

# ON THREE

The Magazine For Apple III Owners and Users



Volume 4, Number 4

April 1987

\$4.00

**Printer  
Upgrade**

**///  
Telecommunications**

**Copy ///**

**The  
Beginning ///**

**PKASO/U  
Command Module**

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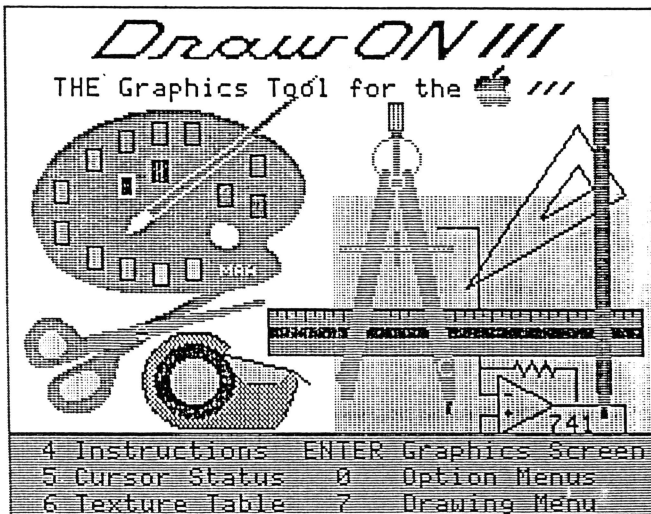
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**Draw ON /// requires 256K minimum memory**

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- NEC
- Okidata
- . . . and others

\*required to print color drawings

Specify printer and interface when ordering



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**ON: The Cover**

This month's cover proves that with some imagination and the help of a LaserWriter printer, anything is possible.



## **/// E-Z Pieces**

This program is the Apple /// version of the Apple II 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.

The data base section is just like the popular QuickFile ///, but better. /// E-Z Pieces' Data Base can handle as many as 3,000 records per file and double the number of fields per record. Sophisticated record selection, sorting and printing combined with lightning fast sorts and searches make this portion of /// E-Z Pieces valuable.

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

**It is available for \$135.00 plus \$3.50 s/h.**



# Apple.Sauce

Lynne Denicola

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## /// E-Z Pieces Upgrade Update

As I'm sure by now all of you are aware, *ON THREE* recently attempted to gather enough names to persuade Robert Lissner to produce an update to his world-famous program, /// E-Z Pieces, and make it available to Apple /// owners and users. Unfortunately, this attempt has been disappointingly unsuccessful.

Many months ago, *ON THREE* contacted Lissner and asked him to produce an update for /// E-Z Pieces which would elevate this /// program to the level of AppleWorks Version 2.0. AppleWorks is the same basic program as /// E-Z Pieces but was written by Lissner for the Apple II computer series *after* he wrote /// E-Z Pieces for the Apple ///. Since the time of AppleWorks' original release, sales of that program have skyrocketed. There was no need to convince Lissner to produce updates to AppleWorks because of the original's popularity; sales and royalties were guaranteed. So he produced several updates on the way to the current version presently on the market, AppleWorks Version 2.0. But, since production and support of the Apple /// was discontinued by Apple, Lissner had no incentive to produce even one update for his original /// version of AppleWorks, /// E-Z Pieces -- until now.

*ON THREE* offered Lissner a percentage of the program's profits if he would take time away from his other programming efforts to update /// E-Z Pieces for the Apple ///. Lissner was approaching the end of one project and knew he'd have some free time before beginning his next when *ON THREE* requested that he write an update of /// E-Z Pieces. Lissner accepted the proposal under one condition: a significant number of current /// E-Z Pieces owners had to be willing to purchase the update to make it worth his time and effort. *ON THREE* agreed with Lissner's thinking and proceeded to do a feasibility study. A flier was sent to 22,000 known Apple /// owners, TAU mentioned the project in the current edition of its newsletter, *The /// Magazine* included a piece about the update and user groups across the country spread the word. The *ON THREE* toll-free order lines were opened for update requests and special *ON THREE* price discounts were given to anyone calling about the /// E-Z Pieces update.

Only 1,300 owners of /// E-Z Pieces were willing to purchase the update. According to the estimates of Lissner, Bob Consorti and Richard and Lavona Rann, 50 to 60 percent of the people who received the flyer own and use /// E-Z Pieces. So if at least 10,000 owners of /// E-Z Pieces were reached with news of the

update, why did only 10 percent of those owners respond when asked if they would someday purchase one? The update would add attractive new features to the original program as well as fix several bugs. Mail merge capability, more records for the data base, more cells in the spreadsheet, more room in the word processor -- all this and more would be offered in the new version. Everyone at *ON THREE* is saddened by this turn of events and is at a loss to explain it.

Nonetheless, the update will not be produced. The primary reason for this decision is lack of response. It would be naive to think that Robert Lissner would spend three to four months on an updated version of /// E-Z Pieces when only 1,300 copies may be sold. So, you say, wouldn't he do it for sentimental reasons? After all, /// E-Z Pieces was the father of a highly successful child, AppleWorks. Perhaps a few years ago he might have, but he has had a terrible time dealing with the company which owns the rights to /// E-Z Pieces: Haba Systems, Inc. While Haba as the owner of the program must pay Lissner royalties, Lissner said that he has not received payment from them for the last 18 months. He has tried to contact them, but they do not return his calls or letters. In short, they have effectively destroyed any emotional incentive Robert Lissner may have had for producing a /// E-Z Pieces update. Even if he had done an update, there is a definite possibility that Haba would have sought a share of his profits. For Lissner, it is a no-win situation.

But to those of you who did respond, *ON THREE* sends a heartfelt thank you. *ON THREE* did its best to bring a /// E-Z Pieces update to the community and plans to do what it can to help those of you who showed an interest in a /// E-Z Pieces update. Currently on the drawing board are a mail merge accessory for the Desktop Manager as well as a spelling checker for /// E-Z Pieces.

## Parting Is Such Sweet Sorrow

I must sadly and fondly say goodbye to all of you. I recently accepted a position with another Southern California software producer and will be editing their newsletter in addition to performing other functions for that organization. I have greatly enjoyed editing this magazine and will dearly miss my interactions with you, *ON THREE* magazine's subscribers and authors. *ON THREE*'s new editor is Paula Sheppard, who comes to this magazine from a newspaper in Wyoming. Paula is looking forward to assuming this position and I know all of you will make her feel welcome.



# 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.



# The Beginning ///

*Richard and Lavona Rann*

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## Repair and Maintenance

What do you do if, heaven forbid, something goes wrong with your computer. Like any other manmade device, the Apple /// is subject to mechanical breakdown. Over the years the /// has proven to be a very sturdy machine, however, a couple of problems have been known to surface from time to time. Fortunately the most common problems are simple ones related to dirt and movement. With the advancing age of the earlier ///'s and the fact that many people have been buying used Apple ///'s which were moved around or stored for a period of time, a few problems are frequently occurring.

The first problem stems from loose or corroded parts on motherboards (including add-on memory boards). The loosening of chips comes from vibration or heating and cooling. Vibration occurs in a cumulative manner with extended use or more obviously from moving the ///. The heating and cooling occurs with normal use as the machine heats up when on and cools off when turned off. The temperature changes and vibrations often cause the chips to work loose and make faulty contact.

The second problem stems from accumulated dust and dirt under the keyboard which inhibits the functioning of the tiny switches under each key. With a little patience, time, some simple tools and the information that follows, these problems can be easily solved.

### Doing the Chip Walk

Once, things were worse. The very first Apple ///'s had a severe problem with the design of the chip sockets on the motherboard: the snap-in sockets loosened after the repeated heating and cooling of normal use. This caused system failures in which the machine just stopped. In some machines the failure rate became as high as every few minutes. Apple fixed the problem by changing the socket mechanism on the motherboard and replacing the motherboards, for the early /// owners, with ones having the new sockets. This helped alleviate but did not completely solve the problem. Apple ///'s are still very sensitive to heat and are especially prone to problems when several of the expansion slots are filled.

When a chip loosens, the /// normally locks-up or stops, but the problem can have a number of other manifestations. When the /// locks-up, the screen does not generally go blank or otherwise change; most of the time it stays the same as if all is well and you are only waiting for a calculation or disk access. Cursor movement often becomes inhibited. Everything looks okay, but

you can't get the machine to do anything. Very often this occurs when the machine has just started to perform a disk read or write, and the normal wait just seems to become indefinite. Some programs will be at a "System busy" or similar message used to indicate that a relatively slow activity is occurring. At other times there is a failure to execute, or even find, a program instruction. These situations are harder to diagnose because they appear to be software (program) problems. If upon doing a reboot and executing the same program the same way it works okay, or fails in a different place, the odds are fairly good that there is a chip problem. Each failure has a particular look due to certain chips which have loosened and to the program's location in memory. Eventually, it will cause the /// to stop running. When this happens, everything in memory is lost because you will have to reboot. If it stops during a write command, the file being written to disk will probably be ruined, and if not, the directory on the disk will probably be messed up (a listing of the device by System Utilities will give a "Directory damaged" message). If nothing else, the possibility of this type of system failure should encourage you to regularly and frequently back up your work in process.

Another possible indication of "chip walk" comes from SOS (Sophisticated Operating System). Like end user programs, SOS can give a wide variety of error messages in this situation, depending on where the failure is. One of the most common is "ERROR \$02." Basically, this message indicates that SOS cannot find where to go. It has lost the ability to find the next instruction. Whether you get this message or one of the handful of other common ones, a likely and relatively-easy-to-solve problem is loose chips. One further test is to turn off the machine and allow the motherboard to cool. Most of the time this will allow the /// to be rebooted, but it may not correct the problem. If the machine appears to start up again and then fails again in a few minutes, first check to see if failure occurs in the same program at the same place. If so, it may be a program problem. If not, the odds are that you have either a corroded socket that does not make proper contact, or a loose or bad chip. Bad chips, however, normally cause a consistent problem which can be repeated whereas bad connections are normally intermittent.

Many of you may have heard of the "/// drop." In the early days of the Apple ///, technical advisors suggested this dangerous procedure, which amounted to lifting the front edge of the keyboard an inch or two away from the table and letting it drop. The shock was supposed to cause the chips to be reseated. Unfortunately other chips could be loosened or delicate circuits stressed with this type of treatment. Fortunately, we've progressed further in our ability to attack Apple /// problems. We do not recom-



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mend the /// drop, nor do we approve of any other remedy which sounds as if it was first practiced in professional wrestling.

The best solutions, as with most difficulties, are preventative. One good idea is to install a fan. There are several types of fans available which can be used in or near a ///. An internal fan will do the best job, but one that blows across the back of the machine will help a lot. Another simple, but unfortunately partial, solution to the problem of overheating is to permanently raise the /// off of the desk top so a greater volume of cooling air passes underneath. This can be accomplished by placing a couple strips of wood under the rubber legs and is applicable to the top of the /// as well. For example, if you have a monitor or Profile sitting on top of your ///, raising it an inch or two to improve the circulation of air can help. These steps cut down on the heat levels and minimize heat-related problems.

If the problem already exists, it may yet be fixable at home. We've found that if the "chip walk" has been a recurrent problem on a ///, there is probably either a very loose chip or a problem with corrosion on the chip legs or in the sockets. Since there is very little voltage involved, only minute amounts of corrosion cause problems. To solve this type of problem, the motherboard must be removed and cleaned, and the chips reseated in the motherboard as well as the memory boards. This is not a difficult operation; most of us can master it in one short session. The most important thing is to work slowly and methodically and to have reasonable respect for the delicate nature of the parts involved. Anyone exercising reasonable care and caution should have no problems. For the non-mechanical among us, it might be best to have a service technician perform the operation, but it may be hard finding someone willing to work on a ///, and will probably be quite expensive.

You need a few things before beginning. You'll require both a Square-bar standard screwdriver and a Phillips screwdriver because the bottom plate of the /// is held on with 9 or 10 Phillips-head screws. The next items you need are a chip puller and a can of electronic component cleaner (called television tuner cleaner in electronic and television shops). These two are sold at Radio Shack as well as any number of independent electronics stores and computer shops. Several companies make packs of computer tools packaged in a leather pouch for easy storage near the computer. These usually contain chip pullers as well as several other useful tools like tweezers, tongs and an assortment of screwdrivers; one of these packs even includes a chip pin straightener which works on several of the more common types of chips. It is also a good idea to have a soft, lint-free cloth handy as well as a flat surface with enough space to disassemble the Apple /// and on which components can be sprayed without doing damage. (You can work without a chip puller, but it is simpler and safer if you use one.)

Once you have your tools at hand and have read all the instructions, you are ready to start. Please read through the whole process before embarking on this effort.

First: make sure the /// is turned off (you really should unplug it); remove all of the cords and devices you normally have attached to the ///; take off the top cover by loosening the two screws on either side of the keyboard; and remove all the cards from the slots by gently pulling them straight up. You will want to make it easy to remember which cards were in which slots, so keep them in order or place a note with each card. Set the cards on a flat surface where they will be safe from anything which could jar them or put pressure on their circuits.

Once the /// has been stripped of cards and attachments, it is ready to be turned over. Place the /// upside-down on the table so it is resting on the metal frame with the keyboard facing toward you, as if you were going to type on the back side of it. The bottom is covered by two metal panels which are attached by screws to the ///'s aluminum frame. The panel on the right-hand side is long and narrow and covers the power supply. For this procedure the power supply panel can be ignored. Remove the screws from the larger panel with the Phillips screwdriver and set them aside.

**CAUTION:** Before the motherboard can be completely removed, several connectors must be carefully disconnected. With the bottom panel loose, slowly lift the inside edge as if the ///'s outside edge was hinged. After lifting it a few inches, several sets of wires become visible. The first wire, or connector, runs from the internal disk drive to the disk drive connector plug on the rear edge, located now in the upper-left corner of the ///. This wire is a ribbon wire like the ones connecting the external disk drives to the /// and has a similar directional plug with a notch to prevent attaching it in the wrong direction. Another ribbon wire runs from the front edge of the /// and connects near the middle of the hinged edge. This is the keyboard wire and it too is notched to prevent reversing the order of the connectors. From the location of the keyboard plug, a twisted red and black wire connects to the motherboard at a spot three chips toward the center of the machine away from the keyboard plug. This is the speaker connection. It is a two-pronged plug with a notch in the connector which must be re-connected facing the back of the machine. Finally, a bundle of insulated wires attaches to a plug close to the center of the raised edge of the machine. This is the power supply cord. Beginning with the power supply, disconnect the cords in order ending with the disk drive connectors.

**NOTE:** These are the basic cords on all APPLE ///'s. Some other add-on's or optional equipment add connections. If your /// has a clock, the batteries will be connected to the motherboard with a wire and a connector. Another common connection is found in ///'s which have Titan ///+//e cards installed. In that case, a ribbon connector runs from the graphics chip socket to the new graphics chip on the Titan board.

IT IS VERY IMPORTANT THAT YOU BE METHODICAL WITH THIS STAGE OF THE PROCESS. Many people have additional connections and it is important that you can identify each connection and return it to the way it was after the cleaning is finished. It is a very good idea to use tape or peel-off labels to mark each wire and its attachment point *before* they are

disconnected. Labeling each wire also allows you to indicate the direction of the plug. Check carefully that all wires have been removed and their connection location has been noted before moving on to the next step.

Now the motherboard should be free and can be removed from the ///. Lay the access panel on its back so the motherboard is in the same position as if the /// were operating. For the curious, we are including a quick tour of the chips and what is where. The rest of you can skip to the next paragraph. A row of larger chips stretches across the front edge of the board; these are the logic chips. The two double-sized chips, fourth and fifth from the left side, are 6502B 3 MHz processor chips. The smaller chip next on the right is the ROM boot/monitor chip. Behind the processor chips are several rows of smaller chips. On the right side, extending to the center of the motherboard four rows deep, are the first 128K of RAM. In a 256K machine, a bridge piece raised above this section and crossing the entire board carries the second 128K of RAM. Behind the RAM chips on the motherboard are the chips devoted to timing. Around the place where the keyboard plugs in are a half-dozen chips for keyboard control, and at the back of the right side are the chips which control the internal disk drive functions. On the left side, beginning in the third row from the front, are the chips for controlling the video. REMEMBER that this quick tour is only a most general overview and that it deliberately omits many important components. It is provided to give you a brief orientation to the operating layout of the ///. If you want precise information on the chip layout, you'll need copies of the technical and/or service manuals for the ///.

Now, let's begin the cleaning process. You will simply remove and re-seat all the chips on the motherboard. There is nothing difficult about this process. It is only necessary to work with care. The main reasons for exercising care can be summarized in the following three statements. First, some of the chips may be tight and have to be worked carefully from their sockets with a gentle back and forth rocking motion. Second, many of the connections on the motherboard are fragile and will not stand excessive forcing. Third, the legs on the chip are extremely fragile and must be handled gently. They will often bend back into place, but they can also break off. Obviously, components will not work correctly with broken legs.

At this point a chip puller is a great help. The puller itself looks like a tweezers with points turned in on itself. The points are designed to slip between the chip legs at the center of the chip. This gives a good purchase on the body of the chip so it can be worked out of the socket while putting as little strain on the legs as possible. This can also be accomplished with a small, thin-bladed screwdriver. With the screwdriver the best technique is to attack the chip from the end, well away from the legs. The screwdriver may have to be moved from side to side in order to work the chip free.

Once a chip is out, several things must be done. First the chip legs must be checked and straightened if bent and then sprayed with cleaner and rubbed with an abrasive cloth. The chip legs are made of a soft metal which can be easily reshaped. Next the area around the socket should be cleaned. Here, we've found that a small computer vacuum can be useful. It can remove dust and

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## **Graphics Manager™ \$49.95 plus \$3.00 s/h**

The complete graphics utility for the Apple /// interfaces to Draw ON ///™ and all graphics programs and allows printing enlarged or reduced portions of the graphics screen, normal or inverted, single or double density and with four rotation values.

For the first time you can load directly any DOS 3.3 or ProDos Hires or double Hires graphic files (including "Print Shop") and of course SOS fotofiles or other binary graphic images.

Comes complete with full documentation and diskette containing standalone SOS interpreter and a Desktop Manager™ module. All popular printers, serial and parallel interfaces supported and limited color graphics capability is included.

**• Available now!**



---

hair that accumulates on the motherboard, but has a small enough suction level that it will not damage the electronic parts. DO NOT use a standard vacuum cleaner! The small computer vacuum is also helpful with keyboard problems discussed later in this article. The motherboard can be sprayed with component cleaner with emphasis on the exposed empty sockets. Make sure before reattaching the power that the cleaner on the motherboard has dried completely.

Now you are ready to place the chip back into the socket. Remember that the legs must be straight for the chip to be properly re-installed. MAKE SURE THAT THE CHIP IS BEING HELD BY THE ENDS AND ALL THE LEGS ARE CLEAN OF OIL, DUST AND CORROSION. REMEMBER THAT THE OIL FROM YOUR FINGERS IS NOT A CONDUCTOR AND MUST BE CLEANED FROM ANY PLACE YOUR FINGERS HAVE TOUCHED. Electronic component cleaner will help the legs make contact in the socket. Slip the chip back into the socket with a rocking motion pressing it gently into place. Many times there will be a slight click as the chip re-seats itself. The force should be steady and gentle. Remember that too much pressure may damage the plug or the connections holding it in. Repeat the same procedure with each chip.

Reassembling the /// is essentially the reverse of taking it apart. Bring the motherboard back to the main chassis and re-connect the wires taking care that they are in the right place and in the right orientation. Swing the bottom panel back into position and replace the screws. While this process has solved the "chip walk" problem for many people, it is only a temporary solution. It may have to be repeated as often as every six months or one year. For some users we have talked to, the cleaning seems to have been a permanent solution to the problem, or at least one that has lasted for several years. This process is also effective when you have to replace a chip because it has gone bad. Bad chips have not been as common a problem but now that you know how to open, remove and replace chips, you also know how to replace a defective chip. In a later article, we will explain ways to determine whether or not a chip is defective.

## Keyboard

Since we have shown the way to attack the most common hardware problem, we might as well delve into the other common problem. Apple /// keyboards are susceptible to several maladies which are generally corrected the same way. The most common reason for problems is wear, followed closely by dirt. Normally the keyboard is sensitive, but corrosion and dirt may make it oversensitive or not sensitive at all. If a key switch is corroded it may not break contact quickly enough and put a half dozen strokes on the screen for each actual stroke made. At other times it may not make contact at all, no matter how hard you strike the key. Cleaning may solve the problem in some cases, but in others part replacement may be required. For example, the micro-switch under each key can wear out. When that happens, it is possible to replace the key and switch yourself, but this takes a certain skill with a soldering iron, so many people choose to have a professional perform this operation. It is expensive, about

\$35 a key with discounts for changing more than a single key at a time. While changing keys is not difficult in theory, it does take some practice, knowledge and a little skill, therefore, we do not recommend that novices attempt it. What you can do to lengthen the time between needed repairs is to keep the keyboard clean and free from dust and corrosion. Once again a small vacuum is a great help and a dust cover can be a good investment. A regular vacuum cleaner brush attachment can be used on the outside of the keyboard to remove dust, but if the keyboard is opened, it is better to use a small vacuum designed for use with a computer or other electronic equipment.

Before assuming that a key needs replacing, or as part of normal maintenance, we suggest an annual cleaning. To open the keyboard for cleaning, make sure the power is off before turning the /// upside down. On the bottom of the keyboard are five screws, one in each of the corners, and a single screw in the center along the front edge. Remove these five screws and turn the machine right-side up again. The cover over the keyboard should now be loose and easily removed. Beneath it is the keyboard assembly. To remove the keyboard assembly take out the two screws on the left side and loosen, but DO NOT REMOVE, the two screws on the right side. Lift up on the left side of the keyboard assembly and slip it from under the two loosened right hand screws. The keyboard can be completely removed by disconnecting the keyboard cable located on the middle rear edge of the keyboard. DO NOT PULL ON THE CABLE. USE A SCREWDRIVER TO PUSH ON THE TAB ON THE CABLE CONNECTOR.

With the keyboard assembly out, the inside of the keyboard case can be vacuumed with a LOW SUCTION vacuum. The space between micro-switches can be cleaned and the back side of the keyboard can be sprayed with an electronic component cleaner to remove corrosion. This part of the keyboard is relatively sturdy and can stand up to brushing with a soft bristle brush. To remove the key caps just pull them straight up. They are held on by friction. Once they are removed, the microswitches are exposed. Remove hair and dust then spray liberally with electronic component cleaner. Allow the cleaner to bubble away the dirt and corrosion from the contact points. When everything is clean and dry, replace the keyboard cable, place the keyboard back into its mounts, reset the screws and close the keyboard cover, ending by replacing the five screws. BE CAREFUL NOT TO TIGHTEN THE KEYBOARD COVER SCREWS TOO TIGHTLY. THEY ARE SCREWED DIRECTLY INTO THE PLASTIC CASE AND THE THREADS CAN BE EASILY STRIPPED.

Each of these procedures is easy, even for people with little knowledge of electronics. What is needed is care and attention to a few basic rules. First, the Apple /// should always be disconnected from the electrical outlet before any work is started. Second, nothing should be forced. If a chip cannot be removed, it is probably not the one causing the problem. Third, make sure everything is dry before turning the machine back on. Even approved electronic cleaning agents can cause shorts when they are still in a liquid state. Finally, if anything seems strange or (Continued on p.10)

# /// Telecommunications

Rodney Hendricks

As an avid telecommunications nut, and an even more avid Apple /// user, I've looked everywhere for information about telecommunicating with the ///. Alas, none was to be found. Because I have spent many hours with my Apple /// connected to other computers, I decided to compensate for this lack of telecommunication information by sharing some of this knowledge with you through a column in *ON THREE*. So for those of you who have a /// and a modem, or those of you who are interested in telecommunication, I offer what I do know in this article and in articles to come.

My Apple /// was about a year old when I decided to purchase a modem. Having read an article in one of the various computing magazines about connecting one computer to another so they could communicate, I became interested in learning more about it. So I climbed into my trusty vehicle, armed only with a checkbook and the desire to enter this magical kingdom known as *online*. I returned home bearing a box inscribed with the words "Apple Modem 1200," proceeded to tear into the box and started getting acquainted with the equipment which would give me access to this new world.

The directions were clear: set a few DIP switches, connect a cable from the modem to the built-in serial port on my ///, plug the modem into the wall, plug a modular phone cord into the modem and away I went. By sheer accident I managed to connect with several electronic bulletin board services (BBS's) that weekend and amassed a rather large long distance telephone bill (it didn't occur to me that I could learn how to use this equipment by calling local numbers).

Now is a good moment to spend talking about what you will need to go online. I'll assume that you already have the first piece to the puzzle, your Apple ///. The second thing you need is a modem. The third and last requirement is the software, either a terminal or communications program.

Modems are generally categorized according to baud rate, which is the speed it sends signals over telephone lines. A 300 baud modem sends 30 characters per second, a 1200 baud modem sends 120 characters per second, a 2400 baud modem sends 240 characters per second and so on. Two years ago, when I bought my 1200 baud modem, about 90 percent of the bulletin board services were running at 300 baud, with the remainder operating at 1200. The modem I bought operated at either 300 or 1200 baud, so as more and more boards switched to the much faster 1200 baud, I was not left behind. Currently about five percent of the bulletin boards operate at 2400 baud. If you are considering buying a modem at this time, the lowest speed I recommend

purchasing is 1200 baud. A good, name-brand 1200 baud modem can be purchased for around \$100.

When you go modem shopping, you will repeatedly hear the phrase "Hayes compatible." Hayes has been the front-runner in the modem business for several years, therefore most modem manufacturers produce their modems to be Hayes compatible. But exactly what does this mean?

Hayes created a standard language used by computers and their modems to communicate. In other words, if you type in ATDT, the modem knows to pick up the telephone receiver (actually it initializes the telephone line) and tone-dial any digits following the ATDT. So if you type in ATDT5550080 the modem secures a dial tone and tone-dials the telephone number 555-0080. Other commands allow you to pause, pulse-dial and auto-answer as well as perform many other duties. Since Hayes was and still is the largest marketer of modems for the micro-computer industry, most software written is written to support Hayes protocol. Several terminal programs do not require that you know any of the Hayes commands because they have menus which allow you to select tone- or pulse-dial and enter a list of frequently-called telephone numbers. Dialing is then simply a matter of scrolling through the list of telephone numbers, making a selection and dialing the number by pressing only one key. So you do not need to learn the modem commands if you do not wish to, although they are not complicated. I do, however, highly recommend that you buy a modem which is Hayes compatible.

Now let's talk about software. I suggest you start out with a menu-driven software program such as Apple's Access /// or Southeastern Software's Data Capture /// because these programs allow you to select from a menu the action you wish to perform.

All terminal programs have a configuration section. One example of a configuration section is listed in Figure 1. Another, from Sun System Remarketing's Easy Term, happens to be my favorite and is listed in Figure 2.

Figure 1

CURRENT TERMINAL STATUS

1:	Baud rate:	1200
2:	Data format:	8 bits, no parity
3:	Backspace Character:	BS
4:	Control Character Mute:	OFF
5:	Terminal Mode:	Full Duplex
6:	Communications Protocol:	XON/XOFF
7:	Character wait:	OFF



**Figure 2**

MICRO/Courier Terminal Mode  
Terminal Options:

```

Send file name . . . . .
Receive file name . . . . .
Telephone number . . . . .

Baud rate . . . . . 110      300      600      1200
Flow control . . . . . None    Xon/Xoff  Etx/Ack
Duplex mode . . . . . Full    Half
Data format: data bits . . . . . 7      7      7      8
               parity . . . . . Odd     Even     Mark    Space  None

Auto <LF> after <CR> . . . . . Yes
Left arrow key mapping . . . . . 08
Delay after <CR> . . . . . 00
Delay after <LF> . . . . . 00
Delay after form feed . . . . . 00
Xon . . . . . 11
Xoff . . . . . 13
Command delimiter . . . . . 7E
Hardware handshake . . . . . Yes  No
    
```

As you can see, you can change several items to modify or configure your system to suit your needs. It is important to note that both computers must be set with the same configuration or they will be unable to communicate. **Baud rate** can usually be set from 110 to 9600 baud for most terminal packages I've seen for the Apple III. The **data format** allows you to select the manner in which the bytes of information are sent across the telephone lines. You will find that two common data format configurations will take care of most of your telecommunication needs. About 90 percent of all computer systems I've encountered operate at 8 bits, 1 stop bit and no parity, and the only other setting I've ever had to use was 7 bits, 1 stop bit and even parity. You'll also find that the **duplex mode** setting for most bulletin board systems is full duplex. This means that when you type

something on your Apple III, the signal is sent through the modem, across the telephone line to the other computer and echoed back to your computer so you can see what you're sending. If you cannot see what you are typing, then you need to change the duplex setting to half duplex. If you are seeing two of everything you type, for example typing "hello" produces "hheelllloo," then you must switch to full duplex. Most terminal programs allow you to switch duplex modes without hanging up and re-dialing.

Currently, the preferred **flow control** setting for downloading a file from another computer is X-ON/X-OFF. As soon as XMODEM becomes available, that will be the best method to use.

Next month, I'll review some of the telecommunications programs available for the Apple III.



(The Beginning III Continued)

out of place, seek help. The Apple III is made to surprisingly exact tolerances; it can be damaged easily. It can be safely handled, though, if care is taken. Both of these procedures will help keep your Apple III functioning at peak efficiency for years and get it back up and running quickly should you be one of the unlucky ones to run into these common hardware problems.



## ON THREE Presents . . .

# Disk Manager

Disk Manager

File Commands

List Directory  
Copy File  
Delete File  
Rename File  
Lock/Unlock

Device Commands

List All Devices  
Copy Volume  
Format Disk  
Rename Volume  
FileVerify Volume

⌘? = Help

Use Arrow keys to SELECT, Press RETURN to RUN. ESCAPE to EXIT.

This Desktop Manager module features the most frequently used applications of Apple's System Utilities and makes them available to you from within any program. Copy, delete, rename, lock/unlock and list all of the files on your disk without leaving the program you're using. Copy, format, rename and verify *volume* commands are available as well, so you will never again lose data because you exited a program to format a disk. Only \$44.95 plus \$3 s/h.

# Text File Manager

Cevin Soling

While this Business BASIC program doesn't offer all of the features of the Desktop Manager's Disk Manager module, it does permit you to list text files while in BASIC, just as the Disk Manager does. However, this program goes one step further: it lets you view a text file in .D1 or .D2 by sending it to either your console or your printer without leaving BASIC. There are two stipulations, however: there must be at least five blocks of free disk space available in drive 1 and the disk should not have its write protection notch covered. To use the program after you have entered and saved it, boot Business BASIC, load the file and run it. The user interface is clear and easy to understand.

```
1 REM +-----+
2 REM +           Text File Manager           +
3 REM +           by Cevin Soling             +
4 REM +                                           +
5 REM +           Copyright (c) 1987         +
6 REM +           ON THREE, Inc.             +
7 REM +-----+
12 HOME
13 PREFIX$=".D1"
15 A=1:B=1
20 DIM APL$(255):DIM TXT$(255):DIM APL(255)
25 DIM Z$(255):DIM Y$(255)
30 PRINT"WHICH DISK DRIVE WILL YOU BE GETTING
TEXT FILES FROM?"
35 PRINT"(1) DRIVE --> 1"
40 PRINT"(2) DRIVE --> 2"
41 PRINT"(3) EXIT PROGRAM"
45 GET A
50 IF A<1 OR A>3 THEN 45
55 IF A=1 THEN PREFIX$=".D1"
60 IF A=2 THEN PREFIX$=".D2"
61 IF A=3 THEN 400
62 REM => A TEXT FILE IS CREATED WITH THE LIST
OF PROGRAMS FROM THE DISK
66 ON ERR GOTO 69
68 DELETE".D1/CAT.TEXT"
69 OPEN#1 AS OUTPUT, ".D1/CAT.TEXT"
70 OUTPUT#1
75 CAT
80 CLOSE#1
81 OFF ERR
82 REM => THE PROGRAM LIST IS NOW BEING SEARCH
ED FOR TEXT FILES
85 OPEN#1 AS INPUT, ".D1/CAT.TEXT"
90 ON EOF#1 GOTO 115
95 INPUT#1:APL$(A)
97 IF MID$(APL$(A),16,8)="CAT.TEXT" THEN 105
100 IF LEFT$(APL$(A),6)=" TEXT" OR LEFT$(APL$
(A),6)=" *TEXT" THEN TXT$(B)=APL$(A):B=B+1
105 A=A+1
110 GOTO 95
```

```
115 CLOSE#1
120 B=B-1
125 IF B=0 THEN HOME:PRINT"NO TEXT FILES FOUND
":INPUT"HIT ENTER TO CONTINUE:";Q$:RUN
130 HOME
132 REM => DISPLAY THE LIST OF TEXT FILES ON T
HE SCREEN
135 FOR Z=1 TO B
140 PRINT"(";Z;") ";TXT$(Z)
145 Z$(Z)=MID$(TXT$(Z),16)
150 NEXT Z
155 Y=2
160 FOR Z=1 TO B
165 IF LEFT$(Z$(Z),Y)=LEFT$(Z$(Z),Y-1)+" " T
HEN Y$(Z)=LEFT$(Z$(Z),Y-1):Y=2:GOTO 175
170 Y=Y+1:GOTO 165
175 NEXT Z
178 PRINT
179 PRINT" HIT -RETURN- TO GO BACK TO MAIN
MENU"
180 PRINT"WHICH TEXT FILE DO YOU WISH TO RETRI
EVE OR DELETE";
185 INPUT A$
186 IF A$="" THEN RUN
187 A=VAL(A$)
190 IF A<1 OR A>B THEN 185
195 HOME
200 PRINT"WHAT IS THE DESTINATION OF THIS TEXT
FILE?"
205 PRINT"(1) CONSOLE"
210 PRINT"(2) PRINTER"
215 PRINT"(3) DELETE"
220 GET C
225 IF C<1 OR C>3 THEN 220
230 HOME
235 X=0
240 ON C GOTO 245,280,325
242 REM => GET TEXT FILE AND DISPLAY ON CONSOL
E
245 OPEN#1 AS INPUT, PREFIX$+Y$(A)
247 X=1
250 ON EOF#1 GOTO 259
255 INPUT#1:APL$(X):APL(X)=LEN(APL$(X)):X=X+1:
GOTO 255
259 CLOSE#1
260 XY=1
262 PRINT APL$(XY);:APP=APL(XY)+APP:IF APL(XY)
<64 THEN PRINT:APP=APP+80
263 XY=XY+1:IF XY=X THEN 275
265 IF APP+APL(XY+1)>1830 THEN APP=0:PRINT:INV
ERSE:PRINT"HIT ENTER:";:NORMAL:GET Q$:PRIN
T
270 GOTO 262
```



# ON THREE Presents...

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

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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.
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- 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.

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California residents: (800) 331-1418

\* 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.

```

270 GOTO 262
275 PRINT:INVERSE:PRINT"END OF TEXT FILE - HIT
    ANY KEY";:NORMAL:GET Q$:RUN
277 REM => GET TEXT FILE AND SEND IT TO THE PR
    INTER
280 OPEN#1 AS INPUT, PREFIX$+Y$(A)
285 ON EOF#1 GOTO 310
290 INPUT#1;APL$:X=X+1
295 OPEN#2 AS OUTPUT, ".printer"
300 OUTPUT#2
305 PRINT APL$:GOTO 290
310 CLOSE#1
315 CLOSE#2
320 GOTO 275
325 HOME
330 PRINT"ARE YOU SURE YOU WANT TO DELETE--"
335 PRINT Z$(A)
340 GET Q$:IF INSTR("Nn",Q$) THEN RUN
342 ON ERR GOTO 360
345 DELETE PREFIX$+Y$(A)
350 PRINT CHR$(7);Y$(A);" IS DELETED"
355 INVERSE:PRINT"HIT ANY KEY";:NORMAL:GET Q$:
    RUN
360 HOME:PRINT Z$(A);" IS LOCKED":PRINT
365 PRINT"DO YOU STILL WANT TO DELETE IT?"
370 GET Q$:IF INSTR("Nn",Q$) THEN RUN
375 UNLOCK PREFIX$+Y$(A)
380 GOTO 345
400 ON ERR END
405 DELETE"CAT.TEXT"
410 END

```



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# Crossword-Scrambler

Crossword-Scrambler is a computer program that is educational and makes learning fun. Unlike many software products, Crossword-Scrambler is a challenge and really makes you think. While it is not a "shoot 'em up" type of arcade game, you will not be disappointed by this game's graphic displays and musical interludes.

If you need a diversion from your daily computer routine, Crossword-Scrambler provides one without making you feel as if you're wasting time. Hundreds of different crossword questions provide hours of educational entertainment for you and your entire family.

Purchase Crossword-Scrambler today and start having fun with your computer.

**Only \$11.95 plus \$2 s/h**



FOR THOSE  
SPRINGY DAYS...

DON'T FORGET TO WEAR APPLE ///  
T-SHIRTS, SWEATSHIRTS AND CAPS!  
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\$3.00 shipping and handling.

Sweatshirts are available for \$15.95  
plus \$3.00 shipping and handling.

PICK UP YOUR CAPS  
for \$3.95 plus \$2.00 s/h.

ON THREE presents...

## The Uncopyprotect Driver \$19.95 <sup>plus</sup> \$2 s/h

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 Uncopyprotect 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 *Uncopyprotect Driver* comes with full documentation and will work with *Selector ///* so you will no longer require a "key" diskette. The *Uncopyprotect Driver* is sold for legitimate *Archival* purposes only. *ON THREE does not condone* and will not condone duplicating a disk for any other purpose.

ON THREE Presents ...

# Sandman

## \$29.95

plus \$2 shipping and handling

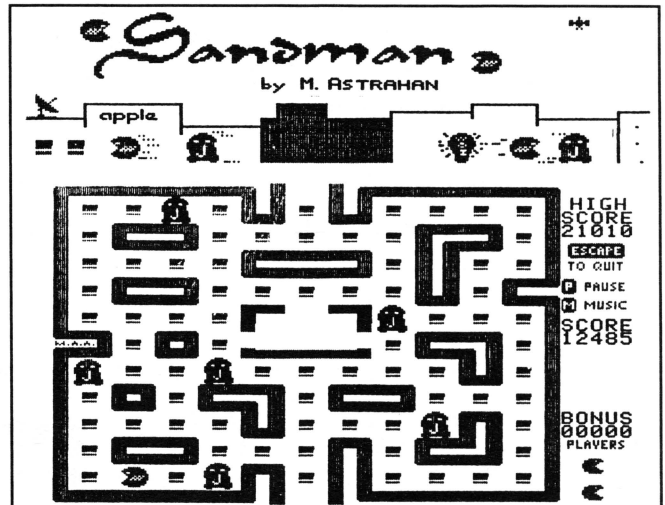
a new multi-level arcade game by Mel Astrahan

- Use with joystick, keyboard or mouse
- Can be run as a Desktop Manager background module

The objective of SANDMAN is to score as many points as possible. Salvage all of the Apple /// parts discarded throughout the halls of Apple's labyrinthian research lab to receive points. WARNING! The lab is haunted by the ghosts of JOBS... if they catch you, you're done for!

Your only weapon against the JOBS is to find the WOZ who wanders about the lab peaking in on various projects. For a short time following a meeting of SANDMAN and WOZ the JOBS turn blue and may be exorcised if you can catch them.

"—Brilliant, colorful and fast moving, Sandman will provide hours of fun."



# Printer Upgrade

Earl T. Brelje

I'm sure many of you who purchased your Apple /// three or four years ago also bought an Epson MX printer. After years of faithful service and no problems, many of you are considering replacing it anyway to have more speed and near letter quality print. But, if you want near letter quality print more than increased speed, I have the perfect solution for you: Dots-Perfect.

Dots-Perfect is a printer upgrade kit from Dresselhaus Computer Products which works with the Epson FX, JX, RX and MX printers. The kit's installation procedures are well documented with pictures and explanations. To install the kit, you need only remove three chips from the printer, plug in a new board, run a jumper wire to a resistor and set dip switches not originally used by Epson. You can easily install it in less than 30 minutes.

Several new features are now available. When the printer is online, pressing the FF button puts the printer into near letter quality (NLQ) mode. Although not as good as that of the new 9- or 24-pin printers, for a printer this old the print quality is not bad. Pressing the LF button returns the printer to the draft mode. Although all the software commands still work exactly as before, most functions can now be selected using the ONLINE, FF and LF buttons. Pressing the ONLINE and FF buttons together activates the menu selection mode. Pressing the FF button selects the functions and the LF button turns the functions off or on. The function selections are:

1. Condensed
2. Double-wide
3. Emphasized
4. Double-strike
5. Perforation skip
6. 1/2" left margin
7. Italics
8. Underline
9. Fine print
10. 8 lines per inch
11. Slashed zero
12. 8 1/2" wide paper

After each press of the LF or FF button, a buzzer beeps to verify that it has been pressed.

To select double-wide, press the FF twice, then the LF. Press the FF twice again and then the LF and double-strike is also selected. To deactivate the menu mode, press the ONLINE button. The printer is now in the double-wide and double-strike modes. And

included in the kit for your easy reference is a sticker for the printer describing the operation of the menu mode and selections.

The NLQ character set is a special two pass set, but it works with all the other functions of the printer. Also included is an IBM-compatible character set. Using the dip switches, the printer can be powered up with either the Epson or IBM set and draft or NLQ mode. NLQ or the IBM character set can also be selected from four new software control codes.

## The Bottom Line

Overall, I would have to say that for the price this kit greatly improves the performance of the Epson printers. It is extremely easy to install, and the price of \$79.95 is much easier on the checkbook than the \$500 to \$900 required to purchase a new printer.

The kit may be ordered directly from:

Dresselhaus Computer Products  
837 East Alost Avenue  
Glendora, CA 91740

(818) 914-5831



///	///	///	///	///	///	///
<b>DE CLASSIFIEDS</b>						
///	///	///	///	///	///	///
<p><b>Liquidating</b> large Apple /// system dirt cheap. Buy spares now! Disk drives, hardware, software, CPM, write for list. Glenn Young, 612 Delgado Drive, Baton Rouge, LA 70808.</p> <p><b>Classified Rates:</b> \$1 per word, \$25 minimum. Copy must arrive 60 days prior to cover date, e.g. April 1st for June issue.</p> <p><b>Subscriber Discount:</b> \$.50 per word, \$12.50 minimum. The following restrictions apply:</p> <ul style="list-style-type: none"><li>- Non-commercial ads only.</li><li>- No items valued over \$100.</li></ul>						



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## EVOLUTION OF THE MICROCOMPUTER

PHASE I: Experimenters and Hobby Users PHASE II: Education and Games

### PHASE III: BUSINESS

The **PHASE III CONFERENCE & EXPOSITION** is the first major gathering designed explicitly for the business and professional user of **Apple** Computers. The seminars have been planned to provide the business/professional user (and developer) with tools and skills to increase productivity and profitability.

Full registration includes 3 days of seminars and workshops, a keynote reception the first evening, a gala banquet on the second evening which will feature a major speaker as well as honor several of the pacesetters and pioneers of hardware and software for the **Apple** family. The first 200 persons registering will also receive invitations to the /// **Forever Luncheon** which will honor the people who have made major contributions to the continuing value of the **Apple** ///.

The conference will address issues relevant to business use of all models of **Apple** computers. Seminars and workshops will be presented on three simultaneous tracks and will include topics ranging from introductory product tutorials, head-to-head comparisons of competing products and accounting issues, to advanced classes on specific products. A consistent goal of the conference will be to augment attendees' return on their **Apple** system investment.

In addition, all attendees will receive full admission to the **Phase III Exhibition**. Representatives of a variety of hardware, software and service providers will be present to suggest solutions to your business problems. Many vendors will be offering special **Phase III** discounts.

The headquarters hotel is the **HYATT REGENCY WOODFIELD** in SCHAUMBURG, Illinois. A limited number of rooms will be available for early registrants at \$57 per night, single or double occupancy. The hotel is about a 15 minute ride from Chicago's O'Hare Airport.

**Conference Dates: Friday, October 2 through Sunday, October 4, 1987**

SAVE BY REGISTERING EARLY and also BE ONE OF THE FIRST 200 to get in on the special luncheon. To guarantee your registration at the lowest EARLY BIRD RATE, send your \$100 non-refundable deposit now! (The remainder of the registration fee will be due no later than July 1.)

	Before <u>APRIL 15</u>	Before <u>July 1</u>	After <u>July 1</u>
Conference fee	\$225	\$275	\$325
Companion fee (banquet, reception and exhibition only)	\$ 60	\$ 60	\$ 75

This conference is being sponsored by **TAU**. For more information about the **TAU** users group for business and professional users of Apple's, write to:

**TAU c/o Lavona Rann 1113 Wheaton Oaks Drive Wheaton, IL 60187**

For additional conference information or to register, send this form to:

-----  
**PHASE III, INC. c/o Randall Jackson 1511 N. Bell Chicago, IL 60622**

Please Print:

Name \_\_\_\_\_ Title \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City/ST \_\_\_\_\_ Zip \_\_\_\_\_ Phone ( \_\_\_\_ ) \_\_\_\_\_

I need hotel registration forms.

Check enclosed.

I wish to exhibit.

---

# Future of the ///

As part of the Phase III Conference and Exhibition scheduled for October 2 through 4, 1987 in Chicago, I am organizing a panel discussion about potential enhancements of the Apple ///, including add on's for the Apple /// and perhaps new computers which will be compatible with existing software for the Apple ///. To prepare for this panel discussion, I am collecting wish lists. Please tell me what hardware products you want to see produced either as an improvement for the Apple /// you now have or as a feature of a new machine.

## What do you wish your machine could do that it cannot do now?

Please limit your suggestions to hardware or SOS enhancements and try to make your requests *performance* specific, not *device* specific. For example, don't phrase it like this: "I want a Whiz-Bang Industries, Inc. Thunderbolt 409." Instead, please write your request like this: "I wish we had a hydrolic turboincabulator that filtered the bit-spliced line frequencies, like the Thunderbolt 409 does for that other computer." Also, estimate the amount of money you are willing to pay for such an enhancement. To isolate the value of each individual improvement, assume that your requested improvement will be made available as an enhancement to an existing Apple /// and will NOT use an expansion slot.

Even if you know someone else who has already written and mentioned the improvement you want for your computer, please let me know what you want anyway. It is as important to know *how many* people want an item as it is to know *what* is wanted.

Once you've completed your wish list, mail it to me at either of the following addresses:

Chris Acreman  
13805 Windmill Circle  
Pflugerville, Texas 78660

Chris Acreman, PE, RPS  
Acreman Engineering  
300 E. Huntland Drive, Suite 215  
Austin, Texas 78752

Or you can send your wish lists to me by CompuServe's EMAIL [72747,3060] or to my mailbox on the ///'s Company bulletin board [(804) 747-8752, half-duplex, 7 bits, odd parity, 300 or 1200 baud, APPLE.III.HELP/MAIL.BOXES/ROW.4/CHRIS.ACREMAN].

With these wish lists as a starting point, the discussion between a panel of experts and users in the audience should result in a synthesis of ideas. After the seminar, developers will have a clear idea of what the market is and users will have an idea of what they can reasonably expect from developers in the future. Thank you in advance for your input, help and cooperation in making this a success.

Chris Acreman  
Organizer, "Future of the ///" Panel Discussion  
1987 Phase III Conference and Exhibition

# PKASO/U Command Module

Earl T. Brelje

```
=====
; Desktop Manager PKASO/U Command List Module by Earl T. Brelje
; Copyright (c) 1987 by ON THREE
;
; Written by Earl T. Brelje with the help of the sample module and the ASCII
; conversion table. Module written by Bob Consorti. Portions of each were used
; to create this module.
;
; This module displays a list of the PKASO/U commands. It's easier to use
; this Desktop module than to get the book out each time you need to know one.
;
; This module can also be used to keep commands handy for any other program
; you own which doesn't provide built-in help screens. Simply replace the
; PKASO/U data with the data for your application.
=====
;
; .ABSOLUTE
; .PROC Pkaso
; .ORG 3800
; JMP Enter_Here
; .BYTE 07. ;Length of current module name.
; .ASCII "PKASO/U" ;Module name. May be up to 14
; ;characters long.
=====
;Equate and Macro Definitions:
=====
Read .EQU 0CA ;Call number for a SOS Read.
Write .EQU 0CB ;Call number for a SOS Write.

.MACRO SOS ;Used to make SOS calls.
BRK
; .BYTE %1
; .WORD %2
; .Endm ;End of macro definition.

.MACRO GotoXY ;Acts like Pascal's GOTOXY
; and BASIC's HPOS,VPOS.
; .BYTE %1 ;Screens X position.
; .BYTE %2 ;Screens Y position.
; .ENDM ;End of macro definition.

.MACRO Normal ;Sets normal screen.
; .BYTE 17.
; .ENDM

.MACRO Inverse ;Sets inverse screen.
; .BYTE 18.
; .ENDM

;=====
;~94Z changes the lead in for PAKSO/U before the data for these two
; screens. If you don't do this you will not believe what will be printed when
; the PKASO/U starts getting this stuff.
Write_Data GotoXY 01.,01. ;Starting screen location 01,04
; .ASCII " " " "
=====
```



**ON THREE Presents...**

# Macro Manager

Macro Manager allows you to define a single keypress as a series of keystrokes to be played back anytime. You can also record over 2,000 keystrokes as you type and invoke them later by pressing one key. One MacroMap™ can hold 50 defined keys, called macros. With Macro Manager, you can create up to 200 different MacroMaps which are easily selected from a menu, so you need never retype repetitive text again. Let the Desktop Manager's Macro Manager do it for you. Only \$44.95 plus \$3 s/h.

Macro Manager			Keypad Definitions
Solid Apple Definitions			
[A]	[N]	[,]	[0]
[B]	[O] ON THREE	[.]	[1]
[C]	[P]	[/]	[2]
[D] Dear Subscriber,	[Q]	[:] Dear Sir/Madam	[3]
[E]	[R]	[']	[4]
[F]	[S] Sincerely,	[[	[5]
[G]	[T]	[)]	[6]
[H]	[U]	[\]	[7]
[I]	[V]	[~]	[8]
[J]	[W]	[=]	[9]
[K]	[X]	[`]	[.] March 1987
[L]	[Y]		[~]
[M]	[Z]		[ ]
⌘? = Help			
MacroMap: Your MacroMap			
Escape to Activate Macros and Exit. Macro Manager written by Rob Turner V1.0			

```
GotoXY 01.,02.
.ASCII "| PKASO/U Commands | _____ |"
GotoXY 01.,03.
.ASCII "| Print Styles ~a0 Start / End |"
GotoXY 01.,04.
.ASCII "| Underline ~10 / ~20 |"
GotoXY 01.,05.
.ASCII "| Boldface ~30 / ~40 |"
GotoXY 01.,06.
.ASCII "| Subscript ~50 / ~60 |"
GotoXY 01.,07.
.ASCII "| Superscript ~70 / ~80 |"
GotoXY 01.,08.
.ASCII "| Italics ~90 / ~100 |"
GotoXY 01.,09.
.ASCII "| Double Strike ~110 / ~120 |"
GotoXY 01.,10.
.ASCII "| Proportional ~130 / ~140 |"
GotoXY 01.,11.
.ASCII "| |"
GotoXY 01.,12.
.ASCII "| SuperFont Characters ~aS |"
GotoXY 01.,13.
.ASCII "| ~0S selects font in /// memory |"
GotoXY 01.,14.
.ASCII "| ~2S most recently used Superfont |"
GotoXY 01.,15.
.ASCII "| ~4S font in PKASO/U memory |"
GotoXY 01.,16.
.ASCII "| ~8S scr font into driver memory |"
GotoXY 01.,17.
.ASCII "| ~16S font from driver to PKASO/U |"
GotoXY 01.,18.
.ASCII "| ~S switch to normal printer font |"
```

```

GotoXY 01.,19.
.ASCII " | add 1 to a for high density |"
GotoXY 01.,20.
.ASCII " | SuperFont printing |"
Gotoxy 01.,21.
.ASCII " | |"
Len_Write_Data .EQU *-Write_Data ;Number of bytes to write.
;=====

```

```

W2_Data GotoXY 40.,02.
.ASCII " | |"
GotoXY 40.,03.
.ASCII " | Printing Size ~aF |"
GotoXY 40.,04.
.ASCII " | ~40F = 5 CPI |"
GotoXY 40.,05.
.ASCII " | ~80F = 10 CPI |"
GotoXY 40.,06.
.ASCII " | ~132F = 16.5 CPI |"
GotoXY 40.,07.
.ASCII " | |"
GotoXY 40.,08.
.ASCII " | ~aZ change leadin character |"
GotoXY 40.,09.
.ASCII " | a = Ascii numeric code |"
GotoXY 40.,10.
.ASCII " | |"
GotoXY 40.,11.
.ASCII " | ~aM Send escape codes to printer |"
GotoXY 40.,12.
.ASCII " | ~M Send just escape |"
GotoXY 40.,13.
.ASCII " | |"

```

## ON THREE Presents...

# ASCII Chart

This Desktop Manager module lists the decimal, hexadecimal and corresponding character values of all ASCII keyboard characters. A second screen shows the decimal and hexadecimal equivalents of keypresses which include the control key. This keypress table can be invaluable when you need to know printer commands to enable different printer modes. The ASCII table is a necessary tool for programmers of all skill levels. Why not have them both at your fingertips? Only \$9.95 plus \$3 s/h.

Ascii Conversion Table

Dec	Hex	Cr	Dec	Hex	Cr	Dec	Hex	Cr	Dec	Hex	Cr	Dec	Hex	Cr	Dec	Hex	Cr		
0	00	NUL	19	13	DC3	38	26	&	57	39	9	76	4C	L	95	5F	114	72	r
1	01	SOH	20	14	DC4	39	27	'	58	3A	:	77	4D	M	96	60	115	73	s
2	02	STX	21	15	NAK	40	28	(	59	3B	;	78	4E	N	97	61	116	74	t
3	03	ETX	22	16	SYN	41	29	)	60	3C	<	79	4F	O	98	62	117	75	u
4	04	EOT	23	17	ETB	42	2A	*	61	3D	=	80	50	P	99	63	118	76	v
5	05	ENQ	24	18	CAN	43	2B	+	62	3E	>	81	51	Q	100	64	119	77	w
6	06	ACK	25	19	EM	44	2C	,	63	3F	?	82	52	R	101	65	120	78	x
7	07	BEL	26	1A	SUB	45	2D	-	64	40	@	83	53	S	102	66	121	79	y
8	08	BS	27	1B	ESC	46	2E	.	65	41	A	84	54	T	103	67	122	7A	z
9	09	HT	28	1C	FS	47	2F	/	66	42	B	85	55	U	104	68	123	7B	{
10	0A	LF	29	1D	GS	48	30	0	67	43	C	86	56	V	105	69	124	7C	
11	0B	VT	30	1E	RS	49	31	1	68	44	D	87	57	W	106	6A	125	7D	}
12	0C	FF	31	1F	US	50	32	2	69	45	E	88	58	X	107	6B	126	7E	~
13	0D	CR	32	20	SP	51	33	3	70	46	F	89	59	Y	108	6C	127	7F	DEL
14	0E	SO	33	21	!	52	34	4	71	47	G	90	5A	Z	109	6D			
15	0F	SI	34	22	"	53	35	5	72	48	H	91	5B	[	110	6E			
16	10	DLE	35	23	#	54	36	6	73	49	I	92	5C	\	111	6F			
17	11	DC1	36	24	\$	55	37	7	74	4A	J	93	5D	]	112	70			
18	12	DC2	37	25	%	56	38	8	75	4B	K	94	5E	^	113	71			

RETURN  
for more  
ESCAPE  
to leave.

```

GotoXY 40.,14.
.ASCII "| ~Z restore PKASO/U to initial |"
GotoXY 40.,15.
.ASCII "| settings |"
GotoXY 40.,16.
.ASCII "| |"
GotoXY 40.,17.
.ASCII "| |"
GotoXY 40.,18.
.ASCII "| |"
GotoXY 40.,19.
.ASCII "| |"
GotoXY 40.,20.
.ASCII "| "
Inverse
.ASCII "PRESS ANY KEY TO EXIT"
NORMAL
.ASCII " |"
GotoXY 40.,21.
.ASCII "| "
Len_W2_Data .EQU *-W2_Data ;Number of bytes to write.

;^Z Switch back to normal PKASO/U operation.

;=====
;Below are the SOS call paramater tables.
;=====

Write_List .Byte 03 ;Number of parameters for
;write.
Write_Ref .Byte 00 ;Console reference number.
.Word Write_Data ;Pointer to the data.
.Word Len_Write_Data ;Number of characters to write.

W2_List .Byte 03 ;Number of parameters for
;write.
W2_Ref .Byte 00
.Word W2_Data
.Word Len_W2_Data

Read_List .Byte 04 ;Parameter for a Read call.
Read_Ref .Byte 00 ;Console reference number.
.Word Key_Buffer ;Pointer to key buffer.
.Word 1 ;We want one key.
Ret_Count .Word 00 ;Number of bytes returned.
Key_Buffer .Byte 00,00 ;Leave space for two bytes
;in case the console is in
;two byte read mode.

;=====
;Below is the main entry point for the module.
;=====

Enter_Here STX Read_Ref ;Store console reference
;number in both SOS call
;parameter lists.
STX Write_Ref
STX W2_Ref
SOS Write,Write_List ;Write first half of message.
SOS Write,W2_List ;Write second half of message.
$01 SOS Read,Read_List ;Ask for a key.
LDA Ret_Count ;See if we have received one.
BEQ $01 ;No key has been hit so
;ask again.

RTS ;User has hit a key so leave.

.END ;End of the module.

```





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# Ranntings

Richard and Lavona Rann

---

## Serious Problems in the /// Community

For a number of months we've been telling you how great you are, but new problems have come to our attention. We are not going to take back all of those nice things we said. We meant them and still do. But there are problems creeping into our community and no matter how hard it is to admit they exist, ignoring them will not make them disappear. Our more than four years' experience with the /// community has impressed us with the overall integrity and good sense of most of our fellow ///er's. Now that is being challenged by the actions of what we hope is a small group for one type of problem and a misunderstanding by what appears to be a much wider group for the second.

The smaller problem is that of basic honesty. TAU and several of the businesses supporting the /// have often worked in a friendly, basically non-businesslike way in supporting those with /// *emergencies* by mailing things on the basis of a promise that the check would be in the mail that day. Many, many ///er's have benefited from that practice and have faithfully paid and spread the word about the good service they were provided. Recently, the viability of this approach has been killed by a few people's lack of integrity. There is not a lot a community like ours can do about dishonesty of this type except be understanding when the providers require payment before service in *all* cases. This is a loss to all of us. It will be especially painful to some of us when we need things from providers who cannot accept credit cards and must wait to get a check (and maybe for it to clear) before sending us what we need. If you need a block editor, backup disk drive or whatever, you may want to consider this and order before an emergency occurs.

The other problem is less specific and covers a topic we have all heard about: illegal software copying. Recently, one of the /// software developers shared his feelings with us about illegal copying of his programs. "It's gotten so bad that people are calling me asking for the manuals for the programs they've copied. Some of them expect me not to charge for the solution to problems they encounter running pirated copies of my programs." We had to agree that it is discouraging to try so hard to make a business work and watch all that money slip away because of illegal copying. Not just discouraging, but financially threatening.

The problem runs much deeper than just our friend's problems with pirated software. It threatens the viability of our community. It should be no surprise to anyone that it takes money to write/develop, market and service commercial software and hardware. That money comes from sales. It is as simple as that.

There is no such thing as a free lunch. Public domain software cannot fill the void and isn't really free anyway. The Apple /// community is viable only because people can make a profit supplying goods and services. There are people in the community willing to pay their money for products devoted to the Apple ///. When that money stops, the community will die. At that point the Apple /// will be the same excellent computer that it has always been; the difference will be that it will be obsolete. No new programs will be generally available and the future will soon pass it by.

In 1986 we saw some of the difficulties created by tight markets. One of our suppliers, Titan Engineering, went into Chapter 11 bankruptcy. We won't claim that their problems stem from sales of their Iie emulation board, but that certainly is a factor. More recently Charlie McConathy left the Apple /// hard disk business. His difficulty is that he can no longer get Apple /// controller boards made at a reasonable price. Neither of these examples has anything to do with piracy problems, nor was there any way for the /// community to prevent them, but they do illustrate how economic pressures are shrinking our community in ways we cannot control.

There is an area over which we do have control. It is related to the illegal software issue. An individual *can* make a difference. It would be too easy to say, "Don't make copies;" that would do little good and we don't condemn all software copying. What we advocate is paying for the software you use. Everyone likes to see new and different software. Each of us likes to try a new program. It is inevitable that some programs will be copied. This can be good because it spreads the word about the newest software and gives users a chance to personally see what it does. People who take a pirated copy and use it as more than a demo are breaking a trust. If a copied piece of software is useful, and important, buy it. Vote with your dollars for the community. Support the marketers and developers so they can afford to provide more things for us all in the future. Whatever you do, do not ask for service when you have not paid your share of the development costs.

We know that the world isn't as simple as all this. There are problems with software makers, with discontinued software, with programs that are no longer supported and we recognize a growing gray area for which copying is sometimes the only answer. Yet it is important not to penalize those still supporting the Apple /// because of the shortcomings of others. There is no doubt that Apple /// developers and supporters deserve your backing. If you get a piece of copied software, demo it and decide for yourself if it is something you need. If it isn't, there is

# How many dollars have you invested in your Apple ///?

Answer this questionnaire and find out how to extend your computer's life:

- Do you vacuum your office or home less than twice a day?  YES  NO
- Are there smokers in your office or household?  YES  NO
- Are there children in your household?  YES  NO
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If you answered "yes" to one or more of the above questions, then you need to protect your investment with an *ON THREE* Dust Cover.

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City \_\_\_\_\_  
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\*3% surcharge on American Express. California residents add 6% sales tax.

nothing lost. Most software authors want users to be satisfied with their software. Try it and if it doesn't measure up, write over the diskette. But if it does, pay for it.

Whatever you do, remember that your actions will make a difference. Think twice before loaning software to a friend. If they want a demo or need a quick fix, couldn't you do it for them? Do not encourage others to fall down in their fair share of support to the community. We are already almost too small to support magazines, developers and viable user groups. Every person and every dollar count. If you feel you need to loan someone a copy, be certain they understand that you expect them to buy the original and don't loan it if you think they won't.

Some of you would be surprised at the number of calls the various /// helplines get from people wanting manuals for things that are still supported or at least still for sale. A good number of the software calls to our helpline concern things that are very clearly stated in the manual. We get some very interesting answers when we ask if the callers have the manual. Yes, there are some legitimate reasons why someone may not have a manual. We bought a copy of Draw ON /// from someone selling their /// and never got a manual. When we finally move up to the 512K upgrade, we will send in our *original* diskettes for Draw ON /// and offer to purchase a manual. If you have a legitimate copy of software, i.e. original diskettes and a bill of sale, most vendors will work something out for you. Don't copy your manuals for others if the vendor is still in business!

We haven't addressed legitimate or at least quasi-legal copying issues. Basically, we're not lawyers and we don't want to be sued. There is quite a bit of /// software that is no longer supported and the vendors have gone out of business. The developers and sellers of those products probably don't deserve the same degree of ongoing support from us that our active developers do. It is a tough decision in some cases. We have wondered, more than once, whether HABA wouldn't have come up with an upgrade to /// E-Z Pieces if they had gotten checks from all the people who are now using copies of that program. It is worth thinking about.

In the end we have a group of concerns of equal importance to providers and users. The groups are intricately involved with each other because each group's success depends on the support of the other. Profits for providers are tied to providing a useful service. When the user receives the service without paying, he is denying his responsibility to the community and opening the door for others to do the same. Each provider which goes out of business or stops serving the /// community is probably a permanent loss.

We know a few people in the community who always buy one of everything from selected providers, just to encourage them to keep doing more. We can't all afford to do that, but we have to do what we can to help keep the /// market viable. Taking a collective stand against inappropriate copying would be a big positive step. We will, ultimately, dictate the type of support we get by the type of support we give.





# Copy ///

Edward N. Gooding, Sr.

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## A One-Pass 140K Floppy Copier

If you have 256K of memory but only one disk drive, this is the copy program for you! It reads the entire source disk into memory (hence the need for 256K) and then allows you to make multiple copies directly from memory without re-reading the source disk. It will also format diskettes and is very fast, even though it does read- and write-verify all sectors. It will also copy unprotected Apple II disks for you, but will not copy anything that is copy protected because it is a sector copier, not a nibble copier. This is the ultimate copy utility at this time for Apple /// owners with 256K but only the internal disk drive. No more floppy elbow from swapping source and destination disks! The program supports "round robin" copying, is friendly and easy to use. In fact, I think most people could use it successfully without any documentation.

The program is produced by Digital Microware, P.O. 2508, Seal Beach, CA 90740, telephone (714) 855-0555. The cost is \$49.95. It is also sold by Blytheco, 22952 Alcalde Drive, Suite 100, Laguna Hills, CA 92653, telephone (714) 583-0424 for \$45.95. Blytheco offers full system support as well as other Apple /// products.

Copy /// is not copy protected, although it comes with dire warnings about not changing anything on the disk. The main program is written in Business BASIC and makes use of several assembler invokables. Though it is not copy protected, the authors did list-protect the programs in a creative way. If you'd like to learn how to list, modify and install this program under an interpreter switcher like Catalyst or Selector, then read on.

### Making Copy /// Catalyst-Compatible

After playing with Copy /// for a while, trying to make it compatible with Catalyst Version 2.1, I finally succeeded in getting it to boot from Catalyst and return to it after the **SHIFT Q** keypress. I have also reduced the elapsed time of the boot by removing the "advertising" code from the boot process.

Copy /// 5.0 is really just a Business BASIC program which makes liberal use of five assembler language invokables to copy floppy diskettes. The folks at Digital MicroWare also did a few primitive but cute tricks to frustrate the casual ///er who might try to snoop around in the program. First of all, they must have zapped the Basic 1.1 interpreter, because the Hello program on the diskette is titled "WORMS." In fact, the volume name is /THE.GARDEN, and the actual Copy /// program is titled "SPIDERS." The font files are "SOIL" and "BUTTERFLY," and

the invokables are "TULIPS.INV" (a font file retriever/loader), "MUSHROOMS.INV" (a reset key lock and rebooter module), "POTATOS.INV (sic)," "LETTUCE.INV" and "CARROTS.INV" (disk read, write and format invokables--I haven't figured out which is which, yet). These folks must be organic gardeners.

Here's how to modify the program to boot from Catalyst. First, create a subdirectory under Catalyst to store the Copy /// files. Next, copy the following files from the Copy /// diskette to the Catalyst subdirectory: TULIPS.INV, POTATOS.INV, LETTUCE.INV, CARROTS.INV, BUTTERFLY.

In addition to these files from the Copy /// diskette, you will probably want to copy a standard font from your Business Basic diskette to this subdirectory. Copy /// uses custom fonts and, if you don't load a more standard font before exiting back to Catalyst, you will see some cute tricks performed by your Catalyst menu; nothing destructive, but distracting nonetheless.

If you want, you can rename TULIPS to FONTS and BUTTERFLY to COPY///, but remember to make the corresponding changes in SPIDERS as you change the program listed below. If you discover the functions of POTATOS, LETTUCE and CARROTS before I do, please let me know. You don't need the SOS system files, the MUSHROOMS.INV (we will replace it with the BYE verb to exit BASIC and re-enter Catalyst if you have BASIC Version 1.23Ax), WORMS (just advertising anyway) or SOIL (font file for WORMS).

Now comes the somewhat tricky part. We must unprotect SPIDERS and modify it slightly. Boot BASIC and load .D1/SPIDERS from the Copy /// boot diskette. Try to list the program. Nothing happens, right? Somehow those rascals have devised a way to prevent you from listing their program. (Shades of Beagle Bros.) If you try to randomly list specific line numbers, you will find that you can list parts of the program, but then the screen goes crazy again after a short time. Why? Because they have imbedded control codes in the program which alter the characters on the screen! If you try to open a printer file in immediate mode and list the program to your printer, your printer will go crazy as well. The control codes are doing this. So try listing the program to a disk file. Voila! The ASCII file created by the program listing can then be edited with Apple Writer /// or any other word processor. To list the BASIC program to a disk file, type the following instructions in immediate mode (without line numbers):

```
OUTREC=255  
OPEN #3 AS OUTPUT, ".D1/PROGRAM.ASCII":REM You
```

can name it anything you like.  
 OUTPUT#3  
 LIST  
 CLOSE  
 OUTREC=80

Boot Apple Writer and load your listing of SPIDERS. See the REM statement at the beginning of the program? See the control codes after it which create a window one character wide and long? No wonder you can't see the program listing! No wonder your printer goes crazy! Now use the Find (CONTROL F) function to find all occurrences of "REM" and then delete each REM statement from the program. Don't try to include the control characters in your [F]ind because the program's authors have placed random spaces between them. Simply locate the REM's and delete the offending characters. Fortunately, or unfortunately depending on how you view it, the authors only used REM's in this program to prevent you from listing it. Therefore, you will find all of them very quickly by performing [F]: /REM/.

Next, modify the reboot routine near the beginning of the program. Remove the code which prints the "Insert a System disk and press 'RETURN' to reboot:", accepts the keypress, tests it for a RETURN and then PERFORM's REBOOT.

Replace it with an INVOKE of the TULIPS/FONTS.INV, a LOAD of the standard font from your BASIC diskette and then the BYE verb. This return you to Catalyst. You will have to code the INVOKE TULIPS.INV statement, but you can copy the DIM A%(512) through PERFORM LOADFONT(@ARRAY\$) from just below in the program where the BUTTERFLY/COPYIII font is loaded.

The only other change to the program code is to add an INVOKE TULIPS.INV to the beginning of the code to load the BUTTERFLY/COPYIII font. This invocable was supposed to be loaded by the WORMS/HELLO program, but since we elected not to use this program, we will have to add the invoke to SPIDERS here as well as above. If you renamed the TULIPS.INV and BUTTERFLY files, don't forget to change the two lines which reference them at the beginning of the program.

Below are listings of the beginning of SPIDERS/HELLO, both the original version and my altered version.

This is how the program appears after being stripped of its REM's:

```

102 CLEAR
103 DIM A%(512):GOTO 116
105 HOME:VPOS=24:HPOS=1
107 PRINT"Insert a System disk and press RETURN to Reboot:";
109 CLEAR:DEL 116,3221:REM This is cute, a self-deletion step?
111 GET k$
113 IF ASC(k$)<>13 THEN 111
115 PERFORM reboot:REM Performed from the mushrooms.inv subroutine.
```

```

116 ON ERR GOTO 3185
117 ARRAY$="A%":FONT$="BUTTERFLY":FONTNAME$=CHR$(34)+FONT$+CHR$(34)
118 PERFORM GETFONT(@FONTNAME$,@ARRAY$):HOME:PERFORM LOADFONT(@ARRAY$)
119 INVOKE"potatos.inv","carrots.inv","lettuce.inv","mushrooms.inv"
```

This is the beginning of the program as I use it from Catalyst:

```

102 CLEAR:REM Unchanged
103 DIM A%(512):GOTO 115:REM Changed the GOTO from 116 to 115
105 ::
107 INVOKE"fonts.inv":REM Add this to reset font before leaving
109 ARRAY$="A%":FONT$="byte.font":FONTNAME$=CHR$(34)+FONT$+CHR$(34):REM Add
111 PERFORM GETFONT(@FONTNAME$,@ARRAY$):HOME:PERFORM LOADFONT(@ARRAY$):REM Add
113 BYE:REM Add to exit Basic and re-enter the Catalyst menu
114 ::
115 ON ERR GOTO 3185:REM This was 116, changed it to 115
116 INVOKE"fonts.inv":REM Add this since we won't use WORMS (Was tulips.inv)
117 ARRAY$="A%":FONT$="copy.font":FONTNAME$=CHR$(34)+FONT$+CHR$(34):REM Change font file name from Butterflies if you wish.
118 PERFORM GETFONT(@FONTNAME$,@ARRAY$):HOME:PERFORM LOADFONT(@ARRAY$)
119 INVOKE"potatos.inv","carrots.inv","lettuce.inv":REM Remove the mushrooms.inv reference; we don't need it since we'll use BYE, instead.
```

Everything below 119 is unchanged.

Save the file back to disk and re-boot Basic. Type "NEW" to clear memory, then type "EXEC ASCII.FILE.NAME", where ASCII.FILE.NAME is the name of the SPIDERS listing file which you edited with Apple Writer. This will convert the program back to a normal BASIC program. Now, save the BASIC program to your Catalyst/Copy.III subdirectory as HELLO.

Boot the Catalyst Editor and edit the menu to add a reference to Copy ///. The interpreter pathname is .PROFILE/CATALYST/BASIC. (I upgraded to version 1.23Ax with no problems--you need it to use the BYE verb anyway.) The prefix is the subdirectory the Copy /// files are stored in. The program prefix is the HELLO program (formerly SPIDERS) in the Copy /// subdirectory.

Booting Copy /// from the Catalyst menu will now take you directly to the Copy /// function screen where you can start copying immediately. Pressing SHIFT Q will take you immediately back to the Catalyst menu.



# One, Two, /// Forum

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## Odds and Ends

First of all, I am interested in buying Draw ON ///, but before I do, I'd like to know whether it works with an MX-100 printer connected to a UPIC card. I have tried to use the graphics mode on my printer with minimal luck. When I send a 16<sub>10</sub> to the printer while it is in graphics mode, it goes crazy. I experimented a bit with my printer before sending this and I think Pascal assumes the printer is a text file and grabs the 16 as a DLE-blank code. No matter what I do, including using UnitWrite, the 16 causes a problem. However, Business BASIC presents no problems. Help! If all goes well in solving this difficulty and they'll work with my printer, I'd like to order Draw ON /// and the Graphics Manager. Also, can I use the Gameport /// and Apple II joystick with Draw ON ///?

You may be interested in a Pascal program I've written which searches through all block devices trying to find a file name. For example, if you enter =On=, the program prints the entire pathname, creation date and size of any file which has the two letters "ON" in the name. My program also searches sub-directories because I don't like trying to find a file using System Utilities or the Pascal Filer when I can't quite remember the file name or pathname. So if you'll send me a copy of your author guidelines, I'll submit this program for you to publish.

While writing the program mentioned above, I was trying to correctly print the file type and ran into an inconsistency between your Disk Manager and System Utilities. I wrote a small program which created dummy files with each file having a consecutively higher file type value starting with 0. The inconsistency appears with RPS Data and RPS Index. Disk Manager lists them as having file types 13 and 14 and System Utilities with file types 16 and 17. System Utilities also has four additional types: AFDiscard, AFModel, AFReptFmt and ScreenLib. It probably doesn't make any difference, but I thought I'd bring it to your attention.

And finally, could you send to me or print in a future issue a list of the latest version numbers of Apple /// software? I used to maintain the operating system of Digital Equipment's PDP-11 series computers and I was impressed with their upgrade notices. With DEC I always knew I had the latest and greatest version and didn't have to worry about knowing whether or not a new version had been released without my knowing. Thanks for a great magazine.

Robert C. Sudduth  
APO, NY

*Draw ON /// will work perfectly with a UPIC card and your printer. When ordering Draw ON ///, however, you must specify the Epson Version. This version is the only one which will work with your printer. However, neither Gameport /// nor the Apple II joystick works with Draw ON ///.*

*The problem you're having with the 16<sub>10</sub> command is that it is illegal. Pascal intercepts this command before it can reach your printer. Therefore, you should check in any of the available Pascal manuals to learn how to send a legal command which will do what you want.*

*A version of the Pascal program you've written and submitted is already on the market. It is called "Find Files" and is provided with Pascal Version 1.3, which is available from Sun Systems Remarketing, P.O. Box 4059, Logan, UT 84321, telephone (801) 752-7631. But even though for that reason I cannot publish your program, I am including a copy of the author guidelines anyway in hopes that you will continue to write programs and submit them for possible publication. There are not many Apple /// programmers left, so I do my best to encourage anyone who is interested in programming for the ///. If anyone else reading this column would like a copy of the author guidelines, call or write and ON THREE will forward a copy to you immediately.*

*I have contacted David Ottalini of Washington Apple Pi's Apple /// SIG and he is compiling a list of the latest versions of Apple /// software. So as soon as he gathers the necessary information, it will be published in this magazine.*

*And thank you for your observations about the Disk Manager. We'll incorporate your suggestions and many others we have received since the program's release in the next update.*

## Telecommunications

John Morrison's letter in the January 1987 issue of *ON THREE* got my hackles up. Again. What on earth is the problem? What is difficult about Access ///?

Access /// provides nearly perfect emulation of the ubiquitous DEC VT-100 terminal, and the emulation is even better than advertised. My university's mainframe has a front-end processor (Yale ASCII Terminal Emulation Program) that lets selected terminals pretend to be full-screen 327x terminals. With Access ///, and by telling the front end that I am a VT-100, my Apple /// has all the features of a directly connected 3278 -- including all 12 PF keys. With Access /// command files, I can automatically



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set up my communications parameters and go through the log-in sequence for any service, whether my university mainframe or CompuServe, without having to have a Hayes modem.

No other Apple /// telecommunications product provides both terminal emulation and general command files. The other products (that I know of) have no terminal emulation. If they have any automatic facilities, they are keyed to the Hayes command set and they cannot go through a complete log-in sequence for a general telecommunications service. But no matter the product, there is nothing especially difficult about using it with an Apple ///.

Allan M. Bloom  
Blacksburg, VA

*I have been shamelessly allowing some ON THREE contributors to frighten the readership of ON THREE without giving an opposing viewpoint regarding communications packages generally and Access /// particularly. The time is now and the viewpoint is Mr. Bloom's. I hope this helps to even the score.*

#### **Grueling Graphics**

I have owned Apple /// computer systems since 1983 and have found them to be fast, reliable and responsive machines. Lack of software for specific purposes, however, has left me frustrated at times. After reading your magazine since August, I have accumulated some questions which I hope you can help me with.

First of all, I am having trouble finding a good graphics package for my C. Itoh 1550 printer, which I understand is a wide carriage version of the ProWriter. I am currently in engineering school, so I need such features as log-log and semi-log plots. It would also be very helpful if there were an easy way to load VisiCalc data into the program. I have found programs that provide parts of what I need (Business Graphics and Graph & Calc), but no program that fills the whole bill. My question is this: is there a program out there that will work with Draw ON /// to take care of the needs described above? The ideal program would have Business BASIC's file loading abilities, Graph & Calc's scientific plots and the ability to use Draw ON ///'s superior graphics. Also, will the Desktop Manager system eventually support an under \$2,000 laser printer?

My next question deals with data bases. In your August 1986 issue, Omnis 3 was reviewed. Judging by what I read of it in the review, Omnis 3 sounds like the exact data base I need. Do you know who sells it? How much does it cost? Is it copy-protected? If so, what provisions does it have for backup?

Any help in answering the above questions is appreciated.

Robert Stanley  
Pardeeville, WI

*I'm sorry to tell you this, but no program exists for the /// which will do everything you want it to do. The best thing I can*

*recommend is that you continue using the programs you currently use to produce your desired charts and graphs.*

*But there is good news. The Desktop Manager will work with any printer you attach to your ///. As long as you have the appropriate driver in your ///'s driver file to make the laser printer run with the ///, the Desktop Manager will work flawlessly.*

*Omnis 3 is currently being sold by D A Datasystems. For more information about that program, contact:*

D A Datasystems  
3792 Windover Drive  
Hamburg, NY 14075

Telephone: (716) 648-2462

#### **Denticulate Postulate**

Our company was formed for the purpose of developing and marketing software to be used for the management of dental offices, using the Apple /// as our computer. Our dental management system was sold to four dental offices prior to Apple's withdrawing support for the Apple ///. In spite of the lack of support from Apple, our system is still being used in three offices and manages the practices of four dentists.

After reading the article "Block\_Write" by Bob Consorti and "Apple.Sauce" by yourself in the November 1986 and January 1987 issues of *ON THREE*, it would seem to me that our software may be easily adapted to the IIGS. If this is possible, it would give us the advantage of utilizing a faster computer and perhaps a fast tape backup. This would not only be an advantage to the dentists who presently use our system on the Apple /// (which has been an excellent computer for us), but perhaps also an advantage to us because our software may again be marketed.

I would like to obtain a manual or literature which details the changes necessary to convert programs written in Pascal for the Apple /// to Pascal programs for the IIGS. I would very much appreciate it if you could advise me where I may obtain such a manual or literature. Our software uses the Apple Record Processing Services (RPS) system for file handling. Can you tell me if the IIGS is able to use that system? Can you also tell me if the IIGS is able to run software written for the Apple /// such as QuickFile, Word Juggler and VisiCalc?

Thank you in advance.

Grant Jorgenson  
Calgary, Alberta  
Canada

*ON THREE's programmers program in Assembly language, which is immediately transferable to the IIGS. However, since you program in Pascal, you're going to have to wait to port your programs over until a version of Pascal is released for the IIGS. Two different Pascal versions are currently under production. One*

is called TML Pascal and the other UCSD Pascal. Bob Consorti, president of ON THREE, recommends the latter, produced by Pecan Software Systems, Inc. Their address and telephone number are:

Pecan Software Systems, Inc.  
1410 39th Street  
Brooklyn, NY 11218

Telephone: (718) 851-3100

They should be able to provide you with more information about a release date, etc. Neither Bob nor ON THREE programmer Tim Harrington think the Apple RPS system will work under the soon-to-be-released version of Pascal for the IIGS. But ask Pecan Software Systems anyway. They'll definitely know.

Your Apple III Word Juggler program will run on the IIGS, but your VisiCalc and QuickFile programs will not. However, all is not lost. Your VisiCalc files can be used by many other spreadsheet programs being released for the IIGS. And your QuickFile files can be read by AppleWorks for the IIGS.

If you'd like to obtain developer's information from Apple, you'll have to talk directly to them. They'll tell you all you need to know about becoming a software developer for the Apple IIGS. You can reach Apple's Developer Relations section at the following address and telephone number:

Apple Computer  
ATTN: Developer Relations  
20525 Mariani Avenue  
Cupertino, CA 95014

Telephone: (408) 996-1010

*I'm sure they will be able and willing to help you.*

### Fun and Games

After years of considering writing but feeling too unknowledgeable about the III to formulate a sensible question, I am stimulated by the recent changes in the magazine and the continued impressive product development to write and, if for no other reason, to simply thank you. My computer gets little use beyond word processing and an occasional game, and I have never made the time to study or use the III to the degree which it deserves. I am always fascinated and stimulated by the ways in which others are utilizing it.

The Beginning III is great. For computer illiterates such as myself, step-by-step explanations often open up possibilities that we did not know existed. Similarly your patient, careful answers to questions from beginners is invaluable.

I've notice that there are some readers who like myself enjoy playing games on the III. Maybe, for all of our benefits, you

## Products and 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	\$49.95	\$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 //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	\$3.00	MicroSci A143 560K Disk Drive +	\$325.00	\$6.50	Dust Cover for Apple III and Monitor III	\$11.95	\$2.00
Unprotect Driver	\$19.95	\$2.00	Reconditioned 512K Apple III w/monitor III	\$1048.00	\$50.00	Dust Cover as above plus ProFile	\$12.95	\$2.00
Desktop Manager	\$129.00	\$6.00	256K Apple III w/monitor	\$749.00	\$50.00	I ♥ My Apple III T-Shirts		
Desktop Manager/ON THREE O'clock combination	\$165.95	\$8.00	512K Memory Upgrade, 256 to 512K (Remit \$324 and \$25 cash or \$35 credit is rebated when old board is returned.)	\$324.00	\$10.00	sm, med, lg, x-lg yellow, blue, white, beige	\$11.95	\$3.00
Disk Manager* (utilities)	\$44.95	\$3.00	256K Memory Upgrade, 128 to 256K, no rebate	\$150.00	\$10.00	I ♥ My Apple III Sweat Shirts		
Grafix Manager**	\$49.95	\$3.00				sm, med, lg, x-lg yellow, blue, white, silver	\$18.95	\$3.00
Macro Manager*	\$44.95	\$3.00				I ♥ My Apple III Caps	\$5.95	\$2.00
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)	\$19.95	\$2.00						
Card Machine (blackjack game)	\$24.95	\$2.00						
Fruit Machine/Card Machine combination	\$39.95	\$3.00						
Sandman** (arcade game)	\$29.95	\$2.00						
Crossword Scrambler	\$11.95	\$2.00						
UniDisk III.5 disk and documentation only	\$60.00	\$3.00						
Sider 10, 20 mb Driver and documentation only	\$159.00	\$3.00						

To order, call toll-free (800) 443-8877 or in California (800) 331-1418. Send check or money order to:

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.

All prices are subject to change without notice.

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could publish a list of purchasable games that are around or is what we see in your magazine all that there is? Speaking of games, I have a couple that I play in emulation mode. I have not been able, however, to save the game to return to it at the same point later. Is there a way around this problem?

I also have a question about Apple Writer. I have been unable to figure out a way to underline a word preceding punctuation without either getting a space between them or underlining the punctuation mark as well. Is there a way that you know of doing this?

I am considering purchasing a 512K Memory Upgrade from *ON THREE*. However, I have what is probably a not uncommon history which makes understanding how to go about getting the upgrade a bit difficult. I purchased one of the early 128K Apple ///s. A few years ago, I paid for a 256K upgrade which required installation by my local dealer. Now, please tell me what I am: (1) a 128K who needs your help and a bit more money to reach 512K, or (2) a 256K who can do it at home and maybe even get a cash rebate for my efforts?

Thanks again for a high-quality and reliably periodic publication.

David Hunter  
Minneapolis, MN

*Thank you for your kind words about ON THREE magazine. I have tried my best to improve it and appreciate your noticing and complimenting my efforts.*

*The problem you've noticed with some of your games not being saveable for play later is that of the program itself. You must consult the documentation or contact the manufacturer of each individual program to see whether it is capable of holding your place for later play. If it is unable to save your place, then the programmer who wrote it failed to program that function into the game. It is unfortunately unfixable except by the programmer or the company responsible for producing the software.*

*The problem you're experiencing with Apple Writer, however, is common and easily solved, depending on the printer you have. What you need to do, after you have typed the second underline character and before you type the punctuation mark, is press **CONTROL V** and enter your printer's command code for a backspace. This code is mentioned in your printer's manual; every printer has different codes for a backspace, so I cannot tell you what yours is. Some cheaper printers don't allow for a backspace at all, so this procedure may not be possible for everyone. After entering the backspace code, press **CONTROL V** again. Finally, type the punctuation mark. Now when your printer goes to print your document, it will underline the word, leave a space where the underline token was, backspace as directed by the imbedded control command and then place the punctuation mark exactly where you want it, immediately after the underlined word. Simple.*

*Another simple procedure is installing the 512K Memory Upgrade, which you will be able to do effortlessly. You, as your letter states, are a "256K who can do it at home." The directions which accompany the upgrade are easy to understand and follow, so I see no problem with any Apple /// user, beginning or advanced, upgrading a system at home. And yes, you can return the old 256K board for cash or even ON THREE credit.*

*I hope these answers help you. If you have any further questions or comments, please write again. Helping my magazine's readers solve their problems is the best part of my job.*

### **The Big Freeze**

Thank you for the update to my Word Juggler program. I know it will be a great advantage having the updated version when my Sider 10 arrives. However, I would like to address one problem I am having with my Apple ///. When I boot my Word Juggler disk, sometimes I receive the proverbial "System Failure" message with the symbol "\$0F" at the end. This happens during booting and sometimes after I have entered a large document into memory. I was thinking about purchasing your Lazarus /// file recovery utility, but I'm not sure whether my problem would be solved by using such a program. The system just freezes, resulting in all kinds of work being eliminated. I don't think the problem is static related because my home is well insulated. Once as I was typing a document, the system froze with the cursor sitting in a stationary position; the blinking cursor simply was no more. This also happened while I was printing a document. I immediately rebooted the Word Juggler disk and my /// performed as if nothing had happened.

This happens to me all the time. I never know when the system will freeze. I have narrowed the problem to two possibilities: either the computer has some bad chips or there is dust on my Word Juggler disk. I have eliminated the second possibility because my system has since failed when the drive was not operating and besides, if the disk was dusty I couldn't boot it. Therefore, I have concluded that one of the chips has become weak and needs assistance. Have you ever heard of a similar problem? Is it the disk or is one of the RAM chips going crazy?

I have seen your advertisement for a RAM diagnostic disk. If I purchase and use this disk, will it check all of my system's RAM disks for proper functioning? And if so, do you sell the RAM chips to customers so they can replace the defective ones themselves?

Bill Sharp  
Jonesboro, AR

*First of all, do you have a 512K Memory Upgrade installed on your computer? If so, use the disk you used to test the system after installing the upgrade to check the RAM. This should point to a defective chip if one is in fact defective. If you don't have 512K yet, then you may want to order the RAM diagnostic disk.*

Another answer to your problem could be loose chips on the motherboard, a frequent problem with Apple /// computers which results in sporadic system failure. Either you or an authorized Apple /// repair person could open your computer and gently press down on the motherboard's chips to make sure they are all firmly seated in the board. DO NOT press down on the chips on the 512K upgrade board; you may do more harm than good. If you do have the 512K Memory Upgrade, it is a relatively recent addition to your system and there should not be a problem with it.

*BUT BEFORE YOU DO ANYTHING, read Richard and Lavona Rann's "The Beginning ///" article in this issue of ON THREE. In it they describe your problem exactly and present ways of solving it.*

#### **Ile or not Ile . . .**

Your magazine's address was passed along to me by another Apple /// user. I have owned an Apple /// for five years now and intend to continue using it for some time to come. In fact, at this moment I also own a Ile and have just become the proud owner of a Macintosh Plus.

The main reason I am writing, in addition to getting regular input from kindred spirits, is to find a solution to a minor problem which I am facing. I will be selling the Ile and keeping my /// and, of course, the Macintosh. I have a great deal of software for the /// as well as five years' worth of letters, files, etc., so the /// has become an invaluable part of my life. The main problem parting with the Ile presents is that I have been using the "Dollars & Sense" program to keep track of my personal finances. I would like to continue using that program in the future but on the ///. However, running the /// in emulation results in a 40 column display, which is far less than satisfactory to say the least.

To date, I have only come up with one solution to my problem. Apple put me in touch with a firm in Utah, Sun Systems Remarketing, which offered to sell me a Titan /// + Ile card which would allow my /// to run either Ile or /// software interchangeably, complete with 80 column display. This sounds pretty good, but I'd like to hear whether you have any other ideas as to how I can solve this problem or if you have any experience with this card.

I am looking forward to your reply.

W.R. Barnett  
Oakland, CA

*Answering your question about the Titan /// + Ile card, that is the only way to do what you want to do. Based on reports we've received from users it is a good card and Sun Systems Remarketing, from our experience, provides proper user support. The only problems we foresee with the card is that it uses two precious slots in your /// and does not allow the Mouse Text character set.*

You may have already discovered that some of your other Ile programs will not run at all on the ///, even in emulation mode. This is because some of those programs require that the ///'s processor contain a special chip, the 65C02. This chip is sold by Sun Systems Remarketing and is easy to install. It may be wise for you to inquire about it.

#### **For Your Information**

In response to your column in the January 1987 issue of *ON THREE*, I have two points to make.

First, there is a card, the "Apple Turnover," for the IBM which allows it to read and write Apple II and Apple /// files (SOS files cannot have subdirectories). I have only used it to convert DOS 3.3 and SOS files to PC DOS, but it works fine for that. The documentation says that it can convert VisiCalc files to Lotus 1,2,3 and they sell an inexpensive additional program that can convert Apple hi-res graphics to PC DOS color graphics. The card is, or was, available from:

Vertex Systems  
6022 W. Pico Boulevard  
Suite 3  
Los Angeles, CA 90035

Second, there is indeed a fast copy program called "Copy ///" for the Apple /// that copies the entire disk into memory. It can also copy Apple II DOS 3.3 disks in native mode if they have the volume number one. It works very nicely and would be a real savior for someone temporarily or permanently without a second disk drive.

H.E. Frech, III  
Santa Barbara, CA

*In this issue is an article titled "Copy ///" written by Edward N. Gooding, Sr. In his informative and entertaining review of the program, he lists two places from which it may be obtained.*

*NOTE: I published the above reference to Vertex Systems' "Apple Turnover" without being able to confirm that the company is still in business and located at that address. I did this because some ON THREE reader may be able to obtain a copy second-hand and should be aware that the program exists. A wise consumer should always be cognizant of his or her alternatives.*



**ON THREE**  
**TOLL-FREE ORDER LINES**  
**(800) 443-8877**  
**In California**  
**(800) 331-1418**



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

If you want to meet other Apple /// owners and exchange ideas, contact one of the user groups listed below. If you recently formed a group, know of one not listed here or have updated information about a group already listed, please contact *ON THREE* and we will include your information in this section, no charge.

- California**  
Sacramento Apple /// User Group  
1433 Elsdon Circle  
Carmichael, CA 95608  
(916) 482-6660
- Orange County Apple ///  
User Group  
22501 Eloise Avenue  
El Toro, CA 92630
- LA-So. Bay Apple /// Users Group  
P.O. Box 432  
Redondo Beach, CA 90277  
(213) 316-7738
- Apple /// Users of Northern CA  
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 /// SIG  
P.O. Box 80569, Burnaby, B.C.  
Canada, V5H 3X9
- The Astronic Club  
1453 Highbush Trail  
Pickering, Ontario  
Canada L1V 1N6  
(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 Road  
Westport, CT 06880  
(203) 226-4198
- Florida**  
Sarasota Apple /// User Group  
c/o Computer Center  
909 S. Tamiami Trail  
Nokomis, FL 33555  
(813) 484-0421
- Georgia**  
Atlanta /// Society  
385 Saddle Lake Drive  
Roswell, GA 30076  
(404) 992-3130
- Illinois**  
TAU c/o Lavona Rann  
1113 Wheaton Oaks Drive  
Wheaton, IL 60187  
(312) 665-6319
- Kansas**  
Kansas City Apple /// Users Group  
5533 Granada  
Roeland Park, KS 66205  
(913) 262-3355
- Maine**  
So. Maine Apple Users Group  
Casco St., Freeport, ME 04033  
(207) 865-4761, ext. 2249
- Maryland**  
Apple /// S.I.G. Chairman  
Washington Apple Pi  
8227 Woodmont Ave. #201  
Bethesda, MD 20814  
(301) 654-8060
- Minnesota**  
Minnesota Apple Corps User 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 S.W. 5th Ave. #2000  
Portland, OR 97204  
(503) 645-6789
- Overseas**  
Apple /// Users Belgium/Netherlands  
c/o H. Van der Straeten, Vestinglaan 49  
2580 Sint-Katelijne-Waver  
Belgium  
(015) 205328
- Overseas (cont.)**  
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 /// S.I.G.  
P.O. Box 5537  
Richardson, TX 75080
- River City Apple Corps /// S.I.G.  
Box 13349  
Austin, TX 78711  
(512) 454-9962
- Texas (cont.)**  
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 Road  
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
- Apple THREE Group International  
c/o H. Joseph Dobrowolski  
P.O. Box 913  
Langley AFB, VA 23665  
(804) 865-7520

The *Call Three: Hot Line* is a service whereby Apple /// users with questions can call an area number for answers. The individuals answering your calls are fellow Apple /// users who volunteered to help those in need over some of the rough spots. They are not compensated for this service, so we owe them a resounding "three cheers" for their kindness and generosity.

If you are willing and able to aid others by answering questions, please write to *ON THREE* and provide the necessary information. If you have questions, feel free to call our consultants listed below. Please observe the calling hours shown and, before placing a call, double-check the time zone so you don't inadvertently awaken someone! No other restrictions apply to this service.

For your reference, the accompanying table lists subjects and abbreviations used in the "Subjects" column of the consultant 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
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
Rodney Hendricks	TX	(214) 581-0524	Su-Sa	6-9pm	Central	DB,EP,GE,MD,QU,SO,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
Vincent F. Latona	CA	(818) 703-0330	M-F	9am-5pm	Pacific	GE,WP,BB,SS,AE
Dennis R. Cohen	CA	(818) 956-8559	Su	10am-10pm	Pacific	GE,PA,MU,WP,DB,SO
			M-F	7-9pm		
			Sa	12n-6pm		
Kelly C. McGrew	WA	(206) 943-8533	Su-M,Th-Sa	7-9pm	Pacific	DB,GR,SS,PR,MD,CT
Larry E. Kalland	AK	(907) 272-4968	Su-Sa	12n-11pm	Alaska	AC,CT,GE,SS,EP,WP
H. Van der Straeten	Belgium	(015) 205328	Su-Sa	7-10pm	Europe	BB,CT,DB,GE,PA,PR,SS
Arnaud Trache	France	21 03 04 21	Sa-Su	10am-7pm	Europe	AC,BB,DB,AE,FI,GR,MD,PR,SS,TC,EP and all ON THREE products
J. Woretshofer	Netherlands	043-611704	Su-Sa	9-12 am	Europe	CT,FO,GE,PA,QU,SO,WP,AE,EP

**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.



**\$49.95**  
plus \$3.00  
shipping and  
handling

**Desktop Manager/ON THREE O'Clock Combo**

**\$165.95** plus \$8.00 shipping and handling



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

ON THREE Presents...

# The Desktop Manager™

This is the most complete and sophisticated desk accessory program ever written! Finally you can unclutter your desk the Desktop Manager way. The Desktop Manager places all of the desk accessory utilities you need -- appointment calendar, note pad and calculator -- within every program you own, so you can use them as if they were a part of your original programs. While you are using your program, you cannot see the Desktop Manager. However, by pressing only two keys the Desktop Manager menu appears, ready for your use from within *any* application!

While word processing, have you ever needed to multiply two numbers? Or have you suddenly remembered while in the middle of a spreadsheet the name of that stock your broker suggested, but have no pen or paper nearby to jot it down? Perhaps you've forgotten your spouse's birthday again, although you did write the date on a piece of paper you keep in your desk. Why not increase your productivity and efficiency while you clear your work area of that old-fashioned calculator, pens and paper scraps, and unnoticeable appointment calendar? With the help of *ON THREE's* Desktop Manager, you can do all this and more.

From within any program, two keypresses override and freeze your current application and display a window containing the Desktop Manager's main menu. Now you have the power of all of the Desktop Manager's options at your command. Simply select one of the following standard Desktop Manager features:

**Note Pad** - This handy tool has multiple pages per note, word wrap, automatic repagination, pick up and paste, and many other features usually found only in a word processing program. On-line help screens (a standard Desktop Manager feature) make using the Note Pad effortless as well as convenient.

**HELP MENU**

General Commands:

- ⌘A =>Add Another Note
- ⌘B =>Backs Up to Previous Note
- ⌘N =>Moves to the Next Note
- ⌘S =>Shows Note Selection Menu  
(Help Provided in Menu)
- ⌘R =>Allow Renaming Active Note
- ⌘F =>Find Text Within Note
- ⌘M =>Moves the Note Pad Window  
(Pressing Escape Will  
Restore Window Contents)

ESCAPE TO EXIT.

**Appointment Calendar**

17 Mar 87 6:13:01 PM

You have 2 appointments scheduled for today.

8:00 AM 9:04 PM

SUN	MON	TUE	WED	THU	FRI	SAT
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Open Apple ? Key For Help. MARCH 1987

**Appointment Calendar** - Set multiple appointments daily through December 31, 1999. As your appointment is due, a reminder appears on your screen regardless of what application you're using. The daily and weekly appointments are shown at a glance and, as with all Desktop Manager options, help screens are only two keystrokes away.

**Calculator** - A powerful electronic workhorse, the Calculator has full 16-digit accuracy and advanced functions such as SIN, COS, TAN, LOG's, x to a power, square root pi, memory and base conversions in addition to the basic add, subtract, multiply and divide functions. Also, you can invoke a simulated paper tape for printing later or pasting into another document.

**Calculator**

0

[Hlp] [Prt] [Tap] [CE] [CLR]  
 [Sin] [Cos] [Tan] [Pi] [e]  
 [Log] [Ln] [x^y] [Sqt] [Bin]  
 [D] [E] [F] [Deg] [Dec]  
 [A] [B] [C] [Rad] [Hex]  
 [7] [8] [9] [ / ] [M+]  
 [4] [5] [6] [ \* ] [M-]  
 [1] [2] [3] [ - ] [RM]  
 [0] [+/-] [ . ] [ + ] [ = ]

	25	Sqt
	5	
	5	*
	5	+
	79.95	-
	32.01	/
	65.02	-
	2	Bin
	0.0348994967025	Deg
	.0348994967025	*
	587	+
	100	-
	0.09	+
	183.88168537718894	=
	367.76337075437788	Sum
	0	CLR
	55.95	/
	12	*
	0.06	=
	0.27975	Sum
	0	CLR