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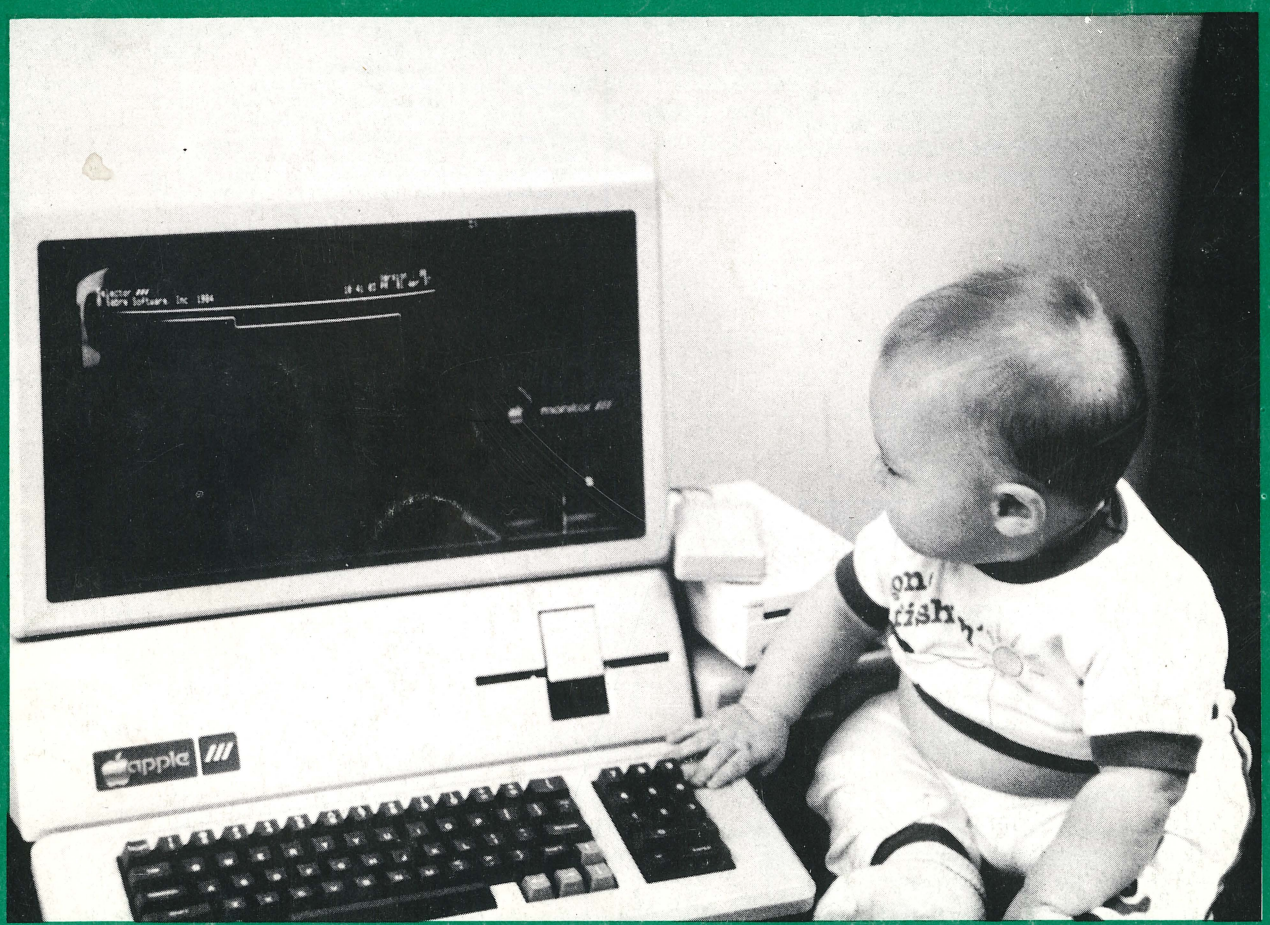
The Magazine For Apple III Owners and Users

Volume 4, Number 6

June 1987
$4.00

Back to BASIC



STOP AND LOOK!

Another Apple /// company, **The /// Magazine,** inadvertently has been selling the prompt procedure program designed to speed up and control screen display. **Prompt Procedure** by John Cisar *(Copyright 1986 by **ON THREE**)* was published in the September 1986 issue of ***ON THREE*** magazine and is only available through ***ON THREE*** by ordering Disk of the Month No. 10 for $14.95. This disk also contains other programs such as Football Pool. If you have purchased Prompt Procedure through **The /// Magazine,** please return it and your money will be refunded so you may purchase the **COPYRIGHTED** version.

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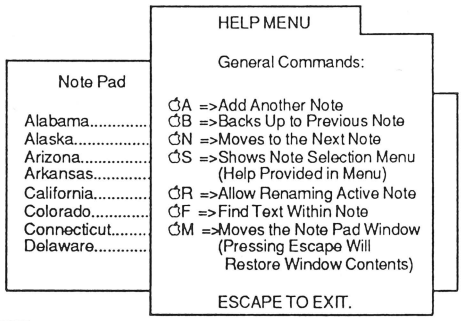

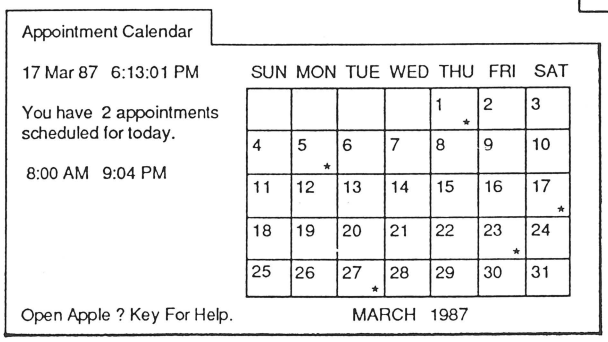

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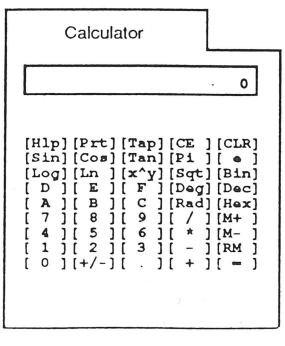

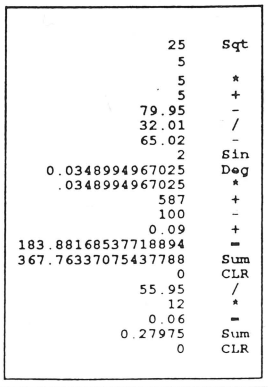

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The Magazine For Apple /// Owners and Users

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ON THE COVER:

HAVING FUN, YET? Baby Nathan McNeese enjoys spending some time at the Apple ///. Just as Nathan learns how to sit up, crawl and walk, beginners will be learning how to program in BASIC language this month. (photo by Paula Sheppard).

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Apple.Sauce

Paula Sheppard

As promised, I have started the **Apple.Slices** section of the magazine this month, as part of **Apple.Sauce**. I must say I am very excited about this new section and believe that you will be, too. So read on and find out what Apple.Slices is about.

In this month's issue, there are some very good articles for **all** /// users to read. To start with, the beginners, who have been reading Richard and Lavona Rann's **Beginning** /// articles, will soon become programmers. After reading this month's article, they will be able to make their own programs! For those beginners who are hesitant, don't worry, it is very easy and fun! I encourage those who have recently walked into the /// world and have missed any of the past five **Beginning** /// articles to make sure they get copies of the old articles. They are extremely helpful for beginners. Just call our order lines for extra copies.

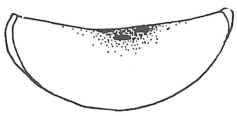
Meanwhile, computer graphic artists can sit back and enjoy the program *ON THREE* president, Bob Consorti has in store! All that is needed is an Epson printer, Business Basic or Pascal and perhaps a copy of last month's issue to review the procedures of the Apple DMP-ImageWriter program. You may be surprised at what or who you can create.

Is your desk messy? Do you have a hard time organizing your thoughts? Then read Jeffrey Fritz's review of **ThinkTank**, which he says is "a computerized outline." He will take you through the entire program, giving advice about the program and reviewing its quality.

Who needs user groups? Find out in this month's **Ranntings** column. The Ranns discuss the importance of user groups and how to find the one that is right for you.

If you want to voice your opinion, but haven't had the chance, this issue is the one to read. Phase III is conducting an Apple /// user survey on the present and the future of Apple /// software. So fill out the survey and return it as soon as possible to Phase III. The information will be used by a panel during the Phase III conference.

Enjoy this issue and remember, should you have any questions about your ///, don't hesitate to drop me a line. Perhaps, your letter will be used in **One, Two, /// Forum** to help others with questions.



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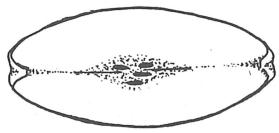

Disk Manager

The Lock/Unlock selection will allow you to lock a file but you are still able to write to the file unlike System Utilities which does not allow you to read or write to the file. This is just another bonus while using the new Disk Manager!

Macro Manager

If you have recently purchased a Macro Manager Desktop Manager™ Accessory program but are having a difficult time remembering definitions of the MacroMaps, just print out the MacroMaps by using Pickup and Paste in the Desktop Setup.

Simply call up the Desktop Manager, get the MacroMap you want printed on the screen then use SOLID APPLE 5 to turn on the text pickup and SOLID APPLE 6 to paste the text from the ClipBoard. From there, use the OPEN APPLE B command and RETURN to watch your cursor zip across the text and pick it up. From there, exit to the Desktop Setup main menu and choose ClipBoard Tools and RETURN on the Print ClipBoard preference. It's that easy! Forget the messy desk with the MacroMap definitions scribbled down. Just tape the Map to your /// and don't worry about continually calling up the Desktop Manager because you can't remember all of your definitions.

Lissner Pieces

Robert Lissner, who wrote /// E-Z Pieces, will be the keynote speaker at the Phase III conference slated in October. According to Phase III president, Lavona Rann, Lissner has confirmed his plans to be the conference's speaker. Recently, Lissner had considered writing an update to the /// E-Z Pieces program, but due to a lack of interested users, the project will not be done. However, it may be exciting to discover Lissner's upcoming plans at this conference. So if you have put off making reservations, there's no excuse now as some of the top /// figures, such as Lissner, will be at the conference.

BPI Accounting System

Houston-based CompuMedia has recently released a two and a half hour video training tape on the BPI General Accounting System. The tape, produced in cooperation with BPI Systems, Inc., covers all functions of the BPI General Accounting System, from initial set-up through the creation of a sample set of books. *ON THREE* sells BPI accounting for $99 plus $7 shipping and handling. ///

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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 ///.

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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.

* 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.

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** 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.

The Beginning ///

Richard and Lavona Rann

Opening the door to BASIC

In last month's column, we introduced programming languages. This month we continue by looking at BASIC in a bit more detail. We will present some of the concepts necessary for any "how to" on programming, and introduce you to a few other useful skills. What we do this month will not make you a *programmer*. At best, it will only serve as an introduction. Even at this level, the information in this column will help you to begin building the skills necessary to enter and run programs from listings, and to write programs in any language, most especially *Business Basic* on the ///. We selected *Business Basic* because it is the most commonly used BASIC on the ///, and was written specifically for the SOS environment.

The experience of starting to learn to program has a lot in common with the documented experiences of the average early 1800s settler when confronted by a forest wilderness. He knew that he must clear land for a farm, and use the cut logs to build a house and barn, but the details were very foggy. As beginning programmers, we are faced by a similar forest of bewildering instructions, rules, definitions, and limitations that we must master to build our analog of the house and barn: our first program.

Like the settler, some of our work will be in the form of trial and error as we learn and decide what we can use to build our project. Also like the settler, we have an almost infinite number of choices in selecting what type of project to build. In terms of the settler's project, we need to ask if the house will be a simple one room cabin, a sprawl of rooms on one floor, or perhaps a two floor design. The parallel in programming projects could be a simple program to print your name out on a printer, or a more complex program to create a data base of your address book, or a very complex series of programs to control a factory. The first important task for both programmer and settler is to have the finished product clearly in mind before beginning. Only if we know exactly what we are building, can we do things like select the right log for the ridgeboard. Before starting to define our project, however, let's look at some of the most useful trees in our programming forest.

We probably don't have to tell you that programmers seem to have a language that is all their own. Relax, it isn't really a foreign language. It is a code, and one that is fairly easy to break once you get used to it. We've never seen it documented, but one of the first *rules* of being a programmer is to talk in acronyms. An acronym is a word that is supposed to be a shorthand way of saying and remembering something. The word acronym itself provesthat the process often fails when it comes to understanding. The word came from the phrase: Alphabetic Collocation Reducing Or Numbering Your Memory. Even those who remember what an acronym is cannot generally remember that phrase. An acronym is simply a use of the first letters of the words in a phrase, condensed for ease of remembering and/or communicating. It does work sometimes. One of the reporting areas in Lavona's *real* business world is known as *marketing automated rating support.* That is a mouthful.The unit is widely known as MARS, which is easier to say, type, and remember.

You probably know more about acronyms now than most people that use them. Let's move on to BASIC, which is an acronym from Beginner's All-purpose Symbolic Instruction Code. This language is considered the simplest to learn to use because it uses a lot of English words for instructing the computer. Words like Load, Run, End, Save, New, List, and Print have meanings in BASIC that are similar to their meanings in English. Thus, they are easier to learn than the instructions in many languages. Learning the vocabulary of BASIC is not difficult. In order to utilize this vocabulary (instruction set), we have to go one step further: we have to learn a little about grammar and syntax. In English and other human languages, grammar and syntax are basically the rules for systematically ordering words, phrases and punctuation into meaningful combinations. Word (instruction) order and punctuation are very important in computer languages and are generally referred to as syntax.

If you stop and think about it, you will see that a lot of our understanding of oral English requires assumptions and background information that is provided by our understanding of the situation around the use of the words. In formal written English, syntax is much more important than it is in oral use because we cannot assume that the reader will always be starting with the same assumptions. In computer languages, syntax revolves around the *understanding* built into the language and the rules that have been established for making your instructions understood.

When a language recognizes words like BASIC, those words become what is called Reserved Words, and must be utilized according to the syntax of the language. The term *reserved* means that use of those words is reserved for specific purposes. Many of the Reserved Words used in BASIC are used in SOS and other Apple /// programs, and have the same meanings. The words listed above, and about a hundred more, are the the most useful tools we have for our programming project. They are the trees in the forest of the house builder. Along with them, there are a number of other features to BASIC, such as standard mathematical operations, variable handling methods, a variety of logic commands, and file and graphic handling commands. All of these would have to be mastered if you decided to become a BASIC expert, but most can be set aside and forgotten until or unless your specific project needs those tools. Since all programs will use Reserved

Word instructions, we will begin with an introduction to some of the most commonly needed instructions, and then demonstrate how they may be used in a small project.

LOAD, RUN

LOAD and RUN are terms that may be familiar from application programs that you have purchased. They are very commonly used words in computer jargon. When you are in BUSINESS BASIC, the instruction LOAD followed by a SOS pathname causes a program to be read from the disk and loaded into the ///'s memory. Computers can only do things that are available to them in their memory. In BUSINESS BASIC, you can choose from two instructions to read a file containing a program and put it in memory. LOAD is the first, and RUN is the second. LOAD only puts the program in memory where you can *list* or look at it, change it, or run it. The syntax for the word LOAD is that it must be the first word on a line, and it must be followed by a pathname which refers to a file containing a BASIC program. To load a program stored on the internal drive with a name of cut.trees, would require the statement: **)load .d2/cut.trees**

The) is the standard prompt character in BUSINESS BASIC. We'll use the acronym **BB,** now that we're all trained in deciphering acronyms. When you boot BB, you may see a variety of things since a special *hello program* may be on the disk and, if so, will run automatically when you start BB. For now, just remember you are in BB and ready to program when there is a line which only displays the prompt character in the first, far-left column. This means BB is waiting for you to enter something (i.e. it is your turn to talk to BB). Each time you enter a line and end it by hitting the RETURN key, you have made a BB statement (similar to an English sentence).

RUN is only a little more sophisticated than LOAD. The statement: **)RUN** actually does what you might guess it would. It causes the /// to try to do what the statements of the currently loaded program instruct it to do. There is a variation of the syntax which allows you to load and run in one step. The syntax allows you to enter a pathname after the reserved word RUN, to tell it which program you want to load and run.

)RUN .d1/total.trees would load the program named "total.trees" from the internal drive and execute or **run** it.

)NEW on a line by itself, clears memory so that you can type in or load a new program.

CAT for Catalog causes BASIC to display a disk directory or subdirectory listing. Used without a pathname, it assumes that you want to look at the directory name defined by the PREFIX. We discussed the concept of PREFIX in the column about System Utilities. The default prefix for most people will be ".d1". If you boot BB from a hard disk, the default may be something else. If you want to see a catalog (listing) of a different directory, you add a pathname after the CAT. **)CAT .d2**

Notice that all the example statements have exactly one space after the Reserved Word before the pathname. It is good to get into a habit of watching spacing. Spacing is and important part of the syntax of computer languages.

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

Even though extra spaces are allowed by some versions of some languages, it is better to develop safe habits when starting out. It will give you fewer things to worry about, and fewer opportunities to make mistakes, as you move on to other topics and/or languages.

PRINT will print (by default to the screen) anything which immediately follows the reserved word and has been included within quotation marks. It is the way that things get printed on the screen and onto printers. With the default output location of the screen, the statement:)**PRINT "CUT TEN TREES"** will write **CUT TEN TREES** on the screen.

Before we go into more Reserved Words, take a break, boot BB and try some of the commands listed above. Obviously, the program named will not be on your disk, but if you do a CAT of the disk, you can see what programs are there and stop and look at a few of them. If a user tries to load something not on the disk (maybe by making a typo on the program name), the message "?FILE NOT FOUND ERROR" will appear on the screen. If one tries to load a file that is not a BB program, the message "?TYPE MISMATCH ERROR" will appear. While these messages are not very user friendly, they give the information necessary to trace the problem.

Up to this point, we have talked about commands that would often be used when running a program one statement at a time. BB is an interpreter language. It does one instruction at a time and converts it to machine language as it does it. When you type in BASIC commands *without line numbers* you are saying to BB that you want it to execute your statements now. This is referred to as the Immediate Mode. If you did some examples as suggested in the preceding paragraph, you saw that each time you entered a statement (line), the /// responded in some way. That is very nice and is easy to use for learning how to use a statement or word, but isn't a very useful way to do programs that are very long.Why? Because as soon as you enter a line and it is executed, it is gone. In the immediate mode, BB assumes that a person is there to give instructions one at a time. Handy for some things, but not a programmer's delight.

When entering a number followed by a statement, the statement is stored in memory rather than processed. When you have entered a series of lines with line numbers, you can tell the program to execute them all by entering the RUN command. When using line numbers you are writing programs rather than entering individual requests for action. The Reserved Words LIST, END, STOP, CONT and SAVE are generally only useful with or within programs.

LIST is an instruction that causes the program in memory to be listed. Used alone, it will quickly display the whole program. That is fine with a short program as it will all fit on the screen. A longer program will scroll by so fast that you will only be able to see the last statements. If you put a number after the word list, it will display only the program line at that line number. If you want to list only a range of lines, you can use LIST followed by a beginning number, a comma, and a higher number. List will then display only the lines within the range. To list lines numbered 25 and up, through and including 100, you would enter:

)LIST 25,100

END is usually used as the last statement in a program. It is used when a program is supposed to come to a *normal* finish and is usually on the highest line number of the program.

STOP is used to tell the /// that the program should quit even though it has not run out of instructions. It is useful for error handling or programs with complex logic. STOP is normally only used for temporary halts or for error conditions. It stops processing after first displaying the line number of the instruction. It can also be used to temporarily stop a program.

CONT, for continue, restarts a program that has been stopped with a STOP command. It lets a person use STOP command in the program to make a temporary end, and continue from the next instruction after the STOP message, only after entering the CONT command.

The next instruction is on the next higher line number. Note that in line numbered programs, the order you type the instructions is **not** important! BB **remembers and stores instruction statements in the numeric order of the line numbers.** In the absence of statements that tell it to do otherwise, instructions are always done in line number order.

SAVE is the instruction used to store a basic program. It needs a pathname following the word SAVE on the same line. The pathname tells BB where to store the program that is in memory. It will be written to the pathname provided and is the way you provide a name for programs and save them to be used or modified later. For instance, **)SAVE .d1/new.trees**

Our first program

There are more Reserved Words. Many of them have very specific and important meanings, but with these few and the addition of a couple simple mathematical and logical operations, we can do real programs. Let's begin helping our settler in building his cabin. One of the advantages of learning with BB is that of its interactive nature. The error messages listed earlier are not the only ones you will learn to handle. Mistakes are to be expected. The message that plagues most people during their learning process is **syntax error**. It means that BB has been asked to execute a command that does not make sense to it. Remember that you are communicating with a fairly dumb machine, and it has a limited vocabulary and syntax. Step back and be patient just like a good kindergarten teacher is with young children. The language is limited and you have to use your superior brainpower to figure out the syntax that it can understand. Part of the trial and error necessary in learning to program is learning how to communicate in the language. Remember that making and correcting errors is one of the most time honored ways of learning.

It is always smart to type NEW whenever starting a new project. That will ensure that no stray commands are left over from a prior program. After you type in the NEW command, a) prompt and the cursor will be ready for you to start entering your program. Line numbers are very important in BASIC; every line in a program needs to have a unique line number. It not only allows the /// to keep track of the program, but it allows you to modify the program by replacing a line, deleting lines, or by adding a

number that hasn't been used.

A good habit to get into is to number lines in increments instead of consecutively. If you numbered your lines 1,2,3,4,5, and then wanted to add a line between lines 1 and 2, you couldn't without retyping the existing lines 2,3,4,5 with new, higher numbers. If you had entered them originally as 10,20,30,40,50, you could have added a line numbered 15. When beginning a program that may eventually become larger, it is a good idea to number the lines a 100 lines apart to make it easier to slip whole new routines into the program.

Now let us begin the way our settler might have when attacking the project of building a cabin. Type **100 PRINT "Gee this forest is sure big."** followed by hitting RETURN. Note that we do not want you to type anything before the line number (100) or anything after the second ", except a return. The return is a way to tell BASIC that a line of programming is finished. After entering this line, if you enter a list command, it will display: **100 PRINT "Gee this forest is sure big."**

Now type RUN. Immediately, the characters between the quotation marks are displayed on the screen. This is the same as would have happened without the line number, EXCEPT that you can say RUN again and it will do it again, and if you want, you can SAVE this small one-line program on a disk.

You have just used a concept that has not been described yet. The characters set off by the quotation marks are what is called a LITERAL. Many Reserved Words and statements in BB allow you to supply literals. The term is often used by programmers and refers to something that is defined and saved "as is" for use without change. You have completed your first program. Technically, you could be called a programmer, but there is still lots to learn. Let's use our settler to help us formulate a problem and do a program that is a little more complex and useful. The settler looks at the forest and says something like this, "I can cut ten trees a day, clean the logs, and pull the stumps. I need about a hundred trees to build my house; How many days will it take?". Remember that most settlers were not well schooled and they did not have pocket calculators. Let's write a program to help answer his question.

```
100   DAYS=0
200   TREES=0
300   PRINT"I can cut ten trees today."
400   DAYS=DAYS+1
500   TREES=TREES+10
1600  PRINT DAYS
1700  GOTO 300
2000  END
```

We know that we have 'days' and 'trees' to worry about. We know also that we will be doing certain mathematical operations to keep track of days and trees. The first thing we must do in the program is to tell the computer to set aside a place for the results of our calculations. We created data fields for 'days' and 'trees' on lines 100 and 200. Since the words we used were not Reserved Words, and they were not literals, BB assumed that we wanted it to use the *words* as field names, better known as variables. We defined the fields and made certain they started out as zero in the first two statements. If we had wanted days to start at 100, we would have said DAYS=100. The equal sign causes the field at the left to be filled with the information on the right.

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At line 300 our friend begins cutting trees. He works one day and cuts ten trees so we have the statement in line 400 and 500 where we add one to 'days' and ten to the total in 'trees'. Note that the fields we defined before are used here and the information on the right of the = sign is a statement rather than an amount. The statement days+1 actually takes the value of the field "days" before reaching this line, adds 1 to it, and stores the result back in the field "days". Each time this statement is executed, the number days goes up by 1.

Since we want to see the process of more than one day, we use a GOTO instruction to make the program go back and redo instructions that it has done before. The statement on line 1700 causes the program to jump back to line 300 and continue from there. The GOTO statement is very powerful and you should think carefully about the logic path that you are building. This situation where a program goes back to instructions that it has done before, is generally referred to as a LOOP. It is so named because the program continues to go back over the same territory, much like a runner doing laps on an oval. If we used this program the way it is written, our settler would cut trees forever, or at least, until we turned off our ///. Luckily, there is another way to get a program to stop. The way to bail out of a BB program that is running amok, is to press the Control key at the same time as the C key. This will normally stop the program. Why don't you try the program and see what it does.

What we need now is a way to for the program to tell that it has fulfilled the settler's requirements, and then stop. The "IF THEN" statement, which is one of the most useful logic statements in BASIC, will fill the bill. It allows us to define a condition with an "IF" and indicate directions for the computer when the condition is true. By changing the statement on line 1700 to: **1700 IF TREES<100 GOTO 300**

We tell the program to check to see if we still have less than 100 trees cut, and if so, go back to line 300. When the field 'trees' has 100 or more in it, the GOTO is not done, and the program continues on to the next line number. In the original program the next line was the END statement. To make the program a little easier for our settler to understand, we can put in a line at 1750 to print a message that the program is done. We suggest that you enter the program the original way and run it, use CONTROL-C to stop it, then enter the new line 1700 and run it again. Running the first version will result in the screen scrolling too fast to read until you stop the program. There are ways to slow it down, but don't worry about that now. Going through these steps will make the concepts that we have covered a lot clearer.

After running the program with the change at line 1700, let's look again at our program. Type LIST and hit return. While you are at it, you might want to save the program to a disk drive for future reference. The statement will be something like "SAVE .d1/trees".

As you will find out quickly, when writing programs there is always one more exception to our initial logic that we have to add to our programs. We will do one more change to illustrate another form of statement (line).

Let's assume that our settler is a religious man and will not work on Sundays. He still wants to know how many days will pass before he will be done. A day passes every week when no trees are cut. To make our program take that condition into account, we must insert another logic command into our program. If we were doing this for real, we would not be able to assume that he always started counting on Monday, but to keep things simple, we will do it here. That means that the 7th day is Sunday. We must write a logic statement that tests for the seventh day. The following statement shows that you can do several things on one line. It tests to see if the field days is equal to 7, and if it is, it prints a special message and goes back to the beginning of our loop. Note that where we put this statement is very important. You can try it with the statement at different line numbers (try after line 500) and see what happens.

450 IF DAYS=7 THEN PRINT "Sunday is my day of rest.": GOTO 300. Here we combined several directions on one line. This is an acceptable practice in BASIC. The portions of the statement are separated by a colon (:). There are many pros and cons of putting multiple instructions on a line. If you do decide to make a further investigation into BB, you will find that there are quite a few options and philosophical ideas on programming style.

One of the best ways of checking out the program when it seems it might have logic errors, is done without the assistance of your computer. All you will need is a listing of your program, a pencil, some paper, and a little patience. Obviously it would be nice if the listing of your program were on paper instead of the screen. Handling files can be a relatively advanced topic, but opening a print file and listing your program is quite simple. First you need to know the name of the driver file for your printer. Most people use a system that has .PRINTER for a driver name, but it can be others. If you don't know what your printer driver is called, try .PRINTER. If it does not work, you can use system utilities to see what the driver file is named. Remember, if you booted BB from its own diskette, the SOS.DRIVER file **on that disk** is the one that defined your printer driver and its name. Once you know the name of the printer driver, you can follow along with our instructions (insert your driver name wherever we use .PRINTER).

```
)OPEN#1,.PRINTER
)OUTPUT#1
)LIST
)CLOSE#1
```

The statements above will assign file number 1 to your printer driver, and the OUTPUT#1 statement causes normal screen output to be sent to file #1 (your printer driver). You then do a list and the list goes to the printer instead of to the screen. Finally, you close the file so that output goes back to the screen. It may seem confusing, but it does work. Just remember that the Reserved Word OUTPUT# is used to change the location that normal screen messages go to. The syntax of the statement required to use OUTPUT# is that an active file number must immediately follow the #.

Once you have a paper listing of your program, you can take a blank sheet of paper and draw a box for each field that your program needs. In the case of our example, you need two boxes, one for "days" and one for "trees". Label each box with the appropriate name. Then take a pencil and

pretend that you are the computer and that you have just been given the program to run. It starts by telling you to put a 0 into the box named "days", do it. Then follow SLOWLY and carefully, each step that the program tells you to do. You will have to erase the numbers in the boxes as you are told to change them. This allows you to step through the logic of the program and should make it easier to see where the logic does not work. As soon as you notice something that does not seem correct, stop and look back over the last few steps that you have done. With a little practice, you will be *debugging* like an experienced professional. The term "debugging" refers to getting all the errors out of your program and has its roots back in the days when computers had vacuum tubes that attracted moths which caused the computer to work incorrectly. Debugging was actually getting rid of real bugs. Today, debugging is usually just a process of tracing program logic for a human error in writing a program.

Together we have written a rather complex program using a few simple commands and a few advanced ones. There are a number of other things we can do to our settler, but he like us he has cut a few trees our of his forest and can feel proud of his labors. He is not yet a skilled carpenter, but he has proven that he can build shelter when required. As we said at the beginning of the column, the information here will not make you a professional programmer. If you want to learn more about BB, we suggest that you get and spend some time with a good book on the topic, (like the original BB manual). The few instructions and the subset of the Reserved Words that have been introduced, are only a small part of the capabilities of BB. Our goal was to give you enough of an introduction so that you could write a few small programs and have enough familiarity with BB that you would be able to run programs that you get on disk, or enter programs listed in newsletters and in magazines like *ON THREE*.

To run a program that is already on a disk, you just boot BB (or if you are already in BB, enter NEW), and use the RUN instruction to load and run the program. If you are going to type in a program, just enter NEW and type in the program. **Remember** to pay particular attention to line numbers and punctuation marks. They must be in the right places. You also need to remember that each line needs to be followed by a return. If your typed-in program doesn't work, check each line very closely for typing errors. If you want to see what harm a typing error can do, take our little program (after you have saved it to disk) and change (retype) line 400 as:)**400 DAYS=DOYS+1**

The change of the a to *o* in the second use of the field name *days* causes the whole program to go wrong. The reason is that BB thinks that you have defined a new field named *doys*. This type of error is quite common even with experienced programmers. The one thing that programming usually does, is teach us a bit about humility. The silly computer does exactly what we tell it to and it does it fast. The phrase *computer error* is usually used to indicate a *human error* . Be patient with yourself, the computer is infinitely patient in letting you practice until you get it right. Unlike people learning to program *on the job,* like Lavona did years ago, there is no one waiting to tease you when you try your first program and it takes a while to get it debugged.

Use your imagination and try different combinations of the things you have learned, to do a few new programs for yourself. If you go slowly, you will find that it is not really the big mystery that it may have seemed. Most of all, it can be *fun.*

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ThinkTank

Jeffrey Fritz

The software box said "ThinkTank, the first idea processor." What an intriguing thought for a person who works in a disorganized manner. My ideas tend to evolve freely without any particular concern for order. Whether I'm using a database, a word processor or a spreadsheet, I enter as it comes to mind. Let the computer worry about organizing it later on. None of this structured stuff for me!

So when I heard of a product for the Apple /// from Living Videotext, Inc. called "Thi ", I was hooked. Here was a program that promised to do the same thing for my ideas that /// E-Z Pieces did fo my words, data and figures - process them. This program would allow me to enter ideas in any order and organize them later.

ThinkTank can be thought of as an computerized outline. Remember completing outlines in school? Each major thought had its own headline. Thoughts that were subordinate to the main topic wound up as sub-headlines, which could have their own sub-headlines. That's the idea behind ThinkTank and it makes a great deal of sense. The human mind, like computers, works in a sequential manner. We think in an outline form and have some outlines so down pat that we hardly give them a thought. Take for example, getting ready for work. In an outline form, the morning routine might look something like the following:

Get up in the morning
- A. Wake up
  - 1. Turn alarm off
  - 2. Get out of bed
- B. Go to bathroom
  - 1. Wash face
  - 2. Shave
  - 3. Brush teeth
  - 4. Comb hair
- C. Get dressed
  - 1. Choose clothes
  - 2. Select shirt
  - 3. Find matching tie
  - 4. Find matching suit
    - a. Complain because matching jacket is at the cleaners
    - b. Make compromise and wear another suit
    - c. Find another shirt to match to the new suit
    - d. Find another tie to match the new suit
  - 5. Put on clothes

ThinkTank helps structure thoughts by entering them in an outline form which makes the program special. As an electronic outliner, it has many uses. It can be used to create seminar notes, form letters, and article outlines. ThinkTank comes with a sample data file containing several outlines which clearly illustrate ThinkTank's usefulness. There is a product development outline, personnel records for a famous sea captain, lesson plans and a Christmas letter. It's a versatile program that will make you wonder why it wasn't thought of earlier.

ThinkTank works in the native Apple /// mode. There is no need to fool with II emulation. It is not copy protected, which is important for /// users. Many programs written for the /// are no longer supported. When the copy protected master disks start going bad, there is real trouble. With ThinkTank this will never be a problem.

The users manual

ThinkTank's *Users Manual* is a combination tutorial and reference guide. It contains an index and a listing of error messages. Also, a separate reference card is included. Some information, such as details on how to use ThinkTank with a Pascal compatible word processor, is available at extra cost from Living Videotext.

The manual was written for three different versions of ThinkTank: Apple II, II plus, IIe and Apple ///. In the introduction, each computer is dealt with separately. However, the tutorial and reference sections merge all three machines together. The manual does not always point out when a feature is not available on the Apple /// version. For example, some versions of ThinkTank have a "Disk Manager" which allows the user to list and copy files and format disks from within ThinkTank itself. Unfortunately, the Apple /// version doesn't have this feature. You must quit ThinkTank and boot System Utilities to get the same work done. That's a pain - particularly if you are looking for an old outline and can't recall its name.

While ThinkTank will not format a disk, the boot disk's SOS.DRIVER file has the format drivers included and active! They sit there taking up disk space and computer memory. I used System Utilities' System Configuration Program to delete the formatters (.FMTD1 - .FMTD4) from the program disk. Do this to the working copy, not the original of the program disk.

Headlines and paragraphs

ThinkTank has two kinds of text entry: headlines and paragraphs. Headlines are single line entries that can be a maximum of 80 characters long. They are automatically indented according to the relationship of the new headline to the one directly above it. ThinkTank can be directed to create or move a new headline to the left, right, above or below an existing headline. Paragraphs are limited to 2,048 characters. ThinkTank paragraphs can be made up of several literal paragraphs, but the program will treat

them as a whole. Once entered, paragraphs are tied to their associated headlines and will move with the headlines.

Headlines can be created at will, moved at will and expanded or collapsed as it pleases the user. When a headline is expanded, the next layer of headlines is revealed. Collapsing a headline has the opposite effect, rendering all headlines under the cursor invisible. Selective expansion and collapsing results in an uncluttered screen display even with the most complex outline. Simply expand what you are working on, collapse the rest of the outline. Out of sight, out of mind, although not completely. ThinkTank places a + sign ahead of headlines that have headlines underneath them. If a headline has no successors, it is proceeded with a - sign. At a glance, you can tell what can or cannot be expanded.

ThinkTank is not really a word processor, but has some features normally associated with word processors. There are two built-in editors. One is for paragraphs, the other for headlines. Both have search and replace functions that do the job, but not as quickly as most word processors.

A deliberate and a fast path

ThinkTank uses two methods to communicate commands to the program. The *Deliberate Method* employs menus at the bottom of the screen. Commands are presented in an uncluttered display. As the command cursor is moved, brief descriptions of each command appearss on the menu. This is very handy for new users and those who don't quite remember how to get there from here. The other way of communicating with ThinkTank is to employ the *Fast Path*. The program allows you to type several commands in succession. This avoids the menus and speeds up the program's response. Thus, an experienced user can simply type "N3D" and the program will create a place for a new ("N") headline 3 places down ("D") from the present cursor location. After a while, many of ThinkTank's commands become intuitive and the need for the menu diminishes. But the menus are there if you need them. The ability to choose either the deliberate method or the fast path at will is a big plus.

Nobody's perfect

Be aware that while the program will help you create, it will make you work more than perhaps it should. The program uses what appears to be the Apple II Pascal operating system. This is especially unfortunate in view of the power of Apple /// SOS. The intent of ThinkTank's designers is obvious. By using Pascal as an operating system they created software which could easily be ported to different computers. Frankly, they paid a high price for this convenience. Pascal is a fine programing language, but an unspectacular operating system. It pales in com-parison to SOS's power and flexibility; thus, limiting the program.

The program is a memory hog - even on a 256K machine. Although the manual states that the program will run on a 96K Apple, I wouldn't want to do so. If the outline is more than a few headlines deep, memory is quickly consumed. Collapsing ThinkTank's outline does reclaim memory. However, the user is forced to constantly keep collapsing and expanding the outlines for the sake of memory. In a large outline, that is an annoyance and inefficient.

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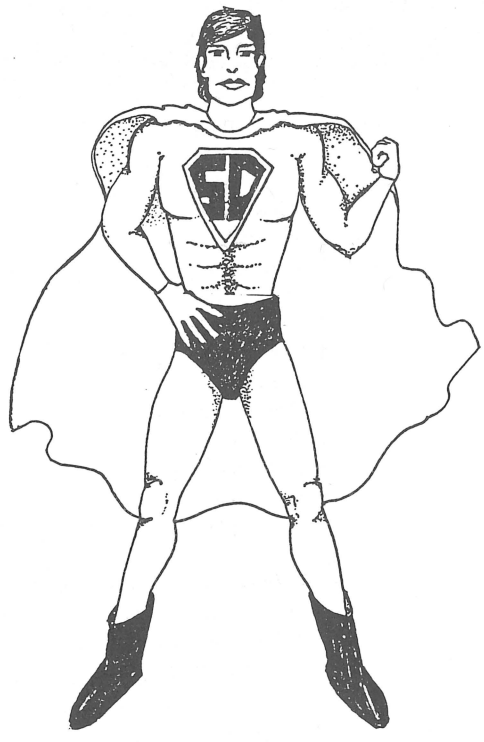

Apparently, the creators of ThinkTank could foresee this and attempted to save memory by using a form of virtual disk memory. In a virtual system, some of the program is swapped in and out from disk as needed. This process can be very disk intensive. There are many thumb twiddling moments as ThinkTank looks to the program disk for information, then does a save to the data disk, then comes back to the program disk looking for yet more information.

On the subject of disk utilization, ThinkTank did something very interesting to my data disk. My system uses a Microsci A 143 as drive 2. This allows me over 1100 blocks (roughly 573 KB) of storage. Creating a ThinkTank file on a disk formatted for the Microsci changed all of that in a hurry. All of a sudden, my large capacity formatted disk was reduced to 274 blocks. Not only that, but System Utilities claimed that the disk was an Apple II disk! This is likely the result of the Apple II Pascal operating system used by ThinkTank.

ThinkTank will only save one outline per diskette, an incredible waste of disk storage. To their credit, the authors do point this out in the manual. They even provide a way around the problem. They suggest that ThinkTank be *tricked* into thinking that the data disk is really a hard disk. It seems that ThinkTank will permit multiple data files on a hard disk. I don't like *tricking* any program, but in desperation I tried it. Sure enough, it worked on my Microsci disk drive. I had plenty of room left after ThinkTank saved several of my outlines to the same disk.

I should point out that my victory was not complete, however, if ThinkTank is configured for a hard disk and is supposed to allow you to *browse* the data disk. Browsing is like listing, but only one file at a time appears on the screen. ThinkTank stubbornly refused to browse the disk. Even though I had several outline files on my disk, ThinkTank insisted that "No outlines (are) available to (the) disk". If I specifically named the outline file, ThinkTank dutifully brought up the file. This is a big problem since the Apple /// version of ThinkTank does not have the Disk Manager feature. This makes it necessary to keep a printed listing of the data disk handy. If you don't care for printed catalogs for every data disk, you'll need to buy *ON THREE's* Desktop Manager with the Disk Manager module and upgrade to 512K to have enough room for it all!

When writing to a text file, the program will overwrite an existing text file. There is no warning and no second chance. Be sure to change the name of a previous file unless you intentionally want to overwrite the old file.

The manual gleefully says, "The built-in editor is a joy to use. You hardly have to think about it". Alas, such is not the case. The paragraph and headline editors are slow and not especially sophisticated.

Like /// E-Z Pieces, ThinkTank allows you to highlight a word, phrase, sentence or paragraph. It calls this the *select mode*. Once selected, the text can be copied, deleted or moved. Cursor movement in general is slow, but in the select mode the cursor moves *very* slowly. There is no way to speed it up. Moving a section of text requires the user to select it, copy it to the new location then delete it from the original location. This is an overly complicated process. It is easy to hit the wrong key and undo the select command.

My nemesis is the return key. It must be pressed to select text in /// E-Z Pieces. Hitting RETURN when using ThinkTank's select feature undoes the selection completely. I have to relocate the cursor and start all over. This is not exactly my idea of a "joy to use" editor!

ThinkTank has incorporated both search and global replace features into the program. With certain limitations, the program will search the outline for keywords up to 80 characters in length. On limitation is that the cursor must be above the word for the program to find or replace it. This will be a familiar problem with the /// E-Z Pieces users as the same limitation is imposed by /// E-Z Pieces. ThinkTank displays what it is searching, which is interesting to watch, but very slow.

Three flavors: structured, plain and formatted

ThinkTank has the ability to *port* information in and out as standard ASCII text files. This is important if you plan to use ThinkTank with your favorite word processor or spelling checker. Information can be ported to a printer, or to and from a Pascal text file. ThinkTank does offer formatted output. You can control line spacing, left and right margins, page length, indentation, page headers and footers and a variety of other functions. It is possible to print an outline directly from ThinkTank without ever booting the word processor. In fact, it may be preferable to do so because ThinkTank loves to put control characters in text file output.

There are three port types: structured, plain and formatted. **Structured** is used for text file back ups, to port an outline to another computer, or transfer information from one outline to another. **Formatted** porting is for printed copies of your outline. There are 16 settings which determine the way the outline will look.

Plain porting does not allow the user control over the format settings. Instead, the program uses what is called *minimal format settings*. This creates a text file which can be used with a Pascal compatible word processor. Plain porting is the only type that does not add control codes to the text file. But here's the catch - only paragraphs can be transferred. Outlines are completely ignored in plain porting. In order to port an outline into a text file, structured porting must be used. Then the word processor's replace feature must be used to clean up the control code garbage in the text file. That makes for extra work in transferring information from ThinkTank to a word processor. It would have been much better to allow plain port choice of paragraphs, headlines, or both.

An open and closed matter

File commands are used to open and close outline files. However, they are not available from the opening menu. If the new session's outline is different from the last session's, the user must go through the process of opening the old file, closing the old file and then opening the new file. More than a bit cumbersome. This process also makes changing the disk options of the program harder. An outline must be opened and loaded before the program can be instructed to change to a hard disk, or different disk configuration. There is a program on the data disk called

"HARDPATCH" which will operate directly on ThinkTank's disk setup. It must be executed from the Pascal command line. Not difficult to do, but it can be intimidating to a non-Pascal user.

Bugs and other frustrations

ThinkTank has some minor annoyances and some very frustrating bugs. For instance, the program allows command keys to be changed. If using CONTROL-D to delete text doesn't suit your fancy, the program has an option to change it to a key more to your liking. What a wonderful idea! I decided to change the command key for silencing the speaker from CONTROL Q to CONTROL K. The program accepted my change. When it tried to saved the new command key, several error messages flashed on the screen one right after another - much too fast to read. Then the program simply crashed to the Pascal command line. So much for changing command keys.

ThinkTank has a bug which affects the program's ability to boot. When changes are made to the program's settings, such as altering the number of disk drives, these changes are saved on a file on the program disk called "TANKOPTIONS." During two different sessions the program crashed while booting. It complained that it "couldn't load program options (file)". System Utilities indicated no problem with the file or the program disk. Apparently during a previous session ThinkTank wrote something to the TANKOPTIONS file that it couldn't read back into the program. It was a very costly bug, because it required booting Utilities, getting the master disk out of storage and re-copying the TANKOPTIONS file to the working copy of the program disk. It was then necessary to change the program defaults back again to suit my preferences. All the time, I feared that the TANKOPTIONS file would be fouled up all over again. I had to resort to saving a copy of my properly configured TANKOPTIONS file on the boot disk. That eliminates the need to reconfigure the program every time this problem occurs, but it should not be necessary to take such steps.

Many of the later version Apple programs take advantage of the OPEN APPLE key. After using programs like /// E-Z Pieces or Draw On ///, it becomes a habit to press the OPEN APPLE key for commands. Along comes ThinkTank to change all that. The program requires the user to use the CONTROL key instead. Applewriter users will fare well with this program, but for me it is confusing to move between ThinkTank and /// E-Z Pieces. Delete is no longer "OPEN APPLE D", but rather "CONTROL-D".

An idea whose time has come

The editor sometimes misses characters and it seems to happen more frequently after a command has been executed. The cure is just a matter of re-entering the character again, but it is annoying. Also, after quitting the program, the user is simply dumped onto the Pascal command line. I never did consider the Pascal command line to be especially artistic or even meaningful outside of the Pascal system. After quitting the program, I would much rather see the familiar "Insert System Disk and Reboot" message that SOS offers. I guess I can't have everything!

In conclusion

ThinkTank for the Apple /// is available from the Association of Independent Microdealers, 3010 North Sterling Avenue, Peoria, IL 61604 for $85. It may also still be available from the manufacturer, Living Videotext, Inc., 2432 Charleston Road, Mountain View, CA 94093 for $150.

With all its limitations, it is still a very viable tool for processing ideas. In fact, this article was created on ThinkTank. I started by entering individual comments as headlines. Each was typed in as the idea came to mind. The headlines were developed into an outline form. Headlines were grouped first by subject ("editor", "porting", etc.) and then by general topic ("Introduction", "Strength", "Problems", etc.). Topics were moved around to make more sense. Subjects were moved around within the topic headlines to make more sense. The paragraph editor was used to generate text for each headline item. The paragraphs were then ported over to /// E-Z Pieces for polishing. It's easier than it sounds.

I find myself enamored with the concept of idea processing. It's a concept that is a natural for a personal computer. Its implementation in ThinkTank is far from ideal, but it certainly is an idea in which its time has come!

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Apple File ///	$99.00	$7.00
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Apple /// Pascal	$99.00	$5.00
Backup ///, users guide and disk***#	$50.00	$3.00
BPI General Accounting	$99.00	$7.00
Business Basic***	$99.00	$3.00
Card machine (Black Jack game)	$24.95	$2.00
Fruit machine (Slot machine game)	$19.95	$2.00
Card machine/ Fruit machine combination	$39.95	$3.00
Crossword Scrambler	$9.95	$3.00
Desktop Manager	$129.00	$6.00
Communications Manager	$49.95	$3.00
Desktop Manager/ON THREE O'clock combination	$163.95	$8.00
Disk Manager* (utilities)	$44.95	$3.00
Graphics Manager ///, //c, //e**	$39.95	$3.00
Macro Manager*	$44.95	$3.00
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Draw On /// Graphics Tablet Version	$229.00	$5.00
Lazarus /// file recovery utility	$49.95	$2.00
Mail List Manager***	$99.00	$7.00
Quick File ///	$50.00	$7.00
RAM Diagnostic Disk*** Specify 128K, 256K or 512K	$15.00	$2.00
Sandman** (Arcade game)	$19.95	$2.00
Selector /// program switching utility	$99.00	$7.00
Sider10, 20 mb Driver and Documentation only	$159.00	$3.00
/// E-Z Pieces	$135.00	$3.50
Unidisk ///.5 disk and documentation only	$50.00	$3.00
Unprotect Driver	$19.95	$2.00
Hardware		
Apple /// Unidisk ///.5 (800K 31/2" disk drive w/interface, driver & documentation)	$499.00	$10.00
Apple //e Mouse and Interface card (Use with Draw ON and Desktop Manager)	$160.00	$5.00
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MicroSci A3 140K Disk Drive#	$225.00	$6.50
MicroSci A143 560K Disk Drive#	$325.00	$6.50
ON THREE O'Clock	$49.95	$3.00

Product	Price	S/H
Reconditioned 512K Apple /// w/monitor ///	$1148.00	$50.00
Titan /// Plus //e	$199.00	$7.00
Xebec Sider 10Meg Hard Drive	$800.00	$35.00
Xebec Sider 20Meg Hard Drive	$950.00	$35.00
256K Apple /// w/ monitor	$749.00	$50.00
256K Memory Upgrade, 128 to 256K	$150.00	$10.00
512K Memory Upgrade, 256K to 512K (Remit $324 and $25 cash or $35 credit when old board is returned.)	$324.00	$10.00
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Other services and products		
Device Driver Writers Guide	$19.00	$3.00
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Dust Cover for Apple ///	$11.95	$2.00
Dust Cover as above plus profile	$12.95	$2.00
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Ranntings

Richard and Lavona Rann

Who needs a user group?

Too often we've asked people if they belonged to a user group and they answered with a variation of "It's all too big a bother; besides, what do they really do for you?" Once in a while, we get someone that has joined a group and answers: "I belong to a user group. But that doesn't mean anything." We hope that neither of these categories fits you. Even if one does, stay tuned for awhile and we'll give you some useful information.

Historically, most people realize that user groups go back to at least to the days of the Homebrew Computer Club, where WOZ showed off the Apple I. A much smaller group of people remember the days of the 60's and early 70's when user groups formed to discuss problems and solutions for dealing with any one vendor or product available for mainframe computing. These early groups were usually composed of programmers because, back then, no one knew much about computers or used them except programmers. These groups initially gathered to share concerns about manufacturers and software publishers (who were normally one and the same at that time).

During the early microprocessor days, the non-business groups, like the Homebrew Computer Club, began to come into existence. In the late 70's and early 80's, these groups primarily attracted young technical people who were eager to share ideas, programs and, unfortunately, quite often software that wasn't theirs to share. As good as these groups were in many other senses, the blatant disregard for the rights of software companies has left a blot on the image of user groups that will be a long time fading.

Most modern user groups have commonalty with both of these differing historical bases. The following five traits represent what we have found to be the common ground of most Apple user groups:

A) Most are openly and vocally against software piracy.
B) Most are interested in getting the most out of a product or set of products.
C) Most are interested in learning more about the product(s),
D) Most develop a network of people that can provide help to members.
E) Most pay some attention to providing an opportunity for camaraderie between members with others that have similar interests and concerns.

The academic (i.e. dullest) definition of a user group can be: "a group of people, who have organized to share ideas and assist each other in topics related to whatever they commonly use". It doesn't sound like much, but its strength lies in its vagueness. Individual groups select different areas of emphasis. Each group has its own mixture of emphasis on several levels. A group may try to be all things to all people, but that will not generally succeed unless the group is *very* large and has formal or informal special interest groups. The five philosophical items listed above may be mixed and matched, and different levels of commitment given to each. Also, groups may special-ize in novice users, intermediate users, developers and hack-ers, or some combination of experience levels. There is an almost endless variety of choices that are consciously or uncon-sciously made when a user group is formed. The variety is the reason that a good number of us belong to more than one Apple user group. They are all different, and often provide complimentary services.

What should you look for in a group?

That depends on your personal needs and desires. What are you looking for? Technical information or help? Social events? News? Software information? Public domain software? Something else? Is it important to you to be able to attend meetings and talk to the other members? These are just a few of the items that should be considered when selecting a group and deciding what level of activity is appropriate for you.

Most groups have a newsletter or magazine. Not all have a publication, and when they do, it will probably vary from those of other groups in size, publishing schedule, and type of topics covered. When considering a group, you should ask if they have a publication, and if so, ask for a sample copy. This way, you can evaluate content and approach and determine its usefulness for you. You can also tell a lot about the goals and emphasis of a group by reading the articles in a sample issue. If all the topics seem to be too simple-minded or too technical for you, most likely, the group is not right for you. On the other hand, the topics may be eminently readable but not items that interest you. Remember, you are looking for an organization that has some degree of commonalty with your interests.

Most Apple user groups have disk libraries. Normally speaking, the larger the group, the larger the library. These libraries are usually a good way to get a collection of software at a very reasonable cost. One should be aware that Public Domain software is legally free. What the seller can charge you for is the cost of the disk and any expenses to recover their costs (initial *purchase* and copying fees, etc.). The amounts charged for these *expenses* vary considerably across groups and businesses that sell Public Domain software. Most of the time, the software is widely spread and available at widely varying charges. Look at the prices charged and see if they are reasonable. In the case of user group charges, the

reasonableness of the charges should take into consideration other services you get from the group and how much of them is covered by other fees. It is common for user groups to help keep membership fees low by a markup on their PD sales. In addition to the standard public domain charges, evaluate the size, and content of the library as is relates to your interests.

Many larger groups have group purchases, and in the case of TAU, there is a software Royalty Program which works for the group member as if a group purchase had been contracted for selected software. These can be useful.

Help and social camaraderie depend on the nature of the **core group** that actually does the work of a user group. Small groups covering a relatively limited geographic area are more likely to have more social events and person to person interaction. Larger groups and those covering extended geographic areas usually have a more comprehensive base of knowledge to search out help when you have a complex, or rare, problem. If you are likely to need help, check out what formal help services are available. The larger groups normally have a helpline to call, but in the smaller group, you will know most of the members and may feel more comfortable calling them.

In the Apple /// community, there are still several /// specific groups, and most of the larger general Apple groups have /// SIGS. Most of the more active ones are listed each month in *ON THREE*. We suggest that you think about what you would like in the way of user group benefits, and then write or call a good selection of groups for information. When you have collected the requested information, compare them all and decide which one, or two, are best for you. Then you should join, and the only decision left is how much you really want from the group. If you want a lot, you would be better off looking for opportunities to take an active part and possibly become one of the *core group*.

We've said it before, but it bears repeating. In order to keep the /// community alive, we all have to back those that are providing support. That includes developers, vendors, publishers, and user groups.

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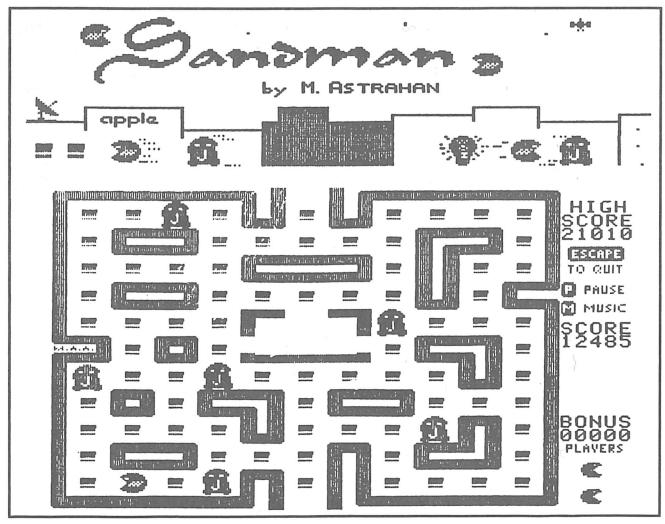
Your only weapon against the* JOBs *is to find the* WOZ *who wanders about the lab peeking in on various projects. For a short time following a meeting of* SANDMAN *and* WOZ *the* JOBS *turn blue and may be exorcised if you can catch them.

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



```
        PPPPPPPPPP  HH                                                IIIII IIIII IIIII     An Apple ///
       PP       PP  HH          AAAAAAAAAA   SSSSSSSSS  EEEEEEEEEE       II    II    II              User
      PP       PP  HH                 AA  SS           EE      EE        II    II    II               Survey
     PPPPPPPPPP  HHHHHHHHHH  AAAAAAAAAA  SSSSSSSSS  EEEEEEEEEE       II    II    II
    PP           HH      HH  AA      AA          SS  EE                II    II    II        On the Present
   PP            HH      HH  AA      AA          SS  EE               II    II    II       And the Future of
  PP             HH      HH  AAAAAAAAAA  SSSSSSSSS  EEEEEEEEEE      IIIII IIIII IIIII    Apple /// Software
```

Part of the Phase III Conference and Exhibition -- scheduled for October 2 through 4, 1987 in Chicago -- will be a panel discussion on the future of Apple /// software. That panel discussion will most valuable if we can get you, the Apple /// software user, to tell us your own thoughts. Since the future starts today, we would first like to know what software you have now and what you think of it. The following table lists most of the commercial software for the ///. Please check each program that you own.

INTEGRATED SOFTWARE
- ( ) A01 /// E-Z Pieces
- ( ) A99 Other (Specify)

PROGRAMMING LANGUAGES
- (X) B01 Business BASIC
- (X) B02 Cobol
- ( ) B03 Forth
- ( ) B04 Fortran
- ( ) B05 Modula-2
- ( ) B06 NPL
- (X) B07 Pascal
- ( ) B99 Other (Specify)

PROGRAMMING AIDS
- ( ) C01 Basic GTO
- ( ) C02 Basic XREF
- ( ) C03 Basic XT
- ( ) C04 Basic Utils
- ( ) C05 Pascal Tool Kit
- ( ) C06 Pascal Utility Library
- ( ) C07 Programmers Power Tools
- ( ) C08 RPS
- ( ) C09 V-form Pas Interface
- ( ) C99 Other (Specify)

DATA BASE MANAGEMENT
- ( ) D01 Aladin ///
- ( ) D02 Apple File
- ( ) D03 Data Base ///
- ( ) D04 FreeForm
- (X) D05 Keystroke
- ( ) D06 Omnis-3
- (X) D07 PFS:File
- ( ) D08 PFS:Report
- ( ) D09 QuickFile
- ( ) D10 Versaform
- ( ) D11 Wozbase
- ( ) D99 Other (Specify)

WORD PROCESSING
- (X) E01 Apple Writer
- (X) E02 Apple Speller
- ( ) E03 Factwriter
- ( ) E04 Ink Well
- ( ) E05 Word Juggler
- ( ) E06 Lexicheck
- (X) E07 Script ///
- ( ) E99 Other (Specify)

MAIL LIST SOFTWARE
- (X) F01 Mail List Manager
- ( ) F02 MLM Utilities
- ( ) F03 Postmaster
- ( ) F99 Other (Specify)

FINANCIAL/ANALYSIS
- (X) G01 BPI Accounting
- ( ) G02 Checkbook ///
- ( ) G03 Desktop Plan ///
- ( ) G04 DIF Sort
- ( ) G05 Multiplan
- ( ) G06 Senior Analyst
- ( ) G07 State of the ArtAcctg
- ( ) G08 Viz-A-Con
- (X) G09 VisiCalc
- (X) G10 VisiCalc Advanced
- ( ) G11 VisiSchedule
- ( ) G99 Other (Specify)

DATA COMMUNICATIONS
- (X) H01 Access ///
- ( ) H02 Codefile Transmitter
- ( ) H03 Data Capture ///
- ( ) H04 EasyTerm
- ( ) H05 Electronic Mailman
- (X) H06 Infonet
- ( ) H07 Kermit
- ( ) H08 Let's Talk
- ( ) H09 MicroCourrier
- ( ) H10 Terminus
- ( ) H99 Other (Specify)

PROGRAM SELECTORS
- ( ) J01 Catalyst
- (X) J02 Selector ///
- ( ) J99 Other (Specify)

GRAPHICS
- (X) K01 Business Graphics
- ( ) K02 Chartmaker ///
- ( ) K03 Draw On ///
- ( ) K04 Font Writer
- ( ) K05 Graph'n'Calc
- ( ) K06 Graphics Manager
- (X) K07 Graphics Wizard
- (X) K08 PFS:Graph
- ( ) K09 SoftDraw
- ( ) K99 Other (Specify)

RESIDENT PROGRAMS
- ( ) L01 Attach Driver
- ( ) L02 Calendar Pak
- ( ) L03 Desktop Manager
- ( ) L04 Discourse
- ( ) L05 On Time
- ( ) L06 Power Keys DM+
- ( ) L07 Power Print ///
- (X) L08 Unprotect Driver
- ( ) L99 Other (Specify)

FILE CONVERSION SOFTWARE
- (X) M01 APPLECON
- ( ) M02 Reformatter ///
- ( ) M03 Grabit
- ( ) M04 MLMASCI
- ( ) M05 NVASCI
- ( ) M06 CONPATH
- ( ) M07 SOSTRAN
- ( ) M99 Other (Specify)

UTILITY PROGRAMS
- (X) N01 Backup ///
- (X) N02 Confidence Program
- ( ) N03 Data Window ///
- ( ) N04 Disk Window ///
- (X) N05 Dealer Diagnostics
- ( ) N06 Jeppson Disassembler
- ( ) N07 Lazarus
- ( ) N08 PC-Copy
- (X) N09 PFS:Rescue
- ( ) N10 Power Cat ///
- ( ) N11 Power Print ///
- ( ) N12 The Retriever
- ( ) N13 Source Window ///
- ( ) N99 Other (Specify)

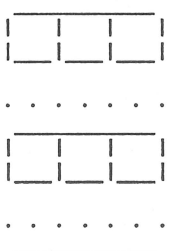
GAMES
- ( ) P01 Apple Chomp
- ( ) P02 Cap'n Magneto
- ( ) P03 Card Machine
- ( ) P04 Crossword Scrambler
- ( ) P05 Fruit Machine
- ( ) P06 Sandman
- ( ) P99 Other (Specify)

MISCELLANEOUS
- (X) R01 Think Tank
- ( ) R99 Other (Specify)

What programs do you use most? _____ _____ _____ _____ _____

Which do you use the least? _____ _____ _____ _____ _____

What changes would you like to see to your existing programs?



What new functions would you like your Apple /// to perform?

Place Stamp Here

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USA

Data Capture ///

Edward N. Gooding, Sr.

Last month, I wrote about the system requirements, installation, documentation and some of the features of Data Capture ///. I also mentioned the File Menu and what exactly this telecommunications software has to offer in the File Menu. This time, I will deal with the Options Menu and be more specific about the pluses and minuses of the program.

In the O)ptions Menu, a user would see the display as shown in Figure 4.

Figure 4
Options Menu

From this Menu you can change:

B)aud Rate
C)atalog Display
D)elay Times
F)ilter Table
M)odem Parameters
O)ne Key Commands
P)hone Number
or
S)ave Options on Disk
L)oad Options from Disk

Press the key marked RETURN to Exit

Which Selection >

B)aud Rate Setting - is used to set the data transmission speed to either 110, 300, or 1200 bps (bits per second). If you have a modem that supports higher speeds, or wish to use Data Capture to communicate with another /// that is hard-wired to your ///, the user's manual tells you where to modify the root program to allow transmission speeds of 2400, 4800, and 9600 baud.

C)atalog Display - allows you to suppress the automatic directory listing display that precedes the Merge, Send, File List, File Print, and Option Load functions.

D)elay Times - allows the user to change the duration of the pause after each transmitted Carriage Return and/or after each transmitted character. The user can also change the delay time assigned to the Pause Character used in Data Capture's One Key Commands (discussed later in this review), and can change the value, or character used in One Key Commands to invoke the pause. The novice terminal program user does not need to be intimidated by these options. The average user will probably never have to change them.

Here's an example of how I use the Carriage Return delay when uploading files to CompuServe: When I call during peak hour and when there are many other callers using the system, I can really notice a slowdown, especially where the system prompts me for each line of data during an upload. At this time, I will increase the Carriage Return delay, sometimes to the maximum amount, to compensate for the amount of time it takes CIS to send the prompt for each line.

F)ilter Table - is used to prevent specified control characters that are received by the program from being passed through to the Capture Buffer. If certain control characters are allowed through, they would adversely affect your screen display, or drive your printer crazy during a print operation. When you select this option, you are presented with a table of the applicable control codes, and you can toggle the filtering of each one on and off by pressing the corresponding letter on your keyboard. The display looks like the one in Figure 5.

Figure 5
Control Character Filter Table

CTRL CHAR	CTRL CHAR	CTRL CHAR
A <F>	L <F>	V <F>
B <F>	M <A>	W <F>
C <F>	N <F>	X <F>
D <F>	O <F>	Y <F>
E <F>	P <F>	Z <F>
F <F>	Q <F>	[<F>
G <A>	R <F>	\ <F>
H <A>	S <F>	] <F>
I <F>	T <F>	^ <F>
J <F>	U <F>	_ <F>
	K <F>	

Change any of the Above ? N

The <A> signifies that the control character is <A>llowed to enter the Capture Buffer, while the <F> signifies that the control character will be <F>iltered.

The Bell (CONTROL-G), the Backspace (CONTROL-H), and the Return (CONTROL-M) are always allowed to enter the Capture Buffer, you can not filter them. The Null Character (CONTROL-@), and the Rubout Character (CONTROL-_) are always filtered and you can not change their settings.

M)odem Parameters - allows the user to change the number of Data Bits, the Parity, and the number of Stop Bits. These are terms that terrify novice telecommuni-

cators, and understandably so. You do not really have to understand what these bizarre things are, but simply need to know that how you set these options on your system must match the settings on the remote computer that you want to connect with. Nine times out of 10, eight data bits, one stop bit, and no parity will do the job for you, and this is how Data Capture /// comes initially configured. If you connect with another computer system, and get nothing but garbage coming across the screen, then the chances are very high that either the M)odem Parameters or the B)aud Rate Setting are not insync with the remote computer.

O)ne Key Commands - Anyone who uses the Glossary function of Applewriter, or the keyboard macros of the Desktop Manager or Power Keys will immediately recognize what this handy little feature is all about. This function allows you to store 10 (0-9) macros, or strings of up to 40 characters. In other words,when you press the OPEN APPLE-ZERO key, you can have the program send your logon password to your favorite online service. This is a great tool for entering repetitive phrases or other pieces of information. If you are already a user of one of the two aforementioned keyboard macro programs, then I doubt that you will find much use for this feature, but if you are not then you will find this to be a timesaver.

P)hone Number - allows you to store a default phone number. Use this to store the phone number of the online service or bbs you call most frequently. When selecting D)ial Phone Number, this number will automatically be displayed. You can include pause commands in this phone number to allow for waiting for an outside line at an office location.

/// E-Z Pieces

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

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

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

$135 plus $3.50 s/h

S)ave Options to Disk - will save current One Key Commands, the Filter Table, the default Phone Number, Baud Rate, and Modem Parameters, along with all the status flags from the T)oggle Menu to a file on disk. A user can save as many different variations of options as there is room for on the disk. This is also a very nice feature of this program.

You can set up your options (including the storage of logon passwords in the One Key Commands) for each online service or bbs that you call frequently. Before dialing, simply use the L)oad Options from each Disk function and then D)ial Phone Number function. You can name the different option files to match the various systems that you call. Each one will be suffixed with an ".OPT". There is a file named DCAP.OPT on the boot disk that must always be present for Data Capture /// to run. You can set your own default options and then save them with this name to have them automatically loaded in whenever you start Data Capture ///.

L)oad Options from Disk - loads the options S)aved in the above function.

If you selet the T)oggle Menu option from the main menu, you will be presented a menu that looks like the display in Figure 6.

Figure 6
Toggle Menu

From this menu you can switch:

C)apture Buffer (ON/OFF)
D)uplex (FULL/HALF)
E)chowait (ON/OFF)
F)ill Empty Lines (ON/OFF)
L)inefeed (ON/OFF0
P)refix for Disk Files
R)emote System Prompte Character
S)how Control Characters (ON/OFF)
T)ransmit (ON/OFF)

Press they key marked RETURN to exit

Which Selection>

These options control features that can change frequentlyt during the operation of Data Capture ///. This is why the status of most of the options on this menu are displayed in the 3-line status display at the top of your screen when you are Enter/Receive mode.

C)apture Buffer (ON/OFF) - pressing the letter "C" will turn capture mode on and off. The capture mode status is displayed in the Status Lines, and when capture mode is "on", the number of lines in the Capture Buffer will always be accounted for in the top Status Line.

D)uplex (FULL/HALF) - pressing the letter "D" will toggle back and forth between full and half duplex. This is another one of those mysterious telecomputing terms. All you need to remember about duplex is if you can not see what you key on your screen, then select half duplex. If you find yourself seeing double, then change to full duplex.

E)chowait (ON/OFF) - pressing "E" will toggle this feature on and off. This option, when "on", makes Data Capture /// wait after it sends each character until the remote computer sends back an echo of the character received. Obviously, when this option is selected it will slow down the sending of data to the remote computer.

F)ill Empty Lines (ON/OFF) -pressing "F" will toggle this feature on and off. When "on", this feature sends a Space Character, followed by a Carriage Return whenever it finds a blank line in the text. This is to compensate for the fact that some online services will terminate input mode when they encounter two successive Carriage Returns.

L)inefeed (ON/OFF) - pressing "L" will toggle this feature on and off. If you find your lines being double spaced as you receive them from the remote computer, then turn this option "off". If the lines are being printed on top of one another, then use this option to turn linefeeds "on".

P)refix for Disk Files - pressing "P" allows you to specify the default path- name prefix that is used for all file related functions unless the ruler overrides the prefix by entering a complete pathname when prompted for a filename.

R)emote System Prompt Character - pressing "R" will allow the user to specify what prompt character the remote system will send before Data Capture /// can send each line of text. For instance, if the remote computer that you are connected with sends a ">" character before it allows you to send a line, then you can specify this to Data Capture, and it will dutifully wait for this character before it sends each line of text.

S)how Control Characters (ON/OFF) - pressing "S" will toggle this feature on and off. When "on", it will allow control characters that are imbedded in the text being displayed on the screen to be seen by you as inverse-display letters. When "off", control characters will not be displayed.

T)ransmit (ON/OFF) - pressing "T" toggles this feature on and off. Normally, this will be set to "on" status, but occasionally you may want to enter text into the Capture Buffer that you don't want sent to your modem. Then select the "off" status to prevent them being sent. Turning this option "off" might also prevent sending some inadvertent commands to the modem while entering text into the Capture Buffer.

...And the survey says...

My general opinion of Data Capture /// is pretty high. I've been a very heavy user of Access /// ever since version 1.0 first came out. I don't think that Data Capture /// is going to convert me from Access ///, but I believe that is only because I am so comfortable with Access ///; it's kind of like an old hunting dog to me. Other dogs in the hunt club may be faster or prettier, but Access /// has served me so well over the years that I can't bring myself to part with it. Like I said previously though, I would recommend Data Capture /// over Access /// to a new modem user. It is not as intimidating as Access /// is, and is definitely easier to use. It is more powerful than version 1.1 of Access /// (the non-interpreter version), due to the fact that it has the line editor and the One Key Commands available to it. The following summarizes some of my specific likes and dislikes of Data Capture ///:

Likes

1. I like the way to get back into the program if I inadvertently quit before I'm really ready to.
2. I like the Business Basic implementation of this program. It executes fast and efficiently, and I like the ability to easily customize the code. The program is well written and easy to follow, so I had no problems implementing minor enhancements the OPEN APPLE-U "hook" into the program is an especially nice touch for adding help screens or custom code.
3. I like the double user interface with the menus for beginners and the fast-access keys for experienced users. The use of fast access keys to perform functions like turning the Capture Buffer on and off "on the fly" are especially nice.
4. I very much like the ease of use of this program. The way that the author(s) have implemented the various functions just seems to make sense to me.
5. I know that the term "user-friendly" has really been over-used over the past several years, but I can think of no other term to describe how this program interacts with the user Data Capture does an excellent job of error-trapping, and the warning and error messages that it displays are concise and coherent. You won't see any "SOS IOERROR# 45" messages which make you scramble for your SOS Reference manual or psychiatrist's phone number. The program, as evidenced in item #1 above is very forgiving. It never crashed on me a single time while I was legitimately using it, and even when I deliberately tried to crash it by keying in wrong responses it simply displayed an appropriate message and gave me a chance to try again.

Dislikes

1. I found one feature to be particularly annoying. When using an option from the F)ile, T)oggle, or O)ptions sub-menu, the program returns you immediately to Enter/-Receive mode. I would prefer a return to the appropriate sub-menu to select another option from that menu.
2. Another annoying feature of Data Capture /// is that the screen contents are not saved when you temporarily exit the Enter/Receive mode. If you are online and have a screen full of text from your favorite online service or bbs, and you exit Enter/Receive mode to invoke a function from the T)oggle Menu, when you are returned to Enter/Receive mode your screen display has vanished. This could be disconcerting to a new modem user, who might think he or she had been disconnected while using a T)oggle function. The program should save the screen contents, and then restore before re-entering Enter/Receive mode.

David Hughes of Southeastern Software informed me that if I change the "GOTO 20" verb at the end of line 8208 to "GOTO 16" that the screen will indeed be restored. I made the change and it worked perfectly. David also informed me that if I deleted everything after the "GOSUB 100" in line 15 the previous screen would be restored after using the O)ptions and F)ile Menus. Another plus for Business Basic and a responsive developer.
3. I'm not crazy about line editors of any type, and I don't like this one, either. However, in all fairness to David and

Southeastern, this is about as good an implementation of a line editor as you are going to see, though. If you are not a hard disk user, most likely you will appreciate this feature as it will help save you from floppy elbow disease.
4. I do not like the arbitrarily imposed 38 byte limit on file pathnames. David informed me that he imposed this limit because that was all that would fit in the status line at the top of the Enter/Receive screen. If you want longer pathnames and I don't object to having a longer pathname truncated in the status line, then you can make the following changes to the program to allow a full 255 byte pathname limit: Change lines 8, 8012 and 15190 to INLEN%=255.

The Bottom Line

I received a review copy of this program and the price was not displayed anywhere on the software or documentation. Hughes, Data Capture /// author, informed me that the price was $90.00. However, if you have a copy of last month's *ON THREE,* you will see that there is a certain special running on the item. I think that $90 is slightly too high for what you get. Considering you can download Business Basic programs that do line-editing and auto-dialing for the price of a long distance phone call, and considering that you can purchase Access /// at fire sale prices here and there, I don't think a $90 price tag will generate many sales. I think a $59 price would be a good value software purchase, especially for someone who is just starting out in the wonderful world of telecomputing.

Buy this program, a mail-order or even a used Hayes modem, and a serial cable and after a couple of months you won't know why you waited so long. Having a modem is a great way to break through those "isolation blues" that we ///'ers experience every now and then.

One of the first places that you should start calling after you get your modem and this program is CompuServe. It has a dedicated Apple /// forum online that has some of the most knowledgeable Apple ///'ers that you would ever want to meet. I have never seen any question, be it hardware, software, or programming go without some sort of a response from someone in the Apple /// SIG there. I heartily recommend that you get a CompuServe user's ID.

Of course, I can't miss a chance to tell you to call my bbs, ///'s Company in Richmond, VA, at 804-747-8752. The protocol is 300 or 1200 baud, 7 or 8 bits, odd parity, full duplex. There are over 650 Public Domain programs and articles related specifically to the mighty Apple /// online for your viewing and downloading pleasure. The style of my bbs is similar to a library or an archives, while Compuserve has a much more interactive format. Between the two, a user can get more out of Apple ///, so if you've been thinking of getting into the world of modems and bbs's, come on and jump in!! You will never regret it.

ON THREE *presents* ...

ASCII Chart

Ascii Conversion Table

Dec	Hex	Cr	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	a	116	74	t
3	03	ETX	22	16	SYN	41	29	)	60	3C	<	79	4F	O	98	62	b	117	75	u
4	04	EOT	23	17	ETB	42	2A	*	61	3D	=	80	50	P	99	63	c	118	76	v
5	05	ENQ	24	18	CAN	43	2B	+	62	3E	>	81	51	Q	100	64	d	119	77	w
6	06	ACK	25	19	EM	44	2C	,	63	3F	?	82	52	R	101	65	e	120	78	x
7	07	BEL	26	1A	SUB	45	2D	-	64	40	@	83	53	S	102	66	f	121	79	y
8	08	BS	27	1B	ESC	46	2E	.	65	41	A	84	54	T	103	67	g	122	7A	z
9	09	HT	28	1C	FS	47	2F	/	66	42	B	85	55	U	104	68	h	123	7B	{
10	0A	LF	29	1D	GS	48	30	0	67	43	C	86	56	V	105	69	i	124	7C	|
11	0B	VT	30	1E	RS	49	31	1	68	44	D	87	57	W	106	6A	j	125	7D	}
12	0C	FF	31	1F	US	50	32	2	69	45	E	88	58	X	107	6B	k	126	7E	~
13	0D	CR	32	20	SP	51	33	3	70	46	F	89	59	Y	108	6C	l	127	7F	DEL
14	0E	SO	33	21	!	52	34	4	71	47	G	90	5A	Z	109	6D	m			
15	0F	SI	34	22	"	53	35	5	72	48	H	91	5B	[	110	6E	n			
16	10	DLE	35	23	#	54	36	6	73	49	I	92	5C	\	111	6F	o			
17	11	DC1	36	24	$	55	37	7	74	4A	J	93	5D	]	112	70	p			
18	12	DC2	37	25	%	56	38	8	75	4B	K	94	5E	^	113	71	q			

RETURN for more ESCAPE to leave.

This Desktop Manager module lists the decimal, hexidecimal and corresponding character values of all ASCII keyboard characters. A second screen shows the decimal and hexidecimal 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.

Epson Graphics

Bob Consorti

This article is a continuation of last month's DMP-Imagewriter. However, instead of using an Apple DMP-Imagewriter to print black and white graphics as last month, we will be using the Epson printer.

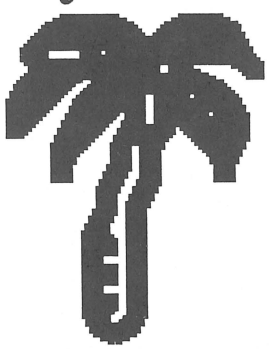
The parameters for the Epson and the DMP-ImageWriter are the same. The Epson version of the program in both Basic and Pascal is called PRINTEPS. This routine takes up 1,186 bytes.

To use the program, make sure you follow last month's directions.

```
;  ____________________________________________________________________
;|                                                                    |
;|          E P S O N   S C R E E N   P R I N T   U T I L I T Y       |
;|                                                                    |
;|       Written  1/3/83  BY B.C.          Modified  1 Nov 84         |
;|                                                 thru 30 Dec 86 by B.C.
;|                          PROGRAM MODULE                            |
;|                                                                    |
;|    Contains the programs to do screen dumps in:                    |
;|                                                                    |
;|             Graphics Mode - Normal                                 |
;|             Graphics Mode - Rotated                                |
;|____________________________________________________________________|
;| Epson Graphics Screen Dump Utility                                 |
;| Written By : Bob Consorti          (c) 1987 by ON THREE, Inc.      |
;|                                                                    |
;| This file, in source or code form, may not be sold for profit in any way,|
;| shape or form.  It may be distributed freely at no charge or at a minimal|
;| charge for the cost of the diskette and shipping.  This title block must |
;| not be deleted or modified when copying or distributing.  The above cost |
;| is not to exceed $5.  I want this to be free so please don't sell it.    |
;|____________________________________________________________________|
;
;
;    - - -   ZERO PAGE EQUATES   - - -

ZEROPAGE        .EQU    00              ; Start of Zero Page
ROWCOUNT        .EQU    00              ; Vertical Location
BYTECOUNT       .EQU    01              ; Horizontal Byte Location * 2
COUNTER         .EQU    02              ; General purpose counter
CONVY           .EQU    03              ; Y Input to CONVERT
CONVADRS        .EQU    04              ; Output Address from CONVERT
BYTE            .EQU    06              ; Eight Byte Workspace
SHIFTCOUNT      .EQU    0E              ; General Counter
COMMAND         .EQU    0F              ; Inputted control variable
GENERAL         .EQU    10              ; Used for anything
TAB_STOP        .EQU    14              ; Inputted tab stop variable

;
;   - - -   COMMAND EQUATES   - - -
;

COLUMNS         .EQU    01              ;
CLIP            .EQU    02              ;
PAGE            .EQU    04              ;
ROTATION        .EQU    08              ; PSCREEN commands
MODE            .EQU    10              ;
SIZE            .EQU    20              ; As described in the Silentype
INVERSE         .EQU    40              ; manual.
DENSITY           .EQU    80                ;

;
;   - - -   GENERAL EQUATES   - - -
;

ESCAPE          .EQU    1B
LINEFEED        .EQU    0A
TAB             .EQU    09
LEFTTORIGHT     .EQU    3E
POWERUPSTATE    .EQU    40

HEIGHT          .EQU    192.            ; Height of Screen

OPEN            .EQU    0C8
WRITE           .EQU    0CB
CLOSE           .EQU    0CC

D_CONTROL       .EQU    83
GET_DEV_NUM     .EQU    84

;
;   - - -   SPECIAL EQUATES   - - -
;

KBDFLAG         .EQU    0C008
ENVRMT          .EQU    0FFDF
NEW_ENVRMT      .EQU    73

;
;   - - -   MACROS   - - -
;

                .MACRO  SOS
                BRK
                .BYTE   %1
                .WORD   %2
                .ENDM

; ____________________________________________________________________
;|       Start of Code                                                |
; ____________________________________________________________________

                .PROC   PRINT_EPS,2

                JSR     MOVEZ           ; Save the first 20H bytes in Z page

                PLA                     ;Get the return address
                TAY                     ;Hold in Y & X
                PLA
                TAX
                PLA                     ; Pull the tab stop info, store
                STA     TAB_STOP        ; it and remove the high byte.
                PLA
                PLA
                STA     COMMAND         ; Pull the one byte command
                PLA                     ; and dump the high order byte
                TXA                     ;Restore the return address so we can
                PHA                     ;exit without killing ourselves
                TYA
                PHA

                TSX                     ; Save the location of the stack
                STX     STACKLOC        ; in case we have to do a quick exit

                PHP                     ; Save status, then disable interrupts
                SEI
                LDA     ENVRMT
                STA     ENV_TEMP
                LDA     #NEW_ENVRMT
                STA     ENVRMT
                LDA     #00             ; Get the state of the ALPHA-LOCK
                STA     FLAGVAL1        ; key and store it.
                LDA     #08
                BIT     KBDFLAG
                BNE     $090
                LDA     #01
                STA     FLAGVAL1
$090            LDA     ENV_TEMP        ; Restore status (including interrupts)
                STA     ENVRMT
                PLP

                LDA     #MODE
                BIT     COMMAND
                BNE     GRAPHICS        ; Will we be printing graphics ?
                JSR     MOVEZ
                RTS

GRAPHICS        LDA     #20             ; Initialize for the right page or pages
                STA     PAGEPRE
                STA     PAGEPRI         ;  On exit, PAGEON will contain an FF if
                LDA     #COLUMNS        ;  only one page is in use (280 mode),
                BIT     COMMAND         ;  and a 00 if two pages are in use.
                BNE     $010
                LDA     #0FF            ;  PAGEPRI contains the primary page
                STA     PAGEON          ;  prefix.
                LDA     #PAGE
                BIT     COMMAND         ;  PAGEALT contains the alternate page
                BEQ     $020            ;  prefix, for 560 mode.
                LDA     #40
                STA     PAGEPRE
                BNE     $020
$010            LDA     #00
                STA     PAGEON
                LDA     #40
                STA     PAGEALT
                LDA     #PAGE
                BIT     COMMAND
                BEQ     $020
                LDA     #60
                STA     PAGEPRI
                LDA     #80
                STA     PAGEALT

$020            JSR     INIT            ; Get printer ready

                LDA     #ROTATION
                BIT     COMMAND
                BEQ     RIGHTWAYS       ; Is this printed normally ?
                JMP     SIDEWAYS        ; or sideways ?

;
;
;   - - -   Print the graphics screen, straight up and down   - - -
;
;

RIGHTWAYS       LDA     #70.
                STA     WIDTH
                LDA     #CLIP
                BIT     COMMAND
                BNE     $020
                LDA     #COLUMNS
                BIT     COMMAND
                BNE     $010            ; Width will be set when through
                LDA     #SIZE           ; If we are in 560 mode or doubled
                BIT     COMMAND         ; then the high ten bytes must be
                BNE     $010            ; clipped
$020            LDA     #80.
                STA     WIDTH

$010            LDA     #0
                STA     ROWCOUNT        ; Which row we are on (0 - 191)

NEXTROW         LDA     #0
                STA     BYTECOUNT       ; Which horizontal byte we are on

; ******  Bug Fix  -  12/28/82  ******
```

```
                BIT     PAGEON          ; Used to return pointer to page 1
                BMI     $010            ; in 560 mode, in case clipping
                LDA     #00             ; has screwed it up
                STA     PAGEON
; ********************************
$010            JSR     GRAFIXON        ; Get ready to send a string of bytes

NEXTBYTE        BIT     PAGEON
                BMI     $010            ; Find out which page we are on and
                LDX     PAGEON          ; prepare to gather bytes from it
                LDA     PAGEPRI,X
                STA     PAGEPRE
                LDA     #01             ; If in 560 mode, toggle PAGEON to
                EOR     PAGEON          ; point to the opposite page for the
                STA     PAGEON          ; next pass
                CLC
                BCC     $020

$010            INC     BYTECOUNT       ; In 280 mode we will incrementing
                                        ; twice because we are not alternating
                                        ; pages

$020            LDA     BYTECOUNT
                CLC                     ; The high order 7 bits of BYTECOUNT
                                        ; actually specify the byte
                ROR     A               ; The low order bit specifies the page
                                        ; when in 560 mode (thus the extra
                                        ; increment in 280 mode)
                TAY
                LDA     ROWCOUNT
                STA     CONVY           ; Convert the row we are on

                LDA     #7              ; Collect eight vertical bytes from
                STA     COUNTER         ; the screen
$030            JSR     CONVERT         ; and store them at BYTE to BYTE+8.
                LDA     @CONVADRS,Y
                LDX     COUNTER
                STA     BYTE,X
                LDA     #SIZE           ; If double size is on, only four bytes
                BIT     COMMAND         ; are taken and each is duplicated twice
                BEQ     $040
                DEC     COUNTER
                DEX
                LDA     @CONVADRS,Y
                STA     BYTE,X
$040            INC     CONVY
                DEC     COUNTER
                BPL     $030

                LDA     #6              ; Now, the low order 7 bits of the
                STA     SHIFTCOUNT      ; 8 bytes must be collated, making up
SHIFTBYTES      LDX     #7              ; 7 bytes, each containing one of the
$010            ROR     BYTE,X          ; orriginal 8 bytes.
                ROL     A               ; This is required because the print
                DEX                     ; head is vertical
                BPL     $010
                BIT     COMMAND         ; If bit 6 of the command is on
                BVC     $020            ; the image must be inverted
                EOR     #0FF
$020            TAX                     ; save the image in case we need it
                JSR     OUTPUT          ; send out the byte
                LDA     #COLUMNS
                BIT     COMMAND         ; If in 560 mode, only vertical is
                BNE     $030            ; doubled
                LDA     #SIZE
                BIT     COMMAND         ; If the image is doubled . . .
                BEQ     $030
                TXA                     ; recover the byte
                JSR     OUTPUT          ; and send it out again

$030            DEC     SHIFTCOUNT      ; Collate for 7 bits
                BPL     SHIFTBYTES      ; The 8th bit (shift bit) is garbage

                INC     BYTECOUNT
                LDA     BYTECOUNT
                CMP     WIDTH           ; If we aren't at the end of the line
                BCS     $040
                JMP     NEXTBYTE        ; do it for the next set of bytes

$040            JSR     PAPERFEED       ; Move the paper down

                LDA     CONVY           ; When finished, CONVY will have been
                STA     ROWCOUNT        ; incremented to the next line needed

                CMP     #HEIGHT         ; If we aren't at the bottom . . .
                BCS     ALLDONE
                JMP     NEXTROW         ; Do it for the next row

ALLDONE         JSR     CLOSE_IT        ; Close it up

                JSR     MOVEZ           ; Restore the Zero page

                RTS                     ; Thats All ! !

;
;
;   - - -   Print the graphics screen rotated 90 degrees   - - -
;
;
SIDEWAYS        LDA     #80.            ; Sideways, there is no clipping
                STA     WIDTH

                STA     BYTECOUNT       ; Start at the bottom and move up
                DEC     BYTECOUNT       ; row by row

                LDA     #0
                STA     COUNTER         ; This time, COUNTER will be used
                LDA     #SIZE           ; to hold the SIZE
                BIT     COMMAND         ;
                BNE     SNEXTBYTE       ; FF if normal
                LDA     #0FF            ; 00 if double
                STA     COUNTER

SNEXTBYTE       LDA     BYTECOUNT       ; Again, only the top 7 bits hold the
                LSR     A               ; actual byte count
                TAY                     ; the low bit contains the page
                LDA     PAGEON          ; if only one page is in use, we must
                BMI     $010            ; inc twice to divide by 2

                EOR     #01             ; since we are scanning right to left
                STA     PAGEON          ; we must start with PAGEALT
                TAX
                LDA     PAGEPRI,X       ; If in 560 mode, PAGEON contains
                STA     PAGEPRE         ; 00 if first half byte to be used
                SEC                     ; 40 if second half byte to be used
                BCS     SBIG

$010            DEC     BYTECOUNT       ; Only one page in use, so inc twice

SBIG            LDA     #0              ; Row scanning is always top - down
                STA     CONVY

                JSR     GRAFIXON        ; Get ready

SNEXTROW        JSR     CONVERT
                BIT     COUNTER         ; If the image is doubled, it must be
                BPL     $010            ; handled specially
                LDA     @CONVADRS,Y     ; Otherwise, just load the character
                ASL     A               ; Dump the high order bit
                JMP     SOUTPUT         ; and send it out
```


ON THREE has just the answer to your summertime needs!



With summertime just around the corner, it never hurts to have an extra T-shirt around to proclaim your love for **APPLE /// COMPUTERS!**

FOR $11.95 and $3.00 shipping and handling, you can own a fabulous **I ❤ Apple /// T-shirt.** What could be better than a yellow, blue, white or silver shirt to make this proclamation? It's a great way to meet other /// owners in your area, too.
FOR THOSE sunny days, throw on an **I ❤ Apple /// cap.** Those are available at the low price of **$5.95 plus $2.00 s/h.**

```
$010            LDA     #COLUMNS
                BIT     COMMAND
                BEQ     $020
                LDA     @CONVADRS,Y     ; If 560 mode, just double vertically
                ASL     A               ; so dump the high order bit
                JMP     $070            ; and send it out (twice).

$020            BIT     COUNTER         ; Each half of the byte must be duplic.
                BVC     $030            ; and sent out.  Counter determines
                                        ; which half we are working with
                LDA     @CONVADRS,Y     ; Shift out the second half
                ROL     A
                ROL     A               ; by dumping the first half
                ROL     A
                ROL     A
                ROL     A
                ROL     BYTE            ; putting the 3 bit in once
                SEC                     ; and all the others in twice
                BCS     $040

$030            LDA     @CONVADRS,Y     ; Shift out the first half
                ROL     A               ; by dumping the high bit
$040            LDX     #03             ; doubling the next 3 bits
$050            ROL     A
                PHP
                ROL     BYTE
                PLP
                ROL     BYTE
                DEX
                BNE     $050
                BIT     COUNTER         ; and putting the last bit in once
                BVS     $060            ; if we are working on the second
                ROL     A               ; half, then this does not apply
                ROL     BYTE

$060            LDA     BYTE            ; The high order bit is always garbage
                ASL     A

$070            BIT     COMMAND         ; Invert it if COMMAND says to
                BVC     SBIGOUTPUT
                EOR     #0FE            ; (remember, the char. was shifted)

SBIGOUTPUT      TAX                     ; Save the character, we will need it
                JSR     OUTPUT          ; and send it out
                TXA                     ; Get the character back
                JSR     OUTPUT
                TXA
                SEC
                BCS     SSEND           ; and send it out again

SOUTPUT         BIT     COMMAND
                BVC     SSEND
                EOR     #0FE

SSEND           PHA
                JSR     OUTPUT
                PLA                     ; Character must be sent out twice
                JSR     OUTPUT          ; for proper aspect ratio

                INC     CONVY           ; Move to the next position down
                LDA     CONVY
                CMP     #HEIGHT
                BCC     SNEXTROW        ; If we are not down, keep going

                JSR     PAPERFEED       ; move the paper up

                LDA     #COLUMNS
                BIT     COMMAND
                BNE     $010
                BIT     COUNTER
                BMI     $010
                LDA     #040            ; If horizontal must be doubled, then
                EOR     COUNTER         ; change go back and print the second
                STA     COUNTER         ; half
                BEQ     $010
                JMP     SBIG

$010            DEC     BYTECOUNT       ; Now we are ready to go to the next
                BMI     $020            ; column back
                JMP     SNEXTBYTE

$020            JMP     ALLDONE         ; And thats it ! ! !

;
;   - - -   BASECALC conversion program for graphics screen   - - -
;

CONVERT         LDA     CONVY                   ;  I'm not even going to bother
                AND     #07
                ASL     A
                ASL     A
                CLC
                ADC     PAGEPRE
                STA     CONVADRS+1
                LDA     CONVY
                AND     #38
                STA     CONVADRS
                ROR     A
                ROR     A
                ROR     A
                ROR     A
                AND     #0F
                CLC
                ADC     CONVADRS+1
                STA     CONVADRS+1
                LDA     CONVADRS
                ASL     A
                ASL     A
                ASL     A
                ASL     A
                STA     CONVADRS
                LDA     CONVY
                ROR     A
                ROR     A
                ROR     A
                ROR     A
                ROR     A
                ROR     A
                AND     #03
                TAX
                LDA     #00
                CLC
                   CPX      #03
                BCC     LP1
                ADC     #27
LP1             CPX     #02
                BCC     LP2
                ADC     #27
LP2             CPX     #01
                BCC     LP3
                ADC     #27
LP3             CLC
                ADC     CONVADRS
                STA     CONVADRS
                LDA     #00
                ADC     CONVADRS+1
                STA     CONVADRS+1
                RTS
;
;   - - -   Open printer driver file   - - -
;
INIT            .EQU    *

OPENNAME        SOS     OPEN,OPENPARMS
                BEQ     $010
                JMP     ERROR
$010            LDA     OPENREF
                STA     WRITEREF        ; Transfer Reference number for WRITE
                STA     CLOSEREF        ;  and CLOSE

                SOS     GET_DEV_NUM,gd_list
                LDA     gd_ref          ; The following code sets up the SUN
                STA     cc_ref          ; DATA printer driver to work in the
                                        ; BLIND OUTPUT mode.
                SOS     D_CONTROL,cc_list

; ******  Bug Fix  -  11/01/84  ******

                LDA     #ESCAPE         ; Force unidirection printing
                JSR     OUTPUT          ; only.  This improves the
                LDA     #"U"            ; quality of the image.
                JSR     OUTPUT
                LDA     #"1"
                JSR     OUTPUT

; ************************************

                LDA     #ESCAPE         ; Set line feed distance
                JSR     OUTPUT
                LDA     #65.            ; Command to set line feed distance
                JSR     OUTPUT          ; on the EPSON is ESCAPE-A  (65)

                LDA     #ROTATION
                BIT     COMMAND
                BEQ     FULLSPACE
                LDA     #07             ; Set to 7/72ths for rotated pictures
                JSR     OUTPUT
                SEC
                BCS     HALFSPACE

FULLSPACE       LDA     #08             ;   and 8/72ths for normal pictures
                JSR     OUTPUT

HALFSPACE       LDA     #DENSITY        ; If density bit (bit 7) is set
                BIT     COMMAND         ;  horizontal spacing is not changed
                BEQ     $010

                LDA     #4C
                STA     LINE_DENSITY

$010            LDA     COMMAND         ; If the command is to print out a
                CMP     #51.            ; regular 560x192 normal or
                BEQ     $040            ; inverted picture, then set the
                CMP     #115.           ; right CPI (10).
                BEQ     $040
                CMP     #55.
                BEQ     $040
                CMP     #119.
                BEQ     $040
                CMP     #18.
                BEQ     $040
                CMP     #22.
                BEQ     $040
                CMP     #50.
                BEQ     $040
                CMP     #54.
                BEQ     $040
                CMP     #82.
                BEQ     $040
                CMP     #86.
                BEQ     $040
                CMP     #114.
                BEQ     $040
                CMP     #118.
                BEQ     $040
                BNE     $020            ; ...otherwise just return

$040            LDA     #4B
                STA     LINE_DENSITY

$020            LDA     #ESCAPE         ; set up the tab stop spacing
                JSR     OUTPUT
                LDA     #44
                JSR     OUTPUT
                LDA     TAB_STOP
                JSR     OUTPUT
                LDA     #00
                JSR     OUTPUT

                RTS

;
;   - - -  ERROR handling routine  (just closes files and returns)  - - -
;
ERROR           LDX     STACKLOC
                TXS
                JSR     MOVEZ
                JMP     CLOSE_IT

;
;  - - -  General utility used by all programs to turn graphics on  - - -
;  - - -  and set the appropriate graphics line lengths             - - -
;
GRAFIXON        LDA     #TAB            ; Move to first tab (margin)
                JSR     OUTPUT
                LDA     #ESCAPE         ; EPSON's code for graphics on is
                JSR     OUTPUT          ;   ESCAPE - K,L (4B, 4C) followed
                LDA     LINE_DENSITY    ;   by two digits that represent the
                JSR     OUTPUT          ;   length of the output string
                                        ; * low, high *
                LDA     #ROTATION
                BIT     COMMAND
                BEQ     REGULAR
                LDA     #SIZE
                BIT     COMMAND
                BNE     BIGGRAF
SMALGRAF        LDA     #128.           ; 384 Bits
                JSR     OUTPUT
                LDA     #01
                JSR     OUTPUT
                JMP     GRAFISON
BIGGRAF         LDA     #00             ; 768 Bits
                JSR     OUTPUT
                LDA     #03
                JSR     OUTPUT
                JMP     GRAFISON
REGULAR         LDA     #COLUMNS
                BIT     COMMAND
                BNE     DENSE
                LDA     #SIZE
                BIT     COMMAND
                BNE     DENSE
                LDA     #70.
```

```
                CMP     WIDTH
                BEQ     SHORT1
                LDA     #34.
                CMP     WIDTH
                BEQ     SHORTT1
                LDA     #24.            ; 280 Bits
                JSR     OUTPUT
                LDA     #01
                JSR     OUTPUT
                JMP     GRAFISON
SHORT1          LDA     #234.           ; 490 Bits
                JSR     OUTPUT
                LDA     #01
                JSR     OUTPUT
                JMP     GRAFISON
SHORTT1         LDA     #220.           ; 476 Bits
                JSR     OUTPUT
                LDA     #01
                JSR     OUTPUT
                JMP     GRAFISON
DENSE           LDA     #70.
                CMP     WIDTH
                BEQ     SHORT2
                LDA     #34.
                CMP     WIDTH
                BEQ     SHORTT2
                LDA     #48.            ; 560 Bits
                JSR     OUTPUT
                LDA     #02
                JSR     OUTPUT
                JMP     GRAFISON
SHORT2          LDA     #234.           ; 490 Bits
                JSR     OUTPUT
                LDA     #01
                JMP     GRAFISON
SHORTT2         LDA     #220.           ; 476 Bits
                JSR     OUTPUT
                LDA     #01
                JSR     OUTPUT

GRAFISON        RTS

;
;  - - -   Subroutine to output character in A   - - -
;

OUTPUT          STA     OUTBUFFER
                SOS     WRITE,WRITEPARMS
                BEQ     AROUND2
                JMP     ERROR
AROUND2         RTS

;
;   - - -   Skip to begining of next printed line   - - -
;

PAPERFEED       LDA     #LINEFEED
                JSR     OUTPUT
                JSR     FLAGTEST        ; BREAK check is done at line's end
                LDA     FLAGVAL1
                CMP     FLAGVAL2        ; if ALPHA-LOCK KEY changes positions
                BEQ     OK              ; then exit the print routine.
                JMP     ERROR
OK              RTS

FLAGTEST        PHP                     ; Save status, then disable interrupts
                SEI
                LDA     ENVRMT
                STA     ENV_TEMP
                LDA     #NEW_ENVRMT
                STA     ENVRMT
                LDA     #00

                STA     FLAGVAL2
                LDA     #08
                BIT     KBDFLAG
                BNE     $010
                LDA     #01
                STA     FLAGVAL2
$010            LDA     ENV_TEMP        ; Restore status (including interrupts)
                STA     ENVRMT
                PLP
                RTS

;
;   - - -   Close printer driver file   - - -
;

CLOSE_IT        LDA     #ESCAPE         ; Reset the printer to original
                JSR     OUTPUT          ; printing conditions.
                LDA     #POWERUPSTATE
                JSR     OUTPUT

                SOS     D_CONTROL,cc_list

                SOS     CLOSE,CLOSEPARMS

                RTS

;
;   - - -   SOS CALL PARAMETERS   - - -
;
;

OPENPARMS       .BYTE   04
                .WORD   PATHNAME
OPENREF         .BYTE   0
                .WORD   0
                .BYTE   0

PATHNAME        .BYTE   08
                .ASCII  ".PRINTER       "

WRITEPARMS      .BYTE   03
WRITEREF        .BYTE   0
                .WORD   OUTBUFFER
                .WORD   0001            ;How pitiful, write 1 char at a time

OUTBUFFER       .BYTE   0

CLOSEPARMS      .BYTE   1
CLOSEREF        .BYTE   0

gd_list         .BYTE   02
                .WORD   PATHNAME
gd_ref          .BYTE   00

cc_list         .BYTE   03              ;Setup blind output mode for the Sun
cc_ref          .BYTE   00              ;Data priter drivers
                .BYTE   03
                .WORD   cc_num

cc_num          .BYTE   00
```

Epson Graphics (continued on page 31)

Macro Manager allows you to define a single keypress as a series of keystrokes you can play 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, so you need never type repetitive information again. Let Macro Manager, a Desk-top Manager module, do it for you!

$44.95 plus $3 s/h.

ON THREE Presents . . .

Macro Manager

Macro Manager

Solid Apple Definitions			Keypad 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]		[ ]

Apple-? = Help

MacroMap: Your MacroMap

Escape to Activate Macros and Exit. Macro Manager written by Rob Turner V1.0

One, Two, /// Forum

Juggling with the PKASO/U card

I have just acquired an Apple /// with a 512K memory upgrade and a 5Mbyte Profile. I use the Catalyst (version 2.1) as my program selection utility. I also have a PKASO/U printer interface card installed in slot No. 1 of my Apple. I use Word Juggler (version 2.6) as my chief word processor.

I have found that the Word Juggler superscript and subscript commands do not work with the PKASO/U printer interface card. I am told that I need an appropriate printer interface between Word Juggler and the PKASO/U card. Do you have an interface available to use between Word Juggler and PKASO/U?

Robert Mallonee,
Honolulu, Hawaii

We do not have an interface which would solve your problem. We have been researching the problem and were unable to find someone who does sell an interface for Word Juggler and the PKASO/U card.

However, there are some great /// people who read this publication each month and often have solutions to problems. Should anyone reading this article have any idea where such a printer interface could be purchased, please call **ON THREE** *and we will be glad to forward the information to Mr. Mallonee.*

HELP! Stack Overflow

HELP! I cannot figure out how to handle a couple of problems.

It all started when I switched to Selector /// from Catalyst after I received and installed that magnificent little UniDisk 3.5 I purchased from you. Here I am with a *poor man's* hard disk which eliminates the need for an expensive back-up system and also relieves me of any big-disk crash worries. I can add bytes in BOOK chunks for a couple of dollars (i.e. disks) and give them all the same volume name. When I use Selector's SOS Menu it doesn't know I don't have a real hard disk! It works like a charm, except for a couple of things. I suspect I would be having these troubles even if I had a real hard disk.

On my 512K machine with a /// plus //e card, I have followed the directions on page 37 for the *simple* way to install Business Graphics. However, when I load I am rudely halted with a beep and the message: PASCAL SYSTEM STACK OVERFLOW - FATAL ERROR. These messages are maddening. I cannot find a lue to helpful action - only nasty little statements about this being a fatal error and the need to reboot.

Of course, I have installed Graphics Manager on the same disk. It works like a charm.

My second instance comes after I have finished a fine piece of writing with AppleWriter 4.1 I then go through the routine of reducing the memory to three banks(an annoying bug), then call for the Speller, give the pathname and settle back to enjoy the dandy program. Instead - and particularly if I have carried on some other activity while writing, such as putting in some helpful macros with my Power Keys as I was writing, I am startled with: SYSTEM FAILURE $06, which is my old buddy STACK OVERFLOW.

My document is lost this time. I can't find a way to get back to the menu. Why does this happen and what can be done about it?

I have found a way that gets me by but it is not the cure: If I run Speller first - just get it up on the screen and then quit right away - I can go back to AppleWriter ///, write my piece, and go through the spelling routine without any trouble.

With my 256K machine, which also has a Titan /// plus //e but has Microsci 143 instead of the Unidisk 3.5, I get STACK OVERFLOW whenever I try to use the Menu Editor. When the 20 second routine arrives at the end of printing the little periods: BINGO! there it is: STACK OVERFLOW.

Also, I have some internal RAM disks. On my 512K I have the 512K RAM and also the Titan card RAM. On the 256K I have the Titan RAM. I do not know how I ever got along without these. Secondly, I have become addicted to Power Keys, as indicated above. Is the problem Power Keys or Selector?

A big problem I encountered with my Selector is that I cannot use Mail List Manager. It was such a joy to use Mail List Manager with Catalyst.

There is one dandy discovery, though, I can use Power Keys to put my Advance VisiCalc program on one of my RAM disks before loading it. The difference in speedy response is a delight. I am enjoying my Selector so much that I have almost forgotten how Catalyst works, except for Mail List Manager. Now if I can only get this STACK OVERFLOW licked my joy will be complete - or at least another high point. Your help would be appreciated.

By the way, I can forsee the day when I would want to get another Unidisk 3.5 (without the extras - just to plug into

my present one). Your driver will handle two drives, you say. It strikes me that it could be worthwhile to save my pennies for such a purchase down the road. But where can I get it when the day comes?

I also want to thank *ON THREE* for all you are doing for the Apple ///. The signs for the future of our beloved /// are not good. With the imminent stampede toward the Apple //GS and the new Macintoshes and the subtle change in emphasis of the planned convention, it is clear that things are changing.

However, some of us have no intention of "moving up." With my trusty ///, I have been in good company since 1982. Though I work with other machines at work it is so good to go home to my ///.

Francis K. Wagschal,
New York, NY

I'm sure all of these STACK OVERFLOW messages have been a hindrance to you. I will gladly help you out. First of all, for you have installed your 512K board but the computer is still only 256K as you need to upgrade your boot disk to 512K. This will halt the PASCAL SYSTEM STACK OVERFLOW messages. Once you have an upgraded boot disk, you can use it interchangeably with your 256K system. There is no need to keep a 256K boot.

Secondly, AppleWriter 4.1 takes up 64K of memory, which is quite a chunk. However, the main problem with AppleWriter 4.1 is that it is undocumented with many bugs. I urge you to contact the manufacturer or distributor you bought it from.

Next, with Power Keys on your 256K machine a lot of memory is taken up. Contact Daryl Anderson of D A DataSystems. He is the author of Power Keys. I believe he can find a way to cut down Power Keys to minimal configuration. If that doesn't work, you may have to upgrade your 256K. I'm sure D A DataSystems will have some suggestions as well.

I don't like to break the news to you but on Page 17 of the Selector /// manual, you will see that the current release of Mail List Manager will not run under Selector ///. However, I'm sure there may be some people who were able to work around that problem and can help you, too.

Also, you may purchase a Unidisk 3.5 from any computer store without the interface card. Your best bet would be to pick up a copy of the Apple II Unidisk 3.5. Should you need to add more drives, after this, just give **ON THREE** *a call and we'll be glad to assist you.*

Thank you for the kind words about **ON THREE**. *I can tell that you are a true /// lover, who does not want to change to another system. Keep that great /// spirit moving!*

Red Ryding with RS232 cable

I would like to know if you can help me once again with some information.

I would like to know if anyone has had any success with

ON THREE **asks you to answer the following questions.**

	Yes	No
Are you tired of swapping floppies?	☐	☐
Do you wish to compute more efficiently?	☐	☐
Do you ever receive "Out of room on volume" messages?	☐	☐

If you answered **YES** to any of these querstions, then you need a hard disk. A mass storage device capable of holding **INCREDIBLE** amounts of data for your retrieval at a couple of keystrokes. And if you need a hard disk, then you need the best. Try a **Xebec Sider 10 Megabyte or Sider][20 Megabyte hard disk** from **First Class Peripherals** and ***ON THREE***.
The same dependable disk used by the Apple][can now be used by the Apple ///. You won't believe the speed and efficiency.
Sider hard disks-----Access time = 85 msec
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NOW LOOK at the price:

Sider (10 Megabytes) = $800.00*
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*plus $35.00 s/h
And if you combine it with **Selector ///**, the disk switching utility, you have an incredibly fast, hassle-free system. So, if you want the speed, accuracy and dependability of a good hard disk at a great price, come to ***ON THREE*** for your **Sider and Sider][hard disks!**

using a cable hook up between an Apple /// 256K R-232 port to an Apple Macintosh Plus system port to transfer files (i.e., AppleWriter) using the Red Ryder communication program for the Apple ///.

I have been told that it can be done but I haven't found anyone with experience to make up a cable.

Kenneth E. Ratcliff,
Roseburg, OR

I talked with our technician, Terry McNeese, about the hook up. Terry says he doesn't know of anyone with successful hook ups. However, he pointed out that it can be done, it is just a matter of connecting the RS232 cable from the /// to the Macintosh Plus phone port. Basically, sending will not be a problem, but receiving the information may be a problem. I suggest that you either contact your local Apple dealer or Apple.

The address and phone number at Apple is as follows: 20525 Mariani Ave., Cupertino, CA 95014 (408) 966-1010. I'm sure since the two computers are Apple computers, they will be glad to assist you.

Please let us know the specifics on the hook up so other /// users who have wondered about the same type of connection will benefit.

Continuously underlining

Do you know where I could get a /// word processing program that is compatible with a Brother HR-1 printer which will underline continuously and avoid a lot of embedded print commands?

Jerry Crow
Marshfield, WI

Unfortunately, there is not a word processing program for the Apple /// which will underline continuously without having some embedded print commands. Three products we suggest you try are Word Juggler, /// E-Z Pieces or AppleWriter. Although there are embedded print commands for these programs, they will underline and they do so rather nicely.

Laser printing advances

I have been an Apple /// user for approximately seven years and depend on it a great deal for word processing and spreadsheet applications. It has always met the *challenge* and performed quite satisfactorily.

Currently, I have one Apple /// configured with a profile hard disk, external disk drive, and two printers. One of these is a daisy wheel letter quality printer that has had extensive use in the past four years and is rapidly wearing out and will likely need to be replaced in the near future. The other is an Epson dot matrix printer. I have been using Catalyst and Discourse spooler and use /// E-Z Pieces for most of my work. This particular computer system is used exclusively for word processing.
I would like to replace the letter quality printer with a laser printer if it economically feasible. I would want the laser printer to be compatible with my Epson, if possible, run off a parallel driver and through the Catalyst/Discourse spooler. In addition, it would have to be compatible with /// E-Z Pieces and be able to handle underlining, superscripts and subscripts. Is there such a printer currently available? Do you have any suggestions? I realize that my requirements are quite specific. However, this computer system is dedicated to some very specific jobs.

It seems as though laser printers are capturing a larger share of the printer market and might replace daisy wheel letter quality printers in the next few years.

I also want to tell you that I enjoy your magazine very much and find many of your articles extremely useful and interesting. Please keep up the good work! Any help that you can provide would be greatly appreciated. Perhaps other readers are in similar situations.

Larry D. Trede
Ames, Iowa

Concerning the economic feasibility of laser printers, they are quite expensive, but for your setup the cost may be quite reasonable. You can purchase an Epson compatible Canon or HP laser printer from most any computer store that will work well.

In general, laser printers are preferred and are replacing the daisy printer as the quality of print is better, and laser printers can be used for a network of computers. Thus, with several computers, it may be cheaper for a company to purchase one laser printer opposed to several daisy printers. On the Apple ///, though, laser printers cannot be used to network computers.

Should you purchase a laser printer for your ///, you should keep in mind that the resolution may not be as great as it could be with a Macintosh. Also, you may not be able to use as many fonts as you could with a Macintosh. However, for word processing, I would prefer to use the /// over the Macintosh.

I'm sure there are other /// owners who have considered using a laser printer, so your letter is quite helpful in answering questions for others as well. Thank you for the kind words on the magazine. It is dedicated /// people like yourself who aren't afraid of asking questions who keep the /// world lively and the magazine full of great articles.

Epson Graphics (continued from page 28)

```
;
;   - - -  Routine to preserve and restore Z Page and set up X page   - - -
;
MOVEZ           LDX     #01F            ;Save off 20 bytes on Z_page
MOVELOOP        LDA     ZEROPAGE,X
                LDY     ZEROBUFFER,X
                STY     ZEROPAGE,X
                STA     ZEROBUFFER,X
                LDA     ZEROPAGE+1600,X
                STA     EXTBUFFER,X
                LDA     #08F            ;Point to graphics bank 0
                STA     ZEROPAGE+1600,X
                DEX
                BPL     MOVELOOP
                RTS

;
;   - - -   General Storage Allocation   - - -
;
WIDTH           .BYTE   80.             ; Width of Screen * 2
PAGEPRE         .BYTE   20              ; Page prefix used by CONVERTs
PAGEPRI         .BYTE   20              ; Graphics primary page (for 560)
PAGEALT         .BYTE   40              ; Alternating page  (for 560 mode)
PAGEON          .BYTE   01              ; Current page (for 560 mode)
STACKLOC        .BYTE   00              ; Temporary storage for stack posn.
FLAGVAL1        .BYTE   00              ; Storage for BREAK function
FLAGVAL2        .BYTE   00              ; Storage for BREAK function
TEMP            .BYTE   00              ; Temporary for anything
ENV_TEMP        .BYTE   00              ; Temporary used in the ALPHA LOCK check
LINE_DENSITY    .BYTE   00              ; Temp. used in setting the line density

;

ZEROBUFFER      .BLOCK  20              ; Temporary buffer for Z page swap
EXTBUFFER       .BLOCK  20,08F          ; Temporary buffer for X page swap

                .END
```

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 BVeach, 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 /// S.I.G.
P.O. Box 80569, Burnaby, BC
Canada V5H 3X9
(416) 839-7779

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
Charlottsville Apple /// User Group
216 Turkey Ridge Road
Charlottsville, 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 inadvertantly awaken someone! No other restrictions apply to this service.

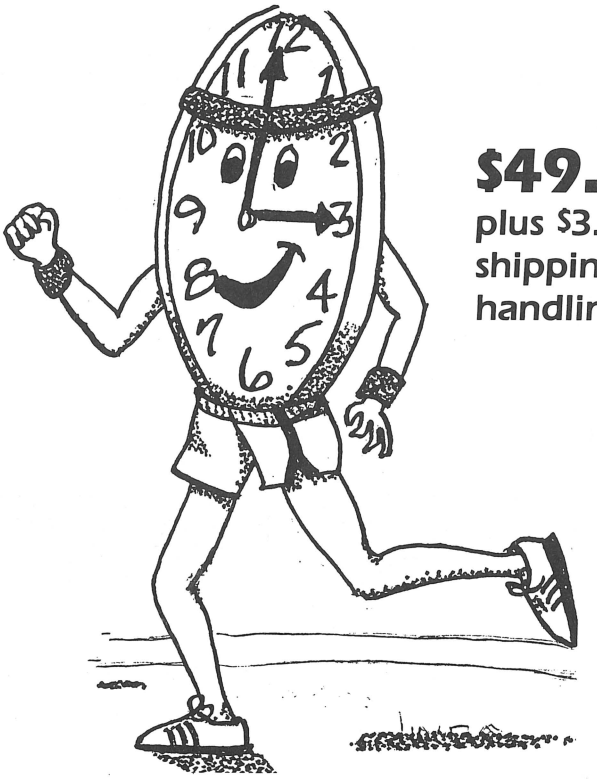
For your reference, the accompanying table lists subjects and abbreviations used in the "Subjects" column of the consultant listing.

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	On Three prod.	OT

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 ,OT
J. Woretshofer	Netherlands	043-611704	Su-Sa	9-12am	Europe	CT,FO,GE,PA,QU,SO,WP,AE,EP
Salvador Garcia	Spain	(91) 234-5068	Su-Sa	7-10pm	Europe	BB, GE,PA,MD,CT

Get off and running with the ON THREE O'Clock!

Let the ON THREE O'Clock be your stop watch today!



$49.95
plus $3.00 shipping and handling

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.

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- A *wrong keystroke can lose hours of work*
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ON THREE Presents... The Communications Manager

The Communications Manager is a powerful tool that allows your Apple /// to communicate or *talk* to other computers or services such as CompuServe™.

If you are familiar with other telecommunication programs such as Access /// or Terminus, you should be pleasantly surprised. VT-52 terminal emulation makes the program as powerful as any other Apple /// communications package. You can record incoming text to a printer or disk file for later viewing and transmit standard ASCII and Pascal Textfiles automatically. **The Communications Manager** has almost every feature of those popular programs plus an important extra.

This extra is error free transmission of files via the popular **XModem** and **Binary II** file transfer protocols. This means that you will be able to transfer programs and data - all types of files - between your Apple /// and virtually any other computer system.

The Communications Manager has all of the easy to use features of other **ON THREE** products, and it's the most powerful communications package available for your Apple ///. It's the ***only*** communications package available today for your Apple /// that completely supports the powerful **Xmodem *and* Binary II** protocols.

Included with this package is a version of **The Communications Manager** which runs as a stand-alone program and a version that can be installed as an accessory under **The Desktop Manager**.

If you have The Desktop Manager, you get the best of both worlds. You can be inside /// E-Z Pieces or VisiCalc and send a spreadsheet or data base file directly! The hundreds of Apple // AppleWorks templates available on bulletin board systems like CompuServe and others can now be yours! Thousands of pictures and other graphics images on CompuServe and other systems can be downloaded to your Apple /// with ease - with **The Communications Manager**. All this for ***only*** $49.95 plus $3 shipping and handling. Order your copy today!