macros ready for use at all times. These can even be used to help set up VisiCalc Keystroke Memory Sequences if desired.

For example, it is often necessary to look up the correct printer codes for certain functions, such as horizontal motion index, spacing and type font. With the printer codes on an available Macro Map, you can enter them in a VisiCalc Keystroke Memory Sequence by playing them out from the Macro Map. To do this correctly, the macro should not contain a carriage return at the end of the string because VisiCalc interprets the carriage return as the end of the sequence definition. If you wish to use the Macro Manager macro to enter a carriage return as a part of a VisiCalc Keystroke Memory Sequence, you must use R instead of the actual carriage return.

It is impossible to use a VisiCalc Keystroke Memory Sequence to invoke a Macro Manager macro, though this would be a great space saver if it could be done. When you hit the defined macro key while defining the VisiCalc Keystroke Memory Sequence, Macro Manager simply plays the contents of the macro into the sequence itself. The VisiCalc Keystroke Memory Sequence

will then play out the macro directly, rather than invoke it from Macro Manager. However, Macro Manager will invoke VisiCalc Keystroke Memory Sequences. For some applications, Macro Manager might be a bit easier to use than the VisiCalc Keystroke Memory Sequence. A single VisiCalc Keystroke Memory Sequence is limited to 123 keystrokes, while Macro Manager can provide a whopping 2,000 keystrokes with a single keypress! Chaining of Keystroke Memory Sequences in VisiCalc will overcome the length limitation. However, it is somewhat difficult later to review a given chained sequence to discover its contents. With Macro Manager, the entire sequence can be viewed at one time.

The uses of Macro Manager in a communications program are obvious. In a program which does not support its own macros, such as Access ///, Macro Manager can send autodial strings, passwords, logon strings and system commands. If you have a Hayes Smartmodem, the string ATDT18056-441055 [Ctrl-M] will dial a very useful phone number. (Control-M is ASCII for Carriage Return.) Macro Manager is not interactive, however. It cannot send a string, wait for a specific response or a time out, and then send another string.

In a data base application, such as Keystroke, Macro Manager can enter strings of recurring information, such as ZIP Codes or names of cities. Most data base applications let you set default values or carry forward the previous entry to the next record. If the default information is not applicable, the correct data must be entered from the keyboard. Macro Manager can take care of all that for you, without making typographical errors!

In the brief time I have had to experiment with Macro Manager, I have not been able to do more than a mere cursory review of its many and varied possibilities. The things which can be done with this utility are limited only by the imagination. For the price of \$44.95, an owner of Desktop Manager can hardly afford to be without it.



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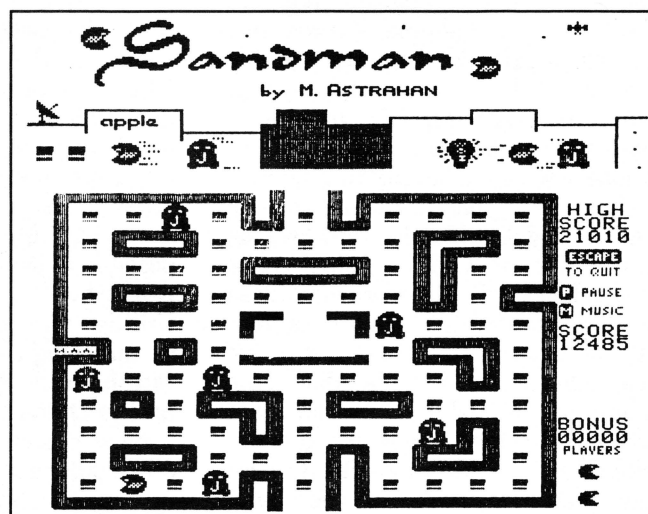
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# Selector ///

david ottalini

*Selector ///*, the program switching utility from *ON THREE*, is an excellent, easy-to-use program that will work with most Apple /// programs (Word Juggler is the most notable exception). It will considerably simplify your computer life, making it easy to switch from one program to another without having to reboot.

Selector /// was designed for use with a hard disk like the 5MB ProFile, the Sider or CMC's 20MB hard disks. But it will also work equally as well with the new 800K UniDisk from Apple Computer. This disk drive uses 3.5-inch hard-shelled disks (the same as the Mac uses) and are available in both single and double-sided versions (although like its 5.25-inch brethren, you can use the single-sided disk as a double-sided one. And there's no write-protect notch to punch out.)

Many of you might see this drive as an ideal back-up system for your hard disk. Holding 800K of information, it can save you a considerable number of disks, not to mention time, when you back-up the data from your hard disk.

But for folks like me, the UniDisk has become my "hard disk" and I've found that Selector is ideally suited to work with it. The purpose of this article is to discuss how you can use Selector to get the most out of your UniDisk while making your Apple /// think it really has what is literally an unlimited hard drive working for it.

## Getting Started

First of all, you'll need the UniDisk driver from *ON THREE*. Install it like any other driver in your *SOS.DRIVER* file and rename .U1 to ".Profile". Connect the UniDisk according to *ON THREE*'s instructions and format a few 3.5-inch disks using your System Utilities program. **Important:** Give every disk the same volume name (like /P or something similar). Do **not** use /// E-Z Pieces to format

your disks. It does not work properly with large disks.

You are now ready for Selector ///. It is self-installing, so after making copies of the three supplied disks (they are unprotected), follow the instructions in the manual. Selector will load your 3.5-inch disk with all the appropriate Language and Program files and subdirectories, as well as the *SOS.Menu* file which makes it possible to switch from one program to another. You will also load System Utilities onto your disk automatically by following the prompts.

## Putting Your Programs on the UniDisk

Now comes decision time. With only 800K to start with, you're down to considerably less space on your 3.5-inch UniDisk with Selector's installed files. You'll have to make some decisions about what programs you want on the disk. You may install only one program if you wish (beyond System Utilities). Selector /// does not care. Or you can add any number up to the space available on the disk.

My first disk, for example has ///E-Z Pieces, Apple Writer 4.0, Apple Speller ///, Backup /// and Business Basic 1.23. I have placed the entire Pascal Development System on another disk and Access /// with a number of telecom files on another. A fourth has /// E-Z Pieces again, along with all my bibliography and data base working files. All the disks are named /P, the name of the volume Selector looks for when I'm ready to switch programs. You need not even include the *SOS.Menu* file if you don't care to, since it's on the Selector Start Up disk and you can access it that way if you wish. You will be prompted the first time just as you were when booting Selector the very first time. But from then on, until you reboot or turn your Apple /// off, the program will always look to .D1 for the *SOS.Menu* file.

My point is that with your system set up as described, Selector does not know it is working with an 800K UniDisk. Because every disk has a Volume name of /P (in my case), it simply switches between programs as you desire. All you have to do is note what programs are on a particular disk and change them as you like to access the programs you want. You will still have to make sure the Selector Start Up disk's *SOS.DRIVER* file has all the drivers you need though, since it cannot dynamically load drivers like Catalyst.

By the way, if you are using Apple Writer 4.0 (the unprotected version is also called "Super Apple Writer") like I am, you can save all your appropriate files to the UniDisk. Follow the instructions to run the WPL program to place the "Help" WPL file on your Start Up disk and that's all you need. The program will automatically look for *Sys.Prt* and *Sys.Tab* on the UniDisk in the appropriate subdirectory. And since Selector remembers that pathway as your assigned prefix, you could also place any WPL programs you use extensively in the /P/Programs/AppleWriter3/ subdirectory and execute them by typing [P]doXXX. You will have to follow the Selector manual instructions to load the protected versions of Apple Writer, as well as *VisiCalc* and *Advanced VisiCalc*.

I would also suggest that you might want to have System Utilities and Backup /// on all your disks, simply for ease of use (you won't have to switch disks that way).

Once you have installed all the programs you want to on a particular 800K disk, you can use System Utilities to delete all the other Selector-installed files. You won't need them and they take up valuable space. If you decide you need to install another program on the disk at a later time,

look in the back of the Selector /// manual for information on the pathnames for particular programs or how to install a program not listed.

The only real negative in all this is that since I am using a 256K Apple /// plus, adding Selector with its larger SOS.DRIVER file takes up more memory than if I had booted the individual programs themselves. This means, for example, that I only have about 125K to work with in ///E-Z Pieces when it is loaded from Selector. I am able to manage at this point (by using my RAM disk for quick storage), but if you have fairly large files you may want to consider upgrading your /// to 512K to provide maximum flexibility.

### Emulation and RAM Disks

I should also mention at this point that Selector will *not* be able to load your Titan /// plus //e Emulation disk. It can load any other 48K-based Emulation disk but not the Titan program. *ON THREE's* publisher Bob Consorti says Titan refused to release the information needed so that Selector could be programmed to do the installation, so in this case we are stuck. Thus, if you have the Titan cards, I would recommend you simply delete the Apple ][ installation

files and reap more disk space.

And while you won't have access to the /// plus //e Emulation from Selector, there is a major benefit to having the Titan cards in your /// or the *ON THREE* 512K upgrade. Both come with drivers that allow you to use portions of their memory for RAM disks. Since Selector allows you to switch between programs without having to reboot, the RAM disks retain memory and are not wiped clean. What that means is you now have the ability to save files to .RAM from one program and pull them into another quickly and easily. I have only begun to tap the potential of this, but here's an example: I am typing this article using /// E-Z Pieces. I will save it to .RAM as an ASCII (text) file, switch to Apple Writer and load the file, then go to Apple Speller and spell check it (I could have gone to Apple Speller directly as well). I can then format and print the article, or save it to disk as an ASCII file to send to *ON THREE's* editor. I could do the same with FOTO files, DIF files, BASIC files, etc.

Another thing I use my .RAM disk for is to download from Compuserve. It is quick, easy and most importantly, very quiet. I can then pull it into Apple Writer or /// E-Z Pieces to

process before saving to disk. (Imagine how quickly you could download a BASIC program, clean it up using Apple Writer, save it back to .RAM and then execute it from Business Basic.) I also have a short Text.Dump BASIC program I could use to save it to a particular disk. What could be easier? Having both the /// plus //e and the 512K RAM disks is luxurious.

### Finally

Like any program, Selector /// is at its best when it can provide you with the flexibility to do your job quickly and easily. If you don't want to go to the expense of purchasing a "real" hard disk, the 3.5-inch UniDisk is a viable alternative you can utilize to the fullest extent possible with only the occasional switch of a disk.

*Melvin A. Astrahan recently finished a program which allows Selector /// to work with Word Juggler. Just send us either your Word Juggler disk or the back up which came with the original (for ownership verification purposes only) and we'll return your disk untouched along with a second disk containing the new program. Please include a \$2 shipping and handling fee.*

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< OE \*picga.]  
A (pij'an) n. 1. Any of various related  
with a deep-chested body, a small head,  
hort legs, esp. a common, often domesti-  
species. 2. Slang. One easily swindled; a  
: [*L pipiō*, squab, young chirping bird.]  
-on-hole (pij'an-hōl') n. A small compart-  
it, as in a desk. —v. -noted, -holing. 1. To  
ce or file in a pigeonhole. 2. To categorize.  
To put aside and ignore.  
jeon-toed (pij'an-tōd') adj. Having the toes  
rned inward.  
-glish (pig'ish) adj. Like a pig; greedy.  
g-gy-back (pig'e-bak') adv. 1. On the shoul-  
ders or back. 2. By a method of transportation  
in which truck trailers are carried on trains.  
-pig-gy-back' adj.  
-pig-head-ed (pig'hēd'id) adj. Stubborn.  
pig-iron (pig'ir-ən) n. 1. A coloring substance  
or matter. 2. A substance, such as chlorophyl  
or hemoglobin, that produces a characteristi-  
color in plant or animal tissue. [*L pigmentu-*  
man-tā'shon) n. Biol. 2. Depc

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ON THREE has not changed its position regarding duplicating copyrighted programs for profit or to give away, but since many Apple /// software products are no longer supported, owners of AppleWriter ///, VisiCalc, and VisiCalc Advanced Version are facing the problem of what to do when a diskette "crashes." After much consideration we decided to proceed with a product to solve that problem. *The Unprotect Driver* will allow you to make back up floppies of the above programs. For the first time, you can put your master disk in a safe place and boot on the duplicate.

Economically priced at only \$19.95 plus \$2.00 shipping and handling, the *Unprotect Driver* comes with full documentation and will work with *Selector* /// so you will no longer require a "key" diskette. The *Unprotect Driver* is sold for legitimate *Archival* purposes only. **ON THREE does not condone** and will not condone duplicating a disk for any other purpose.

# Rantings

*richard and lavona rann*

In previous columns we have written of a /// community. Because of the tremendous diversity among Apple /// owners, many have wondered if there really is a /// community. We are not grouped in one location as the most common use of the word community suggests. In spite of being spread around the world, we have a lot in common. We are interested in a wide variety of questions, concerns, and issues centering around the continued usefulness of the Apple ///. Although normally not geographically close, we have a lot of "neighborliness" in the way that we help our fellow users solve problems and make the best use of the tools available to our community.

Like most communities, we have people who have developed specialties to serve our needs. These specialists include professional and volunteer programmers, hardware developers, helpline volunteers, vendors and writers. Our community resources are varied and valuable. One very important specialist is our historian. The collection of Apple /// reference data and history is of significance to all of us and we thought that you would enjoy knowing a little about our historian, David Ottalini, and his projects.

Dave is a /// owner and a member of the east coast's largest Apple user group, Washington Apple Pi, where he is co-chairman of the Apple /// Special Interest Group (SIG). He holds graduate degrees in history and in journalism. As a freelance writer, he has written a number of articles relating to broadcast media and computers. David's career in journalism has seen consistent growth from early radio work to his current position. He is a producer for the Cable News Network's Washington Bureau where he keeps an eye on Congress and the White House. By interest and experience, he understands the value of collecting, organizing and preserving factual data. With these interests and background, he is a natural for the position of /// historian.

His projects have value in more than a historical sense. Because of the unique circumstances leading to the current status of the Apple ///, information sources are scarce and valuable information seems to be disappearing from the community. Dave correctly sees his bibliographies and data bases as tools

to help all of us deal with the present. Lets look at what they are and how they are of use.

The /// Bibliography lists every article about the /// that has come to Dave's attention. It is an ongoing effort, currently divided into two sections covering 1980-1984 and 1985-1986 respectively. It is compiled from a wide variety of sources including reference to user group newsletters. The availability of the Washington Apple Pi library of books and magazines of the microcomputer industry (arguably the nation's largest aside from the Library of Congress) has to be of great help, but the compilation effort must be staggering. The bibliography is a useful tool in tracing down the "who/what/where/when" and most of all the "hows" from all the material published about the /// and its use.

The data bases are, in simplest terms, a set of indices to all things ///. As this article is written, the number of specific data bases is ten. David continues to collect information on these and other reference topics, so we expect that the next update may include additional topics. The ten current data bases are:

- Books**
- Bulletin Board Systems**
- Clubs**
- Consultants**
- Drivers**
- Publications**
- Public Domain Software**
- Tips**
- Vendors**
- Versions**

You may ask, "What does this do for the average /// owner?" An example may be instructive. As modems become more widespread, many /// owners are developing an interest in accessing bulletin board systems for information and contact with others. The data base has the information necessary to find and access many BBS's. Some of the data fields are name, phone number, cost, a note defining the avowed purpose and/or sponsorship and fields covering the technical information (i.e. protocols, speed).

It is an important step towards maturity for a community to develop someone like David Ottalini. The value of his effort is immediate for those who need information,

and yet the major value may lay far into the future as current sources of information disappear. Someday, Ottalini's work may be a guide to understanding the /// phenomenon. Even more important, his effort requires a response from the /// community. In order to keep people like David working within the community, we must appreciate and support their efforts. For more information, contact Dave directly or call the Third Apple Users information line (312) 655-6319.

## **An Apple A Day**

At the beginning of this year Apple Computer created the position of User-group Evangelist to deal with Apple user-groups. Since then Ellen Leanse, Apple's Chief User-group Evangelist, has been a very busy lady. She has traveled the country meeting with user groups, looking for ways to bring corporate Apple closer to Apple users. Much of her effort seems directed at forming a partnership between Apple and the user-groups. Her agenda is simply to identify the needs of user-groups and find solutions helpful to both users and Apple. While the agenda is simple, many of the solutions will prove difficult to find. What is important though, is the attempt. This is the first time a micro manufacturer has become truly concerned with the owners of its product. This process should benefit all Apple customers.

This July, the Northern Illinois Computer Society and Apple co-sponsored the first Midwest Apple User Group Conference. Among the 39 groups in attendance were an Apple /// group and several with /// SIG's. While much of the discussion centered on topics of concern to managers of user groups, the Apple representatives emphasized Apple's support of the user group community. How this support will manifest itself is still uncertain; yet, Ellen Leanse stated several times that Apple remains mindful of the problems of /// owners. Under John Sculley, Apple seems committed to keeping its customers within the Apple family. This is doubly important to /// owners because Apple is publicly recognizing us. Gone is Job's "out of sight out of mind" philosophy. We hope this translates into good news for /// owners.



# Call Three: Hot Line/Apple /// User Groups

If you would like to get together with other Apple /// owners and exchange ideas, a user group is for you. Below is a listing of all Apple /// user groups known to us. If you have recently formed a group or know of one we have not listed here, please contact *ON THREE* and let us know so that they may be included. There is no charge for this service.

## California

*Sacramento Apple /// User Group*  
1433 Elsdon Circle, Carmichael, CA 95608  
(916) 482-6660

*Orange County Apple /// User Group*  
22501 Eloise Ave., El Toro, CA 92630  
(714) 951-1231

*L.A.-So. Bay Apple /// Users Group*  
P.O. Box 432, Redondo Beach, CA 90277  
(213) 316-7738

*Apple /// Users of Northern California*  
220 Redwood Highway #184  
Mill Valley, CA 94941

*International Apple Core Apple /// S.I.G.*  
908 George Street, Santa Clara, CA 95054  
(408) 727-7652

## Canada

*Apples British Columbia Computer Society*  
*Apple /// S.I.G.*  
P.O. Box 80569, Burnaby, BC  
Canada V5H3X9  
(416) 839-7779

*Canadian Apple /// Users Group*  
80 Antibes Dr. Suite 2805  
Willowdale, Ontario, Canada M2S 3N5  
(416) 665-3622

## The Astronic Club

1453 Highbush Trail, Pickering, Ont.  
Canada L1V1N6 (416) 839-7779

## Colorado

*Colorado Apple Three User Group*  
P.O. Box 3155, Englewood, CO 80112

## Connecticut

*Apple /// Society of So. Connecticut*  
34 Burr School Rd., Westport, CT 06880  
(203) 226-4198

## Florida

*Sarasota Apple /// User Group*  
c/o Computer Centre  
909 S. Tamiami Trail, Nokomis, FL 33555  
(813) 484-0421

## Georgia

*Atlanta /// Society*  
385 Saddle Lake Drive, Roswell, GA 30076  
(404) 992-3130

## Illinois

*Third Apple Users c/o Lavona Rann*  
1113 Wheaton Oaks Dr., Wheaton IL 60187

## Kansas

*Kansas City Apple /// User Group*  
5533 Granada, Roeland Park, KS 66205  
(913) 262-3355

## Maine

*So. Maine Apple Users Group*  
Casco St., Freeport ME 04033  
(207) 865-4761, X 2249

## Maryland

*Apple /// SIG Chairman*  
*Washington Apple PI*  
8227 Woodmont Av. #201  
Bethesda, MD 20814 (301) 654-8060

## Minnesota

*Minnesota Apple Corp Users Group*  
P.O. Box 796, Hopkins, MN 55343

## New Jersey

*North Jersey Apple /// Users Group*  
c/o Roger T. Richardson  
P.O. Box 251, Allamuchy, NJ 07820  
(201) 852-7710

## North Carolina

*North Carolina Apple /// User Group*  
2609 North Duke St. #103  
Durham, NC 27704

## Ohio

*Cincinnati Apple /// User Group*  
5242 Horizonvue Drive  
Cincinnati, OH 45239  
(513) 542-7146

*Apple Dayton - Apple /// S.I.G.*  
P.O. Box 1666, Fairborn, OH 45324-7666  
(513) 879-5895

## Oregon

*Oregon Apple /// Users Group*  
1001 SW 5th Av. #2000  
Portland OR 97204  
(503) 645-6789

## Overseas

*Apple THREE Group International*  
c/o Maj. H. Joseph Dobrowski  
P.O. Box 913, Langley AFB, VA 23665

*Apple /// Users Belgium/Netherlands*  
c/o H. Van der Straeten, Vestinglaan 49  
2580 Sint-Katelijne-Waver, Belgium  
(015) 205328

*Apple User Group Europe e.V.*  
Box 11 01 69 D-4200, Oberhausen 11,  
West Germany 0049-6195-7 3917

*Apple /// User Group Belgium/Netherlands*  
c/o J. Woretshofer, Ganzerikweerd 22,  
NL-6229 TG Maastricht, The Netherlands  
(043) 611704

*British Apple Systems User Group (BASUG)*  
*Apple /// S.I.G., P.O. Box 174,*  
Watford Herts, England WD2 6NF  
0727 73390/72728

*Le Club Apple*  
43 Avenue de la Grande-Armee  
75116 Paris, France

*Apple /// User Group*  
c/o Canberra Accounting Services  
P.O. Box 42  
Duffy A.C.T. 2611  
Australia

## Texas

*Apple Corps of Dallas*  
*Apple /// SIG*  
P.O. Box 5537  
Richardson, TX 75080

*River City Apple Corps /// S.I.G.*  
Box 13349, Austin, TX 78711  
(512) 454-9962

*Houston Area Apple Users Group*  
*(Apple /// Division)*  
P.O. Box 610150  
Houston, TX 77063  
(713) 480-5690 or 974-5153

## Virginia

*Charlottesville Apple /// User Group*  
216 Turkey Ridge Rd.,  
Charlottesville, VA 22901  
(804) 642-5655

*Greater Tidewater*  
*Apple /// User Group*  
Route 2, Box 216  
Hayes, VA 23072  
(804) 642-5655 or  
898-3500, ext. 2671

The *Call Three: Hot Line* is a service whereby Apple /// users with problems can call an area number to get assistance. The individuals answering the phones are fellow Apple /// users who have volunteered to help others over some of the rough spots. They are not compensated for this service, therefore we owe them a resounding "three cheers."

We would like to expand this service even further, so if you are familiar enough with your machine to be able to aid others and answer questions, please write us, stating your areas of expertise and availability in terms of days and hours. Certainly you can bask in the knowledge that you have been able to help a fellow Apple /// user.

For those of you who have questions, feel free to call our consultants listed below. **Please** observe however, the calling hours shown and before placing a call, double check the time zone so that you don't inadvertently wake someone up! There are no other restrictions on using the service other than as stated above. Again, **please** remember these people are volunteers, and if we receive information indicating that calling hours are not being observed, we will have no choice but to remove the consultant from the listing or, worse, discontinue the service.

The following is an alphabetical listing of subjects and abbreviations used in the "subjects" column of the consultants listing.

| Subject        | code | Subject        | code |
|----------------|------|----------------|------|
| Accounting     | AC   | Graphics       | GR   |
| Agriculture    | AG   | Micro-Sci      | MI   |
| Assembly Lang. | AL   | Modems         | MD   |
| Business Basic | BB   | Modula-2       | MU   |
| Catalyst       | CT   | Pascal         | PA   |
| Cobol          | CO   | ProFile        | PR   |
| CP/M           | CP   | Quark          | QU   |
| Data Base      | DB   | SOS            | SO   |
| Education      | ED   | Spreadsheets   | SS   |
| Emulation      | AE   | Telecom.       | TC   |
| Financial      | FI   | /// E-Z Pieces | EP   |
| Fortran        | FO   | Word Proc.     | WP   |
| General        | GE   |                |      |

| Name                   | Area    | Telephone      | Days          | Hours                   | Zone     | Subjects                                     |
|------------------------|---------|----------------|---------------|-------------------------|----------|--|
| Coville Woodburn       | NH      | (603) 863-5590 | M,Tu,Th,F     | 7-8pm                   | Eastern  | BB,CT,GE,GR,MI,QU,WP                         |
| Ken Johnson            | MA      | (413) 536-7502 | Su-Sa         | 6-9pm                   | Eastern  | BB,PA,MD,WP,MI                               |
| Don Loosli             | MI      | (313) 626-3848 | M-F           | 9am-5pm                 | Eastern  | GE,WP,SS,DB                                  |
| Harry T. Hanson        | NJ      | (201) 467-0712 | M-F           | 6-9pm                   | Eastern  | GE,PA,BB,CT                                  |
| Edward N. Gooding, Sr. | VA      | (804) 747-8751 | Su-Sa         | 6-9pm                   | Eastern  | CO,SS,PR,MD,CT                               |
| Jeff Fritz             | WV      | (606) 353-9493 | M-Sa          | 8-11pm                  | Eastern  | BB,DB,GE,MI,SS,TC,EP                         |
| Al Johnston            | FL      | (904) 739-1600 | M-F           | 9am-6pm                 | Eastern  | GE   |
| Paul Sanchez           | FL      | (305) 266-5965 | Su-Sa         | 10am-4pm                | Eastern  | SS,PR,CT                                     |
| R.B. Thompson          | NC      | (919) 787-1703 | Su-Sa         | 10am-10pm               | Eastern  | BB,DB,GE,SS,WP                               |
| J. Donald Glenn        | NE      | (402) 291-9177 | Su-Th         | 7-10pm                  | Central  | GE   |
| Scott Weddel           | NE      | (402) 572-7543 | Su-Sa         | 4-10pm                  | Central  | GE,TC  |
| Jim Ferencak           | IL      | (312) 599-7505 | M-F           | 10am-5pm                | Central  | GE,EP,DB                                     |
| Neil Quellhorst        | IL      | (217) 434-8727 | Su-Sa         | 7-9pm                   | Central  | AL,BB,GR,PA,SO,TC                            |
| Paul Thomas            | MS      | (601) 494-8736 | Su-Sa         | 6-10pm                  | Central  | GE,AC,BB,CP,DB,FI,MI,MD,PA,PR,SO,SS,TC,EP,WP |
| Earl T. Brelje         | MN      | (612) 455-6405 | M-F           | 4-9pm                   | Central  | CT,DB,WP,GE, Quick File, Omnis 3             |
| Ron Maupin             | TX      | (512) 280-0144 | Su-Sa         | 8am-10pm                | Central  | AL,CO,CT,EP,MD,PA,QU,SS,TC,WP                |
| Terri Wiles            | CO      | (303) 850-7472 | Su-Sa         | 10am-6pm                | Mountain | PA   |
| William Prince         | OR      | (503) 254-6465 | M-F           | 9am-4pm                 | Pacific  | GR,TC,Corvus                                 |
| Karl La Rue            | WA      | (509) 582-6459 | F-Su          | 6-10pm                  | Pacific  | MD,GE,EP,WP,TC,SS,CP                         |
| Pat Holwagner          | CA      | (415) 433-2323 | M-F           | 10am-6pm                | Pacific  | GE,SS,WP,CT,DB,SU,AE,EP                      |
| M. Kent Hockabout      | CA      | (415) 865-8579 | M-F           | 9am-10pm                | Pacific  | DB,GE,GR,MI,MD,QU,SO,SS,TC,WP,AE,EP          |
| Vincent F. Latona      | CA      | (818) 703-0330 | M-F           | 9am-5pm                 | Pacific  | GE,WP,BB,SS,AE                               |
| Wayne Hale             | CA      | (619) 450-3856 | M-F           | 7-11am                  | Pacific  | BB,GR,CT                                     |
| Dennis R. Cohen        | CA      | (818) 956-8559 | Su, M-F 7-9pm | 10am-10pm<br>Sa 12n-6pm | Pacific  | GE,PA,MU,WP,DB,SO                            |
| Kelly C. McGrew        | WA      | (206) 943-8533 | Su-M,Th-Sa    | 7-9pm                   | Pacific  | DB,GR,SS,PR,MD,CT                            |
| H. Van der Straeten    | Belgium | (015) 205328   | Su-Sa         | 7-10pm                  | Europe   | BB,CT,DB,GE,PA,PR,SS                         |
| Rene Litt              | France  | (88) 621025    | M-F           | 5pm-11pm                | Europe   | CT,EP,BB,PA                                  |

# One, Two, /// Forum

## Our Hero

As an occasional user of AppleFile ///, perhaps I can answer Darrell A. Russel's question in September's *One, Two, /// Forum*.

I believe that it is possible for AppleFile to have its program files on one hard disk and the model and data files on another. First, select Item 6 from the main menu, "Review/Change AppleFile Special Settings." Then select Item 1, "Set Standard Prefix" to change the default prefix to the other hard disk.

For example, suppose that Mr. Russel has his AppleFile program and current data listed in a subdirectory called ".PROFILE/APPLEFILE". The program upon start up would default to ".PROFILE/APPLEFILE" for its standard prefix. Assume that Mr. Russel wants to use another model and data from a second hard disk called "/OTHER DISK" with a subdirectory of "/OTHER DISK/APPLEFILE". If the standard prefix was set to "/OTHER DISK/APPLEFILE", AppleFile would then access the "/OTHER DISK" for its data while continuing to use ".PROFILE" for the program segments.

One caveat. I do not have a hard disk, so these procedures were checked using a MicroSci A 143 and a regular Apple disk drive. With subdirectories on these disks, AppleFile worked just fine in switching the model and data files between disks. This should hold for hard disks as well, but in the wonderful world of computing, you never know for sure until you try. My advice to Mr. Russel is to experiment, but honor the sage advice: back everything up first!

Jeffrey Fritz  
Williamson, WV

*According to our ON THREE staffers, the procedure Mr. Fritz mentions will*

*work perfectly on hard disks and ease Mr. Russel's woes. If you have a free slot in your Apple ///, I think that purchasing a Sider 20 would be a wise investment for him.*

*Hats off to Jeffrey Fritz for his fine solution!*

## To Print or Not to Print

There is a problem between my Catalyst and BPI programs which I haven't been able to solve with my limited knowledge of the programs. I hope you can help me.

I have an Apple /// with *ON THREE's* 512K Memory Upgrade, an Epson MX-80FT printer with 2K buffer and serial cable, 5K PROFILE, Catalyst 2.0 and BPI GA programs.

The problem is that the BPI program booted through the Catalyst program will not print out reports in the PRINTER mode. The reports can be displayed on the screen through the Catalyst but will not print out on the printer. The program does not hang up when PRINTER is selected but continues to run without activating the printer. Changing the selection to SCREEN results in the reports being correctly displayed on the monitor.

The BPI program also will not correctly copy Company/System in the Data Management Utility 8 selection when booted through the Catalyst program. The program hangs up with an "unable to copy - Input/Output Error -100" message or sometimes "I/O Error -9." The BACKUP /// program works well though.

Strangely, or should I say happily, the BPI program works perfectly when booted separately. Prior to installing the 512K upgrade, the BPI program gave the familiar "Stack Overflow" message when attempting to work the general ledger through the Catalyst, hence I always used the separate program booting. I must admit that I never attempted to print out any reports through the Catalyst/BPI mode prior to the memory upgrade but I'm assum-

ing that it wouldn't have worked then either.

I reinstalled the BPI program thinking that maybe something foreign got introduced into the program but that did not change anything. I also reformatted the PROFILE and reinstalled the programs as they were before the 512K memory board was installed thinking that maybe the new memory board installation might be involved. This did not result in any change in the BPI print out problem through the Catalyst or lack of problem through direct booting. I even changed the order of the Catalyst driver configuration and placed the PRINTER in the first spot but, of course, that didn't make any difference.

I contacted the BPI Systems in Austin, TX but their advice consisted principally of "We don't recommend operating the BPI program through the CATALYST system." Well, all I can say in response to that is I don't, when I want hard copies of the reports.

Have you received any other complaints regarding CATALYST/BPI incompatibility? Do you have any recommendations for correcting my problem?

Thank you for any assistance you might provide to me.

Charles W. Hodgson  
San Antonio, TX

*Your attempt at solving your printer problem with BPI under Catalyst is logical and admirable. Though you may not think it worthwhile, the advice you received from BPI Systems is correct. The program was designed as a stand alone. Such programs usually are not amenable to outside interference (e.g. Catalyst).*

*Bob Consorti, president of ON THREE, did think of one thing you may check. Be sure that the printer driver on your Catalyst disk is the same as that of the stand-alone BPI program. If you read the article in this issue about printers, you'll see that the correct*

driver is critical to the printer's operation with a program.

I hope this bit of advice helps. Perhaps one of ON THREE Magazine's insightful readers will think of some other possible solutions for you.

### OMNIS 3 Plus

In my review of OMNIS 3 in the August issue of ON THREE Magazine I forgot to mention where the program can be obtained. Anyone interested should contact BLYTH Software, 2929 Campus Drive, Suite 425, San Mateo, CA 94403, (415) 571-0222.

If I can help anyone with OMNIS 3, please give me a call. I'm available Monday through Friday between 4:00 and 9:00 p.m. I will soon be opening a mail box, so if the readers prefer, they can direct their questions to me through it.

The Association of Independent Microdealers, 3010 North Sterling Avenue, Peoria, IL 61604, (309) 685-4843 has a catalog of Apple /// software at reasonable prices and has VisiCalc, Advanced Version, available. I haven't ordered from them so I do not know whether they are reliable.

Earl T. Brelje  
South St. Paul, MN

I called BLYTHE Software and was told they now have available an updated version called OMNIS 3 Plus. Mr. Brelje's August review concluded OMNIS 3 was "one of the best programs" written for the Apple ///, so the updated version should be even better.

If you want to contact Mr. Brelje for advice and assistance, his name, telephone number and hours of availability are listed with our other volunteers' in the Call Three: Hot Line section of the magazine. If you are willing and able to help others, just let me know and I will include your name in our listing too. You will be in distinguished company.

### Pascal and You

I have been playing quite a bit with Selector and I am extremely impressed. Having had a long-time love/hate relationship with Catalyst, I am glad to see someone finally come out with a program which beats Quark's program on almost every point.

About the only thing I would really like to see added to Selector /// is the

ability to automatically load a macro keypad as a particular application is launched, just as character sets are loaded. That would make adding the Desktop Manager that much more attractive.

I would also like to know if the Apple Pascal Run-Time Interpreter (PASCAL.RTINTERP and SYSTEM.RT-PASCAL) supplied with Selector /// can handle p-codes generated by the 2.0 compiler's new instructions, for example CYCLE and LEAVE. I haven't tried it but I was curious.

Steven Brineaux  
Los Angeles, CA

Your idea of having Desktop Manager's MacroMaps automatically load from Selector is a good one. However, due to the great differences between the Desktop Manager and Selector /// programs, it is simply impossible to program.

It is possible to run Pascal 1.2 programs with the 2.0 compiler by making the Run-Time Interpreter compatible. To do this, use the LIBRARY program to add the following units into the file:

### SYSTEM.RTPASCAL

DEBUGGER #3  
PRINTERR #60  
DIRSTUFF #61

With these additions, the compiled 2.0 programs should work without any problems.

### One Boot, Two Boots, /// Boots

A while back you asked for topics to be covered in ON THREE. How about publishing a series on error messages, what they mean and, especially, what to do about them. Some are obvious while others are esoteric. Consider "system failure Error 01: Reentrant system call." I have had it show up a number of times while I was pondering my next entry. Each time I had to reboot my system to get it going again. What is it all about and what else can I do beside reboot? Another type of error message I have problems with are those that provide a segment number, a procedure number and a byte offset as additional information. How do you go about using this information effectively?

I also have two short questions. Recently, for the first time since acquiring my Apple ///, I have had to do

a two-step boot because a new driver I needed was overly long. Now I have all my drivers and other essential files (SOS.KERNEL and SOS.INTERP) on one diskette and the remainder of my Business BASIC Files, including the HELLO file, on another. My problem is that this second diskette will not boot. What am I doing wrong? Also, I still have 109 free blocks on my first diskette but, considering the length of the last driver I have to insert, I can imagine running out of space on this diskette some time in the future when I need to add more drivers. Is there some way of doing a three-step boot in this case?

Andre M. Weitzenhoffer  
Nathrop, CO

Thank you for your article suggestion. I have ON THREE's former editor, Val Golding, working on that subject, so you should see it in print next year.

Before presenting the solution to your booting problem, there are a few things you should know. Only three files are absolutely required to start up the Apple ///: SOS.KERNEL, SOS.DRIVER and SOS.INTERP. The SOS.INTERP file may need other files. To run BASIC, you must have a BASIC program with the file name HELLO on the disk. Running a Pascal program requires a few different files, notably SYSTEM.STARTUP and SYSTEM.PASCAL.

To make a two-stage BASIC boot that will work, place on the initial boot disk a new file called HELLO. That program (listed below) will print a message on the screen telling the user to insert the second disk and press RETURN. After the RETURN key is pressed, the program will set the prefix to the disk now in the drive and run the second disk's HELLO program. Remember, place the old, original HELLO program on the second disk and this new HELLO program on the first:

```
10 TEXT: HOME
20 VPOS=12: PRINT "INSERT
  THE DISK INTO DRIVE #1
  and press RETURN"
30 GET AS$
40 PREFIX$ = ".D1"
50 RUN "HELLO"
```

This will give you a working, two-stage BASIC boot. And, considering the amount of room that you have left on your disk, you will never need to make a three-stage boot.



## Grappling with Grappler

Do you have any information on the Apple /// driver for the Grappler interface card? The text supplied with it refers only to the Apple II. I contacted the manufacturer and the dealer but met with no success. The Grappler interface card works quite well with text, but I need more information before attempting graphics.

P.F. Langlois  
Kirkland, Quebec  
Canada

The Apple /// driver for Grappler is available from:

Sun Systems Remarketing  
P.O. Box 4059  
Logan, UT 84321

(801) 752-7631

The driver is called Printer Driver ///.

Bob Consorti has written a graphics dump program which works with the Grappler driver to print graphics with Apple DMP/Imagewriter and Epson-compatible printers.

The graphics dump program can be merged into any BASIC or Pascal program. If you'd like a copy, just send a check for \$5 to ON THREE, specify that you want the graphics dump program and we'll send you a disk with the program on it. California residents add 6% sales tax.

### Help!

I have had problems using my /// to make ASCII Express transfers of packed binary Apple II game programs between computers. I am using an Anchor modem, have installed the ///e cards

■ Use Draw ON /// directly with Apple ///e mouse and interface, joystick, keyboard, or Apple Graphics Tablet (Graphics Tablet version \$50 additional)

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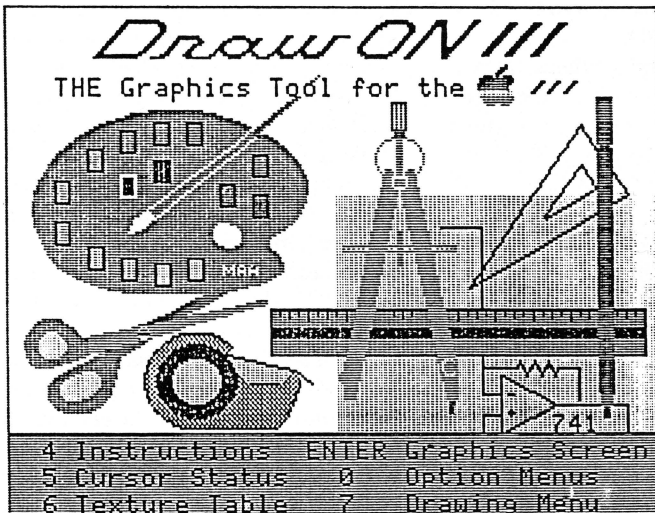
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**Draw ON /// comes with a wide selection of text fonts and objects which can be supplemented with those of your own design. Mix and match with drawings and charts, using Draw ON ///'s powerful cut and paste facility. You can use Draw ON ///'s many fonts to label your own drawings as well as those in other applications, and you can pick up objects, expand, shrink, rotate, invert, and texture.**



**Draw ON /// requires 256K minimum memory**

## Look!

You can print Draw ON /// screens with all of these popular printers:

- Apple DMP
- Epson FX, MX, RX series
- ImageWriter
- ProWriter

plus, with a PKASO/PKASO-U interface:

- Centronics
- IDS Prism, Color Prism\*
- NEC
- Okidata
- ... and others

\*required to print color drawings

Specify printer and interface when ordering

and have tried connecting the modem to the serial port and to an Apple II serial card in slot 1. The transfer is successful but the result is not an accurate copy of the original packed program. I have used the switches on the serial card as described in the instruction booklet but the problem persists. I would appreciate any help in this regard and would be interested in knowing whether you have had any experience with this or know of others who have.

Robert Huse  
Silver Spring, MD

*Unfortunately, no one at ON THREE has had any experience with the /// + ///e card. Perhaps one of our more experienced readers will be able to help you.*

### People Who Need People

First of all, considering the circumstances, I think you folks are doing one heck of a fine job. It can't be easy, putting out a magazine each month for an orphaned product. But somehow you keep on cranking it out. Great! I wish I had something to contribute, as I know the lifeblood of this magazine is its contributors, but unfortunately, I'm barely computer-literate myself. In fact, though I try to read each issue from cover to cover, a good deal of it goes right over my head. I'm quite comfortable with Advanced VisiCalc and have managed to work out a payroll system utilizing it, but the in's and out's of Pascal and BASIC programming seem to elude my every effort. I guess I need to be more mathematically inclined to cope with it. However, VisiCalc does the daily check out for my business (a large gas station) and is advantageous in making sales projections.

I didn't write to tell you of my inadequacies in the computer world but to thank you for your efforts on our behalf, to order some goodies, and to renew my *ON THREE* Magazine subscription before it runs out. I'm not sure when that is because I bought my first two or three issues at my local computer store before subscribing. Thank you.

M.G. Van Hove  
Columbia, MO

*Thank you for your very kind words about ON THREE Magazine. As you know,*

*I am more familiar with the rules of grammar than with the rules of programming and empathize with your feelings. My primary goal as the new editor is to include more articles for those of you who are users and not necessarily programmers.*

*If you are not sure when your subscription expires, look on your magazine's mailing label. The month and year of your last issue are printed next to your name. If your name is so long that the information could not be printed on the label, call or write to us and one of our service representatives will gladly tell you your subscription's expiration date.*

### Legal Eagles

Toward the end of last month I received a complimentary issue of *ON THREE*. This was the first issue I have seen and, though it was six months old by the time I saw it, I found it to contain quite a bit of useful information. Please forward a subscription application at your earliest convenience.

I am approaching four years with my system and like many other was very disappointed, to say the least, to see Apple discontinue its production and support. My only other consideration at the time of purchase was the IBM PC but due to the initial cost and the lack of software available, my dealer convinced me to purchase the Apple ///. Today, I still feel I made the right choice. Since I have a considerable library of software and stored data, the change to another system would be an enormous, if not impossible, task. My son, who will be starting college next year, is also considering buying an Apple /// as he is familiar with its operation and could "borrow" all of the software he needs.

In reading your subscribers' letters, I see that others have had the same problem in locating back ups to their software. One example was VisiCalc. Last year, after numerous letters and telephone calls all over the country, I found Lotus Development. One phone call not only got me the information I had been searching for but also a back up copy of my Advanced Version VisiCalc at no charge. The department to contact is:

Information and Warranty  
Department  
Lotus Development  
55 Cambridge Parkway  
Cambridge, MA 02142

(617) 577-8500

I trust that this will help some of your readers.

H.F. Cochrane, Jr.  
Mendota Heights, MN

*The information you provide will be comforting to others who are in the same situation. Thank you for sharing it. There is one point I must mention, however. Although Lotus is still offering user support, it has stopped producing the VisiCalc program. Legally they are only required to offer this support for two years after discontinuing production, and that time has almost ended. I suggest you purchase ON THREE's Unprotect Driver if you need a back up for the following discontinued Apple programs: VisiCalc, VisiCalc Advanced Version and Apple Writer. It costs only \$19.95 and allows you to make back ups of the previously mentioned copy-protected software. (The Unprotect Driver is sold for back up purposes only; ON THREE does not and will not condone duplicating a disk for any other purpose.)*

*Advanced VisiCalc for the Apple/// is still being sold by:*

*The Association of Independent  
Microdealers  
3010 North Sterling Avenue  
Peoria, IL 61604*

*(309) 685-4843*

*You must not be aware that, regarding your son "borrowing" your disks, most software-producing companies have a single-machine provision attached to the use of their software. This means that if your son wants to use your VisiCalc he may, but only on your machine since you purchased the program. But if he uses it on a machine at school, it is illegal. This is a sore spot with software producers, but many consumers are unaware of the provision's existence.*

*Most producers are not unreasonable, however. If a company owns several computers but does not want to purchase duplicate software for every machine in the office, most software producers will sell a site license allowing one piece of software to be used on several machines. A site license is sold to companies for a fraction of the cost of purchasing separate software for each machine.*



**ON THREE Presents...**

## **ON THREE O'Clock**

***Now is the Time  
for a real-time clock***

Believe it or not, a lot of folks have plain forgotten (or never knew) that the Apple /// was designed to operate with a built-in clock and that, with a clock chip installed, SOS will automatically time stamp and date all file saves.

When the Apple /// was first released, the supplier of Apple's clock chips could not supply a working clock. As a result, the /// was supplied without a clock of any kind. Now maybe you are wondering when you list a disk directory, how the time and date magically appears.

Not too long ago *ON THREE* developed a clock for the Apple /// which plugs in right where the never-released Apple clock was supposed to go, and for just \$49.95 plus \$3.00 shipping and handling, this easy to install, SOS-compatible clock can be yours. It comes with comprehensive instructions and *ON THREE's* limited six-month warranty and does not use any of your precious slots.

With an *ON THREE O'Clock* installed, whenever you save or modify any type of file, the current time and date will be added to the directory listing so you can always tell at a glance which file you last worked on, and when. But that's not all. Business Basic has two reserved variables, `DATE$` and `TIME$`, which return, respectively, the current date and time to your BASIC program. These reserved variables can then be used whenever you want to print the date and/or time in a BASIC program.

### **Special Combination Offer**

There's a great deal more you can do with *ON THREE's ON THREE O'Clock* if you also have our *Desktop Manager*. Whenever you want, you can display the current date and time on the screen with one keypress. Since this is a background function, you can be word processing with *AppleWriter* or entering data into *VisiCalc*, and with one keystroke you can obtain updated time information. In addition, you can use the *Desktop Manager's* Appointment Calendar to enter items you want to be reminded of and, like magic, when the time comes, no matter what you are doing, a message will appear on your screen to gently chide you via the *Desktop Manager* to make that phone call now, etc.

Now The Appointment Calendar is not the only feature of the *Desktop Manager*, you can read about the Calculator, the Notepad, and the others elsewhere, but since the *Desktop Manager* requires a clock, we want to offer you a money-saving deal. Purchased together, you can get the *ON THREE O'Clock* and the *Desktop Manager* for only \$173.95 plus \$8.00 shipping and handling. Now is the time to take advantage of this special offer.



**Desktop Manager/ON THREE O'Clock Combo**  
**\$173.95** plus \$8.00 shipping and handling

BULK RATE  
U.S. POSTAGE  
**PAID**  
Permit No. 90  
Ventura, CA

# **ON THREE Slashes The Price Of The 512K Memory Board**

## **Now Specially Priced As Low As \$289 After Rebate**

The 512K Memory Upgrade from *ON THREE* has for the last two years been the ///'s best selling add-on hardware item. But now it's even better.

We've increased production of these boards to cut our costs, so we are able to offer the 512K Memory Upgrade for less than ever before. And because of higher and more accurate production, we have also doubled the length of our warranty to a full six months! Our ware-

house is filled with 512K Memory Boards, but at this price they may not last. Order yours today.

Have you ever run out of memory in /// E-Z Pieces? Do your VisiCalc programs yearn for more room? Have you ever had stack overflow problems with large programs? Do you want to use the new desk accessories of the Desktop Manager but cannot sacrifice the 32K of memory these utilities require?

The 512K Memory Upgrade is the solution to these problems and more. Automatically recognized and used by all Apple /// programs, the 512K Memory Upgrade is one of the most exciting products ever manufactured for the ///.

More complete information can be found inside this catalogue. Because our warehouse is overstocked, order now and you will get the lowest price ever on the fabulous 512K Memory Upgrade.

## **High Capacity, Low Priced Hard Disk Drives**

Over the last 18 months we have sold hundreds of the popular Sider 10 and 20 MegaByte drives to satisfied Apple /// users. We simply converted the standard Apple ][ version of the drive to work on the ///.

The Sider 10 and 20 are attractively styled hard disk drives with a unique daisy-chain option that allows you to attach a second drive to the back of the first. The 20,808 blocks on the Sider 10 and the 41,616 blocks on the Sider 20 provide extremely fast and reliable storage for your Apple /// programs.

The B-Sider is an ultra-fast tape back-up unit that can attach directly to the back of the the Sider, allowing you to

back-up your entire disk in minutes instead of hours. We are currently working on the Apple /// back-up software. Please call *ON THREE* for information on pricing and availability.

After lengthy negotiations, *ON THREE* has persuaded First Class Peripherals to sell directly to /// owners as they do to Apple ][ owners. You can now order a 10 or 20 MegaByte drive directly from First Class at their ultra-low prices. However, you can only purchase the Apple /// interface card, driver software and documentation from *ON THREE*.

The cost of the *ON THREE* products is \$100 plus \$3 shipping and handling. The Sider 10 and 20 MegaByte drives

cost \$499 and \$799 respectively. To order them, simply use First Class Peripherals' toll-free number. When calling, order the standard Apple //e version of the drive, then order the Apple /// Sider 10 or Sider 20 kit from *ON THREE*. After receiving both, you can enjoy the speed, reliability and low prices of these great drives.

The Sider 10 and Sider 20 are guaranteed for one year by First Class Peripherals.

First Class Peripherals: (800) 982-3232  
*ON THREE*: (800) 443-8877  
In California: (805) 644-3514

**SIDER 10 – \$499**

**SIDER 20 – \$799**