Washington Apple Pi

$2

Volume 7   March 1985   Number 3

Highlights

Adding Floating Point to Forth
CALCULINK Supports Africa Relief
Apple 85-The Macintosh Office
A Pascal Adventure

In This Issue

A DISK /// ON A // ?

$169
WOW!

Clinton Computer had an opportunity to buy a limited number of brand new Apple Disk ///s at a very special price from Apple. We made this purchase because we have manufactured an adapter to make these Apple Disk ///s work on the Apple // Plus or Apple //e, with either DOS 3.3 or ProDOS. The adapter requires no modification to the computer, disk drive or cable. These drives will operate on an Apple // or an Apple ///.
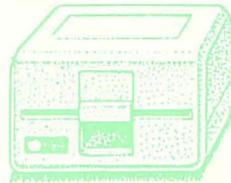
There are many third party drives for the Apple //. Most of them have a low initial price, but are more expensive over the life of the drive because they are not widely serviced or supported. The Apple Disk ///, on the other hand, was built as an improvement over the Disk //. The Disk /// works better and quieter, it looks nicer and it can be serviced by any authorized Apple dealer. A disk controller is also available for $69, if you need one.

Apple Disk ///s available only at our Clinton location. Call ahead for large quantities. Supply limited.

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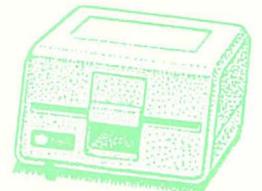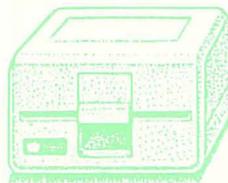
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EDITORIAL

Anticipation.   Now draw it out like the old commercial.   Annn-tisss-iii-paaa-ssshhunn. There you go! That's what we feel - those of us who are off to the MacWorld Exposition in San Francisco before you get this issue. WAP is going to be represented at this first Mac-only computer fest.

Why? Well ... because we are who we are, an energetic group of individuals who through our own efforts and those of our membership have made our organization into a vibrant, growing useful source of information and knowledge of Apple Computer Inc.'s latest offspring, the Macintosh. And we want to learn more so that we can better inform those who do not attend, and to see and hear first-hand from those who are in the process of shaping and molding the uses to which this

truly innovative upstart of the computer world will be put.

We have ideas of our own and we will certainly be prepared to discuss them with our counterparts, with the hardware and software developers and with Apple Computer. We are also prepared to take up the gauntlet which has been left hanging in the breeze by the departure of the Woz for other territories. We do not want to see the Apple // line relegated to the back of the bus.   There are entirely too many of us who treasure our "obsolete 8-bit hunk of chips and plastic".   Remember, 90 percent of Apple's revenues are still being generated from the sale of Apple //'s. We will voice our opinion that there should be (and will be, independent of Apple if necessary) an Apple //x. Steve, are you listening?   ₲

PRESIDENT'S CORNER
by David Morganstein

ELECTIONS THIS SPRING. Nominations for next year's Executive Board will take place during April with ballots made available at the May regular meeting. Those who do not attend the regular May meeting will receive their ballot in the mail. If you wish to run for an elected office, contact me before the April regular meeting. Nominations will be closed at the end of that meeting. We need people who are willing to represent the membership and provide guidance throughout the year. We frequently have an abundance of candidates for Member-at-Large and a dearth for the positions with specific responsibility. We will ask candidates for Member-at-Large to identify special projects they will co-ordinate, enabling the membership to better compare them and the ways they plan to represent you.

CALCULINK. George Shriner has donated a valuable VisiCalc utility to the public in order to help raise donations for the Ethiopian Relief Fund. His program Calculink makes it easier to download files from mainframes and put them into VisiCalc (or similar packages using the Data Interchange Format, DIF). The package also includes a consolidation function, a feature found on commercial disks for a considerable price. You can purchase a disk with Calculink through our disketeria. If you decide to keep the program, you must send a (tax deductible) donation to the YMCA. George is a volunteer board member for the local Y which has agreed to act as a focal point for this purpose. If you keep the program and send the donation, you will receive an instruction manual detailing the program's many features.

PROGRAM CHAIR. We welcome Adrien Youell as our program co-ordinator for the Apple][meetings. The January meeting featured an excellent comparison of business packages for home and small business applications. There was substantial interest in a comparison panel on printers. While Adrien has received several volunteers, more are needed. Please give him a call with topics you would like to hear about or, better yet, are willing to discuss.

ADVERTISING CO-CHAIRMEN. Scott Mirman and Frank Street have volunteered to work with our Editor to seek out and coordinate new advertising in the Journal, thereby raising revenues which help us defray the cost of printing. Many members express keen interest in the new products and comparative prices found in the ads. While Bernie Urban has established a limit to keep advertising within reasonable bounds, as the number of articles increase, we can use more advertisers. Contact our co-chairmen or the office with questions about rates or the names of potential advertisers.

OFFICE VOLUNTEERS. If you have been by our office recently, you may have seen a couple of new faces. Brook Powers and Siew Youell have been donating their time and giving our over-worked regular staff some much needed relief. We want to thank Brook and Siew for their time and we want to appeal to other members to find a few hours a month to contribute. The regular monthly mailing effort to new and renewing members is just one of many projects that can always benefit from some extra hands. Call the office to find out when your time can be put to good use!

SIGMAC VOLUNTEERS. Almost 300 Macintosh owners attended the February meeting. Our hats are off to Steve Hunt, Don Landing, Bob Pulgino, Tony Anderson, Withers Morgan, Ellen Bouwkamp and the many other Mac owners who through their volunteer efforts are helping to make SigMac the tremendous resource it has become.

VOLUNTEERS NEEDED:

New Disk Librarian. Dana Schwartz, our new disk librarian, needs help. If you would like to help assemble and test new disks for our Disketeria, please contact the office.

Group Purchase. We have found that our office staff currently spends a significant amount of time responding to technical questions associated with equipment purchases. The effort they are putting forth is disproportionate to the number of people receiving benefit. Of equal concern is the level of experience with the product that is required to deal with the questions. To some degree these questions should be handled by our hotline. However, some of the questions relate to items available through special group purchases. We want to re-institute a panel of volunteers to help members with these questions. You need only be available to answer calls one evening per week. We will have a call-forwarding phone system which passes to your home phone on an evening of your choice. We want to set up two such panels, one for Apple][products and a second for Macintosh products. Please call Rich Wasserstrom if you are willing to help in this way. If you wish, you can assist in the selection of items to be included in the group purchases and possibly have access to them for evaluation so that you can better answer questions about their capabilities and limitations.

Mac Hotline. We have a small, but growing, hotline for Macintosh products. We need volunteers to help answer questions about: OverVue, Microsoft Basic, Word, and File, MacPascal, MacTerminal, other printers for the Mac, TK!Solver, C, and Forth on the Mac. If you use any of these products and can help prevent others from making the same mistakes you made in learning to use it, please step forward! Most hotline volunteers receive only a few calls a month but in the process may save others hours of grief.

Hot Line Proctor. Our hotline needs a co-ordinator. The list is long and we would like to contact all of the volunteers to see how much demand there is for their item. We need someone who will take a few hours to call the volunteers, verifying phone numbers and seeing if anyone needs to be retired from the list. For those new members and those less technical, a few hours of your time would help us greatly.

TUTORIALS. In addition to the regular Tuesday night tutorial series, there are several special tutorials scheduled for the Spring. In March, George Kinal, (SIG chairman for Telecommunications) will hold a four-part series on Saturday mornings at the office. George, an excellent instructor, will present an in-depth look at Telecommunicating, explaining the jargon, the hardware and discussing several available packages. Walt Mossberg will teach a two-part series on AppleWorks (April 20 and May 11). Whether you are a novice or experienced user, you will find much of value. Paul Bublitz, who has been the hot-line volunteer for Dbase II will teach people about it on May 4. Jenny Spevak will present PFS File & Report on May 18. For more details, see Steve Stern's detailed descrip-

<space>   </space>contd.

tion elsewhere in the Journal. Steve, who (along with Lee Raesly) has so ably organized tutorials for several years, is being joined by two new volunteers, George Sall and Ted Meyer. We greatly appreciate the help Steve has arranged for all of us and thank George and Ted for stepping forward to help him.

MACINTOSH XL. With the simple wave of their Cupertino magic wand, Apple instantaneously changed all those thousands of LISA computers into Macintosh XL's. The good news for Lisa owners was that their computer was not to be made obsolete by a newer version with added bells and whistles (and you didn't have to bring it into a dealer for the transformation). The bad news for current owners was the reduction in prices which now brings a computer which previously cost $10,000 down to $3,600 and foretells the demise of the Lisa Office System, 7/7 and Workshop packages. Having used the MacWorks package on an "XL", I can testify that the harddisk and extra memory can bring greatly improved performance to the Macintosh environment. This "new" XL product represents another Apple effort to move boldly into the office place. A more effective Finder, expected to be released soon, is still needed to make a hard disk workable. The Switcher program, demonstrated at the February SigMac, makes it possible to have up to four programs running concurrently in one 512K machine and represents yet another much needed enhancement.   ⑤

MINUTES

SUMMARY OF JANUARY EXECUTIVE BOARD MEETING

The Executive Board of Washington Apple Pi, Ltd. met on January 14, 1985 at the WAP office. The Raised Dot Society has expressed interest in having its readership receive a disk version of the WAP Journal. The Board authorized the staff to make arrangements to accept Visa and/or Master Charge payments. Those using credit would pay the service fees. The Mac owned by the Club will be upgraded to 512K. Office computer use will be limited to the purposes for which the equipment was purchased. Arrangements will be made to invite developers and vendors to the May general meeting for demonstrations (not sales). Steve Hunt reported that over 200 attended the SigMac meeting in January and the attendance is increasing about 50 per month. Saturday office hours will be 12 noon to 3:00 PM. Hotline volunteers will ask callers for their WAP number.

JANUARY GENERAL MEETING

Washington Apple Pi, Ltd. met at the USUHS on January 26, 1985 at 10:00 AM. David Morganstein presided. Member 6,000 was announced. The WAP office will now be open every Saturday from 12 noon to 3:00 PM. Members were asked for suggestions for future general meetings and tutorials. John Malcolm announced that the Disketeria now offers a "write-up" for each disk for 25 cents.   ⑤

LAWSIG NEWS
by John Weld

The LAWSIG would like to hear from members who have had problems with warranties, contracts, sales representations, advertising, defective products (hardware, sotware) and "vaporware".

It is requested that you submit this information in writing to the WAP office, Attn. LAWSIG.   ⑤

EVENT QUEUE

Washington Apple Pi meets on the 4th Saturday (usually) of each month at the Uniformed Services University of the Health Sciences (USUHS), Building B, 4301 Jones Bridge Road, Bethesda, MD, on the campus of the National Naval Medical Center. Library transactions, Journal pickup, memberships, etc. are from 8:45 - 10:00 AM. From 9:00 to 10:00 AM there is an informal "Help" session in the auditorium. The main meeting starts promptly at 10:00, at which time all sales and services close so that volunteers can attend the meeting. A sign interpreter and reserved seating are provided for the hearing impaired.

Following are dates and topics for upcoming months:

   March   23 - ProDOS - Richard Langston

Dates for SigMac are:

   March   9 - Demonstration of JAZZ

The Executive Board of Washington Apple Pi meets on the second Wednesday of each month at 7:30 PM at the office. All members are welcome to attend. (Sometimes an alternate date is selected. Call the office for any late changes.)   ⑤

GENERAL INFORMATION

Apple user groups may reprint without prior permission any portion of the contents herein, provided proper author, title and publication credits are given.

Membership dues for Washington Apple Pi are $27.00 for the first year and $20.00 per year thereafter, beginning in the month joined. If you would like to join, please call the club office or write to the office address. A membership application will be mailed to you. Subscriptions to the Washington Apple Pi Journal are not available. The Journal is distributed as a benefit of membership.

Current Office hours are:

 Monday - Friday - 10 AM to 2:30 PM
 Tues. & Thurs. - 7 to 9:30 PM
 Saturday   - 12:00 to 3:00 PM *

 * Note change in Saturday hours.

SIGNEWS

APPLE /// SIG meets on the second Thursday of the month at 7:30 PM, at the Convention Center Inn, 12th and K Streets, NW. The next meeting will be on March 14.

Apple //c SIG has been organized. They will meet each month after the regular Wap meeting. See the Apple //c SIGNEWS elsewhere in this issue.

APPLESEEDS is the special interest group for our younger members. They meet during the regular WAP meeting.

DISABLEDSIG - See the DisabledSIG column elsewhere in this issue. Call Jay Thal for details.

EDSIG - the education special interest group - see the EDSIG page elsewhere in this issue.

FORTHSIG will hold its next meeting on Saturday, March 16 at 10:00 AM in the WAP office.

GAMESIG has been revived. They will meet on the first Thursday of each month at 7:30 PM at the office. The next meeting is March 7.

LAWSIG had a reorganizational meeting on Monday, February 18 at 7:30 PM in the WAP office. Watch the Journal for more news.

LISA/Macintosh XL SIG meets after the SigMac meeting on the second Saturday of the month. See LISA SIG news elsewhere in this issue.

LOGOSIG - watch for further details in a later issue of the Journal.

NEWSIG will meet just after the regular Washington Apple Pi meeting and conducts a "drop-in" for new Apple owners on Thursday evenings from 7:30-9:00 PM in the office. They will answer questions and try to help new owners get their systems up and running.

PIG, the Pascal Interest Group, meets on the third Thursday of each month at 8:00 PM at the Club Office. The topics for the next two meetings are:

    March 21 - T. Swan's book, "Pascal Programs for
               Games and Graphics
    April 18 - The use of variant records for optional
               field specification in structured data
               records.

PI-SIG (formerly ASMSIG) meets on the second Monday of each month at 8:00 PM in the WAP office. For further details, call Ray Hobbs at 490-7484.

SigMac meets on the 1st Thursday of each month (programmers's meeting) at 7:30 PM at Our Lady of Lourdes School, 7500 Pearl Street, Bethesda, MD; and on the 2nd Saturday (general meeting) from 9:00 AM to 12:30 PM at NIH, Mazor Auditorium. See SigMac News elsewhere in thia issue.

STOCKSIG meetings are on the second Thursday at 8:00 PM at the WAP office.

Telecom SIG usually meets after the regular WAP meeting.   ☺

CLASSIFIEDS

COMMERCIAL CLASSIFIEDS

There's only one place to buy apples.
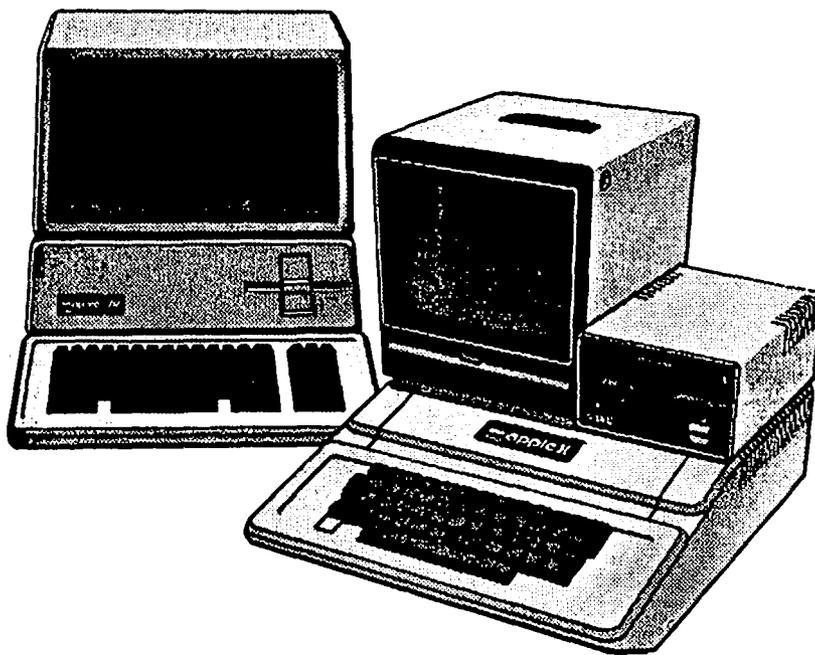
Q & A
by Bruce F. Field

A few months ago someone asked a question about sorting VisiCalc files (or any other spreadsheet files). Anthro-Digital, Inc., 103 Bartlett Avenue, Pittsfield, MA 01201, telephone (413) 448-8278 sells a program called Versacalc!16 that will sort · VisiCalc files in ascending order or descending order. The file must be saved as a "print to disk" file which generates a standard DOS 3.3 text file where each row of the spreadsheet is a single string. Versacalc then sorts each row according to the first column and converts the file back to VisiCalc format. You must reboot VisiCalc and reload the file.

I also replied recently that AppleWorks can only use 64K of memory on an extended 80-column card in the Apple //e. I also mentioned a somewhat negative review in InfoWorld. I must have struck several nerves as this generated some fast return mail. It turns out that with the MemoryMaster //e 128K 80-column card from Applied Engineering (available at the WAP office or from P.O. Box 798, Carrollton, TX 75006, telephone (214) 492-2027) you can also get a preboot program that modifies AppleWorks to use the card, thus providing 101K of usable workspace. There are at least two users who are very happy with this expanded AppleWorks.

Larry Nebron of Daly City, CA wrote to explain that the Get Buffer of ScreenWriter does work as advertised if you are using two disk drives and version 2.2. He says it is best to save the entire file on drive 2 and then save it in pieces to drive 1.

The next two questions (and answers) arrived from Bob Platt who has recently moved to Amarillo, Texas which is somewhere beyond the edge of the Earth as far as personal computing is concerned. (Wait till you see the mail I get from Amarillo on that one.)

Q. Can I run software marked "Works on //c" on my Apple //e?

A. Not always. Some software contains copy protection that makes it difficult to "break" the protection by disassembling the machine language code. One favorite trick involves placing a jump instruction on a page boundary. The 6502 chip in the //e would accidentally roll around, while the 65C02 chip in the //c solves this quirk. As a result, it is best to check the package carefully to see if it is a //c only version or whether the big red //c sticker merely means "Also works on a //c". (BFF note - the 65C02 in the //c also contains some machine language instructions that are not available in the //e and this could also cause problems.)

Q. In Apple Pascal, when reading from the keyboard one character at a time so as to build a string, how can I test for when a carriage return is pressed?

A. Testing for CHR(13) will not work. When a CR is entered at the keyboard, READ will return a blank (CHR(32)) and will set EOLN(INPUT) to true.

Q. I have a B revision //e with an Apple Extended 80-column card. A problem arises when using the word processor of AppleWorks. When entering text, cursor control is lost, random characters are printed on the screen, and occasionally the printer is accessed and any key press issues a linefeed. The problems usually appear after about line 32 in the text. Once these conditions occur, the system usually drops into the monitor at 3AA6 and the registers read as follows A=FF X=F2 Y=22 P=37 S=EA.

A local dealer told me that the problem lies in the auxiliary memory on the 80-column card, and in a number of instances he has had to replace the 8 RAM chips on the card. The dealer said he has brought the problem to Apple's attention but they have told him that their RAM tests show there is no problem. The dealer has successfully used Texas Instruments 4146-15 RAM chips as replacements. I obtained these same chips from an electronics firm and installed them myself. The system appears to work reliably until I reach about line 92 in the text, then the identical problems reoccur.

I have tried using the original AppleWorks program as well as back up copies made on my system as well as another system, but the problem persists. Does this sound like a memory problem? Are you aware of any bugs in AppleWorks which appear when using the Apple Extended 80-column card?

A. Problems that may be either hardware or software are the hardest to diagnose. As far as I know there are no problems with AppleWorks, and since your problem appears to be affected by the RAM chips in the 80-column card it seems reasonable to assume the card may be responsible for at least part of the problem. However with only 30 to 90 lines of text it is unlikely that you are actually using the extra memory in the extended 80-column card. If you have problems with other programs that use the extended 80-column card this would also point to a chip problem. To verify that the chips are really causing the problem, I would put the original RAM chips back in and see if problems again occur after 32 lines of text. If this is true you might try to get another 80-column board and try it in your system. It could also be one of the other chips on the 80-column card (not the RAM chips) that is malfunctioning or operating marginally. Also try your board and software in someone else's computer. It is possible that one of your other peripheral cards is malfunctioning. To test this remove all the cards except the disk controller card and the 80-column card of course, and see if the problem is still there. If you really get desperate you could try interchanging the motherboard RAM chips for the extended 80-column card RAM chips. I don't know what this will do but it might be interesting. If possible I would also get another independent copy of AppleWorks just to make sure your copy doesn't have a problem. If the problem still appears to be in the 80-column board, take your whole system back to the dealer that sold you the card and try to get him to find one that works. I would also write to Apple Computer with the specifics of what you were doing and the resulting problem. Writing Apple probably won't produce any results but it can't hurt. I'm sorry I can't be of more help; this appears to be a really tough problem. If any one else has had this problem with the Apple extended 80-column card please let me know.

contd.

Q. I have an Apple][+ with the Sanyo monochrome B&W 13 inch monitor. How can I improve my screen resolution? Do you know of any plug in cards for this purpose? Or better monitors? Princeton makes a nice hi-res monochrome amber monitor, 12 inch with 800 x 350 resolution, but this doesn't work with the Apple.

A. There are two parts to the problem here. The video circuits inside the Apple control the resolution or number of dots displayed on the screen. For normal Apple video with 40 characters per line and 5 dots per character plus two spaces per character there are a total of 280 dots on each line of text. There is no way to change this without buying an 80-column card. All 80-column cards are not the same. Some use a different number of dots to create the characters. Generally the greater the number of dots, the better the character looks. The Videx Ultraterm has very high resolution but it uses it to put more characters on the screen 160 x 48 (characters not dots) rather than making the characters look significantly better.

The second thing to consider is the resolution of the monitor. The monitor resolution is a measure of how many dots CAN be displayed on the screen, not how many will be or must be. If the monitor has insufficient resolution the characters become blurred and hard to read (i.e. like using a color TV). There is little advantage in using a monitor that has a resolution much better than the video output. The characters might be a little sharper but they won't contain any more dots.

Color monitors are a different story entirely. There are two types of monitors, RGB and composite. The RGB monitor has three separate inputs, one for each of the colors red, green, and blue. The composite monitor on the other hand accepts one input that has all the three signals combined together. The combining process limits the resolution of the signals to about what the 40-column Apple produces. (A color TV uses a composite signal which is one reason you can't display 80-column text successfully with a color TV.) To produce more than 40 columns of text with your Apple and still have color capability, you will need a special 80-column card, one that produces RGB outputs, and an (expensive) RGB monitor.

Q. I've had a][+ for years, and updated it with ProDOS six months ago. I already had a Thunderclock, so I looked forward to the date/time feature: ProDOS, as you know, automatically uses a Thunderclock card, if one is installed. It all worked beautifully - too beautifully. The Thunderclock manual says the card provides seconds, minutes, hours, day of week, day of month, and month. For a year and a half, my card did just that. ProDOS managed to get "1984" as well. I thought that it had been programmed in, and would stay as 1984; but when I checked at midnight last night, ProDOS read "January 1st, 1985". How does it do this? Why can't I reach the year from BASIC? Why didn't Thunderware tell me the year detail was buried in there?

A. AH HA! But first, before the answer, please tell me why anybody in their right mind is playing with their computer on New Years Eve instead of celebrating... The answer is that your clock does not actually contain the year. ProDOS has an algorithm that computes the year based on the month, day, and day of the week. Since non-leap years are 52 weeks plus one day long, each year starts on a new day of the week. Assuming we start in 1984 which is a leap year, this algorithm will fail on January 1,

1989. I suppose you could dig the exact algorithm out of ProDOS, but now that you know how, you should be able to figure it out for yourself. As I have personally heard many times, this is an exercise left for the student.

Q. I am trying to write interactive tutorials for university students. Working all in BASIC is a pain. I understand you can access text files (Apple Writer?) from BASIC to simplify the writing. How do I do this, or how do I learn about it?

A. If you have Apple Writer II or //e or any other word processor that stores its files as standard DOS text files, you can use it with a BASIC program to read the files. Suppose you want to display a screen of instructions from BASIC that you have typed in from Apple Writer. In Apple Writer, type what you want displayed with a carriage return after each line. If you are going to be using the standard 40-column Apple display in BASIC be sure to type no more that 40 characters before typing a carriage return. Save this file to disk. For this example let's save your text with the file name INSTRUCTIONS.PAGE.1. From Applesoft you simple read this as a standard sequential text file. The program segment below will read the file and print it on the screen.

```
200 HOME : REM CLEAR THE SCREEN
210 ONERR GOTO 300
220 PRINT CHR$(4)"OPEN INSTRUCTIONS.PAGE.1"
230 PRINT CHR$(4)"READ INSTRUCTIONS.PAGE.1"
240 INPUT A$ : REM READ ONE LINE
250 PRINT A$ : REM PRINT IT ON THE SCREEN
260 GOTO 240 : REM GO GET ANOTHER
300 POKE 216,0
310 PRINT CHR$(4)"CLOSE"
```

Most of this should be straightforward. Line 200 clears the screen, lines 220 and 230 prepare to read the file, lines 240, 250, and 260 read the file one line at a time, print it on the screen and loop back to read another line. This continues indefi- nitely until there are no more lines in the text file. When this happens you get a DOS "END OF DATA" error. Normally this would stop the program but we have included a statement at line 210 that traps any errors that occur and send the program to line 300. So, the program continues to read the file until there is no more text and then jumps to line 300 in the program. Line 300 is a cryptic way of turning off the error trap. If this were not done every error that subsequently occurred in the program would cause it to jump back to line 300. Line 310 closes the text file telling it that we no longer need it.

If you want to include commas, colons, and other punctuation in your text (and who doesn't) you will either have to replace the INPUT statement in line 240 with an Input Anything routine, or start each text line in your word processor with a quotation mark ("). Additional information about text files can be found in your DOS manual.

Q. I have a Franklin Ace 1000 with a Grappler+ and Epson RX80FT. The ASCII codes above 127 are not transmitted to the printer, presumably because the Franklin is sending 7 bits. How can I use the graphics characters with this setup? Also, can I expand the Franklin with another 64K for double hi-res graphics as in the Apple //e?

A. You are correct in assuming that only 7 bits are transmitted to your Epson; however the cause is the Grappler+ interface card. The Franklin and the

COMMONLY ASKED QUESTIONS

by Chuck Holzworth

As chairperson of the Apple //c SIG, I have received many questions from new users. I have used many different computers for several years, and was reminded of some of the questions I have asked. I will attempt to answer some of the recurring questions in this article.

Q. Can I use DOS 3.3 disks in my Apple //c?

A. Yes. The programs that may give you trouble are the ones written in Integer Basic or the ones which perform memory POKEs. Older Apples came with Integer Basic built in. The New Members' Disk has a version but may still give some trouble, particularly with long programs.

Calls to ROM (Read Only Memory) may give problems because the ROM routines may not be in the same locations. DOS is the acronym for Disk Operating System. This controls how the computer accesses the floppy disk. The DOS is stored on most disks, and the computer loads it into the memory when you turn it on. (Some disks, however, do not have DOS on them.) The Apple //c will run older versions of DOS and the programs stored on them.

Q. I bought a ProDOS program and the computer says "Can't Boot ProDOS", or something similar. What can I do?

A. ProDOS is sensitive to disk speed. The version on your disk may have been written by a disk drive that was running at a different speed. There is a quick way around this problem if it is a copyable disk.

Use the utility system disk that came with your computer and duplicate the disk. When the copy is finished, copy the version of ProDOS from the utility disk onto the duplicated disk. This generally fixes the problems. I don't recommend copying to the original disk, because accidents do occur and your original could be destroyed. Don't try to overwrite the ProDOS on protected disks. It might work, but you can never tell what the manufacturer did to the disk to protect it from being copied.

Q. The dealer told me that I need a second disk drive if I want to copy disks. Is this true?

A. No. I had my Apple //c for at least 6 months before I bought the second drive and had no problem making backup copies of AppleWorks and my document disks. If your dealer told you this, I would recommend finding a new dealer. Either this one doesn't know much about the product, or is trying to get an extra sale. Either way, I would find a new dealer.

Q. I have been using AppleWorks and have run out of room on my document disk. What is the best way to overcome this problem?

A. The answer to this question is generally applicable to programs that hold all of the data in memory while being run. There is an easy, safe way to overcome the problem.

Format a new disk for temporary storage.

1. Read the file from the original disk.
2. Break it in half or perform any other operations you want.
3. After any changes save the parts, one at a time to the temporary disk. (You may have to read the original file several times for multiple parts. REMEMBER to change the name of the file EACH time you perform an operation. Most software packages don't delete the original file when you read it to change it.
4. Load the original copy and save a copy to the backup disk.
5. MAKE SURE the copies work.
6. Delete the file from the original disk.
7. Copy your file(s) back to your original disk.
8. Verify the copy.
9. Delete the extra files from your temporary disk.

The second or third time you go through this sequence, it will become a habit.   ⑮

APPLE //C SIGNEWS

by
Chuck Holzworth

During the January meeting of the Apple //c SIG, a standard meeting date was established. We will meet on the fourth Saturday each month following the WAP meeting.

The meetings will be broken into two parts. The first hour will be devoted to new users. Many //c users are novices and we decided to devote the beginning of the meeting to them. The meeting will normally start at 11:00 AM. The more advanced section of the meeting will begin at 12:00 PM. More technical questions and problems will be addressed during this time.

At the next meeting, several programs will be demonstrated. I will be bringing both AppleWorks and Apple Writer II (ProDOS version). I will also bring Sensible Speller (ProDOS version). Many questions came up during the meeting, and a demonstration may be the best way to answer them. Additional //c's and monitors would be appreciated.

At the meeting it was reported that Apple will no longer be selling and supporting the DOS 3.3 master disk. Older versions of the Apple][came with the master disk included with the system. They also came with Integer Basic in ROM. The Apple //c has neither. Some older public domain programs were written in Integer Basic. The DOS 3.3 master disk contains a version that can be loaded into memory. There was some discussion about asking Apple to release this to public domain.

There was also some discussion about software manufacturers and software dealers. Some indicate that software packages they sell will work on the //c when they won't. There was a small discussion about a legal method of identifying these companies and informing other members. Perhaps the easiest way is to compile and publish a list of the companies that have developed a good reputation among members.   ⑮

TELECOM SIGNEWS
by Dave Harvey

The Telecom SIG was held after the WAP meeting on January 26 and was conducted by George Kinal. There were about 10 members attending.

It was announced that a tutorial was planned on telecommunications for the Apple. It will be divided into sections to cover the many aspects of this subject. There will be 4 sessions all together, to be held at the office on Saturday mornings in March. For a description, see "WAP Tutorials" and the tutorial registration form elsewhere in the Journal.

After the discussion on the upcoming tutorial, George announced that he got word from Anchor Modem that there is now an upgrade to fix the break problem at 1200. For $40.00 Anchor will send you a new ROM that will allow you to send a break signal at 1200 baud instead of just at 300 baud as the situation is now.

Next discussed was the new 2400 baud modem marketed by Hayes at a very reasonable price. We hope that someone who is familiar with this modem will contact George and talk about it at one of the meetings.

During the question and answer session which followed, one question asked was, "If someone is just starting out, should software be purchased first or should the hardware be purchased first?" The answer was that in most cases the software that can perform the desired function should be identified first, and then both the hardware and software should be purchased together. Another question was about the new Promodem 1200A internal modem. Exactly what software is it compatable with? No one at the meeting owned this modem so that question couldn't be answered.

One attendee reported that a 300/1200 baud modem is selling for 50 pounds in England. Jeremy Parker is going to check into this further to find out more details on this.

The new verion of Modem 7, a CP/M communications program, was reported to have an improved dialing feature where it will dial a group of telephone numbers until it finds one that is not busy. George then announced that he has a collection of disks that have the Modem7 (for the Softcard) on them, each of which has a different configuration set-up for serial cards and internal modems. He needs volunteers to take the disks for beta testing. Many were assigned to members present but there are some left that still need to be beta tested. They are: Apple Communications card, Apple Cat, Apple Super serial card, SSM Serial Card, CPS Multifunctional Card, Dis-Patcher Serial Card, Hayes Micromodem II, and Prometheus Versa-Card. If anyone has one of these cards or modems, please get a disk from George and help beta test the program.

The last item mentioned was the problem associated with the Hayes Micromodem II and the Apple 80 Column card on the Apple //e. These two products cannot be used at the same time because of the conflict in memory usage. This was one of the reasons that Hayes came out with the Micromodem //e which took care of this conflict.

There was a discussion on the pros and cons of external versus internal modems. Another discussion was about the Anchor modem that WAP sells and some of the unusual characteristics of this modem. A break signal is now possible at 300 baud but is still not available at 1200 baud. The Anchor still cannot send the tones associated with the "*" and "#" on a Touch-Tone phone. Other than these items the modem works fine. &

FREDERICK APPLE CORE
A SLICE OF THE WASHINGTON APPLE PI

by Lynn R. Trusal

Frederick Apple Core, now the first slice of Washington Apple Pi (WAP), had its beginnings as a friendly gathering of six WAP members using the then brand-new meeting format for WAP members, called "Apple Teas". After several meetings, the original members decided to branch off and start an independent club in the Frederick area. Signs were posted in several stores, the public library and on many community bulletin boards. A constitution was drawn up and approved by the membership on April 23, 1983. The club quickly grew, and soon the classroom at Frederick Computer Products, where we held our first meetings, was no longer big enough to hold monthly meetings. One of our members worked at Fort Detrick and obtained the use of a very nice conference room in one of the base's research institutes.

With a membership of over fifty people, most of the monthly meetings of Frederick Apple Core have consisted of questions and answer sessions, a short business meeting and a program that includes demonstrations of hardware and software packages. The notable exception to this was the first meeting when Bernie Urban spoke to the Club. His ideas and suggestions were just what a new club needed to get started. Since that time, Frederick Apple Core has matured into a strong user group which is patterned after Washington Apple Pi. The meetings use the same general format, and there are two SIGs at the present time. One deals with telecommunications and the other with CP/M programs.

The Frederick Apple Core occasionally publishes a newsletter, and it was this newsletter that prompted the Club to think about joining forces with the WAP. After realizing the cost and complexity of such an undertaking, the executive board starting looking into ways to offer its members the benefits of an organization such as WAP. The satellite club or "slice" idea seemed to be a way of benefiting both groups by offering WAP more exposure and also allowing Frederick Apple Core members the benefit of a superb organiza-tion. Each month our members will be contributing articles to the WAP Journal under the Frederick Apple Core Logo.

Following is a list of officers and Chairmen for the Frederick Apple Core for 1985.

President	- Lynn R. Trusal
Vice President	- Tony Svajlenka
Secretary/Treasurer	- Bruce Taylor
Librarian	- Kurt Holter
Program Chairman	- John Lee
Newletter Chairman	- John Colaluca
Membership Chairman	- Randy Pasley

In 1985 we are placing a strong emphasis on increasing our membership. We plan to contact many of the individuals in the greater Frederick area who have purchased Apple computers in the past year. We will also be placing posters and application forms in many locations around town in order to contact Apple computer users who might be interested in joining our organization. Anyone who joins Frederick Apple Core also automatically joins Washington Apple Pi and is therefore entitled to receive all benefits of membership in WAP. Anyone who lives in the greater Frederick/Hagerstown area who would like to benefit from attending a local Apple users club is invited to join Frederick Apple Core and at the same time receive the benefits of belonging to Washington Apple Pi. We feel that this symbiotic relationship between Frederick Apple Core and WAP will serve as a model for other Apple computer clubs outside the Greater Washington DC area.

The new address for Frederick Apple Core is P.O. Box 1462, Frederick, MD 21701. We hold our meetings on the second Thursday of each month at 7:30 PM at Fort Detrick, Frederick, MD. The meetings are held in the large conference room of USAMRIID, one of the base's research institutes.

Q & A contd. from pg 7

Apple normally send characters with the 8th bit turned on. This causes the Epson to print only graphics characters. To prevent this the Grappler+ has a dip switch (switch #1) that controls the 8th bit. If switch #1 is ON the 8th bit is not transmitted to the printer. When the switch is OFF the 8th bit can be controlled by software. Ctrl-I H turns on the 8th bit and allows you to access the graphics characters. To return to the normal characters send a Ctrl-I X. The problem with this is that once you change the switch to ON, every time you turn the interface on (with PR#1) you will have to remember to send Ctrl-I X or you will get the graphics characters by default.

As for getting double hi-res with an added 64K card I'm afraid you are out of luck. The Franklin is built like the Apple][+ and neither can produce double hi-res graphics. The //e and //c have special circuits to allow them to do this. The //e of course requires an extended 64K 80-column card that plugs into the auxilary slot, while it comes built into the //c.

JOB MART

POSITION WANTED

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HELP WANTED

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—— HARDWARE ——

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SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2 Comm. Tutorial #1 (also on 9th,16th & 30th)
3	4	5 Beginning Tutorial #1 7:30 PM Office	6 Deadline for Journal Articles	7 SigMac 7:30PM-Lady of Lourdes; DisabledSIG 7PM CCCC;->	<- Thurs. 7th contd. GAMESIG 7:30 PM Off	9SigMac 9AM - NIH Mazor Aud.; LISASIG Noon Office
10	11 PI-SIG 8PM Office; Apple /// Tutr.(Util) 7:30 Office	12 Beginning Tutorial #2 7:30 PM Office	13 Executive Board 7:30 PM Office	14STOCKSIG 8PM Office; Apple /// 7:30PM Conv Center Inn	15	16 Forth SIG 10:00AM Office; SigMac Tutr 9:00AM LofL
17	18 LAWSIG 7:30 PM Office	19 Beginning Tutorial #3 7:30 PM Office	20	21 Pascal SIG 8:00 PM Office	22	23 WAP Meeting 9:00 AM USUHS
24	25	26 Beginning Tutorial #4 7:30 PM Office	27	28 EDSIG 7:30 PM Office	29	30MD Apple Corps 2:30 Towson Lib. Gutenberg Word Proc.
31						

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SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2 Beginning Tutorial #1 7:30 PM Office	3	4 SigMac 7:30PM-Lady of Lourdes; DisabledSIG 7PM CCCC;->	<-Thurs. 4th contd. GAMESIG 7:30PM-Off.	6
7	8 PI-SIG 8PM Office; Deadline for Journal Articles	9 Beginning Tutorial #2 7:30 PM Office	10 Executive Board 7:30 PM Office	11STOCKSIG 8PM Office; Apple /// 7:30PM Conv Center Inn	12	13
14	15	16 Beginning Tutorial #3 7:30 PM Office	17 Apple Writer II Tutorial 7:30 PM-Off (Tenative)	18 Pascal SIG 8:00 PM Office	<-| Sat. 20th contd. AppleWorks Tutorial	20 SigMac 9AM-USUHS; LISASIG Noon-Off. Forth 10AM
21	22	23 Beginning Tutorial #4 7:30 PM Office	24	25 EDSIG 7:30 PM Office	26	27 WAP Meeting 9:00 AM USUHS
28	29	30				

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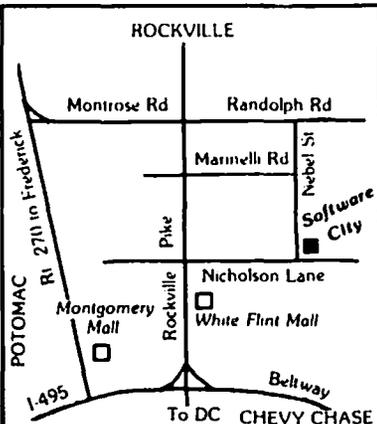
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DISABLEDSIG NEWS
by Jay M. Thal

* * * * * * * * * * * * * * * * * * * *

FOR WANT OF A NAIL...

In past months some of you may have read my articles
on inappropriate technology. They discussed my
attempts to find the easiest way to get SIG meeting
announcements into the mail.

I finally found that it was less time consuming to use
more primitive technology than a microcomputer to
produce the mailing. Now we photocopy our message
onto both sides of heavy 8 1/2 x 11 stock. That size
allows for four postcards which are then cut to size.
Ah success!

But success has its penalties. The SIG's mailing list
has recently past the 200 mark and bulk rate postage
seemed the answer - it saved 2 cents a postcard as
well. The cost of saving turned out to be too costly.
Though they were mailed out January 24, most had not
been received by February 6. And, our meeting is/was
the 7th!

My apologies. Next time the DISABLEDSIG goes First
Class.

* * * * *

BOOK REVIEW: Personal Computers and the Disabled
by Peter A McWilliams, Quantum Press/Doubleday, 1984

First the bad news...If you bought books by the page
I'd sell 134 pages (128-261) back to the publisher at
2 1/2 cents a page. (The price of the 416 page paper-
back is $9.95.) Those pages contain the almost
obligatory general computer book filler material by
describing, superficially, some 52 computers and 11
printers. But, nowhere in those pages does Mr.
McWilliams describe how any of those machines have
been or can be adapted for the needs of the disabled,
or used as ability enhancers. Except - on page 129,
where I noted the words: disabled and mouthstick (once
each). It's as if he had 200K of text on disk that he
wanted to place somewhere.

However, Mr. McWilliams acquits himself in the last
155 pages so I won't demand my $3.35 back. At that
point he launches into a buying guide of software and
hardware designed to overcome specific disabilities
and as ability enhancers. Missing are some very fine
extant examples, but equally useful are many other
items which are less well known - at least to me.

Chapter 13, the book's last, is entitled "Resources"
and provides 75 well stocked pages of organizations,
agencies, newsletters, a reading list, etc., broken
down by discipline and state. It will prove valuable.

The first eight chapters (nothing sequential about

this review), or 74 pages address the broad categories
of disabling conditions: Hearing Impairments, Speech
Impairments, Learning Disabilities, Vision Impair-
ments, and physical/Motor Impairments. They are
sensitively written by integrating the words of per-
sons with those disabilities. Who better can describe
how applied technology can enter their lives and
enhance their abilities.

As noted earlier, McWilliams has used and unused disks
of material laying around and he has borrowed two
chapters (9 & 10) from his earlier books to further
fill out this volume. They turn out to be the high
point of his humor, which does grow on you, though
possibly not enough to make me buy them. The book is
replete with turn of the century line drawings coupled
with humor(ous/less) drollery and an effort to prove
to the disabled that he's just one of the boys.

* * * * *

THE WASHINGTON APPLE PI NEWSLETTER ON DISK

Several of the WAP membership, who are vision
impaired, have been receiving the monthly newsletter
on disk. It is costly, and subsidized, but overall
the costs have been minor. However, that policy may
soon change to a pay as you go effort. The reason for
this is that the Raised Dot Computing Newsletter (a
monthly on computer products for the visually
impaired) has contacted WAP and requested the service
be provided to its readership. WAP cannot afford that
on a wholesale basis, so there is a likelihood of a
two tiered price structure for WAP members and non-
members. The intention is not to make a profit but we
must break even. We will keep you informed.

* * * * *

THE FEBRUARY MEETING

The February meeting focused on applications for the
hearing impaired, and as is usual at the WAP's main
meetings, and at SIG meetings where a large number of
hearing impaired people are expected, a signing
interpreter was present.

In addition to the two speakers: Barry Strassler, of
the Deaf Factory Store; and Richard Barth, of the
Handicapped Education Exchange (HEX), a variety of
Telecommunication Devices for the Deaf (TDD), an Apple
][with a TDD adaptable modem (Novation Apple Cat),
and a Mac were shown.

Mr. Strassler described the history of TDDs as they
evolved from surplus military teletype (TTY) units to
what they are today. TTY/TDDs were relatively inex-
pensive adaptations which proved to be a breakthrough
for deaf communications. They rely on Baudot code
which uses 5 bits per byte rather than ASCII's 7 bits.
That limits Baudot to 32 symbols instead of ASCII's
128. Even when the TTYs shifted (explaining their
clattering and low transmission [baud] rate) they were
limited. However, since ASCII devices were in their
infancy and extremely expensive in the early 1960s
Baudot was the obvious choice.

Disabled citizens, as a class, have less economic
strength than most others. Hence even today with
ASCII machines having come down in price it is
inconceivable to ask for an immediate transition to
them by discarding the 100,000+ TDDs. The impact upon
the community would be as dramatic as the immediate
contd.

discarding of the QUERTY keyboard for Dvorak.

TDDs are available free of charge to the deaf in three states: California, Connecticut and Rhode Island. In California this service is subsidized through a 15 cent per month surcharge on telephone bills. TDD's can be purchased for $150, bare bones, while newer models which are also ASCII compatible and have a printer as well as a small display sell for $450 - $700. Essentially, TDDs look like acoustical modems with an integrated keyboard.

TDD technology has also taken strange turns. General Electric is marketing an ECHO 2000 which uses two touchtone buttons for each letter (except Q and Z). It has been almost universally rejected by the deaf community because its cost exceeds two TDDs. Even bimodal communication (ASCII and Baudot) can be achieved inexpensively with a VIC-20 and modem AND a TDD.

Richard Barth, who runs HEX (on a shoestring) is also a member of Amatuer Radio Research and Development (AMRAD). AMRAD, under a small federal grant, developed a Baudot "black box" that is designed to attach to Apple][modems. The "black box" allows ASCII to Baudot transmissions and can be built for less than $35 - its plans are in the Public Domain.

HEX, itself, is possibly the only computer bulletin board in the country which will accept both ASCII and Baudot communications. It serves as a clearinghouse for computer and technological information for the disabled. Located in Bethesda, MD, HEX's telephone number is: (301) 593-7033.

HEX also serves as a data base, for public messages, and for private electronic mail. HEX also has available public domain software that will allow persons interested in establishing BBSs for the disabled to do so with Apples, VIC-20s, Commodore 64s, Tandy Color Computers, IBM PCs, and Smoke Signal Broadcasting 6800/6809s. Barth's hope is that people with both the interest and the technical ability will take the software and establish microcomputer BBSs for the handicapped throughout the nation.

HEX functions with a 56K micro, a 30 megabyte hard-disk, and two floppys. It stands as an amazing feat when one considers that the Stanford Research Institute (SRI) failed with millions in Federal grants, a PDP 11-74, and 26 phonelines to establish DEAFNET. SRI now goes around the nation trying to promote the concept on nodular BBSs for the deaf (also under a Federal grant) - but with no support for hardware, software, or local organizational development. DEAF-NET still exists in an abbreviated sense on TELENET but the access time charges put it out of the reach of many of the disabled it was designed to serve. &

Troubleshooting contd. from pg 22
Because it couldn't, the read-back value was again 16 counts high.

I probably could have moved one of the chips from high memory down to the middle range and reset HIMEM. But since I had the 4116 on hand I used it instead. To be sure, I was grateful that I had both the chip avail-able and that the software was on hand to help me troubleshoot.

Now, as to why that particular chip went bad, or as to whether this is a harbinger of "alteriotic bus occlu-sion", or some other mystical malady associated with senile computers, I cannot say. I do hope, however, that the next failure will be as easy to repair as this one was. &

EDSIG NEWS
by Peter Combes

Thursday, February 28, at 7.30 p.m.

"Recent Educational Software" - Reviews and demonstrations of new educational material for the Apple.

Thursday, March 28, at 7.30 p.m.

"Apple Computer Clubs for Schools"

All EDSIG meetings are now held in the Washington Apple Pi offices at 8227 Woodmont Avenue, Bethesda, MD.

Meeting Report

Thursday, January 24, at 7.30 p.m. "Current Developments in the Use of Microcomputers in Education" - David Wyatt.

The group discussed many of the items on an "evaluation check list" devised by David.

One of the points - "Is it appropriate to do this on a computer" - provoked considerable discussion; computers have been used far too often as "electronic page turners". David classified "traditional" CAI in terms of "tutorial" and "drill and practice". The latter should not be underrated - in both language arts and mathematics, these have been shown to have considerable value.

Discovery learning had very considerable potential -- Logo and "Rocky's Boots" were well known examples. Some arguments regarding the use of Logo in the classroom were aired. Logo may well encourage creativity, but it is geared to discovery learning, and is there time for this in the classroom? List processing and other higher levels of Logo, fascinating to the expert, remain opaque to the majority of children and indeed their teachers.

Simulations and games were two more categories, but these are neglected in current research, the bulk of which is still concentrated on "tutorial" and "drill and practice".

David proposed a separate distinction between "instructional" programs, with their learning strategies, teaching objectives and so on, and "collaborative" programs without learning content, but which make some part of the learning process easier. The powerful PFS series was currently being repackaged for the school market, and encyclopedias on videodisk were promised. An interesting sideline was that CAI was usually designed for one student only, whereas collaborative material worked well with several students at once.

The educational market continued to grow - last year over 300,000 microcomputers went into schools - double the projection.

To return to the evaluation form - were record keeping routines required? It could be difficult to market a program without them, yet in practice they were rarely used. Similarly, some teachers made great use of "content-changing" facilities, while others used them not at all. The big question was whether computers could develop concepts that were not easily treated by the printed word. David quoted programs

that showed three diemsional curves from all angles, with parameters under the control of the student; something impossible in print.

David showed some of his own material, including "Captain Yes" for Addison Wesley, a program for teaching reading and verbal skills to children with limited spoken English. He used double size color letters, provided by utilities from the Apple Mechanic Text Generator. Graphics were produced using Graphics Magician. David mentioned some of the authoring systems that were now available, from top-of-the-line IAS from McGraw Hill, an $1800 collection of useful routines, to "Dasher", available for $150. David prefers to program in Basic, because of the large number of utilities available, and mentioned EnBasic, with its special character sets and intelligent answer processing.

The problem of dealing with unexpected student answers was leading to the use of artificial intelligence techniques, and we could expect more developments along these lines as micros became available with more powerful processors and much larger memories.   &

NEWS NOTES FROM
THE VEEP   by
Robert C. Platt

Howdy pardner. Greetings from Amarillo, Texas! While we are freezing down here, I see TV news reports that Washington had winter days when it hit 70! Although Amarillo is the last place to get any rumors, here is our latest:

Apple Pascal 1.2. I ordered my update last August and it finally arrived on February 5. The new version fixes numerous bugs and uses all 128K of RAM on Apple //e and //c's. I strongly recommend it. Please note which version you use when you submit Pascal disks to the WAP library.

Modula-2 on the Mac. Modula-2, "the programming language for the '80's", was developed by Niklaus Wirth as an improvement upon Pascal. There are now at least two different versions of Modula-2 available on the Mac. Volition Systems (which reportedly is reorganizing under Chapter 11 of the Bankrupcy laws) is offering a package deal that includes not only their Mac system, but also an update of their Apple][Modula-2 system to run under the new Pascal 1.2. Volition claims to support all Mac ROM calls. I have also seen ads from a company in Utah that is offering a $90 Modula-2 compiler. I will give a more complete report when I try these out.

Computing in Texas. Yes, there are personal computers, even out in the plains. Radio Shack is more popular here than in Washington. The local planetarium/ science discovery center has a room full of TRS-80 color computers. However, Amarillo has launched a program to put Apple //e's in all of the local grade schools. The high schools have a variety of makes, including TI's, and the local junior college has IBM PC compatibles (I am not sure whether they even have a mainframe computer).   &

MEETING REPORT
by Adrien Youell

I suggested ages ago that at least a brief report should appear in the Pi Journal, summarizing the main presentation topic of the Pi meetings, for all those unfortunate members who missed the fun. So, as the new Program Co-ordinater, I thought I would 'fire-up' my screen and do something about it. Maybe in the future a 'really' regular attender would volunteer to write The Column. (Nudge, nudge Bernie; can we call this a Column?)

Four contributors managed to make accounting seem easy, and accounting on computers an absolute must for anyone with 'the green stuff' (and a computer). Jaxon Brown set the scene: what is accounting, and what does your bank manager want to know? He explained which features to look for in an accounts package, illustrating a professional system "BPI - General Accounting", by BPI Systems (from $269). We were sorry Jaxon's wife, Dana, was indisposed and wish such a charming lady a rapid recovery. "BPI" automatically accesses 128K, as a RAM-disk, with the Extended 80-column card, and is strictly 'professional' - learning time 20-40 hours.

Abel Merrill ably expounded on "The Home Accountant - Expanded", by Continental Software (prices around $70), emphasizing that the new 'expanded' version puts wrong things right. He clarified, (being an attorney), the concepts of double and single-entry procedures. "BPI" is a (de-facto) double-entry program, and will not allow single entry - you get 'beeped-at' and figures entered are 'stuck'. If you make a mistake altered figures may be 'corrected' in a separate explanatory entry. The Home Accountant (Expanded) will allow single-entry and you can 'fiddle the books'. Abel explained that this 'what-if' budgeting function allows you to plan which bills to pay now, or defer.

Kevin, (our Kevin, the one whose last name is known

only to his Mom), launched "Dollars and Sense" for the Mac, by Monogram (list price $149). He considered this a powerful program, well implemented on the Mac: see Kevin's review in The Journal, page 51, January 1985 edition.

Mark Pankin, last past the post, but no loser, spoke to an ever diminishing audience (either the Most Worried, or the Most Rich) about "The Accountant", by Decision Support Software, listing at $129 for the //e, $99 for the 48K, and $299 for "The Business Accountant", high-grade version, for the][or //e, with 64K.

Inevitably, questions of 'which to buy', and 'most useful' program features were asked, expertly fielded, by the re-formatted group; 4 chairs in front, hastily pushed into place. Obvious conclusions reached, separated "BPI" from the home user, and "Dollars and Sense" from the non-Mac user; but such was the furor to distinguish "The Home Accountant - Expanded" from "The Accountant" that the meeting agreed to agree that no reasonable advice from the The Floor could solve everyone's personal problems. One other point emerged that prices quoted are irrelevant, and that discount prices have 'invalidated' the value of so-called list prices.

Further Information: "Using and Choosing Home Finance Programs"; Norman J. Wood; Call-A.P.P.L.E., January 1985, page 7, and "Managing Your Money By Computer"; David Gabel; Personal Computing, September 1984, page 137. Letters: Ibid. February 1985, page 11 (Home Accountant).

(PS. Can I say what a stimulating experience it is to be a Pi volunteer - as the Infant Program Coordinator, I have not had such a good time since.....since....... Oh, never mind!)]

Have a problem? The following club members have agreed to help other members. PLEASE, keep in mind that the people listed are VOLUNTEERS. Respect all telephone restrictions, where listed, and no calls after 10:00 PM except where indicated. Users of the Hotline are reminded that calls regarding commercial software packages should be limited to those you have purchased. Please do not call about copied software for which you have no documentation. Telephone numbers are home phones unless otherwise specified.

General	John Day	(301) 672-1721
	Dave Harvey	(703) 527-2704
	Robert Martin	(301) 498-6074
Accounting Packages		
Accountant(Dec.Sup.)	Mark Pankin	(703) 524-0937
Home Accountant	Leon Raesly *	(301) 460-0754
APPLE SSC	Bernie Benson	(301) 951-5294
Apple TechNotes	Lance Bell	(703) 550-9064
	Shirley Weaver	(301) 761-2479
AppleWorks	Carl Eisen	(703) 354-4837
	J.J. Finkelstein	(301) 652-9375
	Jay Jones (Balt.)	(301) 969-1990
Communications Packages and Modems-Telecom.		
Anchor Mark 12	George Kinal(7-10)	(202) 546-7270
	Jeremy Parker	(301) 229-2578
ASCII Express	Dave Harvey	(703) 527-2704
BIZCOMP Modem	Jeremy Parker	(301) 229-2578
General	Tom Nebiker	(216) 867-7463
Hayes Smartmodem	Bernie Benson	(301) 951-5294
VISITERM	Steve Wildstrom	(301) 564-0039
XTALK CP/M Comm.	Bernie Benson	(301) 951-5294
Computers, Specific		
Apple //c	John Day	(301) 672-1721
	Jorge Osterling	(703) 671-5797
	Scott Rullman	(301) 779-5714
Apple //e	Scott Rullman	(301) 779-5714
LISA/Mac XL	John Day	(301) 672-1721
	Don Kornreich	(301) 292-9225
Macintosh: - Genl.	Steve Hunt	(301) 262-9080
	Scott Rullman	(301) 779-5714
	Donald Schmitt	(717) 334-3265
	Rob Clark	(804) 850-2016
Comm. & Modems	Steve Hunt	(301) 262-9080
	Tom Warrick	(301) 656-4389
Digitizers	JoAnn Stewart	(703) 527-4072
Hard Disks	Joseph Kelley (D)	(202) 466-2014
Hardware	Jay Heller	(301) 948-7440
Multiplan	Steve Hunt	(301) 262-9080
	Walt Francis	(202) 966-5742
Multiplan/Chart	Bob Pulgino	(703) 785-5777
Corvus Hard Disk & Omninet	Tom Vier (4-11AM)	(202) 887-7588
Data Bases		
dBase II	Paul Bublitz	(301) 261-4124
	John Staples	(703) 759-3461
DB Master	Dave Einhorn	(301) 593-8420
Data Perfect	Leon Raesly *	(301) 460-0754
Data Factory	Bob Schmidt	(301) 736-4698
General Manager	Normand Bernache	(301) 935-5617
	Leon Raesly *	(301) 460-0754
List Handler	Jon Vaupel	(301) 977-3054
PFS	Bill Etue	(703) 620-2103
	Ben Ryan	(301) 469-6457
	Jenny Spevak	(202) 362-3887
QuickFile II	J.J. Finkelstein	(301) 652-9375
Expediter Compiler	Peter Rosden	(301) 229-2288
Graphics	Bill Schultheis	(703) 538-4575
VisiPlot	Lee Raesly *	(301) 460-0754

Languages (A=Applesoft, I=Integer, P=Pascal, M=Machine

A	Peter Combes	(301) 251-6369
A,I	Jeff Dillon	(301) 422-6458
A	Richard Langston	(301) 258-9865
A	Mark Pankin	(703) 524-0937
A	Leon Raesly *	(301) 460-0754
A,I,P,M	Bill Schultheis	(703) 538-4575
A,I,M	Richard Untied	(609) 596-8816
A,I,M	John Love	(703) 569-2294
M	Raymond Hobbs	(301) 490-7484

Languages contd.		
P	Donn Hoffman *	(412) 578-8905
Forth	Bruce Field	(301) 340-7038
LOGO	Ron Murray (eve.)	(202) 328-3553
LISP	Fred Naef	(703) 471-1479
Math/ O.R. Applns.	Mark Pankin	(703) 524-0937
Monitor, RGB Color	John Day	(301) 672-1721
Operating Systems		
Apple DOS	Richard Langston	(301) 258-9865
	John Love	(703) 569-2294
	Richard Untied	(609) 596-8816
CP/M	Robert Fretwell	(703) 971-2621
	Ray Hobbs	(301) 490-7484
ProDOS	Richard Langston	(301) 258-9865
	John Love	(301) 569-2294
Paddles	Tom Riley (eve.)	(301) 340-9432
Printers		
General	Walt Francis	(202) 966-5742
	Leon Raesly *	(301) 460-0754
Apple Color Plotter	John Day	(301) 672-1721
Apple Daisy Wheel	John Day	(301) 672-1721
Apple Dot Matrix	Joan B. Dunham *	(301) 585-0989
Daisywriter 2000	Bill Etue	(703) 620-2103
	Henry Greene	(202) 363-1797
IDS 460	Jeff Stetekluh	(703) 521-4882
Imagewriter	John Day	(301) 672-1721
	Scott Rullman	(703) 779-5714
MX-80	Jeff Dillon	(301) 434-0405
NEC 8023	Bill Mark	(301) 779-8938
Okidata	Fred Feer	(703) 978-7724
	Scott Rullman	(301) 779-5714
Silentype	Bruce Field	(301) 340-7038
Spreadsheets	Leon Raesly *	(301) 460-0754
	Walt Francis	(202) 966-5742
Lotus 1-2-3	Walt Francis	(202) 966-5742
	Roy Rosfeld	(301) 340-7962
Multiplan	Terry Prudden	(301) 933-3065
VisiCalc	Walt Francis	(202) 966-5742
	Leon Raesly *	(301) 460-0754
Spreadsheet 2.0 (MagiCalc)	Leon Raesly *	(301) 460-0754
SuperCalc	Leon Raesly *	(301) 460-0754
Statistical Packages	Jim Carpenter	(301) 371-5263
	Mark Pankin	(703) 524-0937
Stock Market	Robert Wood	(703) 893-9591
Tax Preparer-H.Soft	Leon Raesly *	(301) 460-0754
Time-Sharing	Dave Harvey	(703) 527-2704
Word Processors	Walt Francis	(202) 966-5742
Apple Writer II	Dianne Lorenz	(301) 530-7881
	Leon Raesly *	(301) 460-0754
Executive Secretary	Louis Biggie	(301) 967-3977
Format II	Henry Donahoe	(202) 298-9107
Gutenberg & Jr.	Neil Muncy Can.	(416) 298-3964
	Harris Silverstone	(301) 435-3582
Letter Perfect	Cara Cira	(301) 468-6118
	Leon Raesly *	(301) 460-0754
Magic Window and II	Joyce C. Little	(301) 321-2989
Peach Text	Carl Eisen	(703) 354-4837
PIE Writer/Apple PIE	Jim Graham	(703) 643-1848
ScreenWriter II	Peter Combes	(301) 251-6369
	E. E. Carter	(202) 363-2342
Supertext II	Peter Rosden	(301) 229-2288
Word Handler	Jon Vaupel	(301) 977-3054
	Christopher Romero	(703) 471-1949
Word Juggler //e	Carl Eisen	(703) 354-4837
Word Star	Christopher Romero	(703) 471-1949

*Calls up until midnight are ok.

DISKETERIA DISPATCH
by John Malcolm

The big news this month is our "recipe" disk. Yes WAP will be releasing a disk containing favorite recipes of our members. The good news is that there is still time for you to get your favorite recipe on the disk. Just send it to the office as soon as possible, for our selection committee's review. Be sure to list all the ingredients, and complete preparation/cooking instructions. Watch this column for the release announcement. (Ed. Note: Better still, we volunteer to taste all contributions prior to their acceptance.)

Following are descriptions of WAP Disketerial Volumes 41, 42, 43, 108, 109, 113, 115, 119, and 125. These documentations have not previously appeared in the Journal.

WAP VOLUME 41 - MACHINE LANGUAGE UTILITIES

ALL PURPOSE DISASMB.(800) - With this utility the user can disassemble to screen, printer, disk-as-text, or disk-for-asm/65. (From 23 bytes to 1/2 K.)

BFILE LIST - This program will search a disk for all binary files, giving the first 13 letters of the file name followed by the file start address and file length, in both hex and decimal. The number of disk free sectors is also calculated.

MEMORY INTERPRETER - The user enters either decimal or hex starting address.

WAP VOLUME 42 - ONE-KEY DOS

(This is a quasi-commercial disk created by Brooke Boering. If you buy it from WAP you are asked to also send $9.00 to Mr. Boering, on the honor system.)

This disk allows one to install a version of DOS called "quick loader DOS" which can load programs faster than Apple DOS. The system also installs an automatic menu, which allows one to RUN, CATALOG, OR DELETE with a single key stroke.

FEATURES - Lists the features that ONE-KEY DOS gives you.

WHICH DOS - Tells the user all the different DOS's which can be used with ONE-KEY DOS.

CONVERTING - Tells the user how to convert disks to the ONE-KEY DOS.

CONNIE - Converts a disk to ONE-KEY DOS.

SLIDE SHOW - In this graphic nice pictures appear on the monitor.

TECH NOTES - The tech notes for the disk.

WAP VOLUME 43 - UTILITIES H
(Add this program to existing descriptions.)

MEMORY MAP (EXEC THIS) - (Remember that the file name includes "(EXEC THIS)". This program tells where: the program, LOMEM, HIMEM, free space, strings, and arrays, reside in memory.

WAP VOLUME 108: IAC 10, GRAPHICS

This disk is a collection of graphics from various programmers in Europe. These graphics are different

from the kind one usually sees in the United States.

ALIEN HEART - One sees boxes which come and go, to and from infinity.

COLLECTIONS - When the bouncing ball hits a stationary dot a pretty pattern blossoms forth.

DA BIN ICH ... - A face appears (a self-portrait), and after 20 seconds or so it winks at you. After another 30 seconds, it does another cute trick - stay tuned and see for yourself. It gives the first-timers a laugh. NOTE: Remember that to run this it is "DA BIN ICH <space> period, period, period".

GABY - Panels of color unfold over other panels, from left to right, and top to bottom.

KRISTALLE - A pattern expanding in the manner of a growing crystal.

LACE - A lace-patterned graphic which transforms every few seconds into a different, more complex pattern.

NEON - This is simply the word "neon" done-up as a flashing neon sign. (The Hirschorn comes to your Apple!)

ONE LINE - A whirling line which generates an ever-changing cobweb-style graphic.

ORNATO 2 - A mirror-image scroll-type design.

PULSATOR - A pulsating, tunnel-effect graphic.

QQQQQ - Patterns transform into other patterns every 3 or 4 seconds.

QUARRY - A graphic similar to QQQQQ above.

RANDOM - A multi-step picture created by the Apple moving a line in a random direction.

SHAKALIN - Big-scale graphics, which change constantly.

STAR - A fancy star grows, then another, and another, etc.

VASARELY - A checker-board pattern graphic rapidly changes, row-by-row, then column-by-column.

WAP VOLUME 109 - APPLESOFT TUTOR

This disk contains a tutorial on Applesoft by Diarmuid McCarty. It starts with a description of the keyboard, what the special keys do ("Ctrl," "ESC," etc.), and then has a basic introduction on how to start the Apple, insert disks, boot-up, etc. The two tutorial sections present a strong foundation for programmers ("READ/DATA/LET/PRINT," "REM/STOP/RESTORE," "ON-GOTO/GOSUB-RETURN," etc.). There is also a "Quick Reference Guide" to basic commands. All in all, it is a good basic introduction to programming for Apple owners.

WAP VOLUME 113 - BUSINESS V

This disk contains the "Computer Assisted Analysis for Managers" package, designed to meet the needs of managers and analysts for easy-to-use, time-sensitive com-

puter support. The package does not contain every analysis technique, but it does include three of the most useful: regression analysis; linear programming; and matrix decision aids.

REGRESSION ANALYSIS - This program contains three interconnected main programs to provide: data base management, bivariate regression, and multivariate regression. Bivariate Regression involves one independent and one dependent variable. There are 10 operations which can be carried out in the Bivar routine (linear, power, exponential, n'th order, etc). The Multivariate Regression gives you two curve fitting options, linear and user-defined. You can get a table of means, standard deviations, a simple correlation matrix, a variance-covariance matrix, or a table of residuals with this option.

LINEAR PROGRAMMING - This program is used to determine the best allocation for scarce resources in order to maximize or minimize a linear function defining an objective such as profit, cost, tonnage, etc. You can enter as many as 20 variables and constraints. The program will produce: a variable table, an initial tableau, an initial basic feasible solution, a basic feasible solution after iteration(s), an optimal dual solution, and optimal tableaus.

The MATRIX DECISION AID provides a structured approach to comparing the relative merits of various alternatives or options. Whether an actual decision is made, the analysis can illuminate parts of the problem previously unconsidered and can provide the basis for elaborate subsequent studies. One can analyze the relative merit of various alternatives or options. Within this option are: decision trees; cost/benefit analysis; utility theory; and process diagrams.

WAP VOLUME 115: IAC 12/13, MISCELLANEOUS

This is a typical IAC (International Apple Corps) miscellaneous disk - some utilities and some games. The following is a brief description of each of the programs on the disk.

APPLESOFT LISTPRINTER - A machine language routine which will format the user's listings into 60 character lines. It puts the name of the program at the top of each page, and numbers the page.

AUTHORSHIP - A routine for programmers which creates a fancy box into which the user can put his/her name (as author) and other information he/she wants to insert.

CALENDAR - A perpetual calendar program which gives the user any month, from 1600 to over 3,000 AD. It allows one to scroll forwards and backwards, month by month, or access any month directly.

CONCENTRATION - A paddle game where the player tries to pick two matching cards.

CONNECTION - A paddle game in which the player tries to draw a line between two dots.

CRIBBAGE - The Apple plays an aggresive game of cribbage with you.

DM II (DOS Modifier II) - This utility lets the user substitute numbers for commands (27 = BRUN, 3 = SAVE, etc.).

HEXCON - When the user inputs a hexadecimal address, or a positive decimal address, or a negative decimal address, the screen shows all three addresses.

HOOVER DAM - The player sits at the console and calls up different "screens" to get information to run the electric generating plant. The player tracks the

status of various spillways, generators, etc. in running the plant.

JOHANNES - This utility, subtitled "Johannes the Disk Baptizer," lets the user change the name of a disk in the Hello program of that disk. The name can be up to 30 characters long.

PAGE DUMP - You guessed it; this program lets the user dump a page anywhere in the program, and also lets the user scroll from page to page.

SOFSYMREF - With this utility the user can load an Applesoft program into memory, BRUN SOFSYMREF, and it will 1) give a list of the line numbers; and 2) give a listing of the variables in each line number.

STOCK TRADER - In this stock market game the player gets $10,000 to wheel and deal with, and can play up to six stocks at a time.

VIDEO TEST - This utility generates test patterns and colors to test the monitor.

WAP VOLUME 119: IAC 15, MISCELLANEOUS

This disk from the IAC is another collection of games and utilities.

ARITHMETIC TAC DOUGH - In this Tic-Tac-Toe game, the player picks a square, the Apple asks a math question, and if the player enters the correct answer, the player wins the square.

AWARI - A game where the player and the Apple each try to move "stones" from square to square, each trying to acumulate the most stones at their home square.

DECISION - A program which helps the user make the most "logical" decision. The Apple prompts the user by asking questions, and having the user assign point-values to various options. The logical choice will be the option with the greatest accumulation of points.

HERB'S CALCULATOR - This really is a calculator which seems to do everything a TI-35 will do. Once the program is loaded, enter a <?> to get the instructions.

INVERSE FIELD INPUT - A utility to input character strings in an inverse field of specified length.

LIFE (LOMEM:3072 HIMEM:8192) - John Conway's game of "Life," which was first described in Scientific American magazine. The player must stabilize the population in various adjoining cells (births, deaths, etc.).

MADLIB - This "game" creates a nonsense story by asking for a series of nouns, verbs, adjectives, adverbs, etc., and then randomly inserting them into a pre-written text.

OTHELLO - A keyboard strategy game similar in some ways to the Japanese game of "GO."

SCREEN PRINT - This utility transfers the contents of the screen to a printer. It operates inside or outside a program, anytime the computer is requesting an input character. After printing the screen, the cursor is returned to its original position. Run SCREEN WRITE INSTRUCTIONS first.

SCREEN WRITE 2.1 - This utility allows the user to fill the screen with text, edit it on the screen (with the SCREEN EDIT program on this disk), print it, or SAVE it. One can call the page up in the middle of a program. It is an effective way of displaying lengthy instructions, "help" information, seldom used menus, etc, without having the text embedded in the program.

SCREEN EDIT - This utility lets the user edit the screen files created by using the SCREEN WRITE program on this disk.

STATE CAPITALS - A game to see how well the player knows the state capitals.

TEXT EDITOR.50 - A text editor/formatter.

TOWERS OF HANOI SOLVED - Your Apple solves the ancient "Towers of Hanoi" puzzle.

WAP VOLUME 125: IAC 18, MISCELLANEOUS

This disk contains a typical IAC assortment: games, sounds, graphics, and utilities.

AMPERSAND KILL-CATALOG UTILITY - A utility to stop and start the menu listing using <&> and <CTRL C>.

APPLESINE - This graphic is a moving vertical sine wave, formed by the word "applesine."

ASCII SCREEN DISPLAY - Shows the ASCII character sets (normal, flash and inverse) which are resident in Apple computers. It also shows the hexadecimal address for each character.

BILLBOARD DISPLAY DEMO - a simple phrase crawls across the screen until the user stops it.

FILE ARRANGER UTILITY - This program puts 15 files on the disk in numerical order 1-15. Then the user can save programs in order, by deleting the appropriate file and saving others in its place.

GRAPHING FUNCTIONS IN HI-RES - This program allows the user to create a graph (X-Y axis) of any function one chooses to enter.

HI-RES SOLAR SYSTEM SIMULATOR - This program plots the paths of Mercury, Venus, Earth, Mars, Jupiter and Saturn for a period of days (I tested it up to 5,000 days).

JOYSTICK/PADDLE TESTER - This utility tests the range of one's paddles or joystick.

LIST THIS FILE BEFORE IT'S RUN - a mini-quiz for amateur programmers. Remember, to LOAD "LIST THIS FILE BEFORE IT'S RUN" to LIST it.

LOAN AMORTIZATION TABLE - This program creates a loan amortization table after asking the user to provide the payment, term in years, principal, annual interest rate, and the number of payments-per-year. A good way to check-up on one's credit union.

MUSIC NOTES WITH OCTAVE NOS. - This program displays a chart in which the musical chromatic scale has assigned unique numerical values for each half-step extending across three consecutive octaves.

PAUSE (WORKING) ROUTINE - A quicky cutey. Try it.

PLAY THAT TONE AGAIN SAM! - An audio program which generates a tone from frequency and duration options provided by the user.

SNAKE ARCADE GAME - A keyboard maze - Try to move the ever-growing snake to eat the pellet while avoiding the walls and itself.

SOME WHERE OVER THE RAINBOW - An audio program which plays, oddly enough, "Somewhere Over the Rainbow."

SOUND BY WAGNER - This program shows the effect on the sound produced by the Apple when different tones and durations are poked into an assembly routine. When run, the program plays a scale while showing the pitch and duration of the notes. As it continues to run, the duration gets longer (slower) so one can compare the values of the pitch and duration.

SOUND1(CALL2921) THROUGH SOUND16(CALL4993) - BLOADing these programs pokes machine language sub-routines into empty memory locations. Calls to these locations then produce the sounds.

SPACE MUSIC+ INTRO - This audio program plays a short piece of "space-y" music.

TRICK FILE NAME UTILITY - This utility lets the user put trick file names of 22 characters or less on a disk. The programs then cannot be called-up by other users. The user can either use the trick name in the program or change line 15 to his/her choice.

TUNNEL VISION - This short graphic creates a square cornucopia.

TWIRLING CURSOR - A graphic showing a twirling cursor (which can't be used).

TWO 3-D SHAPES - The Apple slowly generates a couple of 3-D shapes.

UP & DOWN THE SCALE - A brief audio program which zips up and down the musical scale.

WENATCHEE APPLESTAND (Game) - A keyboard game wherein the player runs an apple stand, trying to maximize profits by choosing various prices to sell the most apples.

TROUBLESHOOTING THE APPLE][WITH SLOWMEM AND FASTMEM TESTS

by Bob Trexler

Recently my 4-year-old Apple][+ went beserk! I was in the middle of a wonderful piece of prose (... well, it was almost poetry), using my trusty ScreenWriter II when the cursor disappeared. I had had that kind of thing occur before and the remedy was to press the reset button. In the past, the screen would flash something at me, the speaker would beep, and the cursor would return. This time, the display showed the monitor prompt, "*". There was nothing I could think to do to bring back the normal flashing block cursor. I was sure the text was still in memory; I was certain that I could probably get it back if only I knew how.

Alas, I had to shut the machine off, and lose my file. I then rebooted SWII, thinking that the muse might still be with me, and that if I could not recapture the exact words of my lost file, I could probably get the most of it put together. I found, however, that I was unable to load any file from disk. In fact, very many operations were not possible to perform. I began to get the feeling that something was seriously wrong. Naturally, I booted my backup. It failed in much the same way. That was even worse news, since it meant that the software might be good and the hardware bad.

My next step was to see if the problem was in the 6502, or in some other part of the computer. To check this out, I booted my Z80 card, and found that this seemed to work, except that Wordstar did not function properly. In short, every test I made suggested that the hardware had failed.

There are two programs in the Apple Pi Library that are quite helpful for evaluating memory chips: SLOWMEM TEST, and FASTMEM TEST. I decided to give them a try.

FASTMEM TEST pokes zeroes and ones into the range of memory you select. If a bit fails to switch, you get an error message that identifies the memory loaction (by its hex address), and the value read back, as well as the value that should have been read back. If you understand the bit patterns you can identify the exact memory chip that has the bad bit.

When my computer was about two months old, I had a 4116 RAM memory chip go bad, and I used the programs cited to isolate it. But, the computer was under warranty, and I was shy. The service department of the now defunct "Computers Plus" correctly found the same chip that I found, and replaced it for me. In view of the experience I had had, I felt that these programs could be of use again. This time, I would not be so shy.

To end the suspense, let me say that I correctly identified the faulty memory chip and replaced it with the one I had in reserve as a result of pulling a chip to insert the pig-tail to the language card.

The purpose of this story is to instruct others on the process so that they may go forth and do likewise, should the occasion arise. In order to make this process intelligible and somewhat general, you will need a little lecture.

Memory Structure. My Apple has 48K on the motherboard. Apple has arranged these in three rows, or sections, of 8 chips each. Each of these rows has 16K 8-bit bytes of random access memory. Each of the chips is knows as a 4116. Each chip has 16K bits in it. Each of the 4116s is assigned one of the eight bit positions. It is responsible for that bit position for the entire 16K section of memory. The row nearest the keyboard handles the first 16K, the middle row handles the next 16K, and the row furthest away handles the upper 16K of memory. The chip nearest the power supply is responsible for the units position. The next one to the right is responsible for the 2's. The next is responsible for the 4's, and so forth.

The figure below shows the chip position, and the binary position it corresponds to.

```
chip-->> 1 2 3 4  5  6  7   8

bit value-->> 1 2 4 8 16 32 64 128
```

This says that the chip in position 4 (if set to 1) will represent the value 8. Thus to represent a value of say, 234, I would expect the following configuration:

```
   chip-->> 1 2 3  4 5   6  7   8
 bit set-->> 0 1 0  1 0   1  1   1
bit value-->> 0 2 0 +8 0 +32+64+128
```

"That's nice!", you may say. But where am I taking you? By examining which bits have been set, and which have been reset, you can find the bad chip because it will not change its state reliably.

If you poke a value into a memory location, you are using a decimal memory location, and decimal value. This decimal value cannot exceed 255 because the Apple is an 8 bit machine. If you set all the chip values to "1", you will total to 255 decimal, or 1111111 binay, or FF hexadecimal.

If I type at the keyboard,

    POKE 8192,255

I will find FF in memory location $2000, when I look via the monitor. The value "FF" is obtained by making every chip in the row have the value 1. If you POKE 8192,00 you will have zeroes in every bit in the entire row.

If you first poke 00's, and then poke FF's into a given memory location, if one of the bits does not change, it means you might have a bad chip. By noting which bit did not change you can identify which memory chip is suspect. (I am being less than adamant about this because there are other chips around that are not memory chips that may affect whether chips change state, so that while you can identify the chip that did not change state, simply replacing the chip will not necessarily fix the trouble.)

FASTMEM TEST pokes 1's and 0's for you, although you can do it manually through the monitor. In my case, the errors occurred in the second bank of 16K chips. When the errors began, the numbers were read back as being 16 counts in error.

SLOWMEM TEST does much the same, except it will poke every value from zero to 255 into the selected memory locations. In so doing it will seem to read back correct data for part of the time, and be in error the reaminder. In my case, the read-back value would be 16 counts high until the actual value poke in equaled that read out. Thereafter, the read-back value would be correct until the bit had to switch to zero.

Column 1

	APPLE PI List Price	APPLE PI MEMBER PRICE
BUSINESS AND PROFESSIONAL:		
ADVANCED LOGIC SYSTEMS		
THE HANDLERS	170	120
LIST HANDLER	88	60
SPELL HANDLER	60	44
T/MAKER	275	195
WORK HANDLER IIe	80	60
APPLIED SOFTWARE TECHNOLOGY		
LEGAL OFFICE MANAGER	379	275
VERSA FORM 64K VER 2.7	389	280
VERSA FORM II	289	205
O BASE	189	135
ARKTRONICS		
JANE IIc	125	92
JANE W/MOUSE	195	140
ART-SCI		
MAGIC OFFICE SYSTEM	295	195
MAGIC CALC	150	95
MAGIC WINDOW II	150	95
ASK MICRO		
(ALL REQUIRE GENERAL LEDGER)		
GL & AP	725	450
GL & AR	725	450
GL & AP & AR	995	595
GL & AP & AR & INV	1250	750
INV, AP, AR, or GL (EACH)	395	275
BPI		
GEN. ACCOUNTING OR TIME ACCTG.	395	249
GL,AP,AR,PR,or GL (EACH)	395	249
CHURCH ACCOUNTING	495	315
BUSINESS ANALYST	195	125
JOB COST	595	345
BUSINESS SOLUTIONS		
THE INCREDIBLE JACK	129	90
CONTINENTAL/ARRAYS		
AP,AR,GL,PR (EACH)	250	150
PROPERTY MANAGEMENT	495	350
HOME ACCOUNTANT - ADVANCED 128K	75	52
HOME ACCOUNTANT	75	52
INSURANCE	60	32
REAL ESTATE PLANNING	50	42
RETIREMENT & ESTATE PLANNING	50	42
TAX ADVANTAGE	70	55
DECISION SUPPORT		
THE ACCOUNTANT VER.5.0	129	83
THE ACCOUNTANT	99	63
THE BUSINESS ACCOUNTANT	255	155
DOW JONES & CO.		
INVESTORS WORKSHOP	149	110
MARKET ANALYZER	349	247
MARKET MANAGER	249	178
MARKET MICROSCOPE	349	247
SPREADSHEET LINK	249	178
HOME BUDGET	99	75
EAGLE SOFTWARE		
MONEY DECISION VOL. 1	199	129
MONEY DECISION VOL. 2	229	137
MONEY PAC VOLS 1 & 2	399	234
FUNK SOFTWARE		
SIDEWAYS	60	40
HOWARDSOFT		
REAL ESTATE ANALYZER	225	165
TAX PREPARER 1985	250	180
HUMAN EDGE		
COMMUNICATIONS EDGE	175	145
MANAGEMENT EDGE	250	175
NEGOTIATION EDGE	275	205
SALES EDGE	250	175
LIVING VIDEOTEXT		
THINK TANK	150	99
MECA		
MANAGING YOUR MONEY	200	148
MEGAHAUS		
MEGA FINDER	150	108
MEGA PAC	125	92
MEGA WORKS (MAIL MERGE/SPELLING)	125	92
(ABOVE WORKS WITH APPLEWORKS)		
MEGA WRITER	100	75

Column 2

	APPLE PI List Price	APPLE PI MEMBER PRICE
MICROPRO		
CALCSTAR (CP/M)	175	129
MAILMERGE (CP/M)	99	68
WORDSTAR (CP/M)	350	227
WORDSTAR W/STARCARD	495	319
MICROSOFT		
MULTIPLAN	125	92
MONOGRAM		
DOLLARS & SENSE	100	65
DOLLARS & SENSE 128K VERSION e/c	120	78
FORECAST	70	41
PBL		
PERSONAL INVESTOR	145	100
PEACHTREE		
BACK TO BASICS ACCOUNTING	195	120
LIST MANAGER	250	163
PEACH PAC	375	240
PEACHTEXT	250	165
SENSIBLE SOFTWARE		
SENSIBLE SPELLER (PRO DOS VER)	125	85
BLACKS LAW DICTIONARY	100	75
BOOKENDS (PRO DOS)	125	85
GRAPHICS DEPT. (PRO DOS)	125	85
SIERRA ON LINE		
THE GENERAL MANAGER	230	145
SMITH MICRO		
STOCK PORTFOLIO SYSTEM	185	85
SOFTWARE PUBLISHING		
PFS- WRITE,FILE,REPORT,GRAPH ea.	125	81
SORCIM		
SUPERCALC	195	140
SUPERCALC II	275	210
STATE OF THE ART		
AP,AR,GL,INV,PR ea.	495	335
BOOKKEEPING SYSTEM	495	345
BUDGET & FINANCIAL REPORTING	395	268
PROFESSIONAL TIME & BILLING	775	535
SALES INVOICING	395	270
STONEWARE		
DB MASTER	229	149
DB MASTER BUSINESS TEAM	350	230
DB MASTER 4 PLUS	295	195
SUPRA SOFTWARE		
- WINNING ON WALL STREET-		
TRADERS DATA MANAGER	280	165
TRADERS FORECASTER	250	100
TRADERS ACCOUNTANT	350	250
COMPLETE SYSTEM	700	495
SYSTEMS PLUS		
LANDLORDS	595	425
SUPEREX BUSINESS SOFTWARE		
RETAILER	450	225
WHOLESALER	800	525
PHARMACIST'S ASSISTANT	2600	1400
VISICORP		
DESKTOP PLAN II	250	178
VISIDEX	100	74
VISIFILE	129	96
VISILINK	149	109
VISISCHEDULE	149	109
VISITREND/PLOT	99	74
FLASH CALC (PRO DOS VERSION)	100	69
WESTWARE		
JOB COST	475	275
COMMUNICATIONS SOFTWARE:		
TRANSEND		
EASY COME EASY GO	130	95
TRANSEND 1	79	42
TRANSEND 2	119	90
TRANSEND 3	225	150
UNITED SOFTWARE		
ASCI EXPRESS PRO (DOS & PRO DOS)	130	81
P-TERM PROFESSIONAL	130	81
Z-TERM PROFESSIONAL	150	95
VISICORP		
VISI-TERM	100	70

Column 3

	APPLE PI List Price	APPLE PI MEMBER PRICE
EDUCATIONAL:		
BARRONS		
COMPUTER SAT OR GMAT	90	69
CBS SOFTWARE		
MASTERING THE SAT or GRE ea.	150	90
MASTERING THE COLLEGE BOARDS	175	115
DIGITAL RESEARCH		
CALCAT SAT	250	180
HARCOURT, BRACE, JOVANOVICH		
COMPUTER ACT or GRE ea.	90	59
COMPUTER SAT	80	52
HAYDEN SOFTWARE		
SAT MATH MODULE	40	32
SAT TEST PROGRAM	20	16
SAT VOCABULARY MODULE	40	32
MICROLAB		
ENGLISH or MATH SAT ea.	35	30
PEACHTREE		
PSAT or SAT WORD ATTACK ea.	50	33
GAMES AND EDUCATIONAL		
25% OFF MANUFACTURERS LIST PRICE		
HARDWARE and ACCESSORIES:		
MODEMS:		
APPLE CAT II BY NOVATION	319	205
APPLE CAT 212 BY NOVATION	599	445
EDA 2 BY MICROCOM	499	345
HAYES SMARTMODEM 300	289	229
HAYES SMARTMODEM 300 W/SMARTCOM I	339	266
HAYES MICROMODEM IIe W/SMARTCOM	329	243
KENSINGTON PORTABLE MODEM IIc	160	109
MARK 12 BY ANCHOR	399	274
POPCOM X100 BY PRENTICE	475	345
TRANSPACK I BY TRANSEND	299	215
TRANSPACK IIe BY TRANSEND	334	250
INTERFACE BOARDS:		
MICROSOFT		
SOFTCARD SYSTEM (CPM/64K)	425	325
SOFTCARD PREMIUM (IIe,CPM,64K)	395	299
SOFTCARD IIc W/DATA BASE II	475	375
ORANGE MICRO		
BUFFERED GRAPPLER +	209	155
GRAPPLER +	145	109
ORANGE INTERFACE	99	75
MISCL:		
KOLA TECHNOLOGIES		
GIBSON LIGHT PEN	250	165
KOLA PAD	125	88
MUPPET PAD	80	52

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person or at the general meeting!

MACINTOSH OWNERS - REFER TO OUR AD IN THE DECEMBER 1984 APPLE PI MAGAZINE FOR A SAMPLE OF PRODUCTS

INDEX TO APPLE & CP/M LITERATURE (1980 - 1984)

by Ted Gaugler

Have you ever wondered how to efficiently sift through the thousands of articles published on the Apple][and find a review article on your favorite word processor or a nicely tailored BASIC subroutine that would meet your specific programming needs? The Microcomputer Index (Database Services, Inc., P.O. Box 50545, Palo Alto, CA 94303, $45/year) will cure your ills. The index is published bi-monthly (although the new publishers are six months or so behind schedule), and the currently-updated machine-readable database is accessible from DIALOG or, less expensively, via Knowledge Index.

Most of the major microcomputer magazines (but alas, not newsletters) are indexed with several descriptors and abstracted, and most of the journals with Apple-related articles can be found (guess where?) in the WAP library. I have copied and compiled the Apple][(///), CP/M and 6502/Z-80 reference citations along with most of the related abstracts. The Apple Index (about 2 to 3 inches thick) covers the literature from 1980 (second half) to 1984 (first half), and it is now available at the WAP library.

You might be asking, "Well, how do I use it?" Well, here's how. Each issue, published bi-monthly or tri-monthly, usually includes a master index of topics and magazines covered, and in relatively recent issues there is also a commercial products index. Apple articles are subgrouped under 6502, Apple DOS, arcade, business, education, games, graphics, hardware review, programming instruction, software review, word processing (and other) headings. Abstracts are arranged by magazine title (and issue) and each is keyed via an abstract number to the citation.

In addition to the standard citation information, the type of article is noted - book review, hardware review, software review, letter, brief note or "article" (usually meaning that a program or some serious advice of some sort is proffered). The citation also includes a bit of information significant to the programmer, namely, the language used in the article's program (BASIC, FORTRAN, COBOL, FORTH, C, Pascal, machine or assembly language, and "other").

Cruising thru the Apple Index one can find not only in-depth reviews of just about every piece of hardware or software you ever considered buying (or have bought) but also scores of utility routines for DOS, CP/M and Pascal. In addition, one will also find multi-issue tutorials on DOS text files, dBASE II and APL, as well as various WordStar patches and other program "fixes". (I even discovered, just in the nick of time, an article on how to install graphics ROMs in my Okidata without "blowing" the printer - a likely danger not covered, of course, in the manual.)

Naturally, the best way to use the index is going on-line and combining search terms to narrow down to the topic of interest (especially since a cumulative published index is not available). Custom searches of the database on non-Apple specific microcomputer topics (e.g., stocks & investments, handicapped, RS-232, Modula-2, etc.) would yield fairly comprehensive bibliographies. An up-to-date alternative, or supplement, to the Microcomputer Index is Computer Contents. Published bi-weekly (and accessible via DIALOG), this index covers almost all of the magazines that have Apple-related articles as well as the rest of the computer field.

CP/M NOTES: An extensive public domain Apple][CP/M library has been made available by the Sig/M of the Philadelphia Area Computer Society. They have converted some 217 8 in. disks to 5-1/4 in. Apple format (434 Apple disks). (The WAP library will receive a printed catalog, and the Sig/M catalog disk will probably be added to the WAP CP/M series.) The disks are available for $10 per volume, including shipping and handling, (2 Apple disks) from:

Apple II CP/M Library
P.O. Box 477
Kulpsville, PA 19443

PIG PRESENTS: "PERFECT PASCAL PROGRAMS" by Robert C. Platt

About two years ago, WAP embarked on a program to publish items of interest to our members beyond our monthly Journal. The first product was our "New Member Handbook" (its new edition will arrive this month.) WAP also canvassed our SIGs to produce special interest publications that would focus on just one topic. The Pascal Interest Group (PIG) rose to the occasion and has produced a (modestly-entitled) book called "Perfect Pascal Programs."

The book features articles from past issues of the WAP Journal on such topics as pointer variables, using hard disks and RAM disks, and system internals. It features programs to transfer text files from DOS 3.3 to the p-System and back. The book also includes several articles that have never been published before. For example, Alan Freiden tells how to build an I/O card for the Apple][+ and //e that will allow your program to respond to screen retrace interrupts. Kevin Nealon unveils the mystery of incorporating units into your Pascal programs.

The book includes a description of all disks in the PIG library indexed by subject.

In order to have this work reach the widest possible audience, WAP has agreed to let TAB Books distribute it commercially at a list price of $16.45 for the paperback and $22.95 for the hardback. However, beginning in March, WAP will sell copies of the paperback to its members for a special price of $9.50 including tax (or $11.00 if mailed to you.) If you have any interest in Pascal, you won't want to miss this book, so drop by the office or mail your request to the office address, Attn. Pascal Book, along with a check for $11.00 payable to Washington Apple Pi.

APPLE WRITER II AND //e
BOOK REVIEWS
by John F. Day

With well over 500,000 copies sold, Apple Writer II and //e are the most popular Apple Word Processors around. For those of you who have Apple Writer II, it should come as no shock to find out that the documentation supplied with the program leaves much to be desired. The explanations were poor, there was no tutorial and the discussion of WPL was almost no help to the novice programmer. Apple Writer //e users are more fortunate because the program has been improved and the documentation is infinitely better. Apple Writer II users should note that the separate WPL manual supplied with Apple Writer //e is excellent and could be a significant help to them. To help fill in the blank spots and expand your knowledge, a number of other books about Apple Writer II and Apple Writer //e have been written. The reviews that follow are a sample of what is out there.

Apple Writer II Made Easy and Apple Writer //e Made Easy by Judy Mandell.

Each 20 page manual is designed to help get you started quickly on Apple Writer. The author has selected the most important features of each program and put them into 20 short lessons to help get you going. These manuals cover only the bare essentials, so don't look for any detailed explanations here. The manuals are sufficient for what they are designed to do, however, but I question the high price for what is essentially a short typewritten flyer.

Apple Writer II Made Easy and Apple Writer //e Made Easy are available by mail, $5.95 each, postpaid from Judy Mandell, P.O. Box 7063 Charlottesville, VA 22906.

Minute Manual for Apple Writer II by Jim Pirisino.

WAP is full of talented people, among them Columbia, Maryland resident Jim Pirisino. Jim has taken great care to develop a good, thorough manual that covers all the aspects and versions of Apple Writer (other than clunky old Apple Writer 1.0 or 1.1). The concept of the manual (like all Minute Manuals) is to provide one small book that covers all the steps necessary to enter, edit, and print a document without having to wade through the computer manual, the one or more manuals that come with your version of Apple Writer, and finally the printer manual and hieroglyphics associated with using the various codes needed to turn the printer on and off. The manual is excellent. It is clearly written, well organized, and complete enough to show the user most of the features of not only Apple Writer, but the more common dot matrix printers available. Good coverage of editing, loading, saving, formatting for printing, printing, printer control codes, glossaries, tabs, and WPL are included. Also included in the manual are several Apple Writer ideas that I have not seen elsewhere (No I won't tell what they are, buy the book!!). By the time you read this article the latest edition of the manual that includes coverage of both the DOS 3.3 versions and the new ProDos version of Apple Writer will be available. Bargain hunters should like this manual, since it represents the best dollar value in Apple Writer books. Also available from MinuteWare is the Glossary Disk for Apple Writer II and Apple Writer //e. This is an Apple Writer glossary disk for either version of Apple Writer that contains glossary files of printing commands for the Epson, Gemini, Apple, C. Itoh, Okidata, and NEC printers. These glossaries allow the user to embed the printer control codes into text

files with just one keystroke. Again, since the codes have already been entered for you, a minimum of effort on the part of the user is needed. The glossary disk has glossaries for the DOS 3.3 version on one side of the disk and ProDos on the other. Be aware that stores may still have older editions of the Minute Manual and Glossary Disk on their shelves. The latest edition of each is February 1985. Minute Manual for Apple Writer $9.95, and Glossary Disk for Apple Writer $14.95 are from MinuteWare, P.O. Box 2392, Columbia, MD. It is also available in many computer and book stores.

Making Friends with Apple Writer II by Ellen Thro.

Billed as "an easy to read, easy to understand, friendly guide" this book is intended to help the reader start using Apple Writer. Unfortunately, I found the book neither easy to read nor understand, and I've been Apple Writing for three years. It is primarily written for those who have Apple Writer II for a][/][+. The first seven chapters are written about Apple Writer II only, while the eighth and final chapter is devoted to Apple Writer //e (DOS version only). I felt that a beginner with a //e and Apple Writer //e would be sufficiently confused by the text that is aimed at the Apple][version of the program that he or she would never get to the eighth chapter. There is too much confusing detail for a book which is supposed to be aimed at beginners, making it a poor choice for novice Apple users. It does have numerous, detailed descriptions covering the major features of Apple Writer that are the best in any of the books that I have come across. The sections on page formatting, alternate margin settings, preparing tables, use of markers, indexing, label preparation and file organization are very informative. Also included were several interesting WPL programs with complete explanations and customizing hints. I recommend this book only for Apple Writers who have mastered the basics and are now desirous of adding to their detailed knowledge of the program. Used in this manner, it is an important addition to anyones library. Making Friends with Apple Writer II is $15.95 from Prentice-Hall, Inc. and is available in most book stores.

The Apple Writer II Handbook for the //e by Kate Lee Johnson.

Again we have a book that is designed to be "the only desk reference you'll ever need". Well, I don't know about that, but it does cover all of the features of Apple Writer //e in excruciating detail. It's 197 pages are copiously illustrated and easy to read. The examples are very good and the sections on entering extra wide tables and listings, building long documents, markers, and top and bottom line entries are valuable. Unfortunately, this is a good book that is punctuated by several glaring errors, primarily concerning printers, monitors and disk drives. The author has a good, often creative, grasp of Apple Writer, but it is obvious that she doesn't know her hardware. She attributes several printer commands to all printers when they actually are only used with an Epson printer. Several of the discussions about disk drives are misleading or just plain wrong. Take all the sections about hardware with a grain of salt. Before you buy this book, read the next section about it's companion volume. The Apple Writer II Handbook for the //e is $19.50 from Curtin & London, Inc./Van

contd.

Nostrand Reinhold Company and is available at most bookstores.

Contemporary Business Letters with Apple Writer II for the //e by Jane E. Robbins and Kate Lee Johnson.

I like this book. All of the good points from The Apple Writer II Handbook for the //e reviewed above are in it, plus a lot more. Don't bother with the other book. Buy this one instead. It covers all the features of Apple Writer and also covers how to write effective business letters, how to make custom form letters, and even some basic punctuation, and letter formatting. This is good, basic stuff that more word processing books should include. Additionally, five excellent WPL programs that produce mail merging form letters are discussed line by line so the reader comes away with a thorough understanding of the basics of WPL. The only sour note is that the technical hardware errors of the other book are also in this book. Oh well, I guess you can't have everything. Contemporary Business Letters with Apple Writer II for the //e is $19.50 from Curtin & London/Van Nostrand Reinhold Company and is available at most bookstores.

Don Lancaster's Apple Writer //e Toolkit by Don Lancaster.

Don Lancaster has been around microcomputers forever and ever. He is not only a talented and entertaining writer, but a creative and knowledgeable hardware man as well. He has written many, many books about everything from TTL integrated circuits to Apple][assembly language. His latest effort is in the area of...you guessed it, Apple Writer //e. What he is offering is a package of eight disk sides crammed full of tips, tricks, patches, and custom features for Apple Writer. Don holds that Apple Writer is the single most powerful word processor made because, by using WPL, it can be fully programmed. I totally agree with his statement that "owning Apple Writer //e and not using WPL is about as absurd as owning a Porsche just to listen to its radio". For the novice or experienced Apple Writer, this package is a gold mine of information. Actually, the toolkit is the "beta" version of what will be a full blown book in a year or so. The advantage is that you don't wait the year to get it. Included in the kit are ideas such as self prompting glossaries, how to send your printer nulls (for you Epson fans), 6 patches that cure a host of program quirks and ills, how to get the most out of your letter quality printer by setting it up for microjustification and kerning, and a complete piece by piece disassembly of the entire program down to a level that would allow machine language customizing if you wish. This package is so crammed full of good stuff that it's obscene. If you are an Apple Writer fanatic like me, the toolkit was made for you. There is both a DOS 3.3 and a ProDos version available. Buy it today! Don Lancaster's Apple Writer //e Toolkit is $39.50 (for either version) from SYNERGETICS, Box 809, Thatcher, AZ 85552 or call (602) 428-4073 and use your plastic money.

One final word about the manuals that come with Apple Writer //e is necessary. If you are an Apple Writer that has read the introduction to the program, done the tutorial, and then put the manuals away on your shelf, dust them off and read them again. The manuals are quite good, and bear re-reading after you learn the initial basics of the program. You will find that what was Greek to you the first time you read the manuals will now make better sense and you will also pickup some techniques you probably missed the first time. If you stayed away from WPL up to this point, pull out the excellent WPL manual and give it a try. In the near future I will review the various Apple Writer glossary disks available, so stay tuned. ✠

APPLESEEDS NEWS
by
Ian M. Thal

This is the first of what will hopefully be a long series of articles on AppleSeeds, the young people's SIG.

A reminder: AppleSeeds is NOT a babysitting service; we are a SIG.

In October '84 the following officers were elected:

Ian Thal   - Chairman
James Gwertzman - Vice Chairman
Tim Sweeny   - Treasurer (now we need a treasury.)
Joshua Goldberg - Editor

(However, Joshua is unable to act in the role of editor at the moment, so I am now acting editor of the AppleSeeds News.)

In November '84 very few people showed up because of the Thanksgiving weekend, and the discussion switched between BBS's and "Monty Python".

In January '85: We did have better attendance and the discussion was mainly on adventure gaming.

Now for the main part of the column:

We have a very small membership. I remember when we needed an entire lecture room for our meetings. Could some nice people volunteer to bring in hardware or software for the meeting? If so, please call me, and be specific on which SIG chairman you wish to speak to (DISABLEDSIG is run from the same house).

James Gwertzman will, in the next column, start a series on graphics and sound programing.

If you would like to contribute to this column, please give me, during the AppleSeeds meeting, your contribution on disk. Please have your name on it so I can return it to you at the next meeting. I will accept almost everything for the column, mainly reviews and hints. This is an example of what I would like:

PrintShop, from Broderbund Software, is a graphics printer utility (it's almost fun enough to be a game), which allows one to make signs, greeting cards, and banners (which take a very long time) etc. One can, with only the arrow and return keys choose from nine borders (such as a double border, or a latticework), a graphic (one of many on disk, or one you have created yourself using the Graphic Editor) and eight text fonts.

PrintShop is compatible with every major printer, and will (in the case of the Graphic Editor) take input from keyboard, joystick, or Koala Pad (I prefer the keyboard however).

One problem, despite what the manual says, is that from our experience (and that of others) one can not make the backup copy described, e.g. we were unable to do so on our old][+, so we made a copy on Joshua's //e; however that copy only prints gibberish.

PrintShop costs about $50 (less at discount houses), and is well worth the money; that is, if making graphics is an interest of yours (and if you don't mind the stated problem). ✠

A MENU FOR THE CALENDAR PROGRAM
by Richard M. Rowell

I have been using Tom Warrick's CALENDAR program (WAP Journal, January 1985) to keep my own calendar. It does the job I need done. It's simple, quick enough and functional. However, I need several different calendars, and have dedicated one disk to all 1985 calendars. The following short menu program selects the appropriate calendar for me:

```
10   REM   A Calendar selector
11   REM   for Tom Warrick's
12   REM   CALENDAR program
13   REM
14   REM   Richard M. Rowell
15   REM
100  D$ = CHR$ (13) + CHR$ (4)
110  HOME
120  POKE 33,37: POKE 32,3
130  VTAB 4
140  ONERR  GOTO 190
150  FOR I = 1 TO 5
160  READ CN$(I)
170  PRINT "<";I;"> ";CN$(I)
180  NEXT I
190  PRINT : HTAB 3: PRINT "... or enter a name"
200  POKE 216,0: POKE 32,0: POKE 33,40
210  VTAB 1
220  INPUT "Which Calendar? ";CN$
230  IF LEN (CN$) > 13 THEN  PRINT CHR$ (7): VTAB 1:
     CALL - 868: GOTO 220
240  IF LEN (CN$) = 0 THEN CN$ = CN$(1): GOTO 270
250  C = VAL (CN$)
260  IF VAL (CN$) > 0 THEN CN$ = CN$(C)
270  FOR I = 1 TO LEN (CN$)
280  POKE 790 + I, ASC ( MID$ (CN$,I,1))
290  NEXT I
300  POKE 790 + I,42
310  PRINT D$;"RUN CALENDAR"
320  DATA RICHARD,WORK,JULIE,SCHOOL,TRAVEL
```

It is now necessary to add these four lines to Tom's CALENDAR program to assign the calendar name to the variable CN$:

```
27   FOR I = 0 TO 12
28   IF PEEK (791 + I) = 42 THEN I = 12: GOTO 30
29   CN$ = CN$ + CHR$ ( PEEK (791 + I))
30   NEXT I
```

These lines can replace the old lines #29-30.

The procedure for setting up a calendar disk is as follows:

1. Type in my program (lines #10-310).
2. Add a DATA line (line #320) with the names of all of your calendars (up to five).
3. INITialize a new disk with this program as your HELLO.
4. Enter Tom's calendar program with the new lines #27-30. (Can be downloaded from the ABBS). Name this file CALENDAR.
5. Done. You are now in business.

I have often used this system of POKEing a name from the HELLO program into the short machine language work area (768-1007); I am then able to RUN any number of Applesoft programs and have the user's name available by reading it back out of the machine language area. In this case it works for storing the name of the calendar. The name begins at address 791 so as not to conflict with the addresses 768-790 used by the CALEN-DAR program (line #42). CHR$(42) is used to mark the end of the name; this is an *. Calendar names are limited to thirteen letters so that the name [NAME].CALENDAR.1985.12 will not exceed the DOS 3.3 name length limit of thirty characters.

The number for any calendar on the menu may be selected (line #220), or a name not on the menu may be typed in. Menu item #1 will always be the default. Without DOS on the disk you should be able to fit five complete calendars on one side of one disk (four if DOS is on the disk).

Now I have all of my 1985 calendars on one disk, easily accessed from a single menu. Wouldn't it be wonderful if such organization allowed me to meet all of the obligations on the calendars? Alas, it doesn't! &

COMMENT ON "CALENDAR PROGRAM"
by Merle Block

The "CALENDAR PROGRAM" by Thomas S. Warrick in the January 1985 Washington Apple Pi Journal produces a very useful calendar. The listing has many unique and useful programming techniques, which I am very happy to learn. For example, 1) the editing subprogram in lines 32-34; 2) the use of the "user defined function", FN M(A), in line 20 to calculate the number of the day of the week; 3) the technique for putting a space between each letter in the month name in line 1420; and 4) the "Input Anything" routine in line 42 works great (but I don't understand it).

Of course, there should be a : after 100 (100:REM) in line 2000; and I got a "SYNTAX ERROR" on line 10070 until I put a semicolon and a variable name for the INPUT (;Q) at the end of that line. I think that my space count for the variable S$ in line 10 must be off as line 3030 would not correctly run on my Apple][+ until I changed it to read:

```
3030 FOR D = 1 TO MD(M): IF MID$ (E$(D),4,54) <> MID$
     (S$,4,54) THEN PRINT E$(D)
```

I added the word NUMBER after MONTH in line 150, so that I would remember that it is a number, not a name. For the Epson MX-80 printer I changed line 1400 to read:

```
1400 PRINT D$"PR#1": PRINT CHR$(9);"85N"; CHRS$(27);
     CHR$(15);CHR$(27)"0": REM EPSON MX-80 SETUP
```

where CHR$(9) = <Ctrl-I>
      CHR$(27) CHR$(15) turns on the Epson compressed mode (132 characters per 8" line).
      CHR$(27)"0" (zero) turns on the Epson 8 lines per inch. If you want the standard 6, leave that out.

And I changed line 1410 for the Epson. Thank you, Tom, for a real nice program!! &

PRINTER LISTER
by Steven Pearce

One of the disadvantages of the Imagewriter printer is that it has no option to force page breaks across the perforations of continuous form paper. Some of the older Epson printers would do this. I suppose Apple Computer thought that existing software would do this. This is true of most word processors, but not of program listings. I have often wished I could list out an Applesoft program with page breaks, but doing a "PR#1" and then typing "LIST" would merely print a continuous listing on the Imagewriter.

There are two parts to the problem. One is the fact that Applesoft stores a program in memory as tokens, rather than as a long string of ASCII characters. This allows a program to be stored in much less space. The LIST command reverses the process by being able to distinguish between a hexadecimal byte representing a token and another representing a true ASCII label or string. In 1983, Sandy Mossberg disassembled the LIST command in Nibble magazine (Volume 4, Number 1) and explained how the de-tokenizing routine works. I will not duplicate his explanation here.

The second problem occurs because screen cursor controls are used extensively in the LIST command, but will not work with a printer. For example, the location $24 represents the horizontal cursor control byte for an Apple][in 40-column mode. If you want to indent something five spaces, you can either type five spaces, or load the value 5 into location $24 and the next character will be indented. A printer knows nothing about location $24 and will print each character next to the preceding one regardless of the value in $24. Some printers or printer cards are "smart" enough to count characters and issue a carriage return/linefeed after 80 characters; the Imagewriter/Super Serial card combo is not. For these reasons, a printer listing program must have two counters; one which is incremented after each character is printed and which issues a CR/LF after 72 characters, and one which counts the number of lines (i.e. the number of CR/LF sequencesS) and issues a form feed when the 56 lines have been printed.

The following program, PRINTER LISTER, will list an Applesoft program to a printer. It issues a CR/LF after 72 characters have been printed and a form feed after 56 lines have been printed (these values can be easily changed). All identation is done with spaces rather than printer control codes, so the program is not limited to any one printer. Please note that line numbers 76 and 77 turn on an 80-column card in slot #3 before jumping back to DOS in line 78. With no 80-column card, the program should end with a jump back to slot #0; again, this is easily modified.

```
:ASM
     1   ................................................
     2   .                                              .
     3   .              PRINTER LISTER                  .
     4   .                                              .
     5   .       BASED ON "DISASSEMBLY LINES" BY        .
     6   .              SANDY MOSSBERG                  .
     7   .       NIBBLE MAGAZINE VOL.4  NO.1  1983      .
     8   .                                              .
     9   .           WRITTEN BY STEVE PEARCE            .
    10   .               DECEMBER 1984                  .
    11   .            BIG MAC.LC ASSEMBLER              .
    12   .                                              .
    13   ................................................
    14   .
    15  CH       EQU  $FF      ;HORIZ CURSOR, 40 COLUMNS
    16  LINNUM   EQU  $50      ;LINE NUMBER
    17  FORPNT   EQU  $85      ;STORAGE FOR LINE INDEX (Y)
    18  LOWTR    EQU  $9B      ;POINTER TO LINE LOCATION
    19  DSCTMP   EQU  $9D      ;POINTER TO KEYWORD TABLE
    20  TKNTBL   EQU  $D0D0    ;START OF KEYWORD TABLE
    21  FNDLIN   EQU  $061A    ;LINNUM LOCATION INTO LOWTR
    22  ISCNTC   EQU  $D858    ;CHECK FOR CTRL-C
```

```
                      23  CRDO    EQU  $DAF8    ;CARRIAGE RETURN
                      24  OUTDO   EQU  $DB5C    ;OUTPUT CHAR VIA APPLESOFT
                      25  LINPRT  EQU  $ED24    ;PRINT DECIMAL OF A,X
                      26  OUTPORT EQU  $FE95    ;DO A "PR# A-REG".
                      27  COUNTER EQU  $FE      ;COUNTER FOR LINE NUMBER.
                      28  *
                      29          ORG  $2E0
                      30  *
02E0: A9 01           31          LDA  #1       ;DO A PR#1.
02E2: 20 95 FE        32          JSR  OUTPORT
02E5: A9 00           33          LDA  #0       ;SET LOWTR TO POINT AT LINE #0
02E7: 85 50           34          STA  LINNUM   ;OR (IF 1ST LINE ISN'T 0) TO
02E9: 85 51           35          STA  LINNUM+1 ;FIRST LINE OF PROGRAM.
02EB: 85 FE           36          STA  COUNTER  ;ZERO OUT LINE COUNTER.
02ED: 20 1A D6        37          JSR  FNDLIN
02F0: A9 FF           38          LDA  #$FF     ;PUT A $FFFF INTO LINNUM SO
02F2: 85 50           39          STA  LINNUM   ;THAT LAST LINE LISTED=65535,
02F4: 85 51           40          STA  LINNUM+1 ;IE, ENTIRE PROGRAM IS LISTED.
                      41  * CHECK FOR END OF PROGRAM
02F6: A0 01           42  NXLN    LDY  #1       ;Y=LINE INDEX
02F8: B1 9B           43          LDA  (LOWTR),Y ;TEST LINK BYTE HI
02FA: F0 32           44          BEQ  END      ;EOP, SO END.
                      45  * PRINT LINE NUMBER
02FC: 20 83 03        46          JSR  CR       ;DON'T DO MARGIN FOR LINE NUMBER.
02FF: C8              47          INY
0300: B1 9B           48          LDA  (LOWTR),Y
0302: AA              49          TAX           ;LINE# LO
0303: C8              50          INY
0304: B1 9B           51          LDA  (LOWTR),Y ;LINE# HI
0306: C5 51           52          CMP  LINNUM+1  ;IS CURRENT LINE# HIGHER
0308: D0 04           53          BNE  ENDRNG   ; THAN END RANGE?
030A: E4 50           54          CPX  LINNUM
030C: F0 02           55          BEQ  PRNMB    ;NO, KEEP LISTING
030E: B0 1E           56  ENDRNG  BCS  END      ;YES, SO END PROGRAM
0310: 84 85           57  PRNMB   STY  FORPNT   ;SAVE LINE INDEX
0312: 20 24 ED        58          JSR  LINPRT   ;PRINT DECIMAL LINE #
                      59  * FORMAT OUTPUT AND PRINT CHARACTER
0315: A9 20           60          LDA  #$20     ;SPACE AFTER LINE #
0317: A4 85           61  LSTLN   LDY  FORPNT   ;RESTORE LINE INDEX
0319: 20 AF 03        62  PRCHR   JSR  CURSOR   ;PRINT NONTOKEN CHAR
                      63  * GET CHARACTER AND CHECK END OF LINE.
031C: C8              64          INY
031D: B1 9B           65          LDA  (LOWTR),Y ;GET NEXT CHAR
031F: D0 20           66          BNE  PROCHR   ;NOT EOL, SO PROCESS CHAR.
0321: A8              67          TAY
0322: B1 9B           68          LDA  (LOWTR),Y
0324: AA              69          TAX           ;LINK BYTE LO
0325: C8              70          INY
0326: B1 9B           71          LDA  (LOWTR),Y ;LINK BYTE HI
0328: 86 9B           72          STX  LOWTR    ;POINT TO NEXT LINE
032A: 85 9C           73          STA  LOWTR+1
032C: D0 C8           74          BNE  NXLN     ;ALWAYS
                      75  * END LISTING
032E: 20 83 03        76  END     JSR  CR       ;CARRIAGE RETURN
0331: A9 03           77          LDA  #3       ;DO A PR#3
0333: 20 95 FE        78          JSR  OUTPORT
0336: 4C 00 03        79          JMP  $300     ;DOS WARMSTART
                      80  * GET CHARACTER IN KEYWORD TABLE
0339: C8              81  KEYCHR  INY           ;BUMP POINTER
033A: D0 02           82          BNE  ONE      ;(DSCTMP),Y=$C000 ON 1ST PASS
033C: E6 9E           83          INC  DSCTMP+1
033E: B1 9D           84  ONE     LDA  (DSCTMP),Y ;GET KEYWORD CHAR
0340: 60              85          RTS
                      86  * IF NON-TOKEN, PRINT IT
0341: 10 06           87  PROCHR  BPL  PRCHR    ;NON-TOKEN
                      88  * IT'S A TOKEN, SO SEARCH TABLE FOR KEYWORD
0343: 38              89          SEC           ;TOKEN-$7F=INDEX TO LOCATION
0344: E9 7F           90          SBC  #$7F     ; OF KEYWORD IN TABLE.
0346: AA              91          TAX           ;X INDEXES KEYWORD LOCATION
0347: 84 85           92          STY  FORPNT   ;SAVE LINE INDEX
0349: A0 00           93          LDY  #TKNTBL  ;SET KEYWORD TABLE
034B: 84 9D           94          STY  DSCTMP   ; POINTER AT $CFD0.
034D: A0 CF           95          LDY  #$CF
034F: 84 9E           96          STY  DSCTMP+1
0351: A0 FF           97          LDY  #$FF     ;(DSCTMP),Y = $D0CF
0353: CA              98  NXKEY   DEX           ;DEC INDEX TO SEARCHED KEYWORD
0354: F0 07           99          BEQ  PRKEY    ;WHEN X=0, KEYWORD IS LOCATED.
0356: 20 39 03       100  TWO     JSR  KEYCHR   ;SKIP OVER KEYWORD:
0359: 10 FB          101          BPL  TWO      ; NONFINAL CHAR (POS ASCII).
035B: 30 F6          102          BMI  NXKEY    ; FINAL CHAR (NEG ASCII).
                     103  * FOUND KEYWORD. PRINT IT.
035D: A5 FF          104  PRKEY   LDA  CH       ;CHECK CURSOR HORIZ POSITION.
035F: 18             105          CLC           ;CLEAR CARRY TO ADD.
0360: 69 06          106          ADC  #6       ;LARGEST KEYWORD IS 6
0362: CD C2 03       107          CMP  R EDGE    ;CHARACTERS LONG.
0365: 90 06          108          BLT  PRINT    ;AT RIGHT EDGE OF PAPER?
0367: 20 83 03       109          JSR  CR       ;YES - SO DO CARRIAGE RETURN
036A: 20 94 03       110          JSR  INDENT   ;AND LEFT MARGIN.
036D: A9 20          111  PRINT   LDA  #$20     ;NO - SO PRINT ENTIRE KEYWORD.
036F: 20 AF 03       112          JSR  CURSOR   ;PRINT SPACE BEFORE KEYWORD.
0372: 20 39 03       113  THREE   JSR  KEYCHR   ;GET KEYWORD CHAR
0375: 30 05          114          BMI  FIVE     ;FINAL CHAR
0377: 20 AF 03       115          JSR  CURSOR   ;PRINT NON-FINAL CHAR
037A: D0 F6          116          BNE  THREE    ;ALWAYS
037C: 20 AF 03       117  FIVE    JSR  CURSOR   ;PRINT FINAL CHAR.
037F: A9 20          118          LDA  #$20     ;PRINT SPACE AFTER KEYWORD.
0381: D0 94          119          BNE  LSTLN    ;ALWAYS
0383: A9 00          120  CR      LDA  #0       ;ZERO OUT HORIZ CURSOR
0385: 85 FF          121          STA  CH
0387: 20 F8 DA       122          JSR  CRDO     ;DO CARRIAGE RETURN
038A: A6 FE          123          LDX  COUNTER  ;HAVE WE PRINTER 56 ($38) LINES
038C: E0 38          124          CPX  #$38     ;ON THIS PAGE?
038E: F0 13          125          BEQ  FMFEED   ;YES - SO DO FORMFEED.
0390: E8             126          INX           ;NO - SO INCREMENT
0391: 86 FE          127          STX  COUNTER  ;LINE NUMBER COUNTER.
0393: 60             128  RTS2    RTS           ;AND RETURN.
0394: A2 00          129  INDENT  LDX  #0       ;PRINT 5 SPACES
0396: A9 20          130          LDA  #$20     ;SO LEFT MARGIN IS EVEN
0398: 20 5C DB       131  LOOP1   JSR  OUTDO    ;WITH LAST DIGIT OF
039B: E8             132          INX
039C: E0 05          133          CPX  #5       ;LINE NUMBER.
039E: D0 F8          134          BNE  LOOP1
03A0: 86 FF          135          STX  CH       ;INCREMENT HORIZ. CURSOR BY 5.
03A2: 60             136          RTS
03A3: A9 0C          137  FMFEED  LDA  #$0C     ;SEND FORM FEED
03A5: 20 AF 03       138          JSR  CURSOR   ;TO PRINTER.
03A8: A9 00          139          LDA  #0       ;RESET LINE COUNTER
03AA: 85 FE          140          STA  COUNTER  ;TO ZERO.
03AC: 4C 93 03       141          JMP  RTS2     ;AND RETURN.
03AF: 20 5C DB       142  CURSOR  JSR  OUTDO    ;PRINT THE CHAR USING APPLESOFT.
03B2: E6 FF          143          INC  CH       ;INCREMENT HORIZ CURSOR.
03B4: A5 FF          144          LDA  CH
```

'EXEC'ing ONE'S WAY TO EASY UTILITIES

by Bob Schmidt

If any of you have by-passed those instructions or routines labeled EXEC because their purpose was vague or because their development was worse, you are missing a most useful tool for your APPLE //'s. You can 1) write busy subroutines in programs already in memory, 2) do printing routines and 3) substitute other routines which you normally do from the keyboard, including machine language entries without the need for the 'LAM' routine in an Applesoft program. Remember, an EXEC file acts exactly as if you were typing its routine on the keyboard. And above all, once debugged, you don't have to look up all those POKEs, CALLs, etc. we all forget so easily.

You ask, how can one write an EXEC file? There are several programs available to write text files, but perhaps the easiest is to use any word processor that writes text files. You enter commands exactly as you would type them at the keyboard - not as a Basic program is written with line numbers. Save your routine under a brief, but descriptive file name. When this file is EXEC'ed, it will 'type' the routine for you.

As you can see, the creation of EXEC files isn't all that difficult? Let me illustrate a few of my routines which I hope will be of some use and perhaps some of you will keep the ball rolling with other routines that are useful to all.

LISTING

```
POKE 118,0: POKE 43699,0: HOME: INPUT"ENTER PROGRAM
NAME:"; X$:     ?:?: INPUT"ENTER DATE ";C$: POKE
43699,1 ?CHR$(4) "PR#1": ?CHR$ (15) CHR$(27)"0"
CHR$(9)"132N" CHR$(9) "80P" CHR$(9)"7L" CHR$(9)"
122R";: PRINT "PROGRAM NAME:..."X$ ;:PRINT"..." ;:
PRINT C$:LIST:PRINT CHR$(13) CHR$(4)"PR#0"
```

This routine will print out a listing of that program in memory on an EPSON printer with several features. (You will have to make appropriate changes for your own printer and interface card.) The printout format includes the use of '?' for the 'PRINT' statement and various printer drivers as follows;

Condensed print <CHR$(15)>; 8 lines/inch<CHR$(27)"0">; 132 char./line<CHR$(9)"132N">; 80 lines/page<CHR$(9) "80P">; left margin of 7<CHR$(9)"7L">; line length of 122 <CHR$(9)"122R">.

A unique routine is included to 'fool' your APPLE which normally will not accept 'INPUT' statements within an EXEC routine. Notice the POKEs: "POKE 118,0 -POKE 43699,0" at the beginning; they allow EXEC to receive your 'input'. The routine is then returned to normal with the POKE 43699,1. This creates a neat hard copy of your programs with perforation skipover for study or archives.

CATLBL

```
POKE 118,0: POKE43699,0: HOME: INPUT"ENTER DRIVE TO
CATALOG-LABEL (1-2) =>": DD:POKE43699,1 ?:?:? "INSERT
DISK TO CATALOG IN DRIVE  ";: FLASH: ?DD: NORMAL ?:?
"PRESS <RESET> WHEN THE CATALOG-LABEL IS COMPLETE":
POKE 43624,DD ?CHR$(4) "PR#1": ?CHR$(15) CHR$(27)"0":
CATALOG
```

This program (like LISTING) does a compressed type, 8 lines/inch, but is useful for a envelope label for your disk (I tape a clear plastic strip on the front of each disk envelope and insert my CATLBL list whenever I update my catalog list). It also includes a capability to select either disk drive as well. This is accomplished by the POKE 43624,'disk drive #'.

For you programmers who regularly use GOSUB's, you can store their routines as EXEC files to be inserted into a program in memory at any time. Here are a few with operational comments.

Y/N?-2

```
2 ?Y/N$;"? Y/N ";GETA$:ON A$<>"Y" AND A$ <> "N" GOTO2:
   ?A$: YES=A$="Y": NO=A$="N":RETURN
```

This strange line supports those often used 'Y/N?' questions in a program and utilizes some Boolean logic (YES=A$="Y") to accommodate a more logical looking program line.

Ex.- 100 Y/N$="IS THIS CORRECT": GOSUB 2 : ON YES GOTO 200: GOTO 300.

Remember, if A$ is "A" as a result of the GET A$ routine, then the phrase (A$="Y") equates to 1 and the 'ON YES' will drive the program to line 200. If not, it will default to line 300 without another line required if you use the "IF YES" routine.

WAIT-4

```
4 VTAB23: ?"PRESS ANY KEY": WAIT -16384,128 : POKE
  -16368,0: RETURN
```

This, of course is the regular 'wait' routine. But I always forget those numbers to POKE. In addition, I soon learned that line 4 held this routine and I didn't have to look up what number I had assigned for this subroutine.

DOS CMDS 39999

```
39999 D$=CHR$(4):OF$=D$;"OPEN"+NF$: CF$=D$;
     "CLOSE"+NF$: WF$=D$;"WRITE"+NF$: RF$=D$;
     "READ"+NF$: DF$=D$;"DELETE"+NF$: AF$=D$;
     "APPEND"+NF$: RETURN
```

I use this line to simplify DOS file references. Instead of having to:

100 PRINT CHR$(4)"OPEN FILENAME", etc.

I just name my disk file name as NA$="filename" and do a "GOSUB 39999" early in my program, and then just type a:

?OF$:?DF$:?OF$:?WF$

to OPEN/DELETE/OPEN/WRITE the" filename". Also included are the READ and APPEND routines.

PROG TO EXEC L1

```
HOME: ?"THIS ROUTINE WILL OVERLAY (ADD) LINE 1":?:?
"ONTO ANY PROGRAM IN MEMORY":?:?"THIS WILL, WHEN RUN,
CONVERT A PROGRAM"  :?:?"TO AN 'EXEC' FILE" 1 HOME:
INPUT "ENTER TEXT FILE NAME TO SAVE TO ";NA$:
D$=CHR$(13)+CHR$(4): ?D$"OPEN";NA$; D$"WRITE";NA$:
POKE 33,33: LIST2-: ?D$ "CLOSE": TEXT: END
```

POKING AROUND SUPER FILECABINET
by J.T. (Tom) DeMay Jr.

While testing some recent modifications to SUPER FILE CABINET, I noticed that strange and mysterious things were happening. Sometimes the lines at the beginning of the program were changed. At first it was just the line number of the first line. Another time the text of that line was modified during program execution. Since this first line was a REM statement, the program functioned properly, but there was still cause for concern. As I continued to modify other parts of the code more destructive changes occurred. I did a quick check of the program listing and could not see anything that might cause this to happen.

I decided to ignore the problem hoping that it would go away. It didn't! The program stopped with a beep and an UNDEFINED STATEMENT ERROR IN 3460. This error is caused by a GOSUB or a GOTO command directing control to a non-existent program line. Usually an easy thing to remedy. The standard procedure is to first LIST the offending line to see what was wrong, then make the correction. When I tried to LIST line 3460, all I got back was a flashing curser. An attempt to LIST the entire program resulted in a series of unintelligible program lines.

It seemed that the program was erased by some mysterious occurrence. The first clue was that the crash only happened while printing a report. I closely scrutinized the code responsible for this print function and, as before, there was nothing unusual. The second clue was the UNDEFINED STATEMENT ERROR which reported that line 3460 was the last one executed properly. This signified that one of the lines executed prior to 3460 caused the crash. The search was narrowing. Inspecting the code around line 3460 revealed that it was inside a FOR...NEXT loop. I remembered the long bout I had had with a FOR...NEXT loop a while back and hoped that I could now better cope with it. (See the WAP Journal August 82 for more about this.) I inserted several PRINT commands to display the values of the variables in the loop as it was executing. This along with the TRACE command helped me isolate the villian. Look at line 3450.

```
3450 POKE 36,K(3*I-1):PRINT N$(J$,K(3*I-2));
```

Do you see anything wrong here? Me neither! I further isolated the problem to the first part of the line by separating it into two lines:

```
3450 POKE 36,K(3*I-1)
3455 PRINT N$(J$,K(3*I-2));
```

Re-RUNning the program with these changes indicated the problem was with line 3450. For those of you who don't already know, POKE 36,Column is used to tell Applesoft which is the next column to print to. It works like HTAB Column, but HTAB was designed to work only with the 40 column screen. Although values for Column in the range 0 to 255 will be accepted, only those between 1 and 40 work properly. When it is desired to print past 40 columns (on a serial printer) the POKE 36 works just fine. At least that is what I used to think. I have been using this method for more than three years in numerous programs without even a hint of a problem. I am still not sure why this works in some cases and not others.

I started asking other WAP members through the ABBS if they had ever experienced any difficulties using POKE 36,Column. There were several helpful replies. One referred me to an article in Volume 1, #4 of NIBBLE. It said, "If you try to use the POKE 36 command with Serial Printers (to print beyond 40 columns) it does all sorts of strange and awful things to your program." It then suggests an alternative solution: using the SPC() command. But my curiosity was aroused, and I decided to continue on my quest for a solution to the POKE 36 problem.

Another reply from the ABBS was a confirmation that in some cases a POKE 36,Value would indeed cause changes in the beginning statements of a program. The suggestion was made to add several REM statements to the beginning of the program. In fact, there were already four such lines giving the program name, credit to the author Ed Shea, and the copyright date. (Ed, If you are out there, I sure would like to talk to you. Call me at 779-4632.)

To see why these REMs didn't help in this case it is necessary to take a deeper look into how Applesoft stores a program. The following information was obtained using procedures from the "Applesoft from Bottom to Top" article in <u>All About Applesoft</u> published by CALL-A.P.P.L.E.

An Applesoft program is normally LOADed at page $8 in memory (that's decimal 2048 for those of you who don't have 16 fingers). To see what it looks like, first LOAD a program, then LIST the first few lines to the printer. Here's what the first two lines of SUPER FILE CABINET from the WAP New Member Disk look like when LISTed:

```
990  REM  ***  SUPER FILE CABINET  ***
991  REM  ***     BY ED SHEA       ***
```

If we enter the monitor (by typing CALL -151) we can examine the program from a different perspective. Since the program starts at $0800 we can display the first two lines by entering "800.84F". The results are reproduced below:

As output by the monitor:	What it means:
0800- 00 24 08 DE 03 B2 20 2A	0 P P # # @ *
0808- 2A 2A 20 20 53 55 50 45	* * S U P E
0810- 52 20 46 49 4C 45 20 43	R F I L E C
0818- 41 42 49 4E 45 54 20 20	A B I N E T
0820- 2A 2A 2A 00 47 08 DF 03	* * * ? P P P P
0828- B2 20 2A 2A 2A 20 20 20	@ * * *
0830- 20 20 42 59 20 45 44 20	B Y E D
0838- 53 48 45 41 20 20 20 20	S H E A
0840- 20 20 20 2A 2A 2A 00 6A	* * * P P
0848- 08 E0 03 B2 20 2A 2A 2A	P P P @ * * *

Key to symbols used in the columns at the right:

    0 - The end of line TOKEN actually a 00.
    P P - The pointer to the address of the next
          program 1. (LOW BYTE, HIGH BYTE)
    # # - The line number as seen by Applesoft
          (LOW BYTE, HIGH BYTE)
    @ - The REMark TOKEN actually a B2
    _ - Used to show a SPACE character

The nine columns at the left appear exactly as output by the monitor. The four digit number is a hexadecimal number which is the address in memory. The two digit numbers following the "- " are the program as stored by Applesoft. The columns at the right are an

attempt to clarify the columns at the left.

Applesoft does not store program lines exactly as they are entered or LISTed. They are stored instead as TOKENS; hexadecimal numbers that represent individual KEYWORDS. Besides these TOKENS, other information is stored as well: An end of line TOKEN (00) [represented at the explanation side of the table by a "0"], a two byte pointer to the location in memory of the next program line [represented at the right by "P P"], and a two byte number which is the actual line number of this line (in HEX of course) [represented at the right by "# #"].

Let's look at the first line as output by the monitor. 0800- is the starting address of the program. Moving to the right, the first thing we see is 00, the end of line TOKEN. In this case it is used to mark the beginning of the program. Next comes 24 08. If we switch these values so that they are 0824, it is easier to see that they are pointers to the next line of the program. If you look at the line starting with 0820 and count over five two digit columns, the value there is 47 and it represents the low byte pointer to the next program line. This is what Applesoft uses to find a line when directed to LIST, GOSUB, or GOTO a particular line #. Resuming our view at the fourth and fifth two digit columns, we see DE 03 which translates to 990 in decimal. This is the first line number in SUPER FILE CABINET. These first five bytes are required for every line of BASIC code. The remainder of the bytes starting from the B2 and continuing to the 00 at 0823 constitute the actual text of line 990. The B2 is a TOKEN for REMark, the 20 is a SPACE, then comes:

```
2A 2A 2A 20 20 53 55 50 45 52 20 46 49 4C 45 20 43
 *  *  *  _  _  S  U  P  E  R  _  F  I  L  E  _  C
```

This format is repeated for each line.

If Applesoft comes to 00 00 00 it assumes the end of the program because the first pair of 00s is the end of line TOKEN, the next two pairs of 00s would be the pointers to the address of the next line in memory. If they point to 00 00 then this is the last line of the program.

With this information in mind, I entered the monitor and printed a paper copy of these values. I ran SUPER FILE CABINET again and then compared the original values with those resulting from the program crash and discovered that two memory locations were being changed:

ADDRESS	BEFORE	AFTER
0802	08	B2 (sometimes B3 or B6)
080C	53	B2

We can see from the explanation of the original memory dump that address $0802 is the high byte pointer to the address of the next program line. When it is 08, the address of the next line is $0824 as it should be, but if it is changed to B2 then the address of the next line is $B224, an address that is used by DOS to hold the next sector to read/write. The change to location $080C is of little consequence since the change at $0802 directs Applesoft to some non-existent program line in higher memory.

Now that I knew what was causing the program to "disappear", the next step was to try to keep the program working. Since I didn't want to give up the POKE 36 the only other alternative was to LOAD the program to a higher memory location where it would be safe from the ravages of POKE 36. Applesoft programs normally start at $0801. This value is stored in a location called TXTTAB $67,68 or decimal 103,104. If these

pointers are changed then the next program will be LOADed to the location pointed to by the new value. One other location has to be changed as well. The byte directly preceding the new start of the program must be changed to 00. The following will work in immediate mode:

```
POKE 104,9
POKE (9*256),0
```

I wanted the program to determine if it was LOADed in the right place. If it was not, then it should be able to change the pointers and move itself to a safe location. Here's one way to do this:

```
100 IF PEEK(104)<>9 THEN POKE 104,9
    : POKE 2304,0: PRINT CHR$(4);
    "RUN SUPER FILE CABINET"
```

This should be the first line of the program. If the program was not LOADed at page $9 then it would change the pointers and reLOAD itself properly. It would be good programming practice to restore these values when the program is ended. If you don't, they won't be restored to their default values until the system is rebooted.

I suspect the problem is a rare one. It may have something to do with POKEing a computed value, or POKEing specific values within a FOR...NEXT loop associated with a GOSUB. Whatever the cause, I feel certain that you can use the POKE 36,COLUMN method of tabbing with confidence. If you must POKE a computed value, try to test all possible values.

Looking back, I spent many hours wrestling with the POKE 36 problem. If I had it to do over again I would probably do it just as I did before. I could have solved the problem another way, probably spending less time and effort, but my curiosity would not have been satisfied. I have learned more about how the Apple works and this will help me to get more out of it. But the most important thing is that I enjoyed the quest.

I wish to thank those of you who have offered suggestions and solutions to this problem. As always, your comments and suggestions are welcome. ✍

```
0386: CD C2 03 145          CMP  R EDGE     ;IS CURSOR AT RIGHT EDGE?
0389: D0 06    146          BNE  RTS1       ;NO - SO RETURN.
038B: 20 83 03 147          JSR  CR         ;YES - SO DO CARRIAGE RETURN
038E: 20 94 03 148          JSR  INDENT     ;AND MARGIN.
03C1: 60       149 RTS1     RTS             ;NO, SO RETURN.
03C2: 48       150 R_EDGE   HEX  48         ;RIGHT EDGE IS 72 ($48) CHARS.

--END ASSEMBLY--

ERRORS: 0

227 BYTES


SYMBOL TABLE - ALPHABETICAL ORDER:

    CH      =$FF        COUNTER =$FE        CR      =$0383      CRDO    =$DAF8
    CURSOR  =$03AF      DSCTMP  =$9D         END     =$032E      ENDRNG  =$030E
    FIVE    =$037C      FNFEED  =$03A3      FNDLIN  =$061A      FORPNT  =$85
    INDENT  =$0394   ?  ISCNTC  =$D858      KEYCHR  =$0339      LINNUM  =$50
    LINPRT  =$ED24      LOOP1   =$0398      LOWTR   =$9B         LSTLN   =$0317
    NXKEY   =$0353      NXLN    =$02F6      ONE     =$033E      OUTDO   =$DB5C
    OUTPORT =$FE95      PRCHR   =$0319      PRINT   =$036D      PRKEY   =$035D
    PRNMB   =$0310      PROCHR  =$0341      RTS1    =$03C1      RTS2    =$0393
    R_EDGE  =$03C2      THREE   =$0372      TKNTBL  =$D000      TWO     =$0356


SYMBOL TABLE - NUMERICAL ORDER:

    LINNUM  =$50        FORPNT  =$85        LOWTR   =$9B         DSCTMP  =$9D
    COUNTER =$FE        CH      =$FF        NXLN    =$02F6      ENDRNG  =$030E
    PRNMB   =$0310      LSTLN   =$0317      PRCHR   =$0319      END     =$032E
    KEYCHR  =$0339      ONE     =$033E      PROCHR  =$0341      NXKEY   =$0353
    TWO     =$0356      PRKEY   =$035D      PRINT   =$036D      THREE   =$0372
    FIVE    =$037C      CR      =$0383      RTS2    =$0393      INDENT  =$0394
    LOOP1   =$0398      FNFEED  =$03A3      CURSOR  =$03AF      RTS1    =$03C1
    R_EDGE  =$03C2      TKNTBL  =$D000      FNDLIN  =$061A   ?  ISCNTC  =$D858
    CRDO    =$DAF8      OUTDO   =$DB5C      LINPRT  =$ED24      OUTPORT =$FE95
```
✍

ADDITION OF FLOATING POINT
TO APPLE II FORTH

by Charlie Brown

Numerical calculations in the Fig-FORTH model of the
FORTH language are based on integer arithmetic. FORTH
aficionados think that this is the only "proper" way
to do arithmetic and they believe that you can make
nearly any computation that you wish. I don't beleve
it! In my opinion this reliance on integer arithmetic
is a major deficiency of FORTH. Floating point arith-
metic, though not absolutely necessary, does make many
arithmetic computations much easier. Fortunately this
omission of floating point arithmetic in the Fig-FORTH
model is easily rectified. Commercial versions of
FORTH use either software methods for floating point
arithmetic or furnish a chip which does the necessary
computations. However, commercial solutions cost
money so this article presents my no-cost solution to
this FORTH floating point problem.

I recently found a software solution presented by A.J.
Monroe in an article published in Dr. Dobb's Journal
(Number 71, September 1982). Since Monroe's solution
is written almost entirely in FORTH itself, it has the
advantage of being generally applicable to a variety
of machines. Two disadvantages, however, are that it
takes a fair amount of memory space (3200+ bytes) and
it is slow, in some instances, very slow. I admit
that this lack of speed is somewhat strange to say
about something written in FORTH, but it is true, as
will be seen later. I discovered this speed problem
since Monroe's article did not contain words for
logarithmic or exponential functions which I needed,
so I added them in the manner he suggested - by use of
polynomial approximations. My own FORTH words worked
in that they gave the correct values, but they took
way too much time. I am not enthusiastic about wait-
ing 2-3 seconds for my Apple to compute the logarithm
of 15. Therefore I continued my search for a cheap
floating point solution for the FORTH language.

A few weeks ago I was nosing around at the WAP office
(a wonderful place that I heartily recommend you
visit) when I came upon a veritable gold mine of
information about the Apple][series of computers.
It is called Apple Tech Notes and, among other things,
it contains information concerning the floating point
routines which are built into the Apple and are used
by Applesoft Basic. The existence of such routines
was also pointed out in an article by R.M. Mottola
which appeared in the August, 1980 issue of Micro,
pages 53-55.

Applesoft uses a 5-byte representation for floating
point numbers (Monroe's solution uses 6 bytes) and
most of the necessary computation routines already
exist in the Apple and do not have to be written, thus
saving additional space. (These routines calculate
such things as trigonometric, logarithmic and exponen-
tial functions, and they do the calculations very
fast.) Therefore this particular floating point solu-
tion solves the two problems with Monroe's approach -
it takes few bytes of memory since most is already
built in and the calculations are done very quickly.
The primary disadvantage is that this solution only
works for Apples (][,][+ and //e) - but we members of
WAP really don't care about other machines, do we. A
comparison of the calculation speeds of the solution
proposed by Monroe and the Applesoft solution is shown
in the following table which presents the number of
seconds to do 100 repetitions of particular floating
point operations.

FLOATING POINT COMPUTATION SPEEDS
(seconds / 100 calculations)

Operation	Applesoft Solution	Monroe's Solution	Ratio
+	0.5	2.1	4
-	0.5	1.6	3
*	0.6	3.0	5
/	0.6	17.4	29
SINE	1.3	106	81
COSINE	1.3	126	97
SQRT	1.5	99	66

As this table shows, the Applesoft solution is much
faster than the solution proposed by Monroe (I did not
include my own logarithm and exponential words since
they were not defined by Monroe, but the computation
speed difference was even more pronounced than the
above comparisons).

The words for the Applesoft solution are presented in
the following 12 Forth screens (note that the words
defined in screens 1 and 7 are similar to those in
Monroe's article).

```
(    <-S        left shift               SCREEN 1 )
HEX
ASSEMBLER
CODE <-S
  BOT LDA, 0= IF, CLC, ELSE, SEC, THEN,
  BOT 4 + ROL, BOT 5 + ROL,
  BOT 2 + ROL, BOT 3 + ROL,
  CS IF, 1 # LDA, ELSE, 0 # LDA,
  THEN, BOT STA, NEXT JMP,
END-CODE                              -->
```

```
( INCR.ADDR and F!                      SCREEN 2 )
\ subroutine to increment address on TOS
CODE INCR.ADDR 0 ,X INC, 0= IF, 1 ,X INC, THEN, RTS,
    END-CODE
\ store floating point numbers
CODE F!   ( # addr --- )
      2 ,X LDA, 0 X) STA, ' INCR.ADDR JSR,
      5 ,X LDA, 0 X) STA, ' INCR.ADDR JSR,
      4 ,X LDA, 0 X) STA, ' INCR.ADDR JSR,
      7 ,X LDA, 0 X) STA, ' INCR.ADDR JSR,
      6 ,X LDA, 0 X) STA, INX, INX, INX, INX,
      0957 JMP,    END-CODE
-->
```

```
( F@                                     SCREEN 3 )
CODE F@
    0 X) LDA, PHA, ' INCR.ADDR JSR,
    0 # LDA, PHA,
    0 X) LDA, PHA, ' INCR.ADDR JSR,
    0 X) LDA, PHA, ' INCR.ADDR JSR,
    0 X) LDA, PHA, ' INCR.ADDR JSR,
    0 X) LDA, DEX, DEX, DEX, DEX,
      4 ,X STA,
    PLA, 5 ,X STA,
    PLA, 2 ,X STA,
    PLA, 3 ,X STA,
    PLA, 1 ,X STA,
    PLA, 0 ,X STA,
    NEXT JMP,
END-CODE
-->                                       contd.
```

```
( move FP registers FAC and ARG              SCREEN 4 )
\ to and from storage locations down the stack
CODE FAC-> 6 # LDY, BEGIN, 9C ,Y LDA, 5 ,Y STA,
          DEY, 0= UNTIL, NEXT JMP, END-CODE
CODE ->FAC 6 # LDY, BEGIN, 5 ,Y LDA, 9C ,Y STA,
          DEY, 0= UNTIL, NEXT JMP, END-CODE
CODE ARG-> 6 # LDY, BEGIN, A4 ,Y LDA, F ,Y STA,
          DEY, 0= UNTIL, NEXT JMP, END-CODE
CODE ->ARG 6 # LDY, BEGIN, F ,Y LDA, A4 ,Y STA,
          DEY, 0= UNTIL, NEXT JMP, END-CODE
-->


( move between TOS and FAC or ARG      SCREEN 5 )
CODE SET.TOS 3 ,X LDA, 1 ,X STA,
             5 ,X LDA, 3 ,X STA,
             0 # LDY, TXA, RTS, END-CODE
CODE CLR-STK INX, INX, INX, INX, INX, INX,
             NEXT JMP,    END-CODE
CODE TOS->FAC  ' SET.TOS JSR, EAF9 JSR,
               ' CLR-STK JMP, END-CODE
CODE TOS->ARG  ' SET.TOS JSR, E9E3 JSR,
               ' CLR-STK JMP, END-CODE
CODE FAC->TOS  DEX, DEX, DEX, DEX, DEX, DEX,
               EB23 JSR, 3 ,X LDA, 5 ,X STA,
               1 ,X LDA, 3 ,X STA, 0 # LDA,
               1 ,X STA, NEXT JMP, END-CODE
-->


( setup for two argument functions     SCREEN 6 )
CODE FMULT XSAVE STX, 9D # LDA, E982 JSR,
           XSAVE LDX, NEXT JMP, END-CODE
CODE FDIVT XSAVE STX, 9D # LDA, EA69 JSR,
           XSAVE LDX, NEXT JMP, END-CODE
CODE FADDT XSAVE STX, 9D # LDA, E7C1 JSR,
           XSAVE LDX, NEXT JMP, END-CODE
CODE FSUBT XSAVE STX, 9D # LDA, E7AA JSR,
           XSAVE LDX, NEXT JMP, END-CODE
CODE FPWRT XSAVE STX, 9D # LDA, EE97 JSR,
           XSAVE LDX, NEXT JMP, END-CODE
: SET.UP   FAC-> TOS->FAC ARG-> TOS->ARG ;
: SET.DOWN FAC->TOS ->ARG ->FAC ;
-->


( convert from double-word to FP         SCREEN 7 )
0 VARIABLE EXP 0 VARIABLE FLAG 0 VARIABLE SGN
\ normalize double word to floating point format
: DNORM EXP ! 0 FLAG !
   OVER OVER OR 0=
   IF   0 1 FLAG !
   ELSE DUP 0< IF 1 SGN ! DMINUS ELSE 0 SGN ! ENDIF
        BEGIN -1 EXP +! 0 <-S DROP DUP 0<
        IF 1 FLAG ! 1 EXP +! 7FFF AND ENDIF
        FLAG @ UNTIL EXP @ 80 + ENDIF ;
\ use decimal point to fix exponent
: D>F 1F DNORM DPL @ DUP
      IF >R TOS->FAC R> 0 DO EA55 CALL LOOP FAC->TOS
      ELSE DROP ENDIF
      SGN @ IF >R 8000 OR R> ENDIF ;
' D>F 2- 16FD !  \ fix INTERPRET to automatically
                 \ convert double word to FP
-->


( stack manipulations                    SCREEN 8 )
\ defining words for FP variables and constants
: FVARIABLE <BUILDS HERE 5 ALLOT F! DOES> ;
: FCONSTANT <BUILDS HERE 5 ALLOT F! DOES> F@ ;
\ stack manipulations
0. FCONSTANT F0        F0 FVARIABLE TEMPF1
F0 FVARIABLE TEMPF2 F0 FVARIABLE TEMPF3
: FDROP DROP 2DROP ;
: FDUP TEMPF1 F! TEMPF1 F@ TEMPF1 F@ ;
: F2DUP TEMPF1 F! TEMPF2 F!
        TEMPF2 F@ TEMPF1 F@ TEMPF2 F@ TEMPF1 F@ ;
: FSWAP TEMPF1 F! TEMPF2 F! TEMPF1 F@ TEMPF2 F@ ;
: FROT TEMPF1 F! TEMPF2 F! TEMPF3 F!
       TEMPF2 F@ TEMPF1 F@ TEMPF3 F@ ;
-->
```

```
( two argument functions              SCREEN 9 )
: F+    SET.UP FADDT SET.DOWN ;
: F-    SET.UP FSUBT SET.DOWN ;
: F*    SET.UP FMULT SET.DOWN ;
: F/    SET.UP FDIVT SET.DOWN ;
: FPWR  SET.UP FPWRT SET.DOWN ;
\ floating point comparisons
: F<0 DROP 0< SWAP DROP ;
: F>0 DROP 0> SWAP DROP ;
: F=0 ROT DROP SWAP DROP 0= ;
: F< F- F<0 ;
: F> F- F>0 ;
: F= F- F=0 ;
-->


( single argument functions             SCREEN 10)
: FSQRT FAC-> TOS->FAC EE8D CALL FAC->TOS ->FAC ;
: FLOG  FAC-> TOS->FAC E941 CALL FAC->TOS ->FAC ;
: FEXP  FAC-> TOS->FAC EF09 CALL FAC->TOS ->FAC ;
: FCOS  FAC-> TOS->FAC EFEA CALL FAC->TOS ->FAC ;
: FSIN  FAC-> TOS->FAC EFF1 CALL FAC->TOS ->FAC ;
: FTAN  FAC-> TOS->FAC F03A CALL FAC->TOS ->FAC ;
: FATN  FAC-> TOS->FAC F09E CALL FAC->TOS ->FAC ;
: FABS  FAC-> TOS->FAC EBAF CALL FAC->TOS ->FAC ;
: FINT  FAC-> TOS->FAC EC23 CALL FAC->TOS ->FAC ;
: FMINUS >R DUP 0< IF 7FFF AND ELSE 8000
         OR ENDIF R> ;
: FMOD F2DUP F/ FINT F* F- ;
-->


( floating point constants              SCREEN 11)
: F1       E913 F@ ;
: F10      EA50 F@ ;
: PI/2     F066 F@ ;
: 2*PI     F06B F@ ;
: LN(2)    E93C F@ ;
: SQRT(2)  E932 F@ ;
-->


( move to and from TIB and print TOS     SCREEN 12)
\ TIB is located at $100 and the built in
\ Applesoft routine at $ED2E also uses this area
\ therefore TIB is temporarily moved
CODE TIB-> 50 # LDY, BEGIN, FF ,Y LDA, 17F ,Y STA,
           DEY, 0= UNTIL, NEXT JMP, END-CODE
CODE ->TIB 50 # LDY, BEGIN, 17F ,Y LDA, FF ,Y STA,
           DEY, 0= UNTIL, NEXT JMP, END-CODE
CODE PRNTFAC XSAVE STX, ED2E JSR, XSAVE LDX, NEXT JMP,
END-CODE
\ print floating point # at TOS
: F. ( # --- )      TIB-> FAC-> TOS->FAC
                    PRNTFAC SPACE ->TIB ->FAC ;
```

Applesoft's floating point routines use two registers
for all its computations. These registers, denoted by
FAC and ARG, are found in memory at locations $9D-$A2
and $A5-$AA respectively. Since these registers are
located in the middle of the FORTH stack, I have
defined some words which move the bytes in these
registers into and out of these locations before and
after they are used. The words FAC-> and ->FAC move
the FAC register to and from temporary storage located
at $06-$0C, while the words ARG-> and ->ARG move
between the ARG register and temporary storage located
at $10-$15. In addition, the words TOS->FAC, TOS->ARG
and FAC->TOS move the top-of-stack (TOS) to and from
the computation registers FAC and ARG. In addition,
the Applesoft routine for outputting floating point
numbers uses the memory located at $100 which is the
terminal input buffer TIB used by the Fig-FORTH sys-
tem. Thus I had to define words to clear and replace
the TIB before printing floating point numbers, TIB->
and ->TIB which move 80 characters between $100 and
$180. These are given in screen 12.

I also made two changes to the word D>F in Monroe's
article which converts a double precision number to a
floating point number. Monroe's word uses the decimal
point to denote a double precision number, as opposed

HYBRID DISKS FOR FORTH - PART II: Superboot

by Chester H. Page

In Part I, I used a fast-load routine as a HELLO program. This system had about two seconds of unnecessary delay; after DOS is loaded from tracks 0/2, the catalog on track 17 is searched, the HELLO program on track 2 is loaded and run, and finally FORTH is loaded from track 29 ff. With SUPERBOOT, FIG-FORTH1.2 is operating in less than 5 seconds from power-on, a saving of another 2 seconds. SUPERBOOT speeds up the loading by eliminating HELLO, incorporating the fast-load routine into DOS (replacing INIT).

Modifications of DOS are usually made permanent by INITing a disk after DOS is changed in memory. In our case, however, this won't work because we shall no longer have INIT. The easiest way to handle this is to ZAP the DOS change onto a disk. To use the fast-load that replaces INIT, we change the entry in DOS that calls for running HELLO, to make it a jump to the INIT area instead. This entry, normally 4C 80 A1, is located at 9E4D, or at track 00, sector 0D, byte 4D. Changing this to 4C 8E AE redirects the jump as desired.

The AE8E address is found on the disk at track 01, sector 0D, byte 8E. With a ZAP program, we enter the fast-load program starting at AE8E.

This SUPERBOOT arrangement gets FORTH up and running in 5 seconds, and reloading (by -20850 CALL) takes only 3 seconds! Compare these times with 12.5 seconds for booting WAP VOL 703 and 9 seconds for reloading (by BRUN FIG-FORTH1.2).

With only one program to be saved to disk, NEWLOAD is shortened to

```
: NEWLOAD BASE @ HEX FIXMAP2 CR 4 EMIT
." BSAVE FIG-FORTH1.2, A$800, L$" HERE 800 - 1+
. CR CR
BASE ! CLEARDISK ;
```

FIXMAP1 is not needed. To make a SUPERBOOT disk, use the following steps:

(1) Boot DOS 3.3
(2) INIT HELLO, DELETE HELLO
(3) Use a ZAP program to change the run-hello pointer, to enter the fast-load routine, and to change INIT to FIG@, all directly on the disk
(4) Insert a FORTH disk and BRUN FORTH
(5) LOAD the SUPERBOOT INITIALIZATION screen
(6) Reinsert the new disk and enter NEWLOAD

With SUPERBOOT, we have lost the option of calling a DOS relocator program. Reloading by -20850 CALL is clumsy. We could insert a jump routine at $300, and use 768 CALL from FORTH, or 300G from the monitor, but there is a more elegant solution available. First, note that calling INIT would call the reload, but INIT requires a following filename, and using INIT in this way could easily develop a dangerous habit!

The DOS command INIT is changed to FIG@ by entering 46 49 47 C0 at A884 (in place of 49 4E 49 D4). This is on the disk at track 01, sector 07, bytes 84/87. The requirement for an accompanying filename is canceled by zapping 00 into track 01, sector 08, byte 09 (memory location A909). Note that FIG@ is now a DOS command and works from both FORTH and the monitor.

Having once entered the fast-load routine into DOS, we do not need to repeat this step in adding SUPERBOOT to other FORTH applications, such as EDITOR. Make a copy of your SUPERBOOT disk, delete its program, BRUN the replacement program; then load the SELFSAVE screen and enter FILESAVE, or load the SUPERBOOT INITIALIZATION screen and use NEWLOAD. The file can then be renamed as desired.

Using FIG@ uncovered an interesting bug. If loading by FIG@ was followed by RESET with no intervening keyboard entry, the disk apparently rebooted. It turned out that it was not a reboot, but a reload caused by repeating the FIG@ command that was still in the keyboard buffer. By killing the first keyboard character before calling FORTH cold-start, this freak repetition is avoided. This is accomplished by inserting A9 00 8D 00 02 into the fast load routine, most conveniently at the end (immediately ahead of 4C 00 08).

I also like to patch the warmstart to insure the presence of FF in $76 after a RESET; this, along with JSR 3EA, keeps DOS in operation. Space is found for this patch by sacrificing -BCD, a word probably never used. The total patch of FIG-FORTH1.2 is

```
823:  00 C3     (for an 80-COL card)
1EC6: A9 FF 85 76 20 EA 03 60     (to reconnect DOS)
1EE1: AA 1D    (to correct the linkage with -BCD
                removed)                          ⊛
```

EXECing One's Way contd. from pg 29

This routine will first describe its intent and then write line 1 onto any program to convert it into a text file. Once added and the program run, the file name desired to be used for the text file is requested and the program will be converted to a text file. Why bother doing this, you ask. Well, its great for using all or any part of a program as an addendum to another program (haven't you seen some neat routines in programs you would like to save for later use?).

I hope that this will be of some help to someone. It took me a long time before I started to EXEC and now I have so many such routines I can't remember them all. Maybe I'll have to create an EXEC menu to find them all. Guess what! Since I started this article, I developed such a menu file format so that I can now EXEC a basic menu on each disk and modify it with appropriate file names from the disk files.   ⊛

Floating Point in Forth contd. from pg 35

to a single precision one, and then disregards its actual location. I have modified D>F so that it uses the decimal point location to adjust the exponent. To input the number 0.01, for example, Monroe's approach requires you to input 1., 100. and then divide the two. The word in screen 7 adjusts the scaling by using the decimal point's location, thus allowing you to simply input 0.01. In addition, following a suggestion made by Chester Page and Bruce Field at a recent meeting of the Forth SIG (you all should come), I modified the word INTERPRET so that it automatically converts any number with a decimal point to a floating point number (this means that you may use single precision integers and floating point numbers, but not double precision integers). Since INTERPRET does this conversion you need not use the word D>F yourself. ⊛

DIF™ FILES: The Data Interchange Format

by Rick Chapman

What is a DIF™ File? The DIF is a special format for writing data out to a normal text file so that more than one program can access that data. It was invented by the originators of VisiCalc back in 1980 to facilitate the transmission of data from VisiCalc files into other programs. DIF files are standard DOS text files written in this special format.

Why use DIF Files? VisiCalc, The Spreadsheet and other generic spreadsheet programs are powerful tools for entering, manipulating and storing tables of numeric data. All of the major spreadsheet programs can use DIF files to store information. Thus the DIF file provides a method of transferring information to and from spreadsheet programs. Even more than that, it is a common file structure that is shared by hundreds of programs that are generally available. Example uses: plotting spreadsheet data, transferring numeric data generated by a Basic program to a spreadsheet, writing special routines to sort or perform other functions to spreadsheet data.

DIF Format: There are 2 sections to a DIF file: 1) The Header and 2) The Data. The Header consists of a series of Header Records. Each Header Record consists of 3 lines, each ending with a carriage return. The first line must contain a string called the Topic that identifies the header item. The second line contains two numbers, the Vector number and the Value. The Vector number is the number of the vector that the header item refers to (set to 0 if not applicable). The Value is a numeric value used by those header items that specify a value. The third line contains a string called the String value used by those header items that need a string instead of a numeric value (set to "" if not applicable).

The 4 Header records that are required in all DIF Files are:

1) TABLE - The first entry in the file. It looks like:
```
TABLE
0,1
"title"
```

2) VECTORS - Tells how many data vectors are present:
```
VECTORS
0,count
""
```

3) TUPLES - Tells how many tuples (data groups) are present:
```
TUPLES
0,count
""
```

4) DATA - Says that data is to follow:
```
DATA
0,0
""
```

The Data Section consists of Tuples, which are groups of data in vector order. The Tuples are made up of groups of 2 numeric values and one string value called Data Values. All Data Values are in the following format:
```
Type Indicator, Number Value
String Value
```

The following Type Indicators are important:

-1 : indicates special data value, either a beginning of tuple indicator (BOT) or an end of data indicator (EOD)

0 : The data is numeric & found in the Number Value.

1 The data is string (Label) and found in the String Value.

An example DIF file is shown below.

DIF™ is a trademark of Software Arts, Inc.

Figure 1. Format of DIF™ File

STOCK	HIGH	LOW	CLOSE
APL	21	19.5	19.72
BCS	13.75	11.75	12

Figure 2. Sample Spreadsheet corresponding to the DIF™ File in Figure 1, assuming that Column ordering was used to save the data. (Columns become vectors and Rows become Tuples.)

CALCULINK SUPPORTS YMCA AFRICA RELIEF EFFORT

by Bob Shriner

Washington Apple Pi has joined the YMCA of Metropolitan Washington to help raise money for relief work in Ethiopia and other parts of Africa hard-hit by drought, disease, and starvation. Apple Pi's Disketeria will distribute CALCULINK - a calc utility program donated to the YMCA by Shriner-Midland Company - and encourage users of the program to contribute to the YMCA Africa Relief Fund. The program can be copied and passed along to other users without charge; but contributions by all users will greatly aid the Africa relief effort. The YMCA will send copies of the 35-page CALCULINK User's Guide, along with information about their relief efforts, to users who mail in a tax-deductible contribution of $25 or more to support the relief effort.

The Washington-area YMCA recently earmarked $10,000 of its own funds for relief to Africa. To assure that the funds are properly used when they reach their destination, all funds are channeled through YMCA's located in the various African countries. The YMCA hopes to set an example that will encourage other organizations throughout the U.S. to join in this urgent humanitarian effort. Washington Apple Pi has accepted the challenge and is now passing that challenge along to its members and other Apple users.

* * *

Contributions, which are tax-deductible, should be sent to YMCA AFRICA RELIEF FUND, 1711 Rhode Island Avenue NW, Washington, DC 20036.

* * *

The following is a summary of CALCULINK's features, taken from the CALCULINK Users Guide.

1.0 CALCULINK OVERVIEW

CALCULINK is an easy-to-use program for converting data files into VisiCalc format and for consolidating data from two or more VisiCalc spreadsheets. It contains powerful features to aid the advanced user without confusing the novice.

With CALCULINK, data files such as those captured from a large data base or time-sharing system, can be converted into Data Interchange Format (DIF), which can be read by VisiCalc, Multiplan, Spreadsheet 2.0, Business Graphics, VisiTrend/Plot, DB Master, Micro TSP, and many other Apple][programs. Without a program such as CALCULINK, data saved from a host computer or any non-DIF database must be laboriously re-entered by hand into most Apple programs before it can be used.

CALCULINK accepts data that has been saved as Apple text files in the format printed out from the host system - in columns of numbers or other data. It is able to handle multiple columns, or single columns in which several sets of data are listed one after another. Once data has been read from the original file, it is reorganized and saved as a new DIF file. The DIF file can then be read directly into any Apple program that requires or uses DIF.

CALCULINK can add together information from two or more VISICALC files with the same structure, including data computed from formulas in the original files. This feature is especially valuable in combining results from several different locations, branches, divisions, etc. The consolidated information can then be read back into VisiCalc for further analysis and manipulation.

CALCULINK can handle files containing up to about 5000 data points (more if you have an APPLE //e or //c which have more than 48K). It will support either one or two disk drives; and it provides simple "toggle switches" with which the user can change disk and printer slot addresses to fit his own set-up.

Because the format used by different host computer systems varies, CALCULINK allows the user to specify the format in which the original file is to be read. In case the user did not make a record of the format of the data when it was originally captured, CALCULINK provides a preview mode for examining the file contents before a false start at conversion is attempted. (Incidentally, this preview mode is handy for inspecting the contents of any text file.) Later, during the conversion process, CALCULINK provides a verification mode for assuring that data have been read and saved properly. Both preview and verification modes allow the user to choose between screen or printer output.

For advanced users, CALCULINK provides special features for reading variable length fields and for reading only selected rows and columns from a large file. CALCULINK can also automatically delete commas which some data base systems place in numerical output.

2.0 PROGRAM STRUCTURE

The modular structure of CALCULINK is designed to make it simple to use, yet flexible enough to adapt to a wide range of applications. When the disk is booted, the program goes directly to the main menu, which offers five program choices:

● check or change system configuration
● preview a file before trying to read and convert it
● go to the main program to execute the conversion
● change verification mode among OFF, SCREEN, and PRINTER
● exit from the program and return to BASIC

CALCULINK can operate under several different system configurations. It is initially set up to operate with one disk drive, in slot 6, and a printer, in slot 1. The optional form feed, which starts a new page for each new file verified to the printer, is turned off. The system configuration module allows this initial set-up to be changed to suit the user's individual system.

The preview module enables the user to look at the structure of an input file before an attempt is made to convert it into DIF. CALCULINK displays the contents of DOS text files, counting each line of text as it is displayed. For multi-column files, the preview provides an opportunity to check the number and character-width of the columns.

The heart of the program is the conversion module, which is divided into three major sections:

● entry of format parameters for the input file
● reading of the input file using the format parameters

contd.

• creation of a new data file in DIF

The user is first prompted for information about the format of data stored in the file to be converted to DIF:

- number of variables
- number of observations (data points and labels) for each variable
- number of columns of data (equal to 1 or to the number of variables)
- character width of the columns (enter the number of characters in each column or <V>, which leads to a submenu for entering variable width field data)
- number of non-essential lines at the start of the file which should be ignored or deleted
- number of non-essential characters at the start of each line (such as control codes, filler spaces, etc.) to be ignored
- location of non-numeric data or labels, specified by variable and observation coordinates in the file

Don't worry if you don't know these values now. The CALCULINK Users Guide explains how to find them, in Chapter 3.

Once the format parameters have been entered, the program is ready to read the input file named by the user. The program will read the file in accordance with the format specifications entered earlier. If the verification mode is set for SCREEN or PRINTER, the information being read by the program will be printed for checking. Labels and non-numeric data will be distinguished from numeric data by the symbol "L>" to the immediate left of the data. If the user is not satisfied that the parameters he specified earlier have resulted in a correct reading of the file, he can return to the menu at that point and then either re-examine the file or re-enter a different set of parameters. If the file has been satisfactorily read, CALCULINK asks the user whether to proceed directly to DIF conversion or to add another VisiCalc file to what has already been read before proceeding. CALCULINK consolidates VisiCalc files by reading the text files created with the /PD or /PF commands. This means that values computed by formulas in the original VisiCalc model will appear as numbers, not formulas.

When all files to be included in the consolidation have been read into CALCULINK, the user's command sends the program to the final stage - creation of the DIF file, which can be loaded back into VisiCalc for further manipulation and analysis.

The new DIF file to be created by CALCULINK will have a name preceded by "DIF." so it will be distinguishable from non-DIF files. The user will be asked to enter the name he wishes the new file to have. Once the file name has been specified, the program will begin saving the data to the disk in DIF format. Verification on the screen or to the printer will show what the contents of the new DIF file look like. Printer verification can also be diverted to the screen here, if the reader chooses, to minimize paper consumption. When the conversion has been completed and the new file has been saved to disk. The program leads the user back to the main menu.

After reaching the main menu, the user can exit the program or work on conversion/consolidation of other files.

#   #   #   #

CALCULINK is a useful utility program for spreadsheet users and others who often want to convert text files into DIF format. More important, it helps support a urgent cause - the YMCA Africa Relief Fund. Whether you use the program or not, please contribute and encourage others to do so.   &

SigMac NEWS
by Ellen L. Bouwkamp

Mac Section

POSITIONS AVAILABLE: SigMac's ExCom is making the following opportunities available. Each position will be guided by the ExCom but you will have primary responsibility for seeing that the duties are carried out. For new SigMac members - here's an opportunity to get to know more about WAP and about your new Mac. For "old" SigMac members - here's a chance to share a year's worth of experience with others.

New Member Disk Coordinator: As project manager, you will select and lead other SigMac members in developing the new member disk. Your group will determine the content of the disk and will see to it that relevant programs are brought together or written. The ExCom would like the disk written ASAP. This position requires a short-term, intense time commitment. Contact: Tony Anderson on (H) (301) 277-0386.

Tutorial Coordinator: Will assure selection of monthly tutorial topics, appropriate speakers, and will provide all logistical support. This position requires about 7 to 10 hours per month for at least six months. Contact: Steve Hunt (h) (301) 262-9080.

Tutorial Speakers: Speakers needed for BASIC tutorial. Contact: Bob Pulgino at (703) 671-3664.

CURRENT SIGMAC INFORMATION:

Current SigMac meeting and tutorial information will be placed on the WAP ABBS and on Terry Monk's BBS once a week. Because of scheduling problems with the USUHS Auditorium, we urge you to call the office or access one of the BBS's for current date, time, and place information. We are trying our best to get this situation straightened out.

BUSINESS MEETING:

Tutorials: The next tutorial, on Multiplan and Chart, was held Saturday, February 16, at Our Lady of Lourdes, 7500 Pearl Street, in Bethesda. March's tutorial will be on March 16, same place and time, on databases. You must call the office for reservations!

NOTE MEETING CHANGE: The March meeting will be held March 9, 9 a.m. to noon, Mazor Auditorium, Building 10, National Institutes of Health. JAZZ is our topic and we suggest you assure yourself a seat by getting there very early! We also hope to have a laser printer demonstration.

Through the democratic process, the Advanced Users' Thursday meetings will continue on Thursday evenings at Our Lady of Lourdes. The next meeting will be March 7th.

The WAP Board has responded positively to our request to have the WAP office open on Saturday afternoons. As of now, it is open from noon to 3 p.m. It was also agreed to upgrade the 128K Macintosh owned by WAP. The Board agreed to the purchase of a digitizer if SigMac could find a way to finance it. As of the last SigMac tutorial, $275 was raised for this purpose. JoAnn Stewart has offered to help make the selection from the three available digitizers. Anyone interested in helping JoAnn may contact her through the WAP office.

MacExpo in San Francisco: On February 20 through 23, SigMac will be represented by Bernie Urban, Jim

Burger, Scott Mirmam, me, and several others at the Macintosh Exposition at Brooks Hall in San Francisco. We are trying to bring this exposition to DC and will keep you posted on our progress. All WAP members who are going to San Francisco are paying their own way.

The SigMac ExCom is working on establishing a WAP BBS devoted to Macintosh users. Tony Anderson has volunteered his //e, and we are in the process of setting it up. In the meantime, there are two BBS's in Reston, both accessible to Washington, DC metropolitan telephone numbers without additional charge. They are: Master Link (703) 476-9459, and Terry Monk's BBS (703) 471-1378.

Rich Wasserstrom needs volunteers to help with group purchase buys. Contact him if you can help.

To those of you wondering why the February WAP Journal was late: The Centers for the Handicapped does the WAP mailings, and they close when we have icy and snowy weather as we did recently. Therefore, the WAP Journals were sent out later than usual.

The group buy on Macintosh upgrades has been disbanded. Your deposits are in the process of being refunded. Both Frederick Computer and Laurel Comm Center have the upgrade for about $565. We suggest that you always shop around if spending the least amount of money you can is important to you. The office stocks Macintosh diskettes from 3M and Maxell as well as diskette boxes. Some software is also available, but call the office to assure that it is currently in stock: Microsoft Word, for example, sold out immediately after the SigMac meeting. Group buys are being considered for modems and Lotus JAZZ. To repeat, for those who haven't heard yet, you must be a WAP member to participate in these buys!

SOFTWARE DEMOS:

Switcher (for 512K) - Withers Morgan. This program, not yet available!, allows you to segment the 512K into four 128K machines. Switcher supports the loading and "switching" among four different applications. These may be four different MacWrite documents, for example, or a combination of MacWrite, MacPaint, Chart, and File, for instance. After installation of the four applications, you can, with a simple command, move from one to the other with ease. You can also save something to a clipboard in one application and move it to another application. This program doesn't have true multitasking features - when you switch, you stop the application which is running; it will not run in background. The 128K subgroups have the same limitations as the 128K Mac. Apple plans to either give this program away free or sell it at a very low cost. Switcher won oh's and ah's, applause, and a few giggles as the applications slid across the screen.

Microsoft File - Bob Pulgino. File is a database management system (DBMS) program that supports both text and pictures. It is very well documented; it has internal help menus and a small booklet which summarizes File's command structure. You can easily create a new format by moving field names. For example, the horizontal layout of name, address, city, state, and zip codes which is commonly found in DBMS programs can be easily changed to a mailing label format, with these field names arranged vertically or horizontally. There is a 32K limit per field (no that is not a

A PAGE FROM THE STACK
by Dana J. Schwartz

Even as you are reading this, the WAP Software Library (Disketeria) is continuing to search the Universe for new additions. Our agents are out scouring the countryside for every conceivable type of Apple software - including DOS 3.3., ProDOS, CP/M, Pascal, and Macintosh. Of course, your contributions are also accepted in person at the office or at the monthly meeting. And don't forget that you get a free library disk of your choice for your donation.

This month SigMac again introduces three brand new Macintosh disks:

SigMac Disks 11 and 12 - MacFonts

This is a collection of nearly 50 fonts for the Mac, which have to be seen to be believed! In addition to the fonts themselves, there are sample picture files showing the more unusual fonts, instructions for installing them on your own disks, and even helping with creating your own fonts.

These two disks complement each other, with many fonts on each. However, SigMac 11 contains most of the documentation and utility routines for loading and editing. The WAP Disketeria Staff recommends that you get both of them, since they were made for each other and can't bear to be apart, even for just one meeting!

Note that some of these fonts are copyrighted, and cannot be used for anything other than personal use. The authors have given their permission for our distribution, but as with all WAP disks, they CANNOT be sold for profit and CANNOT be included with any com- mercial applications without specific written permis- sion from the author(s).

SigMac Disk 13 - RAM Disk and Altered Finder
(description by SigMac Librarian Tony Anderson)

On the desktop:

Analog Clock (by Bryan Johnson) - Yet another clock program, but one of the best.

Disk Utility - Useful for copying entire disk image with two drive system. It also does such handy things as writing boot blocks, verifying disks, and zeroing directories, what ever that means.

In the Fun folder:

Backgammon (by SoloSoft, Stephen Young, Debra Willrett) - A freeware game from the same people who wrote MacProject. It's a nice little program with a great three dimensional view of the board, but it does not enforce the rules of the game. The Mac will play against you or provide you and a friend with a board to play on.

Missile Command (by Robert P. Munafo) - This application is not to be confused with the basic game on SigMac disk 10. This one is fast and furious. Only the sound is missing.

Nightmare (by Fred Bockmann) - While not quite a game it's more than a demo. Sort of a programmer's exercise. Select from the basic shapes that the Mac can draw and start them bouncing and drawing all over the screen.

Rotations (by MACDOM) - A pause that relaxes. Call it a star field or a molecule or plankton adrift in a water spout, this is strangely relaxing. Sort of a Lava Lamp for the Mac.

SOUNDDEMO (by Bruce Hemingway) Get a better intuitive understanding of carrier signal modulation. Also creates weird sounds.

Mondrian - Start this application and you are faced with a blank canvas, so to speak. Pretend you are drawing rectangles in MacPaint. Start at one corner and drag the mouse to the other corner. When you release the mouse, the rectangle slowly fades into view - a nice effect.

In the RamDisk folder:

Ram Insert - This is the re-insert RamDisk that is mentioned in the documentation. Use it to recover from an "Eject" of the RamDisk.

RamDisk - With this program and a "Fat Mac" you can speed up all your disk intensive applications by making some of the 512K look like a disk drive.

RamDisk Doc - Instructions for installation and use of RamDisk.

RMover - A utility needed to install the RamDisk's "INIT" resource in the system file. See RamDisk Doc for details.

In the System folder:

FINDER (by Dave Kliman) - This is standard Finder 1.1g with all of the Dialogs, Icons, and Alert Boxes changed in amusing ways.

In the Desk Accessory folder:

Journal Accessory - This desk accessory was once hidden on your Guided Tour Disk. Now it has been unleashed and made available to you for the creation of your own "Guided Tours".

Journal Documentation - Documentation on the installation and use of the Journal Accessory.

Desk Acc Mover (by Donald Brown, CE Software) - This is version 1.4 of the Desk Accessory Mover. It corrects the problem in version 1.3 (SigMac Disk 5) of not setting the purgable bit. This prevented the Mac from releasing the ram space after the desk accessory was finished.

In the MacPaint folder:

Electronic Symbols (by Peter Trinder) - Peter is a WAP member from the British Isles. On this disk he shares his artwork with us. This is a MacPaint document with most of the standard electronics symbols in it. It might be very handy to place these in the scrapbook.

Music (by Peter Trinder) - This file contains music symbols that can be used like the electronics file above.

In the MusicWorks folder:

MusicWorks is a wonderful music composition and play-

A FIRST LOOK AT OMNIS 2 FOR THE MAC

by Ann Adams

The Omnis database family received a rating of "versatile ... powerful ... one of the best software packages on the market this year" from A+ magazine (August 1984 page 91). This "family" consists of Omnis 1 File Manager, Omnis 2 Information Manager and Omnis 3 Database Manager. Omnis 2 is available for Macintosh and Lisa, and Omnis 3, the full relational database handling up to 12 files, is promised. Apple //e, ///, and IBM-PC versions are available. The software was developed in England by Blyth Computers and has been extensively used overseas. It is distributed in the United States by Organizational Software, 2655 Campus Drive, Suite 150, San Mateo, CA 94403 (415) 571-0222.

I have not had the opportunity to try other Macintosh 'database' software in detail, but have read as many reviews as I could. I have not seen any review of the new-in-October "mouse-menu-windows" version of Omnis2, so I take it upon myself to comment on my copy. Info-World happened to review the pre-mouse version and found it lacking in MacFeatures. Of course it was ! ! I got my early copy with the clear understanding that the mouse version would be delivered later.

One of the first things that struck me on looking at the new documentation was what I will call "nested menus". On choosing certain options from the OPTIONS menu title other menu titles suddenly appear at the right on the menu bar. For example:

Before
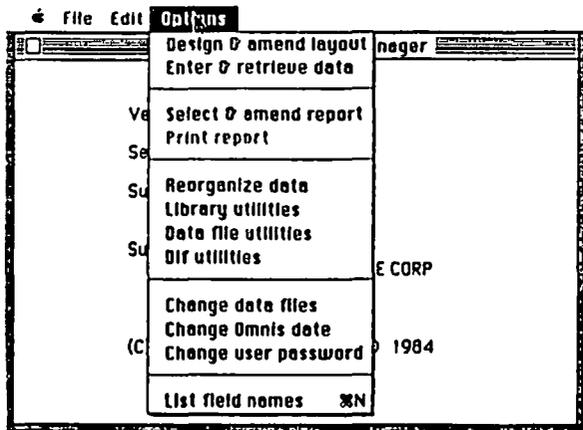
After
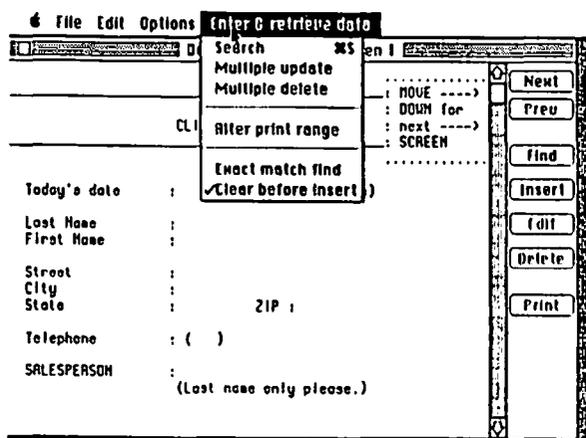
Several of the options nest 3 deep, creating two extra

menu titles. The extra menu titles disappear when the option is de-activated (finished). Why did this impress me so much ?? Maybe my right brain was impressed with the creativity - I don't know how to program for the Macintosh, although I know main frame programming - and I didn't even imagine there was this facility to make menu titles appear when needed.

Furthermore, as well as choices from the menu itself, buttons appear at the right of the scroll bar for further choices. When we have chosen Enter and Retrieve Data we find buttons for NEXT, PREV, FIND, INSERT, DELETE, EDIT and PRINT. These buttons very nicely take the place of command sequences or function keys in non-Mac software.

Looking at the records in the database (via Enter and Retrieve Data) the following features are available:

"What if " projections can be done "instantly" on calculated fields (for one record) and then the results saved on the record or restored to original.

NEXT record or PREV (previous) can be displayed with speed.

Without defining a report at all, one can print the data entry screen (like a 'page' in PFS), for whatever range of screens (first screen? all screens for a record?), by a quick choice of the PRINT button. Then select NEXT...

PRINT...NEXT...PRINT for a fairly quick dump of as much of the database as you wish.

Clicking the mouse on a field you see and then clicking the FIELD button (or - nice touch - double-clicking the field) brings up the entire field definition window. Now here the novice might find more data processing terminology than he cares to; it is a credit to OMNIS 2 that this brings power and flexibility to the program. Terms like boolean or unique indexed or default check on the Data Entry layout, or terms such as justification or duplicates blank on the field description screen for a Report Layout, may be unfamiliar to the novice. All are clearly documented, however.

One can list field names to the screen (command-N) or print a chart of full field information.

Checking of data for validity as it is entered is a valuable feature.
Data entry screens can look like forms or anything you can 'draw' with typewriter characters. No, it does not use fonts nor Mac drawing techniques, but since draft printing is used, it looks like this program is ready to work with a letter-quality printer. Nice if true but I cannot test it.

Time to say a little more about the reporting capabilities. One of the nice features is the ability to create filled-in form letters. Now here is where a letter-quality printer would shine. More features:

Columnar reports can be produced, of course. These can contain far more than 80 columns (print positions), and defining printer control codes allows your printer to do whatever it can do with the ASCII codes coming to it.

contd.

Search for particular records, sort, subtotal to 9 levels.

Print labels , one or many across a page.

Calculate fields at report time or on the database itself.

Now that I seem to be giving the usual boring list of statistics, I'll give just two more . . . for those of you who want technical information. A single database and its related information ('library files' such as Entry Screen Format, Report or Search Formats) must fit on one diskette of 400K (or, as OMNIS describes space, 800 Pascal 512 byte blocks.) A large file could be subdivided, A-G on one disk, H-R on another, etc., but this of course is a kludge. Hey, remember when diskettes had 140K ?? The obvious solution if you have a large database is to get a hard disk, which OMNIS can use very nicely. The other important detail is that the program can handle index fields (up to 10 in a database) so that searching is extremely fast.

"A SECOND LOOK" (if the editor approves) can include DIF files, passwords, normal sort vs. fast sort, reorganization of data, cut & paste of formats or multiple updating.

The current list price of OMNIS 2, from Organizational Software, is I believe $275, and OMNIS 3, a relational database, will be $375 when issued. I bought the pre-mouse version of OMNIS 2 at $195 and then paid the planned $25 upgrade fee. One can upgrade between programs for the differential cost ($100 to go from '2' to '3') and files are said to be compatible. As I said, I cannot compare from experience with other Mac information managers, but I am pleased with the data processing power and Macintosh ease I got for $220. ⚉

mistake) and apparently the whole DBMS is limited only by the capacity of your computer. This program is available through discount software houses. Microsoft File will be discussed more in depth at the March 16 database tutorial.

Microsoft Word - Marty Milrod. In Marty's words: "If you need a full-featured word processing software package - this is it!" Word can operate on a 128K Mac with an extra disk drive and, of course, on the Fat Mac. It is available from discount software companies. Word is very compatible with File and other Microsoft products. The program itself takes up 125K. You can convert MacWrite documents to Word documents, but not vice versa. (Ed. Note: We were able to convert 3.8 MacWrite documents to 2.2 MacWrite by using Word and opening the document, saving as text file, and recreating the entire document.) One of the disadvantages: many of the command keys are different from those in MacWrite, therefore you can get confused early on. But command keys are used frequently, meaning you spend less time moving your hand to the mouse.

Several special features make this product outstanding for extensive documents:

● Document width can be up to 20 inches and the scrolling feature is installed. You can print within 1/4 inch from each margin.

● You can set left and right margins to account for binding space.

● There is no limit to the number of footnotes and where you place them is very flexible.

● The "glossary" feature is a shorthand way of bringing in a lot of text into documents.

● "Preference" allows you to set the rulers in centimeters, 12 pitch, 10 pitch or printers' point measure.

● Two fonts are available specifically for daisy wheel printers.

● You have the option of paragraph control - setting fonts, justification, etc. to operate on a whole paragraph on command. These paragraph controls are highly flexible and provide many editorial options.

A few of the disadvantages to Word: If you designate a columnar format, you cannot see the column layout (although the printout will be in columnar fashion). Word doesn't have automatic indexing or table of contents and you have to memorize a whole new set of keyboard commands.

Marty's presentation was mightily appreciated - the WAP office sold out of Word immediately after the meeting!

REMEMBER: The March meeting has been changed. See the top of this column and mark your calendars! ⚉

back application from Hayden Software. It's already becoming a standard for music on the Mac. We hope to release future disks of compositions. Submit your music to the SigMac Librarian today. Meanwhile, we offer these ditties as a preview of coming attractions.

    First Noel
    Jingle Bells
    Rhapsody
    Silent Night   ⚉

MAC CHARMS ITS WAY INTO LIBRARY OF CONGRESS

by JoAnn Stewart

I was delighted to see the empty Macintosh packing boxes in front of my boss' office that Monday morning a few weeks ago. Although the first microcomputer that had made its way into The Library of Congress was an Apple computer several years ago, some of those micros of the "big blue" brand have recently been showing up. So, upon seeing a Macintosh, I cheerfully greeted my boss that morning, congratulating him on his good taste in microcomputers. I discussed briefly with him the many capabilities of the Mac, with my enthusiasm showing for the one that I had at home, and then I went back to my work. Several days later, much to my surprise, I was assigned to bring up the application on the Mac for which it was purchased - a slide show, to be shown by the Mac, depicting a brief history of typography as part of a new Library exhibit called "Books and Other Machines." This appeared to be a most interesting project until I found out that the deadline was just a brief 10 days to the start of the exhibit. The project became doubly challenging, because this was the first time an exhibit of this type had been computer-generated at the Library.

The scenario for the slide show includes text describing the history of typography and illustrations of various kinds of type fonts, from old books in their original language of publication to examples of modern commercial uses of type. Luckily for me, at a recent Apple Pi SigMac meeting, the new Magic program had been demonstrated. We decided this versatile program suited our immediate needs and obtained it, together with a camera. This program photographs and digitizes an image through a video camera onto the Mac screen. In order to gain a more precise black/white image, our video camera was fitted with a Nikon macro lens. By using the Magic control screen, set up much like MacPaint, surrounding the digitized image on the Mac screen, the exact focus and light exposure of the image are refined. This image is saved as a MacPaint document from which further editing is easily done. The Magic program disk contains MacPaint and can be selected directly from the control screen without having to return to the Magic disk's index.

Even the size of the image can be manipulated. This is particularly helpful because the best focus of the image by the camera does not always produce the size picture needed to make a slide. The size for the slide was dictated by a new program, just on the market, called Slide Show Magician. This program uses MacPaint documents to generate a slide presentation. It requires the slide image to fit into an area just slightly larger than a Mac screen image. It provides a mask overlay from which to test the size of the slide image. It then works interactively with the user to build a script for each slide in the show. Items, such as the length of time the slide is to be shown, the type of special effects to begin the slide with, any text which is to be superimposed over the slide and how this is to be revealed, are selected from menus. At any point during the creation of the show, the current slide or the whole show can be reviewed. The program also has easy-to-use updating capabilities to add, delete or insert slides into the show. And the best part of all is that it takes but a few minutes to develop a presentation.

As was expected, the photography part of the project was the most time-consuming. In order to get the initial image of the object on the Mac screen, the camera on a tripod was repositioned and adjusted for

focus. Then the Magic program black/white controller on the control screen was used to correct the contrast of the displayed image. Next, the "full focus mode" capability was used to display the full image without the encumbering control panel border. The image in this mode is continuously displayed at 1.4 frames/ second. When the image is the best one observed, the automatic focusing is stopped and the image is saved as a MacPaint document.

We found the procedure that seemed to achieve the fastest results for us was to do several hours of photography work per day, edit these documents, and then update the slide show with them. So when the photography session was ended for the day, Macpaint was used to call up each document and remove extraneous details in the picture. Examples are the black circles photographed of the magnetic buttons which held the picture to the wall, or the center fold of the bound book which photographed as a heavy black line. Next, identification text was added to each picture. If the resulting picture proved too large for the size of slide needed, the Magic program was again invoked to change the size of the image. This time the edited version of the MacPaint document was used so that the cleanup editing needed no repetition. When the picture looked like what was desired for the slide show, it was again saved as a MacPaint document.

Next, the Slide Show Magician program was loaded and scripts for the slide show were developed. The edit screen in the build-show program includes a display of a tiny image of the MacPaint document being included in the script. Four additional screens are cycled through to develop the complete script for the current slide; these take less than a minute to complete. At any point, the show as developed can be reviewed, so that timing for slides and other special effects can be tested in the context of the whole show. It is easy to make a change; the same five edit screens are cycled through to update any aspect of the script. The show can then be re-reviewed, if desired.

The limitations for us in the Slide Show Magician program were twofold. One, each slide show could contain only 50 slides due to a program-imposed limit on an index table. Because shows can be easily chained from one show to the next without any time delay in the changeover, this proved only a temporary problem. Since ours was to be a continuous slide show, we chained the end of one slide show to the start of the next show. The second limitation was that the program which builds the show is copy-protected so it could not be put on the hard disk, where we had hoped to store the whole show as one. The presentation program, which displays the slides from the scripts, is not copy-protected but does not have hard disk capabilities. However, it does work easily with two disk drives and the time between each slide, from one to five seconds, was enough for the slide to be accessed and displayed correctly. So this, too, was only a temporary problem. However, it is hoped that the software firm is making adaptations for hard disk capabilities.

When the slide show presentation was completed, 85 slides had been developed, which takes about 12 minutes to view. The MacPaint documents, which comprise the slides, take most of the space on two disks together with the scripts and the presentation program. Since the show is continuously presented

MacNovice
by Ralph J. Begleiter

INTRODUCTION

Remember the endless nights you spent in high school or college, typing and retyping term papers or your thesis? The horror of discovering you omitted one of your "B" books in the bibliography after the entire page was already typed. Of discovering an anecdote in Political Science that would have made a much catchier start if only you didn't have to retype the whole paper to insert it.

You watched with amazement in recent years as "word processors" made that all seem anachronistic. But you recoiled in equal horror from the overwhelming complexity of "word processing" on an office computer, with its "cursor" keys and "function" keys and eminently forgettable "commands", without which none of the magic would work.

If this is you then you've come to the right place! You've bought a Macintosh - the machine you can use to type long papers and short letters, making as many revisions as you wish, without having to retype the final draft and without having to learn "computer." You can even be an artist, without a minute of training!

This column is an experiment, based on the premise that many Macintosh owners are not computer hackers fascinated by the marvels of computing. I'm convinced that many Macintosh owners are people who have never used a computer extensively before for anything, but who now believe they have found a machine which speaks in "human" language and which can be used as an unobtrusive desktop tool to accomplish many of life's tedious tasks.

If you fit this description, then you may find this column of interest. If not, you can skip it without missing a thing! I will try to speak English, not "computer", in this column. I will try to avoid using terms such as "application" and "hex dump", not because they're bad words nor because I have anything against experienced computer users, but because many Macintosh owners have never heard them or understood them and probably never want to.

This is an experiment because I'm not sure it'll be possible to steer completely clear of the jargon to remain pristine. In fact, I've already discovered that to read the owners' and software manuals, you have to get to know at least some computer language. Wherever I can, I'll try to shed light.

This will be a kind of "potpourri" column, with tips and explanations, and commentary from the point of view of the Macintosh user who wants to make the machine serve, but who wants to avoid being sucked into endless hours of figuring out solutions to computer problems. The point of view is the key: The Macintosh owner who is eager to learn how to put his new tool to good use, but who couldn't care less about how the machine works, or about how the software performs its magic. (I may offer some explanations from time to time, for those who are interested, but understanding how it works won't be essential to getting the job done.)

It may all seem elementary to many readers. Fine. It's not for you. It's for those of us who have been brought into the computer world by a new machine which does the job without the user having to understand how it's done.

A couple of housekeeping words: I'm a journalist with almost no previous computer experience. I will, therefore, make mistakes in this column, and I welcome corrections from the readership. My Macintosh is only a few months old, and I am still learning just as you are, presumably. Please offer your suggestions, your questions, your insights and discoveries. I'll pass them along in a future column. And I'll try to keep the column "progressive", so you may want to clip and save some of them for future reference.

Good luck in the new world!　　　　　　　　☆

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over a 10-hour period each day, we built in a series of 5 countdown slides following the trailer slide, showing from "50 seconds to the next show" down to 10 seconds, for viewer continuity and interest.

We held a preview for members of Library management in charge of the new exhibit. They were impressed with the capabilities demonstrated by the Mac, particularly how fast and easy it was to bring up such a presentation. Naturally, they had some suggestions to improve some scripts and wanted several pictures added. With just a few hours remaining until the official opening of the exhibit, my boss and I photographed, refined, saved, edited, and scripted the changes to the slide show. It felt like we were doing it in double-time, but we delivered the finished product on schedule. We could not have done it without the amazing Macintosh.

Since this exhibit needed the Macintosh itself to show the presentation, suddenly it felt lonely for me to be without the Mac, especially when the printer and hard disk drive were left behind. My boss must have felt the same way, because a new Macintosh showed up shortly thereafter. Imagine, a Mac at home and another at the office...it's a dream come true.　　　　☆

COPY II MAC & MACTOOLS: A Review
by Ralph J. Begleiter

Product: Copy II Mac/MacTools
Source: Central Point Software, Inc., 9700 SW Capitol Highway, Suite 100, Portland, OR 97219 (503)244-5782
Price: $39.95 (plus $3.00 shipping & handling)

Copy II Mac is the Macintosh version of Copy II Plus, which was designed to help owners of other Apple computers to copy protected software for backup purposes. The package comes with two programs: Copy II Mac and MacTools, which I'll describe in a moment. Copy Mac II contains the following "Copyright Notice": "This product is provided for the purpose of enabling you to make archival copies only."

Copy II Mac occupies about 14K on your disk, and may itself be easily copied from one disk to another using standard Macintosh techniques (namely moving icons from one disk to another). But it is just as useful when it is kept in one place on a "utilities" or "system" disk for use whenever the need arises. When you open Copy II Mac, you see one window with three menus. The window is basically one big dialogue box, allowing you to tell your Mac what to do, and allowing it to tell you what's going on during the copying process. The "Control" menu contains one command: "quit." The "Notice" Menu contains the copyright notice and a brief explanation of the copying choices.

Your first choice is "Bit Copy" or "Sector Copy." Sector copy mimicks the usual Macintosh copy program, which "reads" sectors of a disk into the memory, then writes them onto the disk you choose. Bit copy is especially designed to read everything on every track of the disk, bit-by-bit, thereby circumventing most (if not all) copy-protection schemes now being used by software producers. One tedious drawback to "bit copy" is the time it takes your Mac to read and write each of 79 tracks on a standard disk. It takes about ten minutes to copy an average disk (the time varies depending upon the amount of data stored on the disk you're copying). The copying process is longest using a single-drive Mac, since you have to swap disks after every three or four tracks are read by the program.

During the copying process, the Copy II Mac program keeps you informed of the state of affairs, counting down the tracks as it copies them, and letting you know if any individual track has a problem. This all takes place in a "messages" window at the bottom of your screen. You are able to choose "Stop Copy" at any time during the process if you change your mind. Copy II Mac operates with either single- or double-disk drive Macs, and an indicator in the window reminds you which drive is acting as the "source" and which as the "destination" drive if you have two disk drives.

The value of this program should be apparent to anyone who has run into a piece of copy-protected software with which safety backup copies are impossible. Microsoft is one example. The company requires owners to pay an additional fee to obtain a "backup" disk. However, even the backup supplied by Microsoft requires you to use the master or the backup as a "key" to allow you to use working copies. Copy II Mac eliminates this hassle. You can make all of your working disks "masters" (complete with the secret "key") so you need not swap disks every time you want to work on one of their programs.

MacTools, the second program you get with Copy II Mac, is useful mainly for those interested in learning more about how their Mac works, or who are into program writing and alteration. MacTools allows you to "see" any "invisible" files on your disk, and allows you to read and write in the files. MacTools also allows you to make your own files "invisible" or to "lock" or "protect" them against writing if you wish. MacTools occupies about 46K on your disk, and like Copy II Mac, may be copied or moved from disk to disk. You need not do this, however, since the program allows you to eject the disk it's on if you wish to insert another to work on with MacTools (click the "close" box to eject the current disk).

When you open MacTools, you see a window with a list of every file on that disk. The list shows the size of the file, its name, and the date it was last modified. It also displays three columns of check-boxes for each file. One column tells you if the file is "Protected," another tells you if it's "Locked," the third tells whether the file is "Invisible." If you wish to change the status of any individual file or group of files, simply "click" on the appropriate boxes. (For example, the "desktop" file is always "invisible" on your disks. If you want to "see" it on your desktop, click the box to make it "visible.") Menus available in MacTools include "Disk" (whose commands affect the disk you're working on), "File" (whose commands affect the files on the disk) and "Misc" (whose miscellaneous commands allow you to "select" groups of files by name and to read and write data in the files). Some of the "tools" you can use in MacTools allow you to verify, format, copy, erase, rename or view/edit a disk. You can also copy, view/edit, delete and rename files, as well as make files visible, invisible, locked or protected. For virtually every major action you choose in MacTools, the program asks you for confirmation, to be sure you don't do anything inadvertently.

Copy Mac II and MacTools are useful products. Even if you are not likely to use MacTools (if you are a Mac-Novice), you may find it interesting just to explore your disks. For backing up data and software disks, Copy II Mac delivers everything it promises.   ⑤

JAZZ DEMONSTRATION AT MARCH 9 SIGMAC MEETING

JAZZ, Lotus' implementation of Symphony on the Mac, will be demonstrated and discussed at the March 9 meeting of SigMac. Demonstrations start at 10:00 AM. This meeting will be held in the Mazor Auditorium of the National Institutes of Health, Bethesda, MD.   ⑤

FROM APPLE TO MAC
by N. G. Carter

When I got my Macintosh last spring, I already had an Apple][+ that was almost five years old. During that time I had used the Apple for a wide variety of tasks, including a lot of record keeping. While it was clear that it would not, in general, be possible to transfer the accumulation of games to the Mac, it did seem reasonable to expect that a way could be found to transfer my records and possibly a number of Basic programs. Most of my records had been put into the Apple either in VisiCalc, or in File Cabinet. The latter program was already in the public domain in 1949 when I got the Apple, so a large part of my data was stored in it. VisiCalc came later and was used for things like income tax and checkbook calculations. Both contained a lot of information that I wanted to put in the Mac. On the Macintosh end, the first program I obtained was Multiplan; thus I began to design my information system around this package. The question was, exactly how could I get the data "across" from the Apple to the Mac? Both File Cabinet and VisiCalc store their data as textfiles (i.e. in ASCII). It would certainly be possible to print out the textfiles (using a word processor) and then to rekey the data back into the Macintosh, but this seemed like the hard way. Clearly, the method ought to be to use the communications mode of both computers to transfer the data as ASCII files.

About the time I was working out how such a system would work, I happened across an excellent utility, designed to do all the hard work of the transfer, appropriately called MacTransfer (by Southeastern Software). This utility consists of a disk for the Apple][and one for the Macintosh, both containing programs written in Basic, and an excellent manual of instructions. More important, rather than having to obtain modems for each machine, this utility allows the use of a "null modem", i.e. a few wires strung between the communications ports of each machine. A short trip to Radio Shack to purchase a nine pin and a 25 pin male connector and some wire, and I had my null modem. The manual to MacTransfer shows exactly how to wire this device; a diagram also appears in the January 1985 issue of A+. I ran into a slight temporary problem when I first tried to run the utility; Southeastern helpfully explained how I had miswired the null modem, and I was quickly up and running. I must say, it is quite a satisfying feeling to see your data flowing across and showing on the screens of both machines.

First, the VisiCalc files needed to be transferred to analogous files in Multiplan. It would, of course, be possible to write a Basic utility to translate the codes from one program to the other and then have Multiplan pick up the data from the clipboard. Far easier, however, is to translate the VisiCalc files into Multiplan on the Apple][, store them as SYLK files and then send them directly across to Multiplan. I had not used Multiplan much on the Apple][because, although it is far more powerful than VisiCalc (it is certainly the best spreadsheet for the Apple), it has a somewhat cumbersome cursor movement for Apples which, like mine, are older than the //e. However, I borrowed one and used the Transfer Option "Other" to load the VisiCalc sheets into Multiplan. Once stored as SYLK files they could be transferred across to the Mac with MacTransfer, and then read into a Multiplan spreadsheet on the Mac. The final step is to use the "Store As" on Mac Multiplan to change the coding to the more compact binary, and the process is complete.

File Cabinet posed a more difficult problem. Here the files are stored as sequential on the Apple, record by record, with the field within each record in order. SYLK is a clear coding, and is found in all Multiplan manuals, but its comprehensive nature makes it somewhat cumbersome for simple files such as those in File Cabinet. I chose to make the translation by sending the files directly to the Macintosh through Mac-Transfer, and then to write a short MS-Basic program to put each file on the clipboard where Multiplan could pick them up. The files one is looking for are identifiable in the Apple disk catalog by the size and by the appended name "INDEXFILE". The first field in the file is the number of records in the file. The number of fields in each record is the first record in the corresponding "HEADERFILE", but if you know what you are transferring you should know what these fields are and how many there are. This can also easily be ascertained by running File Cabinet and looking at a record. Once in the Macintosh, I used the following program:

```
10   DIM A$(150), B$(150), C!(150)
20   OPEN "RECORDS" FOR INPUT AS #1
30   INPUT #1,N
40   FOR I = 1 TO N
50   INPUT #1, A$(I), B$(I), C!(I)
60   NEXT I
70   CLOSE #1
80   OPEN "CLIP:" FOR OUTPUT AS #1
90   FOR I = 1 TO N
100  WRITE #1, A$(I), B$(I), C!(I)
120  NEXT I
130  CLOSE #1
140  END
```

For this particular file, which was received from the Apple][and stored under the name "RECORDS", I had two string fields followed by a numeric field for each record; I used the single precision form for "C" in order to save space in MS-Basic and also because the numbers were never more than a few dollars, and thus did not need a lot of significant figures. Once this program had been run, I quit MS-Basic and opened up a Multiplan spreadsheet. Using the PASTE command, the entire file appeared in the spreadsheet and the transfer was complete.

The third type of file I have transferred is a Basic program. Here the MacTransfer utility contains a program for the Apple][that makes EXEC files from Applesoft programs. Once such a file has been made (it is essentially an ASCII representation of the Basic program), it can be transferred to the Macintosh in that form. It can then be picked up by MS-Basic; however the significant differences between MS-Basic and Applesoft mean that a considerable amount of reprogramming will have to be done. More important, Applesoft has only single precision for real variables while MS-Basic has both single and double. The problem is that MS-Basic assumes that if a variable has no special indication it is double precision. In practical terms this means that even if your program contains only statements that are identical in both forms of Basic (such as FOR...NEXT) it will most likely run out of memory as soon as you try to run it on the Mac.

For this reason you should not open the newly transferred program under MS-Basic, but rather bring it into MacWrite and do a bit of editing. You can use

APPLE 85 - THE MACINTOSH OFFICE:
The Year of the WorkGroup
by James M. Burger

I. INTRODUCTION

The third pilgrimage to Apple's Annual Meeting in Cupertino. Though, I admit to being caught up yet again in the excitement of "Apple Culture." While still a "media event" - with exciting new products - last year's meeting with the Macintosh introduction was more highly charged. More importantly, Apple's rudder has been more firmly turned; the ship is pointed further away from its traditional enthusiast roots and towards the fray and unchartered waters of office automation. The // was hardly mentioned. The message was clear: get Mac into the office.

II. APPLE - 1984, 1985 AND BEYOND

1984

According to John Scully, this was the "Year of Triumph." Apple, he said, reclaimed its role as producer of the industry standard by placing Mac alongside the // and the IBM PC. 1984 was claimed as one in which Apple attained four specified goals:

1. Established Apple as a clear winner;
2. Achieved critical mass of $1.5 billion in sales.
3. Reaffirmed Apple as an innovator; and
4. Established Apple as a great marketing company.

In 1984, Apple introduced Mac and the //c. The Company was reorganized into the // and Mac divisions. Sales strategy was changed to "event" marketing; e.g. the "1984" commercial (which won awards in 35 major international and national competitions) and the Mac introduction. The result: Apple has the highest brand recognition: 37.5% think of Apple first when people think of personal computers; IBM trailed at 13.7% (Scully noted that Pepsi scored only 30%). He said that the first quarter of 1985 bore the fruits of last year's efforts: a 121% increase in sales revenue ($698.3 million).

Finally, 1984 Mac goals: (1) Sales target - 250,000. The result: almost 270,000 sold. (2) 150 programs written for Mac by the first anniversary. The result: 350 packages as of the annual meeting day. (3) Established as the third industry standard: as noted above, Apple claims this achievement.

1985

1985 is styled the "Year of Implementation." The focus this year will be on sales, marketing and support. Whereas 1984 was a milestone in individual personal computing power with the Mac intro, 1985 is to be the year of "WorkGroup Power."

Part of Apple's 1985 plan is to establish "strategic alliances" with other companies, "agreements of cooperation". Apple and General Electric will offer a product called Dealer Talk. This product would integrate Mac with GE's telecommunications services as an intelligent work station to link GE's dealers in the field to the central office. Apple intends to link its dealers this spring. In the future, Apple and GE plan to offer this and a series of computer/communication products.

The only mention of Apple // for 1985 was plans for "computerized classrooms." Apple intends to work on networking //e's so that students will experience the

"power of personal computing far beyond drill and practice, word processing, programming and computer literacy." Apple wants pc's to be the major catalyst for reshaping how learning occurs in school. There was no further elaboration.

Finally, with respect to Apple itself Scully presented two goals that, in corporate America, often conflict and rarely coexist: (1) An increase in performance accountablity, i.e. setting and measuring goals; and (2) Preserving the the informal "Apple Culture." Whether that can be done remains to be seen.

1986

Scully sees 1986 as a major year for new products. Perhaps we will see the LapMac Jobs keeps hinting at. I, for one, would like to see a larger screen Mac (or a fix to LISA to run all Mac software without distortion). Apple promises to continue to build on its existing product line (Apple //x?). 1986 is also seen as the "Year of Department Alliances." That translates to the bridging of WorkGroups. In education, Apple foresees interactive learning. With new video laserdisks, Scully predicts education moving into the home with "true" interactive learning.

1987

Scully predicts a computer industry boom year. He plans Apple's "infrastructure" to be in place to take advantage of it. By 1987, he predicts fully networked companies.

Finally, learning at home will also take advantage of networking. Apple sees a large part of the learning experience taking place outside the class room - "and we expect Apple to be a leader in this phase of education".

III. 1985 - EQUIPMENT FOR THE YEAR OF THE WORKGROUP

Apple announced a series of products designed around the "Macintosh Office." These include a low cost network, an exciting laser printer and a mass storage device to serve the network.

AppleTalk

Apple has taken a bold step which just might break the local area network logjam. For years, there hasn't been much more than talk about networks. Sure, there are networks around but they are expensive and cumbersome. Why spend upwards of $1,000 a computer to share a letter quality printer which doesn't cost much more. We are told to wait for more software to make networks more cost effective. We wait. But, software developers are waiting for a larger base of networks before spending development dollars. So, few networks are installed because there is no software because there are too few networks, and so forth and so on.

Apple is virtually giving away the network: AppleTalk costs $50 retail per computer. A network can connect 2 to 32 users. Networks can be linked by an intelligent bridge. Immediately, users gain access to each other and shared access to powerful peripherals such as mass storage devices and the new LaserWriter . Connecting 10 users to a $6995 high quality, high speed printer makes fiscal sense - a high power laser printer for under $700 a computer.

contd.

Apple claims that over 50 companies are developing products for the network. Some of the new devices and programs are listed at the end of this article. An interesting product is a IBM-PC card to allow it access to the network. Jobs describes this as "co-existence with the IBM World."

Installation is simple. The small connection box plugs easily into the Mac and into the network. Nothing has to be added inside the Mac. Circuits to support AppleNet were built into the Mac. Unlike IBM, no network administrator is needed to install or configure it. The bandwidth appears slow: 230.4 Kilobits. But Apple claims that it is as fast as networks with much higher bandwidths. This has been accomplished, according to Jobs, by very efficient software. Also, vast intelligence is built into the peripherals, allowing more compact code to be sent to the devices.

Cable is simple twisted-pair. Traffic is controlled by a software protocol called "carrier-sense, multiple access with collision avoidance" (CSMA/CA). A computer or peripheral thats wants to use the net "tests the water" by sensing whether the net is in use. If so it waits until the network is free. When it notes that the net is free it waits 400 microseconds plus an additional random time. Then it reserves the line by a quick "handshake process." This keeps other units off the line.

AppleTalk is slated to be available March 1985. The $50 price includes the connector and two meters of cable.

The LaserWriter

The most impressive hardware introduction at the 1985 Annual Meeting was, without a doubt, the LaserWriter. The "paperless office" has been touted for a long time. But all the devices supposedly leading us down that path are generating more paper! Jobs admits this. He claims that the LaserWriter will do what is needed: Not eliminate paper, but make it easier to produce more efficient and effective communication on paper. He may be right.

The LaserWriter is Apple's most powerful computer. The specifications: a 12-megahertz Motorola 68000 microprocessor; 1.5 Megabytes of RAM; and 512K bytes of ROM. The ROM, in part, is used to store Adobe Systems' PostScript language. This, allows the Laser tremendous flexibility and low overhead on the AppleTalk network (it has the network built in).

The Laser can generate pages as fast as one every six seconds, although the average should be closer to 10 seconds (a page with a lot of graphics on it, 15 seconds). It reproduces with an impressive 300 dots/inch. The output (which includes overhead transparencies) is impressive. With some programs now available, the LaserWriter not only eliminates the need for dot-matrix and daisy-wheel printers, but may eliminate the need for an art department or print shop. PageMaker by Aldus Corp. is an impressive program which permits the user to layout newsletters, data sheets and brochures.

It has two popular print typefaces - Helvetica and Times and can reproduce any Mac font. Apple plans to release "downloadable" fonts from many of the typeface libraries of well known typesets. Moreover, it can reproduce anything that appears on the Mac's screen. Also, the LaserWriter has a ROM program to emulate the Diablo 630, which will permit IBM and its clones to use their software directly on the LaserWriter with no software modifications. Also, much of Mac business software is said to produce output for the printer without modification.

As noted above, the LaserWriter will retail for $6995 each (including one toner and imaging scroll in cartridge form - $99 each and good for 2,000 - 3,000 pages). It is to be available this March.

File Server

For work groups, Apple has designed 20 and 40 megabyte harddisks to provide mass storage. These products will act as the mailbox and file cabinets for the network. Apple's file servers follow the concept of keeping the network simple and building intelligence into the peripherals. File servers will have built in computers. Software will provide file transfer, print-spooling and electronic mail. Apple anticipates that third party software developers will write software applications using the built in file management software.

The file server will contain a standard peripheral interface to allow third party development of both hardware and software products, including additional storage and streaming tape backup. The Apple file servers will not be ready until the second half of 1985. Third party hardware developers will have file servers and shared disk products out as soon as the second quarter of 1985.

Better and Bigger Mac

Two announcements buried in the Mac Office are important to LISA and Mac owners. First, the new finder for Mac to "enhance user interface" and to significantly improve Mac performance, particularly with hard disks. Not much else was said about the new finder or when it would be available. Second, the renaming of LISA to Macintosh XL. Apple wants to emphasize that LISA is really a big Mac (although some of us prefer to think of Mac as LISA's little brother).

Along with the new finder is an interesting, not yet released software product called the Switcher. As a LISA owner, I treasure the ability to switch easily between Office System programs. I asked Steve Jobs whether the emphasis on Mac means that Apple will not continue to support the comprehensive LISA Office System and its seven integrated programs. The answer was in part unsatisfactory. That is, Jobs avoided committing to a future for the Office System. Instead, he promised Jazz from Lotus that would be very impressive. In fact, some of the promised features do sound better than the LISA Office System. But questions remain. Will Jazz, for example, be readily installed on LISA's hard disk; or, will the copy protection scheme prevent that.

Jobs went on to praise Switcher. The short demonstration of the Switcher was impressive. While LISA moves quickly between applications, the Switcher moves with a blink of the eye. A pre-Alpha version was demonstrated at the February SigMac meeting. (Initial experimentation on LISA produced a system hang). In effect, it makes a 512K Mac into four 128K machines. While impressive, it is not quite how LISA, with 16 megabyte virtual memory, operates. Hopefully, the two concepts will merge together to give us a very powerful networked business machine.

While remaining to be convinced, I still find the Office System quite impressive. With some additional software development (see "LISA-In-Law" in this issue), and with some of the new hardware (the already delivered 2 Meg RAM Board, and the yet to be delivered Direct Memory Access Hard Disk Controller), LISA would leave the IBM-AT in the dust.

IV. CONCLUSION

Apple is maturing. But, there is still an Apple Culture left. It is clear, however, that Apple is making a concerted effort to get into the office. The very low cost network and the very high quality Laser-Writer are significant steps in that direction. So is the "olive branch" of network and peripheral compatibility to IBM. But the battle for the personal computer office market is far from over.

V. THIRD PARTY ANNOUNCEMENTS

Company	Product	Availability
Videx	Mail Center , information transfer program for AppleTalk	2nd qtr 1985
Tri-Data	Netway(1500, gateway for IBM 3278-2 emulation, & connection to Univac, Honeywell, CDC, HP, DEC, & X.25.	March 1985
3Com Corp.	3Server, connection between AppleTalk and Ethernet, and backbone between AppleTalk network 36-Megabyte Ethernet server.	2nd qtr 1985
Sytek	Product to integrate AppleTalk into Sytek's Localnet/PC .	"Intention"
Sunol Systems	Sun Mac, interface through AppleTalk to share Sunol's Sun Disk.	Now
ParaMIS Corp.	Print and file server for the AppleTalk network, hardware is a board for Apple //e, also interface card for //e to access the server over AppleTalk.	?
Novell	NetWare/Mac , network to support the Mac, IBM-PCs & compatibles.	3rd qtr 1985
Aldus	PageMaker , electronic design and layout of pages. Maybe one of the best pieces of software. Layouts newletters, datasheets & brochures.	2nd hlf 1985
Micro-Design	The Keeper , hard disk/file server system with mass storage, file serving & print serving/spooling, 33 Megabytes & 128K cache memory.	Now
Megahaus	MegaForm, impressive appearing forms and report generator. DeskDesk, desktop accessories, promised.	Now
LBA	Ultra-Office , series of products: 1st one: Ultra-Talk P Unix based info management system. More AppleNet products promised.	Now
Iomega	Bernoulli Box with 20 Megabyte removeable disk server for Apple-Talk.	2nd qtr 1985
Infosphere	MacAIDE , microcomputer server, backplane for system expansion, gateway to industry standard peripherals, available to OEMs.	Now

Company	Product	Availability
HealthCare	DentalMac , dental office Comm. solution system.	Now
Hayes	Announced it is developing "products" for AppleTalk	?
Fortune Systems	ForTalk, communications link to turn Fortune 32:16 micros into file and print server.	?
Centram Systems	TOPS , link MACs directly to IBM-PCs and adds distributed server architecture and inter-operating system capabilities to AppleNet.	April 1985
Alps	Writing lab text analysis to identify writing problems, links student Macs to ALPS proofing programs and central Mac XL.	Now
Banyan	VINES , link AppleTalk with IBM & AT&T systems. Network server with 512K Bytes of main memory, 43 Megabytes of disk storage and a 60-Meg. tape drive.	?
WOS Data Systems	WOSbase, a multiuser database for AppleTalk.	3/15/85

the convenient "find and replace" feature of MacWrite to change all the references to numeric variables to single precision. Next, get rid of all PEEKs, POKEs and CALLs unless you are a real expert on the innards of the Macintosh, and figure out some other way of doing whatever they do. Next, the old faithful D$ will have to go as will the READ and WRITE statements that follow OPEN when you are working with disk files. The MS-Basic program shown above is a good example of the manner in which sequential files are read and written to disk, the slight difference being that "CLIP:" is a special file used for transferring data between Macintosh applications. A file is only named in the "OPEN" statement, which is used to give it a number, a system which is much easier than the Applesoft syntax. Another difference is that VTAB and HTAB do not exist in MS-Basic on the Macintosh, as the language addresses points on the screen (PSET) rather than characters as in Applesoft. Other differences are less serious. In general MS-Basic is much richer than Applesoft. Once the obvious changes have been made, save the listing and then open it with MS-Basic and try to run it. The Basic system will probably give you a few syntax errors. When these are cleaned up (this is an excellent way to learn MS-Basic if you are already reasonably proficient in Applesoft), you then save the program under the Save As command, which gives you the opportunity to save as a binary file, and the transfer is complete.

The whole process of transferring programs and data from the Apple][to the Macintosh is not only fascinating, it is also extremely useful. I highly recommend it, but I hope that you feel a bit of nostalgia and regret as you ask your old faithful Apple to give up its useful stores of data to its new brother MAC! ⑥

LISA/MACINTOSH XL SIGNEWS

by John F. Day

The next meeting of the LISA/Mac XL SIG will be especially interesting. The March 9th meeting will feature a presentation by Kurt Schmucker, author of The Complete Book of LISA, published by Harper & Row. Kurt will talk to us about the LISA 3.0 Workshop, LISA Pascal, The LISA 3.0 Toolkit, and be available to answer our questions. This should be a super opportunity for us to get some excellent information on LISA software, especially since Kurt is currently working on a new book to be published later this year which covers new releases.

The Complete Book of LISA is a recently published book which has outstanding coverage of the LISA 7/7 Office System software. It is full of tips, tricks and hints about 7/7, and also covers many other aspects of the LISA. I highly recommend the book. It is available locally in many bookstores, and from Harper & Row Electronics and Technical Publishing, 10 East 53rd Street, New York, New York 10022. The cost of the book is $17.95.

The big news of the month, of course, is the continuation of the LISA as the Macintosh XL. Many of us had heard rumors that the LISA was to be done away with. They appear to have been partially correct, since the name LISA will go away, but the machine will live on as an "obese Mac", as I have chosen to call it. The system is called a Macintosh XL 1/2 megabyte mainframe, and with the addition of an extra 1/2 megabyte memory board has 1024K, or "a full gallon". A new copy of MacWorks, version 2.0, comes with the Mac XL, and allows you to boot directly into the Mac environment if you use the entire hard disk for Mac-type software. It will also still run the LISA 7/7 software. However, those of us who want to be able to share a hard disk between Mac and LISA 7/7 will still have to boot with the MacWorks disk. One cheerful note is that the new MacWorks is significantly less buggy than the older version.

Rather than paraphrase the Apple press release, read it for yourself:

####################
APPLE RENAMES LISA COMPUTER AS MACINTOSH XL

CUPERTINO, Calif., January 23, 1985--Apple Computer, Inc. today announced that the Lisa (2/10 computer has been renamed the Macintosh* XL to reflect the computer's key role in The Macintosh Office, Apple's new line of business products.

"Many people have asked when Apple will introduce a Macintosh that has a built-in hard disk, enlarged screen and the internal capacity to process very complex business applications," said Mike Murray, director of marketing for Macintosh at Apple. "We already have such a Macintosh. It's called the LISA 2/10 and we want people to know what it can do.

"That's why we're changing its name to Macintosh XL --to better communicate that the XL is truly an extra-large Macintosh." The Macintosh XL has a 12-inch screen, larger than either the 128-kilobyte or the 512-kilobyte Macintosh computers. It comes with 512 kilobytes of memory, expandable to 1 megabyte, or 1024 kilobytes. The computer also has a built-in hard disk that can store up to 10 megabytes of information.

With up to 1 megabyte of memory, the Macintosh XL enables business users to run complex applications.
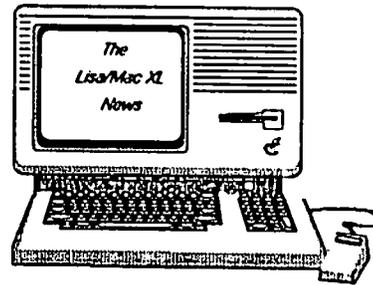
Users of Lotus Development Corp.'s Jazz integrated business software, for example, can use the full memory capacity to create very large documents and models.

The built-in hard disk offers fast performance and 25 times the storage capacity of a floppy disk. The larger screen allows users to see more data at one time, such as more columns in a spreadsheet or wider pages in word-processing applications.

"Apple is committed to its installed base of Lisa users," Murray said. "For people who already own the Lisa 7/7 business software, we will offer a migration path from 7/7 into the networking environment of our new Macintosh Office products. This package includes programs that transfer files from Lisa 7/7 to Macintosh software applications, including MacWrite, Mac-Draw, MacProject and Jazz.

"With the new role of the Lisa 2/10 as a 'big Macintosh' in The Macintosh Office, the Lisa 2 and Lisa 2/5 will be phased out," Murray said.

END OF PRESS RELEASE
####################

A new edition of the LISA 7/7 Office system software, version 3.1, is available. It corrects many of the bugs in 7/7, allows the use of the 15" wide Image-writer (yea!), and gives you a new copy of LisaWrite and LisaProject. It is supposed to be free, and available from your local dealer.

Those of you who saw the Apple special section in the December 1984 issue of Byte magazine may have noticed an ad for "The Desktop Junction". I called the phone number and had a nice chat with David Redhed, the chap who also wrote the LISA article in the same issue of Byte. (He also writes the "Something Over 32 Bits" column in Call A.P.P.L.E.). David has organized the Desktop Junction to give LISA developers a way to inform LISA owners about their products, and to give LISA owners a way to learn about new products as well. A user membership entitles you to three product reports for the $35.00 membership fee. A developer membership entitles you to register your current and planned products and to receive user-interest lists. The developer membership fee is $50.00 for the first three products and $10.00 for each additional product. For more details and a membership form get with me, or write, The Desktop Junction, 712 35th Ave., Seattle, WA 98122.

David Redhed also has organized (David is a busy guy) a user's group for owners of the LISA ToolKit called, oddly enough, The ToolKit User's Group. For those who don't know what the ToolKit is, it is a package that works with the LISA Workshop 3.0 to aid the programmer in making applications that work on the LISA 7/7 desktop. David already has 87 members in the ToolKit User's Group and will publish a newsletter on ToolKit related information. A membership is $15.00 for 6 issues. Order from: The ToolKit User's Group, 712 35th Ave., Seattle, WA 98122.

If mentioning the ToolKit makes you want to run out and buy one, don't look for it at your local dealer.

LISA-IN-LAW

by James M. Burger

I was one of those early believers in LISA. (Since writing this article, Apple has rediscovered Lisa - it is now called the MAC XL. I can't get used to that yet, so rather than use the universal search and replace, read Lisa as MAC XL, if you so desire). After seeing the unveiling at the 1983 Apple annual meeting, I knew I had to have LISA. Given the cost, however, I knew that I had to justify LISA as a business machine. But not being a programmer, I knew that I would be locked in to the Apple-supplied programs until a reasonable number of outside developers could meet the market (had I only known that Apple needed John Scully and Mac to open the softgates). Therefore, I had to integrate the Lisa series of programs into my law practice. (I tried my][+, it was good for typing rough drafts; but, as I will discuss below, I needed an machine with integrated software).

Back in the dark ages (the transitor had been invented, but not the minicomputer), I was forced to learn to touch type (now called keyboarding). This skill stood me in good stead when I went to law school. (I'm convinced my high grades were due solely to the fact that Professors' strained eyes were grateful for a typed exam). When I first started practicing law, however, the most advanced electronic device on my desk was a large $450 four-function calculator (and I had to fight the office administrator get to that!). Now, LISA forms an integral part of my office day.

While I would like more software capability for LISA (software developers are beginning to develop more for the LISA-Mac family), LISA is already performing Yoeman service. I have been putting LISAWrite, LISACalc, LISADraw, LISAGraph, LISAList and LISA-Terminal to work everyday. I've done some preliminary work with LISAProject, but it's the only program of the seven that one needs to read most of the manual to use it comfortably.

Yes, believe it or not, I haven't read one of the manuals cover to cover or used one of the tutorials. One of the outstanding qualities of LISA is how easy the programs are to use. As a typical type A+ driven Washington attorney I have little time to sit in front of a computer and plow through a several hundred page manual. In fact, before I got my LISA, I ran an extensive spreadsheet (1-2-3) on the leading competitor. It took hours to learn enough to set up and run a cash flow analysis (even though I was reasonably familiar with VisiCalc). Then, every time I wanted a printout, it took a considerable amount of time to set up to print. I just completed a many page future projection on LISACalc; the difference is like a breath of fresh air.

Another important point is absence of relearning time. Given my constant travel schedule, and the varying nature of my work, my "computer time" varies considerrably. If I don't work with a spreadsheet or other program for a few weeks, I don't want to have to sit down and take a refresher course. Because the programs share many common elements, it is easy to return to a program you haven't used lately; you are kept refreshed by using any of the others.

I recently read a favorable review of Symphony. They interviewed a daily user of 1-2-3, who said that he was impressed by how "easy" it was to go from 1-2-3 to Symphony; after 8 hours of reading the instruction manual and practicing, he had already mastered 60% of the program. That is too much time; once you have learned one Lisa program, you already have mastered 60% of any of the others.

I probably use LISAWrite more than any of the other applications. I dislike dictating into a machine. I find it hard to visualize the result on paper (I can't wait for voice recognition). LISAWrite is ideal for draft letters, personal letters, interoffice memoranda and draft papers. Normally I don't use it for final business letters. I haven't purchased a letter quality printer (I'm waiting for a reasonably priced Laser printer). Also, I find that a final is better after it goes from my draft to a final through my secretary. Although, the newly released spell checker has helped the quality of my work.

A significant difference between Mac and LISA is the desktop environment. I can create tailored documents which can either be kept in the 10 meg. hard disk window as an icon, or in a file folder, or any place on the screen. Many folders contain documents created while doing work for a specific client. But three general folders are usually in daily use: Stationery, Firm Management and Communications.

Stationery contains a number of personalized forms I have created and made into stationery pads. (Once a document is made into a stationery pad - simply pull down the menu and click - I can make unlimited copies to work with without changing the original form, unless I want to). Using LISAWrite I have created a memo form (for internal memos), a draft pad, personal letterhead (which I do use for final copies), a new client form (to let the office know when we have a new client), and a form for check requisitions. From LISADraw I have created a trip expense form which is also in the stationery folder.

The Firm Management folder has LISACalc sheets on projections for the firm, LISAList forms for monthly timesheets, weekly to do list, and a telephone/address list. Despite the drawbacks of LISAList (discussed below), the telephone list has been very useful (in fact I don't know how I traveled without it). Obviously, it is easy to keep the list current. More importantly, before a trip I print the latest list and (until there is a lap LISA), I have a handy version of my secretary's roladex with me.

The Communications folder, along with my Apple Modem, has been a recent, but effective addition to my workdesk. From LISATerminal I have created stationery pads for different communications services - Official Airline Guide, CompuService, MCI Mail, Apple Pi ABBS and Western Union EasyLink. Also, the folder has a LISAWrite document to write drafts before I go online and to printout data I receive. While I have only been using communications for a couple of months, I have found it very useful. Many of my transactions are international, and the ability to send a telex directly from my desk has been a time saver. Also, I have a West Coast software client that I communicate with by using E-Mail. Not only has this saved me the cost of long distance phone calls, it saves a lot of time playing telephone tag (when I get in to work they are still sleeping, when they get in, I'm at lunch, and so on).

contd.

Recently, I got the courage to use LISACalc, LISAGraph and LISADraw in preparing tables, charts, graphs, maps, etc. for use in exhibits for various legal proceedings. During a recent labor arbitration LISA worked overtime to analyze wage rates at different competitor companies to prepare charts and graphs. These were used to show the Arbitrator that my client's wage offer was well above the industry average. My client and the Arbitrator were impressed by the charts and graphs. The other side was, to put it mildly, disturbed. Their graphics department produced only three meager, not terribly understandable graphs to my 25 graphs and tables.

Attached are three of the most significant graphs submitted to the Arbitrator. The Comparative Operating Profit & Loss graph was used to show the Company's poor financial condition. The Captain's Monthly Income spreadsheet was the result of a survey of comparable airlines' wages to obtain an average to contrast with the pay proposals offered by "ShortAir" (the client's name has been changed) and the union. Finally, the Union, ShortAir and Average wages were graphically set forth in "CAPTAINS, Monthly Income". On the wage issue the Arbitrator ruled in our favor, hands down: The Arbitrator decided that the Company's wage proposal should be implemented. I like to attribute that excellent result solely to my pursuasive legal talents, but both the facts and LISA's dramatic display of those facts no doubt contributed to the favorable decision. Footnote: The client's Executive VP was so impressed with LISA that he went out and brought a LISA 2/10, and his VP Operations a 2/5, even though the company was supplying IBM-PC's to its executives.

I am not completely uncritical of LISA. I am unhappy with the difficulty of going from the desktop environment to MacWorks. One has to shutdown, powerup, boot MacWorks, Profile Install and then you are ready to go. Also, of course, I wish the processor was as fast as Mac's; but with a megabyte of memory, the hard drives and the desktop environment, more processor speed would just be icing on LISA's cake. In fact, my limited experience is that Mac programs on LISA, with the hard disk, work even better than on the Mac.

My other area of criticism is software for the desktop environment, although the recent 3.0 and 3.1 releases have improved the desktop. LISAList is not a database management program; it is, as advertised, a list program, wonderful for a simple telephone/address or to do list. I have seen advertisements for a high powered relational data base for the desktop, but have not tried them. Also, apparently Videx has released a useful desktop calendar.

LISAWrite could be a more powerful program (although I prefer it to MacWrite). One deficiency, lack of a spell checker, has been rectified in the 7/7 release. More access to wordprocessing functions from the keyboard, especially cursor movements would have been welcomed (the mouse is great for gross movements, but critics are right; it is distracting to remove your hands from the keyboard for minor cursor movements). LISATerminal could be more powerful; e.g. auto-logon is missing, no busy detect, or auto-redial. But the convenience of having stationery pads on the desktop and rapid switching back and forth to LISAWrite is very handy (switching between MacTerminal and MacWrite is slow and, without a second disk drive, painful).

All things considered, however, I would not replace LISA on my desk with any other personal computer. It has significantly improved my law practice.

COMPARATIVE OPERATING PROFIT & LOSS

ShortAir & Competitive Carriers

Dollars

Years

*Consolidated TechAir/ShortAir   †First half 1984
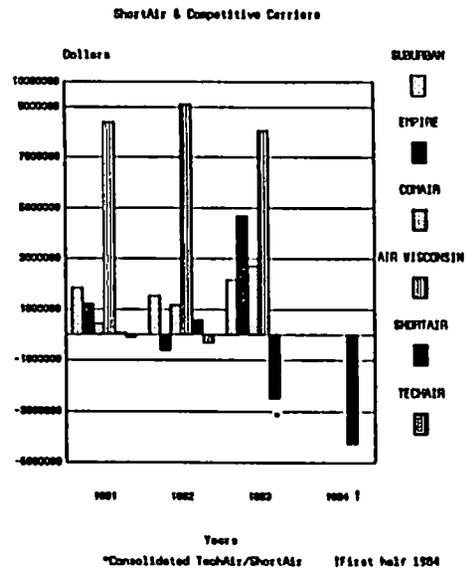
CAPTAIN MONTHLY INCOME

CARRIER	YEARS					
	1	3	5	9	12	16
Air South	2537.25	2664.75	2762.50	3128.00	3128.00	3128.00
Air Michigan	4482.50	4825.50	4668.50	4744.25	4820.50	4820.50
SE Express	2805.00	2805.00	2805.00	2805.00	2805.00	2805.00
Pine	2969.00	4301.50	4811.50	5035.55	5459.80	6025.00
Maine Harbor	2414.00	2504.00	2584.00	2744.00	2864.00	3024.00
Pacific West	2975.00	3029.00	3083.00	3137.00	3137.00	3137.00
Reardon	1826.00	1861.81	2131.35	2793.77	3422.49	3422.49
CBA	2027.25	2244.25	2448.25	2658.85	2711.25	2711.25
MSW	3145.00	3208.21	3272.70	3405.58	3508.78	3651.25
EastAir	1800.00	1850.00	1950.00	2150.00	2300.00	2500.00
Island Air	2984.75	3059.75	3109.75	3199.75	3267.25	3334.75
Dawson	2362.92	3008.00	3312.08	3868.25	3960.67	3960.67
BHS	1507.00	2163.00	2192.00	2324.00	2324.00	2324.00
Average	2570.44	2871.12	2994.68	3230.29	3382.20	3449.53
TechAir	2570.40	2792.25	3043.00	3732.35	4249.15	4934.25
ALPA	2570.40	2792.25	3145.00	4037.50	4858.30	5525.00

NOTE: Based on 85 hours and aircraft of similar passenger capacity, e.g. CV-600, CV-580, DHC-7, HS-748, YS-11 & F-27 Two Engine Turboprop.

CAPTAINS

Monthly Income

Dollars

Years
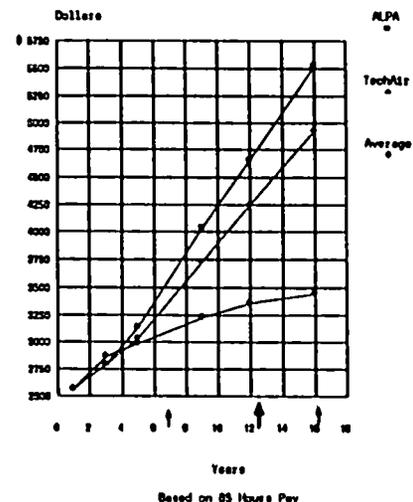
Based on 85 Hours Pay

↑ Average, ‡Low/High, TechAir Pilot Longevity

A PASCAL ADVENTURE
by John and Robert Platt

All too many sample Pascal programs use mathematical
or graphic examples to illustrate the features of the
language. It's about time that Pascal held its own in
the realm of computer games. Hence, this offering.
Although it appears to be a simple adventure game
driver, it is also an example of several important
Pascal programming techniques: random access files,
sets, records, and enumerated data types. By writing
both an Apple Pascal and MacPascal versions, this
example also shows some of the problems involved in
converting programs between the two machines.

On a practical level, we hope that this program will
trigger greater interest in Pascal, especially among
younger WAP members. Again, this driver is only a
beginning, and we hope that others will add to it,
much in the way that Eamon has become a group effort
for Applesoft programmers over the years.

PROGRAM STRUCTURE

Adventures occur in a series of 'rooms' which make up
a 'cave.' In order to allow caves with many rooms,
each is stored on disk with only one room present in
memory at a time. The cave is kept in a random access
file with each room in the cave assigned a number by
the designer. The file name consists of the adventure
name followed by '.cave. data'. The only other infor-
mation to be specified by the designer of an adventure
are the objects that appear in various rooms. The
objects are described in a separate file whose name
ends with 'obj.data'. The first program creates or
edits both files. The second program reads these
files to let a user play the adventure game. By using
a generalized cave design and adventure driver, an
adventure designer can create a new adventure without
any additional Pascal programming.

In a well-written Pascal program, data structures are
designed to reflect their functions. These programs
have two major data structures, one for cave rooms and
the other for objects. Each room has a number that is
assigned by the adventure designer, with room 0 being
the start of the adventure. Each room has a name and
text description. A room can have up to four exits or
'doors.' Each door has a direction and the number of
the room that is connected through the door. If a
particular object must be used to pass through the
door, its code number is also stored.

Each object also has a name, a number and a current
location. If an object no longer exists (for example,
if it has been destroyed) its location equals 999. If
the object is in the player's posession, its location
is -1. Otherwise the location is a room number. Each
object has certain properties such as whether it is
flammable or visible. Because the properties of an
object relate to the action (or 'verbs') that can be
processed by the adventure driver program, they are
hard-coded into the program. This is in contrast with
the scenarios (rooms) and nouns (objects) that are
left entirely to the designer's imagination. Note
that unlike rooms which are kept on disk, the object
file is stored in the "objs" array in memory through-
out program execution.

The program's data structure includes examples of both
enumerated data types and sets. The properties of an
object are an example of an enumeration. The idea of
'visibility' does not really fit into any existing
Pascal data type, so we've created a new one, called

"attrib", to represent such object properties. A
variable of type attrib could have the value 'visi-
ble' or 'hostile', etc. But an object can have more
than one property. Hence, each object must include a
set of attrib's. A set variable can note the absence
or presence of more than one enumeration. This allows
an object to be both visible and hostile or to have
none of these properties. See Chapter 11 of Luehrmann
and Peckham, "Apple Pascal a hands-on approach" for
further details. Also note that while 'hostile' is a
constant of type attrib, '[hostile]' is a set constant
with one element - the presence of hostile. This
distinction is important to understanding the role of
procedure 'YN.'

PROGRAM USE

Assuming the prompt distribution of these programs on
a WAP library disk, keying the listing will not be
necessary. We have also included a sample adventure
called "WAP". To use the program, merely, run
advenbld to create or edit an adventure. (For best
results, map out your adventure on paper before enter-
ing the data.) Each adventure should be given a
unique 3 or 4 character name for use as part of file-
names. The program is menu-driven, and generally
bomb-proof. However, the most likely source of execu-
tion errors is to misname an adventure, or to desig-
nate a disk which will not have sufficient room to
hold your cave file. (If you are planning to add
rooms, it really helps to place the cave file at the
end of your disk.) Designate the disk to be used to
record your data by either setting the prefix command,
or typing '#4:' or '#5:' as a part of your adventure
name at the first prompt. After entering your adven-
ture, the print option can be of great asistance in
proofreading and testing out your work.

The adventure driver in file adven is run by the user.
After asking for the adventure name, it presents a
series of > prompts that require 1 or 2 word commands
in the form of verb-noun. Directions may be abbre-
viated (e.g., n for north, u for up, nw for north-
west) and inventory can be entered as inv. If a play-
er wishes to save the current state of his adventure,
the save command will produce a text file that can be
reloaded with the 'restore' command.

```
PROGRAM ADVENTURE;

  (* BY RC AND JC PLATT 12/84 *)
  CONST
      MAXOBJ = 9;
      MAXVERBS = 64;
      MAXDOORS = 4;
      ININV = -1;
      ENDFLAG = 999;
      GO = 11; (* VERBNUM FOR GO *)


  TYPE
    DIRECTION = (NILL,NORTH,SOUTH,EAST,WEST,NW,SE,UP,DOWN,NE,SW);
    EXITS = RECORD
        DIR : DIRECTION;
        NEXTRM : INTEGER;
        NEEDOBJ: INTEGER (* 0 IF NO REQUIRED OBJ *)
      END;

    ROOM = RECORD
      NUM : INTEGER;
      DOORS : ARRAY [1..MAXDOORS] OF EXITS;
            (*CONNECTING ROOMS *)
```

contd.

```pascal
    NAME  : STRING[20];
    DESCRIP:STRING[255]
  END;

  ATTRIB=(OPEN,FLAME,VISIBLE,HOSTILE);
  ASET = SET OF ATTRIB;
  OBJECT = RECORD
     OBJNUM : INTEGER;
     LOC   : INTEGER;
     ATTR  : ASET;
     OBJNAME: STRING[25]
   END;

  STRING80 = STRING[80];

VAR
  CURROOM : INTEGER;
  DONE    : BOOLEAN;
  VERBS   : ARRAY[1..MAXVERBS] OF STRING[20];
  CAVE : FILE OF ROOM;
  OBJFILE : FILE OF OBJECT;
  OBJS : ARRAY[1..MAXOBJ] OF OBJECT;
  (* =ININV, IF IN INVENTORY *)
  PRINTER : INTERACTIVE;
  CAVENM  : STRING[8];
  C       : CHAR;
  SAVFILE : TEXT;

  PROCEDURE INIT;
    VAR
     I  : INTEGER;
     CV : STRING[20];
    BEGIN
     FOR I:=1 TO MAXOBJ DO
       OBJS[I].LOC:=ENDFLAG;
     WRITE('FOUR LETTER CAVE NAME=>');
     READLN(CAVENM);
     CV:=CONCAT(CAVENM,'.CAVE.DATA');
     RESET(CAVE,CV);
     RESET(OBJFILE,CONCAT(CAVENM,'OBJ.DATA'));
     I:=1;
     WHILE (NOT EOF(OBJFILE)) DO
     BEGIN
       OBJS[I]:=OBJFILE^;
       GET(OBJFILE);
       I:=I+1 END;
     CLOSE(OBJFILE,LOCK);
     VERBS[1]:='ATTACK';
     VERBS[2]:='BURN';
     VERBS[3]:='BUY';
     VERBS[4]:='D';
     VERBS[5]:='DOWN';
     VERBS[6]:='DROP';
     VERBS[7]:='E';
     VERBS[8]:='EAST';
     VERBS[9]:='EXAMINE';
     VERBS[10]:='GET';
     VERBS[GO]:='GO';
     VERBS[12]:='INV';
     VERBS[13]:='INVENTORY';
     VERBS[14]:='KILL';
     VERBS[15]:='LOOK';
     VERBS[16]:='N';
     VERBS[17]:='NE';
     VERBS[18]:='NORTH';
     VERBS[19]:='NORTHEAST';
     VERBS[20]:='NORTHWEST';
     VERBS[21]:='NW';
     VERBS[22]:='OPEN';
     VERBS[23]:='RESTORE';
     VERBS[24]:='S';
     VERBS[25]:='SAVE';
     VERBS[26]:='SE';
     VERBS[27]:='SOUTH';
     VERBS[28]:='SOUTHEAST';
     VERBS[29]:='SOUTHWEST';
     VERBS[30]:='SW';
     VERBS[31]:='TAKE';
     VERBS[32]:='U';
     VERBS[33]:='UP'; (* MUST BE IN ALPHA ORDER *)
     VERBS[34]:='W';
     VERBS[35]:='WEST';
     FOR I:=36 TO MAXVERBS DO
       VERBS[I]:='****';
     CURROOM:=0;
     DONE:=FALSE
  END; (* INIT *)

PROCEDURE SHOWROOM;
  VAR I : INTEGER;
  BEGIN
    SEEK(CAVE,CURROOM);
    GET(CAVE);
    WITH CAVE^ DO
      BEGIN
        PAGE(OUTPUT);
        WRITELN('> ',NAME,' <');
        WRITE(DESCRIP);
        FOR I:=1 TO MAXOBJ DO
          BEGIN
            IF (OBJS[I].LOC=CURROOM) AND (VISIBLE IN
                        OBJS[I].ATTR) THEN
              WRITELN('YOU CAN ALSO SEE A
                        ',OBJS[I].OBJNAME,'.');
          END;
        WRITELN('-------------------');
        FOR I:=1 TO MAXDOORS DO
          CASE DOORS[I].DIR OF
          NILL : I:=MAXDOORS;
          NORTH: WRITE(' N ');
          SOUTH: WRITE(' S ');
          EAST : WRITE(' E ');
          WEST : WRITE(' W ');
          NW   : WRITE(' NW');
          SE   : WRITE(' SE');
          UP   : WRITE(' UP');
          DOWN : WRITE(' D ');
          NE   : WRITE(' NE');
          SW   : WRITE(' SW')
          END; (* CASE *)
        WRITELN;
      END (* WITH *)
END; (* SHOWROOM *)

PROCEDURE SHOWINV; (* PROCESS INV COMMAND *)
  VAR I : INTEGER;
  BEGIN
    WRITELN('YOU ARE CARRYING:');
    FOR I:=1 TO MAXOBJ DO
        IF OBJS[I].LOC=ININV THEN
          WRITELN('   ',OBJS[I].OBJNAME);
  END; (* SHOWINV *)

  PROCEDURE RESTORE;
    VAR I : INTEGER;
    BEGIN
      RESET(SAVFILE,CONCAT(CAVENM,'SAV.TEXT'));
      READLN(SAVFILE,CURROOM);
      FOR I:=1 TO MAXOBJ DO
        READLN(SAVFILE,OBJS[I].LOC);
      CLOSE(SAVFILE)
  END; (* RESTORE *)

  PROCEDURE SAVE;
    VAR I : INTEGER;
    BEGIN
      REWRITE(SAVFILE,CONCAT(CAVENM,'SAV.TEXT'));
      WRITELN(SAVFILE,CURROOM);
      FOR I:=1 TO MAXOBJ DO
        WRITELN(SAVFILE,OBJS[I].LOC);
      CLOSE(SAVFILE,LOCK)
  END; (* SAVE *)

    PROCEDURE PRINTIT;
    VAR I : INTEGER;
    BEGIN
      REWRITE(PRINTER,'PRINTER:');
      SEEK(CAVE,0);
```
contd.

```
        GET(CAVE);
          REPEAT
          WITH CAVE^ DO
          BEGIN WRITELN(PRINTER,'ROOM # ',NUM,'
                        ',NAME);
            I:=1;
            WHILE (I<5) DO
              BEGIN
                IF (DOORS[I].DIR<>NILL)THEN
                  BEGIN
                    CASE DOORS[I].DIR OF
                      NORTH: WRITE(PRINTER,' NORTH:');
                      NW   : WRITE(PRINTER,' NORTHWEST:');
                      SOUTH: WRITE(PRINTER,' SOUTH:');
                      SE   : WRITE(PRINTER,' SOUTHEAST:');
                      EAST:  WRITE(PRINTER,' EAST:');
                      WEST:  WRITE(PRINTER,' WEST:');
                      UP:    WRITE(PRINTER,' UP:');
                      DOWN:  WRITE(PRINTER,' DOWN:');
                      NE   : WRITE(PRINTER,' NORTHEAST:');
                      SW   : WRITE(PRINTER,' SOUTHWEST:');
                    END; (* CASE *)
WRITE(PRINTER,DOORS[I].NEXTRM:3,DOORS[I].NEEDOBJ:3,';');
                    I:=I+1
                  END (* IF *)
                  ELSE I:=5;
                END; (* WHILE *)
              WRITELN(PRINTER);
              WRITELN(PRINTER,DESCRIP);
              WRITELN(PRINTER,'--------------');
              WRITELN(PRINTER);
          END; (* WITH *)
          GET(CAVE);
        UNTIL(EOF(CAVE));
        WRITELN(PRINTER,'NUM,LOC,NAME,ATTR');
        FOR I:=1 TO MAXOBJ DO
          BEGIN
            WITH OBJS[I] DO
              IF LOC<>ENDFLAG THEN
                BEGIN WRITE(PRINTER,OBJNUM:3,LOC:3,OBJNAME);
                  IF OPEN IN ATTR THEN WRITE(PRINTER,' O');
                  IF FLAME IN ATTR THEN WRITE(PRINTER,' F');
                  IF VISIBLE IN ATTR THEN WRITE(PRINTER,' V');
                  IF HOSTILE IN ATTR THEN WRITE(PRINTER,' H');
                  WRITELN(PRINTER)
                END; (* WITH *)
          END; (* FOR *)
        CLOSE(PRINTER,LOCK);
      END; (* PRINTIT *)

PROCEDURE PARSER;

  VAR QUIT : BOOLEAN;
      I,
      VERBNUM,
      NOUNNUM : INTEGER;
      LINE,WD : STRING80;

PROCEDURE MOVE(D:DIRECTION);
  VAR I : INTEGER;
      NEW : INTEGER;
  BEGIN
    NEW:=0;
    FOR I:=1 TO MAXDOORS DO
      BEGIN
        IF CAVE^.DOORS[I].DIR=D THEN
          NEW:=I;
        IF CAVE^.DOORS[I].DIR=NILL THEN
          I:=MAXDOORS;
      END;
    IF NEW=0 THEN
      WRITELN('CAN''T GO THAT WAY.')
    ELSE BEGIN
      I:=CAVE^.DOORS[NEW].NEEDOBJ;
      IF (I<>0) THEN
        IF (OBJS[I].LOC<>ININV) AND (OBJS[I].LOC<>CURROOM)
          THEN WRITELN('YOU NEED SOMETHING TO GO THIS WAY.')
          ELSE BEGIN QUIT:=TRUE;
```

```
                CURROOM:=CAVE^.DOORS[NEW].NEXTRM
              END (* ELSE *)
          ELSE BEGIN QUIT:=TRUE;
                CURROOM:=CAVE^.DOORS[NEW].NEXTRM
          END; (* ELSE *)
      END (* ELSE (NEW<>0) *)
  END; (* MOVE *)

PROCEDURE LOOK;
  BEGIN
    IF WD='PRINTOUT' THEN PRINTIT
    ELSE BEGIN
      SHOWROOM;
      WRITELN('NOTHING SPECIAL')
    END
  END; (* LOOK *)

  PROCEDURE TAKE; (* ADD ITEM TO INV *)
    BEGIN
      IF NOUNNUM<=0 THEN
        WRITELN('DON''T UNDERSTAND.')
      ELSE BEGIN
        IF OBJS[NOUNNUM].LOC=CURROOM THEN
          OBJS[NOUNNUM].LOC:=ININV
        ELSE
          WRITELN(OBJS[NOUNNUM].OBJNAME,' NOT HERE.')
      END (* ELSE *)
    END; (* TAKE *)

  PROCEDURE DROP; (* DROP ITEM FROM INV *)
    BEGIN
      IF NOUNNUM<=0 THEN
        WRITELN('DON''T UNDERSTAND.')
      ELSE BEGIN
        IF OBJS[NOUNNUM].LOC=ININV THEN
          OBJS[NOUNNUM].LOC:=CURROOM
        ELSE
          WRITELN('DON''T HAVE ',OBJS[NOUNNUM].OBJNAME,'.')
      END (* ELSE *)
    END; (* DROP *)

  PROCEDURE KILL; (* EXPAND FOR BLOOD *)
    BEGIN
      IF NOUNNUM<=0 THEN
        WRITELN('DON''T UNDERSTAND.')
      ELSE BEGIN
        IF (OBJS[NOUNNUM].LOC=ININV) OR
           (OBJS[NOUNNUM].LOC=CURROOM) THEN
          BEGIN  OBJS[NOUNNUM].LOC:=ENDFLAG;
            WRITELN(OBJS[NOUNNUM].OBJNAME,' KILLED.') END
        ELSE
          WRITELN(OBJS[NOUNNUM].OBJNAME,' NOT HERE.')
      END (* ELSE *)
    END; (* KILL *)

  PROCEDURE WORD;
    VAR I : INTEGER;
        FOUND : BOOLEAN;
    BEGIN
      IF LINE[1]=' ' THEN
        BEGIN (* STRIP BLANKS *)
          I:=1; FOUND:=FALSE;
          WHILE (NOT FOUND) AND (I<=LENGTH(LINE)) DO
            BEGIN
              FOUND:= LINE[I]<>' ';
              I:=I+1
            END;
            DELETE(LINE,1,I-1);
        END
      ELSE FOUND:=TRUE;
      IF FOUND THEN
        BEGIN
          I:=POS(' ',LINE);
          WD:=COPY(LINE,1,I-1);
          DELETE(LINE,1,I)
        END
      ELSE WD:='';
    END; (* WORD *)
```

                                                                    contd.

```
PROCEDURE FINDVERB(WRD: STRING80);
  VAR I,
    DELTA,
    J : INTEGER;
    MATCH : BOOLEAN;

BEGIN
  I:=MAXVERBS DIV 2;
  DELTA:=MAXVERBS DIV 4;
  MATCH:=FALSE;
  J:=0; (* # OF PASSES *)
  WHILE (NOT MATCH) AND (J<8) DO
    BEGIN
      IF WRD=VERBS[I] THEN
        BEGIN
          MATCH:=TRUE;
          VERBNUM:=I
        END
      ELSE BEGIN
        IF WRD<VERBS[I] THEN
            I:=I-DELTA
        ELSE I:=I+DELTA;
        J:=J+1; (* COUNT PASSES *)
        DELTA:=DELTA DIV 2
      END;
  END; (* WHILE *)
  IF (NOT MATCH) THEN
    BEGIN VERBNUM:=0;
    WRITELN('I DON''T KNOW HOW TO "',WRD,'"')
  END; (* IF *)
END; (* FINDVERB *)

BEGIN (* PARSER *)
  QUIT:=FALSE;
  WHILE NOT QUIT DO
    BEGIN
      WRITE('> ');
      READLN(LINE);
      IF POS('QUIT',LINE)>0 THEN
        BEGIN
          QUIT:=TRUE;  DONE:=TRUE
        END
      ELSE BEGIN
        LINE:=CONCAT(LINE,' ');
        WORD;
        FINDVERB(WD); (* FIRST WORD IS VERB *)
        LINE:=CONCAT(LINE,' ');
        WORD; (* 2ND WORD IS OBJECT *)
        NOUNNUM:=0;
        IF LENGTH(WD)>0 THEN
          BEGIN
            FOR I:=1 TO MAXOBJ DO
            BEGIN
              IF WD=OBJS[I].OBJNAME THEN
                NOUNNUM:=I;
            END; (* FOR *)
            IF VERBNUM=GO THEN FINDVERB(WD);
          END; (* IF LENGTH *)
        CASE VERBNUM OF
        1,2,14: KILL;
        4,5 :   MOVE(DOWN);
        7,8 :   MOVE(EAST);
        16,18:  MOVE(NORTH);
        17,19:  MOVE(NE);
        20,21:  MOVE(NW);
        24,27:  MOVE(SOUTH);
        26,28:  MOVE(SE);
        29,30:  MOVE(SW);
        32,33:  MOVE(UP);
        12,13:  SHOWINV;
        9,15:   LOOK;
        6  :    DROP;
        3,10,31:TAKE;
        34,35:  MOVE(WEST);
        23:     RESTORE;
        25:     SAVE
        END; (* CASE *)
      END;
    END (* ELSE *)
END;
```

```
BEGIN (* MAIN *)
  INIT;
  REPEAT
    SHOWROOM;
    PARSER;
  UNTIL(DONE);
  CLOSE(CAVE,LOCK);
  WRITE('THAT''S ALL FOLKS...')
END.
```

LISA/MacXL contd. from pg 51

The ToolKit is only available from Apple directly. Be aware that Apple will no longer support the ToolKit either, so you will be essentially on your own, hence the ToolKit User's Group listed above. The entire ToolKit, complete with software, source code, source code listings, ToolKit documentation, and Pascal software and documentation is $187.00. It is not a stand alone system. You must have the LISA 3.0 WorkShop to run the ToolKit. If you have questions about the ToolKit, or would like to see it in action, come to the March 16th LISA Sig meeting. Kurt Schmucker will have his ToolKit at the meeting and will demonstrate several ToolKit applications. The ToolKit can be ordered from: Apple Computer, Inc., 467 Saratoga Avenue; Suite #621, San Jose, CA, 95129. The phone is (408) 988-6009.

Buried in the December '84 issue of Byte magazine on page 124 is an article about the LISA ToolKit 3.0. The article, titled Software Frameworks, is very interesting. It should answer many of your questions about the Toolkit. If you were like me, you read the index of the magazine and thought the article was about Ashton-Tate's Framework program. If you also missed it, try again.

If you have been interested in purchasing Inside Macintosh to learn how to program our baby brother (and now our own alter ego), the price just went down to $100.00. The Software Supplement is still $100.00, making the entire thing $200.00. Order them from the same address listed above for the LISA ToolKit.

To clear away any possible confusion, the LISA 7/7 Office System is compatible only with the LISA 3.0 WorkShop, The ToolKit 3.0, and MacWorks. Make sure any application that you buy will work with these, even if the application works from the environments window.

There was a LISA Status Report published by Apple recently. The most interesting thing in the report was that Apple claims to have now made enough LISA 1 upgrade kits to upgrade every LISA 1 ever made! The report claimed that all upgrades should be completed by the middle of November, 1984.

In response to the overwhelming demand, (well it sounded good anyway) I have tracked down two disks of public domain information for the LISA. I will have them for you next meeting. More than likely, they will be marketed in the usual WAP manner, as LISA SIG disks #1 and #2, for $7.00 each. I would also like to put a LISA SIG disk of our own together. I am soliciting your help in getting the 400K worth of goodies to fill the disk. Please give me your old and worn spreadsheets, drawings, etc. so that others may benefit from your brilliance. I will act as the coordinator of the disk, so get your stuff to me.

A magazine that seems to have a large number of articles on the LISA is ICON. It is the magazine of The Association of Apple 32 Users. You must join the group to get the magazine, and the initial dues are $40.00. (And you thought ours were high!) Write to them at: ICON, P.O. Box 634, Santa Clara, CA 95050.

You can get your LISA files typeset by Aptos Post Typography, P.O. Box 910 Aptos, CA 95001. They claim to have inexpensive prices, but that seems to be a relative matter, so check it out yourself. Their phone number is (408) 688-7474. Semaphore Signal is a free publication for LISA and Mac owners who send in their serial numbers to: Semaphore Signal, 207 Grand Drive, Aptos, CA 95003. The price is right!

That about wraps up the news. I'll have more next month.

GAMESIG CLOSEUP
by Ronald Wartow

Adults With Little Time -
Kids -
Anyone With Lots of Time -

This article is prompted by many calls that I have received from people in the above categories. Usually, it is parents interested in stimulating and in finding thought-provoking games for their kids. At the end of the conversation, the parent will say, "I don't have a lot of time but can you recommend something for me." The third category is from club members who are about to take a few weeks off or just want something that will last "forever."

Although I have no kids, I do have a 7-year old niece and an 11-year old nephew who have a computer, and in buying games for them I have researched the market. I solicited the views of several of my Apple-owning friends with kids. Also, I have concentrated on so-called monster games for a couple of weeks, and I have been time-pressed so that only short spurts are possible.

ADULTS WITH LITTLE GAME TIME

This is a difficult category to find in games because many great games take a lot of time to finish but can be played and enjoyed for an hour or two at a time, assuming that you've got the willpower to stop. Believe it or not, the head of customer relations at one of the best game companies told me that wives or husbands have called begging for answers to certain riddles or puzzles to prevent divorce or mayhem, and she wasn't kidding.

At the top of my list would be ARCHON (Electronic Arts), a marvelous blend of chess and arcade and spellcasting, played with joystick, which was inspired by the live chessboard scene in the movie, "Star Wars." A typical game, depending on your ability, lasts only about 20 minutes. Unlike chess, mythical beasts of old, like unicorns and trolls, are your pieces. Like chess, each piece has particular moving and "fighting" abilities. Unlike chess, when one piece lands on a foe's square, the piece isn't taken. Rather, the screen zooms up into a "forest" where it is an arcade fight to the death for the contested square. It's the light side against the dark side and the board squares change from light to dark. This variable, in a typical example, would give a light piece a longer life in battle if it attacks a dark piece on a light square.

At the risk of being a shill for Electronic Arts, another winner is the graphically oriented **MURDER ON THE ZINDERNEUF**, which takes about a half-hour to play. Similar to the popular board game 'Clue", this game involves you as one of any of 8 corruptions of famous detectives, like Miss Marbles and Inspector Klutzeau. Using joystick alone, you wander around the Zinderneuf, a dirigible, and must question, in any of several styles, the passengers to find out who killed one of the passengers by the time the dirigible lands. The game is very realistic and 1920's oriented. If you accuse a passenger early in the game, the passenger will not talk to you for the rest of the game. This game isn't over when it's over because there are apparently over 4000 possible victims and motives, factoring in the 8 detectives and the many passengers.

PENSATE (Penguin) has been called a marriage of Frogger and Chess. Essentially, you start at the bottom of a chessboard with a piece and depending on the level chosen you must "simply" move to the top of the board. Attempting to stop you are various pieces, the number of which you can alter. Each has differing characteristics as far as movement is concerned. A few of these games can be easily played in 20-25 minutes.

QUESTRON (SSI) is an Ultima-type game, that is, fantasy role-playing. Specifically licensed from the writer of those games, the game can be played in easy spurts and probably can be finished in 15-20 hours. The thing that sets this apart from the normal very lengthy fantasy games is that it is entirely joystick-operated, with no typing. The puzzles aren't hard and an excellent save game feature averts catastrophe.

LEGACY (Challenger) is available only on the Macintosh. Along with a friend, this game was completed in about 6-7 hours. The puzzles are not very hard, and it's more a matter of wandering around and looking at and moving everything. I agree with the game's advertising that these are the best graphics in any adventure game, even in black and white.

KIDS

Probably the most heralded game for kids is ROCKY'S BOOTS (Learning Company). This game involves logical thinking by connecting gates and building circuits to perform certain operations. The reviews on this are uniformly high in praise. The follow-up to ROCKY'S BOOTS, ROBOT ODYSSEY I, is recommended for teenagers 13 and up. Heed the warning. Unlike a lot of kid's software that is actually easier than the recommended ages on the package, ROBOT ODYSSESY I is not for younger kids.

Spinnaker Software has a wide range of games available for kids with titles like FACEMAKER, DELTA DRAWING, and STORY MACHINE. You might want to talk to other club members on these. I would stay away from IN SEARCH OF THE MOST AMAZING THING, which has a wonderful adventure game premise, but suffers from unplayability in several respects.

SEASTALKER (Infocom) is that company's first junior-level (ages 9 and up) all-text adventure. The game, unlike the others from Infocom, contains a clues packet. The game is typical Infocom with witty text, and kids will love typing in their name in the beginning, whereupon the title of the game incorporates their name, and when people talk to you in the game you are addressed by name. Although not rated junior-level by Infocom, their next easiest game is PLANET-FALL, a science fiction adventure where you eventually find and are accompanied by a robot companion who is brilliant (occasionally he sings the death scene from Carmen) but has the mentality of a little kid (he wants to play "Hider Seeker").

KING'S QUEST (Sierra On-Line) is filled with great graphics and relatively easy puzzles. The kids will love moving the character around with a joystick which lets the character walk, jump, swim, and duck. Typical adventure game commands are required but that won't detract from the pure visual pleasure of the game. In fact, the kids will like just walking around. However, as I mentioned last month, there is no sound on the Apple.

TIME ZONE (Sierra On-Line). The typical adventure game can take from 20 to 100 hours to solve. The ZORKS, for example, take that long and each takes up one side of a disk. TIME ZONE, on the other hand, takes up both sides of 6 disks. That's right, 12 disk sides. The game contains over 1200 separate scenes of hi-resolution graphics and text. Reportedly, steady work at TIME ZONE even for those relatively experienced at adventure games can result in the solution in about 3-6 months. This game is priced at about $100, but can be obtained for about $70 through mail order and several copies were sold for around $25 at the recent WAP swap meet.

ANY WIZARDRY SCENARIO. These games (PROVING GROUNDS OF THE MAD OVERLORD, THE KNIGHT OF DIAMONDS, and LEGACY OF LLGAMYN) individually can take upwards of 100 hours to solve. These are the famous or infamous, depending on your outlook, DUNGEONS AND DRAGONS converted to the computer. The first scenario is the number one selling Apple program of all time and will soon be released for the Macintosh. They involve creating characters, up to six of which at any one time can explore from 6 to 10 levels of a dungeon, and each level contains 400 rooms or locations. Detailed mapping is a must. An entire cottage industry, selling maps, hints, and even "cheat" disks has grown up around the series. You encounter tons of foes and employ spellcasting and old-fashioned fighting. If you are victorious in individual encounters, chests are found which, if opened successfully, contain magical items and better armor. In reality, finishing the games for many is not the end because people continually are trying to find what else is down there. These are classics and highly recommended. Not only are they "games", but many articles have noted that they are used and studied in everything from college classrooms to psychological and sociological rehabilitation offices by therapists and doctors. A few notes of caution. These games can be very addictive, so you might be advised to keep the kids and yourself under control in terms of time. Also, you must possess the first scenario to play the second, and either the first or second to play the third. In terms of difficulty, the first is the easiest but not easy, the second moderately difficult with a few puzzles and riddles, and the third a toughie. Finally, the fourth scenario is coming out soon. These scenarios are definitely amenable to short-chunk playing.

THE THREE ULTIMAS (1 author, 3 publishers) are very time consuming, particularly the third. All of them are recommended. The first is very difficult to find anymore for the Apple, since I believe the company publishing it has gone out of business. However, one local store has it, and it shows up at the WAP swap meets. These are fantasy role-playing type games which require moderate mapping. Using a color monitor is definitely recommended because the countryside, towns, planets, castles, and dungeons are colorfully depicted. The first scenario is the easiest and not as colorful. The second is harder and while enjoyable contains many locations, but only a few are needed to win the game. The third is by far the hardest and contains many puzzles.

Although I am not into them, I understand that certain war games can be very time-consuming with certain scenarios involving hundreds of hours. Rather than go into specific games which I've only read about, I'll mention that the two companies with the most titles in this area are Avalon Hill in Baltimore and Strategic Simulations in Mountain View, CA. The war games seem to fall into two basic categories: re-creations of historical battles and what-if future scenarios.

Have fun!!!

THE DIRECTION OF GAMESIG
by Ronald Wartow

After the January WAP meeting, GAMESIG held its organizational meeting with about 25 people attending from all walks of life. Several others who had stayed for the general meeting's program were unable to stay but also expressed interest. All Apples, including Macintoshes, were represented. Therefore, GAMESIG is now alive and well.

The discussion centered on what people wanted to do and how best to do it. It was decided to meet once a month, if practicable, at the Office. Arrangements have subsequently been made for GAMESIG to meet on the first Thursday of every month at the Office beginning at 7:30 p.m. THE FIRST MEETING WILL BE ON THURSDAY, MARCH 7, 1985, AT 7:30 P.M. I urge all interested club members to attend. Several recent games for the Apple // series, including SUNDOG and KING'S QUEST, will be demonstrated. Some selected games for the Macintosh will be demonstrated as well as up-to-the-minute information on what's coming for that computer in the gaming area. Also, some "experts" on the WIZARDRYs, ULTIMAS, and INFOCOMs will be available for some gentle prods or help in getting started or progressing in those games. No answers will be given, just something to prevent frustrated gamers from turning their disks into model airplanes.

The people at the organizational meeting seemed to be most interested in all types of adventure and fantasy role-playing games, and one person even specialized in naval war games. Plans were made to have "specialists" in certain gaming areas review games. Guest speakers of note would be invited, possibly to speak to the entire club if one of the "giants" agreed. A club mailing to the major gaming companies asking for software to review will be investigated. Also, the survey on good stores to buy games and other software would be continued. Other possible activities would be a "hot-line" to help those stuck in whatever. Continuing demonstrations of new games as well as little-known games of merit will be undertaken. Many other suggestions were made which will be explored at future meetings.

Because the real key for club members is the availability of new and exciting disks, I appeal to all club members whether they wish to participate directly or peripherally to give me or other GAMESIG members a call for what's the latest poop on software availability. Finally, on the meeting, those GAMESIG members with modems will put appropriate messages on the club's bulletin board.

One final note. Just before I had to meet the deadline for this issue, I got wind of and had a chance to review a very interesting monthly newsletter which will appeal to many gamers. The newsletter is called Quest Busters: The Adventurer's Newsletter and its publisher/editor is the former managing editor of the now-gone Computer Games magazine. For Macintosh owners, the publisher/editor was the author of the September MacWorld article on gaming on the Macintosh. The newletter obviously concentrates on adventures. Of particular significance is the fact that the games reviewed and mentioned are much more current than in the standard Apple or general computing magazines. There is an adventure hot-line, as well as seemingly current information on new and planned conversions for the major computers, including all Apples. The reviews are detailed and informative, sprinkled with comments both good and bad. The issue I reviewed

BEST OF WAP ABBS

by =Alexander-

From WP3041 to ALL   01/11   AppleWorks vs. ?

How does the AppleWorks word processor stack up
against other stand-alone WP's, esp. AppleWriter //e.
How does their spreadsheet compare with other spread-
sheets, their data base with others? =Alexander-

From WP4292 to:[YOU] 01/11   AppleWorks vs. All

I have been using AW for about a month now and really
like it. The data base capabilities are the best I
have ever seen and I have all the good DB's including
dBase II. The WP is not as complicated nor as capable
as WordStar but most people don't require all of
WordStar's capabilities. This comment is based on not
bothering to delve into the manuals, which I have no
time to do.

From WP2243 to:[YOU] 01/11   AppleWorks vs ....

Don't know about Apple Writer //e, but AppleWorks is
no match for LJK Simply Perfect in either the WP or
the DBMS system. Especially since AppleWorks has no
'mail merge' type function for the DBMS to 'talk' to
the WP section. For myself, I would suggest Apple-
Works only for simple home or -small- applications.
Larger ones will be better with Simply Perfect &
FlashCalc. Brett

From WP1510 to:WP3041 01/12   AppleWorks

I like the database and spreadsheet parts of Apple-
Works, but still use WordStar for WP - it is available
used or discounted lots, and although it requires CP/M
it is really useful. Have used it on 100+ page docu-
ments just fine.

From WP4772 to:WP3041 01/13   AppleWorks vs. Other

I have AW, as well as VisiCalc, WordStar, Homeword,
and a host of other programs. The AW is just fine for
the database, and the spreadsheet. The WP has a quirk
that I don't get along with. You have to go to an
Options Menu to center text and the such. It can be a
pain, when you are used to WordStar. Otherwise I would
give the program a 10, but have to give it a 9.

From WAP538 to:WP3041   01/13   AppleWorks vs. Other

The AppleWorks word processor is ok, but (in my
opinion) Apple Writer //e is better, if somewhat
harder to learn. The AppleWorks spreadsheet is very
good,   Can't address their data base, as I've not
tried it. Tom Warrick

From WP5158 to:[YOU]   01/19   AppleWorks vs ???

     The bottom line ... buy Appleworks. - Phil

From WP2788 to ALL   12/31   CompuServe or Source

I want to join one or the other of these services but
not both. I would appreciate any input into which
service provides the most bang for the buck. I am not
interested in games. I would appreciate any assistance
before I make the big plunge.   Don

From WP2208 to:WP2788 12/31   CompuServe

I use only CompuServe and it meets my needs: Official
Airline Guide, ERIC searches, Encyclopedia, access to

Comp-U-Store. It is cheap as you pay for connect time
only. Good for sporadic users. - Richard

From WP5531 to:WP2788 12/31   CServe or Source

Don, I used to belong to both and quit from the Source
recently.   The Apple user's group on CompuServe is
worth the fee alone. Use CompuServe and a decent
terminal program (AE pro) to truly enjoy it.

From WP1682 to:WP2788 01/02   CompuServe

As a long-time reader and contributor to this board, I
can tell you that there was a real donnybrook over the
question of Source vs CompuServe a while back.   IN
GENERAL, CompuServe is better if you are not using it
for business purposes. CompuServe is more hacker-
oriented.

From WP5394 to:WP2788 01/03   CompuServe or Source

I have only CompuServe, and it's great. The Apple SIG
there is--supposedly--the largest computer user's
group anywhere (some say >50K members). I've found
MAUG (Micronet Apple User's Group) extremely helpful.
For example, they post about 400 messages per DAY!
They'll soon have a separate MAC SIG, which will help
us //e'rs a lot (msgs won't scroll off so fast).   I
read several reviews of both services before I joined
CompuServe: All agreed it was the best bang for the
buck (it's cheaper--usually--to join, too: $35-40 vs
$100).   Connect rates about the same . CIS has many
special interest groups for skiers, literary freaks,
political watchers, doctors, lawyers, scientists, just
about everybody. It also has all the financial info
you could want - though some cost extra, plus online
ordering, a really complete news service, a great
humor column, and much, much more.

From WP5181 to:WP2788 01/04   CompuServe vs Source

I have been told that the Source has a monthly minimum
of $10 whether you use it or not. And, I had heard
great things about MAUG. So, my choice was clear-cut.
You don't have to write to Ohio; you can buy a starter
kit at local stores. List price is about $40, but
Crown Books has it for about $30. This gives you 5
hours to start. Then watch your bills grow!

From WP2243 to:WP2788 01/07   Why not both??

With the mininim monthly charges as low as they are, I
really can't think of a reason not to join both CIS
and THE SOURCE. There are all kinds of ways to get
"free" (no sign up fee) subscriptions. If I had to
only get one, I guess it would be "THE SOURCE", mainly
cause there seems to be more info there and the E-Mail
is easier to use. Brett

From WP2722 to:WP2788 01/18   Compu-vs Source

The important thing to remember is that Source sends
you a bill even when you are on vacation!! The monthly
charge gets to you after a while. I don't believe
Compu-Serve bills you when you don't use it.

From WP2383 to ALL   12/31   Blazing Paddles

I have read about Blazing Paddles the graphics program
that MousePaint should have been. Does anyone have a
copy and is using it. I would like to discuss the

disk and receive your recommendations. Gary Hayman 345-3230

From WAP208 to:WP2383 12/31   Blazing Paddles (R)

Gary, I have Blazing Paddles, and I highly recommend it. It has a bunch of nice features. Everything Mousepaint has and more. Nice touches, like being able to use shape tables, full-screen editing, a fat-bits feature you can dynamically move around on screen, ability to use a joystick, Koala Pad, or mouse. Call me if you need more info. Theron Fuller (703) 370-5563 (Home).

From WP5394 to:WAP208 01/03   Dazzle Draw

I haven't seen Blazing Paddles, though I've heard good stuff about it. I can recommend DAZZLE DRAW, however, as the single most stunning graphics program I've seen (I own six myself)!! On a high-res color monitor, it is breath-taking. Try it. The only drawback is that it's protected, but does allow one backup to be made (a la Print Shop).

From WP5171 to ALL   12/29   Monitor

I need to know which is the best color monitor to buy? I have a //e, standard 80-column text card, no extra graphic cards. I am assuming that it probably has to be a low or mid resolution video monitor. Any suggestions would be greatly appreciated.

From WP2513 to:WP5171 12/29   Monitor

I would hightly recommend the Amdek 300 Color Monitor for your application. It is the best composite color monitor I have seen to this date. I doubt that you will be able to use your 80 column card with much success with any monitor but do check it out...the color grahics are fantastic.

From WAP870 to ALL   12/29   Compos. Color & 80c.

Is there a relatively inexpensive composite color monitor that provides usuable 80 cols?? I have an Amdek Composite Color, and it is virtually unreadable at 80 cols. -- Eric

From WAP538 to:WP3797 12/28   Mark 12

Tom: What is "CRC"? To return a Mark 12 for updating of ROM, I just called first and then sent with a cover letter asking for the swap. Quite painless. It will take several weeks, however. Tom Warrick

From WP3150 to:WAP538 12/28   CRC

Saw your question to WP3797. CRC stands for 'cyclic redundancy check' and is an error checking method for transmitting data. It involves more hardware (insignificant) and is based on repeated or-ing with a prime number. The result (remainder) is transmitted at the end of the data and the receiver then 'back' computes to zero. If none zero an error has occurred. Very reliable. It is sometimes used with the Ward Christensen protocol, according to him anyway. He says it is the only modification to the protocol he agrees with. Hope this answers your question.

From WP2746 to:WAP355 12/31   Print Shop Backups

Bought Print Shop just before receiving your article in Nov WAP Journal. Did same thing. Saw words "can make one backup copy" and tried with "COPYA" utility. When that bombed I thought I had blown it, but read manual and held down <ESC> while booting. A menu appeared with directions to swap disks in drive 1, and it copies itself. Hope you get a copy too. Dave Bettwy.

From WP2208 to:WAP355 12/31   The Print Shop

I also had a recent Print Shop backup problem. Successfully made backup via their method (I read manuals - I like the challenge!). However on my first use of the backup I swapped disks during the SETUP section. This had the effect of making the backup unbootable. I have sent the disk and explanation to Broderbund. Let's see what happens. This protection system seems to be an inconvenience to legitimate users. I had bought a Print Shop copy after trying out a friend's. This protection scheme is (a) not dependable and (b) not "protecting" against the right market. Maybe a manufacturer of printer ribbons or paper should distribute the Print Shop free - and get their profits from paper it gobbles up. - Richard

From WP3748 to:WAP519 01/01   Print Shop

I have an Apple //e, Practical Peri. 16K buffer parallel printer card, and an Okidata 92. When I configure, the printer test always fails. The manual on the card says to use the high speed Apple serial card (I assume the super serial). I tried that, and the printer test passes, but things get all screwed up when printing.   ⅋

Direction of GAMESIG contd. from pg 59

contains discussions of TIMESHIP, CYBORG for the Macintosh, THE ELYSIAN FIELDS, and MINDSHADOW. If you're stuck in an adventure game, a column will advertise your problem and your name and address so other gamers across the country can help. The issue contains an adventure game puzzle and the winning entry wins a free adventure game. The cost is $15 for 12 issues and the address is QuestBusters, 202 Elgin Ct., Wayne, PA 19087. Although the newsletter mentions the usual 4-6 weeks for delivery, I received my first issue in 5 days.   ⅋

DIF Files contd. from pg 37

SAMPLE APPLESOFT (WITH DOS) SUBROUTINES FOR ACCESSING DIF FILES

Opening a File for Input
```
5000 PRINT CHR$(4);"OPEN ";NAME$
5010 PRINT CHR$(5);"READ ";NAME$
5020 RETURN
```

Opening a File for Output
```
5500 PRINT CHR$(4);"OPEN ";NAME$
5510 PRINT CHR$(5);"WRITE ";NAME$
5520 RETURN
```

Reading a Header Record
```
6010 INPUT T$
6020 INPUT VN,V
6030 INPUT ST$
6040 RETURN
```

Writing a Header Record
```
6510 PRINT T$
6520 PRINT VN,V
6530 PRINT CHR$(34);ST$;CHR$(34)
6540 RETURN
```

Reading the Header & Setting Vector & Tuple Counts
```
6040 IF T$="VECTORS" THEN NV=V
6050 IF T$="TUPLES" THEN NT=V
6060 IF T$="DATA" THEN RETURN
6070 GOTO 6010
```

Writing a Header Section
```
6600 T$="TABLE" : VN=0 : V=1 : ST$="title"
6610 GOSUB 6510
6620 T$="VECTORS" : VN=0 : V=count: ST$=""
6630 GOSUB 6510
6640 T$="TUPLES" : VN=0 : V=count : ST$=""
6650 GOSUB 6510
6660 T$="DATA" : VN=0 : V=0 : ST$=""
6670 GOSUB 6510
```

Reading a Data Value
```
7010 INPUT T,N
7020 INPUT S$
7030 RETURN
```

Write a Data Value
```
7510 PRINT T,N
7520 PRINT CHR$(34);S$;CHR$(34)
7530 RETURN
```

Read All Data from a Tuple
```
8010 GOSUB 7010 : REM Read Data
8020 IF T<>-1 THEN STOP :REM Error
8030 IF S$<>"BOT" THEN STOP :
     REM Error
8040 FOR K=1 TO NV
8050 GOSUB 7010 : REM Read Data
8060 IF T!=-1 THEN STOP :REM Error
8070 V(K)=K : S$(K)=S$ : T(K)=T :
     REM Read all data into arrays
8080 NEXT K
8090 RETURN
```

Writing All Data
```
8510 FOR I=1 TO NT
8520 PRINT -1,0
8530 PRINT "BOT"
8540 FOR J=1 TO NV
8550 IF label THEN PRINT 1,0 : PRINT
     CHR$(34); S$(I,J);CHR$(34)
8560 IF value THEN PRINT 0,V(I,J) :
     PRINT ""
8570 NEXT J
8580 NEXT I
8590 PRINT -1,0
8600 PRINT "EOD"
```

Close a File
```
9000 PRINT CHR$(4);"CLOSE"
9010 RETURN
```

WAP TUTORIALS
by Stephen M. Stern

A major advantage of a user group is the sharing of knowledge among members - the more experienced members helping the less experienced learn about their Apple computers. In this tradition, Washington Apple Pi has had a policy of providing low cost tutorials.

This spring we are offering three types of tutorials: beginning level tutorials on the Apple and more advanced tutorials on specific topics, and software packages for both the Apple and Macintosh.

BEGINNERS TUTORIALS: The beginners tutorials are given on four Tuesday evenings each month at the club office in Bethesda, from 7:30 to 9:00.

APPLE TUTORIALS: Four advanced tutorials for the Apple][series have been announced for the Spring 1985. Topics include data base managers, telecommunications, and AppleWorks. Two of these tutorials are multi-session, and you should plan to attend each session. These tutorials will be held on Saturday mornings at the club office in Bethesda. The specific topics and dates for these tutorials are:

Telecommunications - Introduction, AE Pro, CP/M and other communications programs, and serial interfacing. March 2, 9, 16 and 30. Instructors: George Kinal, Bill Cook, Dave Harvey, Walt Mossberg, Gene Cartier, et al. (Do not bring your computer to the first or 3rd session - computer is optional for 2nd and 4th session.)

Appleworks - the integrated wordprocessor, spreadsheet and data base manager. April 20 and May 11. Instructor: Walt Mossberg. (Attendees should have an Apple //e or Apple //c and Appleworks.)

dBase II - the CP/M based relational data base. May 4. Instructor: Paul Bublitz of the WAP dBase Hotline. (Attendees should have an Apple][,][+ or //e with CP/M card and the dBase II program.)

PFS File & Report - the Apple DOS-based database. May 18. Instructor: Jenny Spevak of the WAP PFS Hotline. (Attendees should bring several blank disks for data as well as their Apples - PFS works with all Apple vintages!!)

MAC TUTORIALS: Two advanced tutorials for the Macintosh have been announced under the sponsorship of SigMac. Tutorials will be held on Saturday mornings at Our Lady of Lourdes at 7500 Pearl Street in Bethesda at 9:00 AM.

Multiplan & Chart. Feb. 16 (Note: This tutorial has already occurred.)

Data Base managers. Mar. 16.

REGISTRATION:

Registration forms for these tutorials appear at the back of this issue.

Attendance for the Apple][tutorials is limited to ten attendees with computers. Twenty may attend the Mac tutorials. Prior registration is necessary. Priority will be given to members over non-members and to attendees bringing their computers over those without computers. Attendees are advised to bring their computers if they wish to maximize the learning

experience. WAP does not provide computers for the use of attendees, nor can refunds be provided (unless WAP cancels the tutorial). There are five monitors available in the office for the first 5 registrants.

Remember the person leading these tutorials is a volunteer. If you believe you can contribute by leading a tutorial, please contact Steve Stern, George Sall or the club office. We especially need a volunteer to coordinate Mac tutorials - if you're interested in a rewarding job (with no pay) contact Steve Stern or Steve Hunt of SigMac at 301-262-9080.   &

LETTER TO THE EDITOR
by Jay M. Thal

You never know why, at least I don't seem to, when something you write in innocence turns out to be controversial. But such was the reaction to the DISABLEDSIG NEWS article in the February issue. Even the Editor wrote a disclaimer to inform the readership that it was reportage and not opinion.

But, it was both - opinion and reporting. The DISABLEDSIG invites speakers who are deeply involved in working with the disabled and for their rights. Many of the speakers, as well as our audiences, have disabilities themselves and they speak with both passion and insight regarding the issues. Such will continue to be the case.

The controversies and turmoil are little different in nature than those that have and continue to mold our national character. The problems are perceptual, psychological, and often initially invisible to the greater populace. Blacks, women, and challengers to national policy have been but a few of the "groups" that know the problems intimately. So too are the "disabled".

For one of our speakers, or this writer, to state that the disabled are discriminated against seems to us a self-evident fact. For us to assert that access to the power of a computer is an inalienable right is a basic truth. It is, after all, less than 10 years since the Congress decided that handicapped children have a right to education - some States still treat this right with abandon.

So if you read in the DISABLEDSIG column that resort to the courts, or to civil rights techniques, may be a necessity for the disabled - believe it. If the weakest of us are kept from the tools to communicate, or to enhance our abilities, that could be viewed as discrimination. And, computers are one of those tools.

In a way, I'm glad that the question was raised regarding opinion vs. reportage. If you don't like what you're reading rebut it. If you don't understand it, come to the SIG meetings and ask questions.   &

Disks from Washington Apple Pi's Disketeria are available for purchase. This form is only for ordering disks that you want mailed to you.

5 1/4" DISKETTES: - Members $ 5.00 ea.; Non-members $ 8.00 ea., Plus $1.00 ea. postage up to a maximum of $5.00
3 1/2"   "   - Members $ 7.00 ea.; Non-members $ 10.00 ea., Plus $1.00 ea. postage up to a maximum of $5.00

Note: DOS 3.2 disks (Volumes 1 - 40) have been discontinued. The office will maintain an "archival" copy of each of these.

DOS 3.3
( ) Volume 41 IAC 25 Mach. Lang. Util.
( ) Volume 42 One Key DOS ***
( ) Volume 43 IAC 29 Utilities H
( ) Volume 44 Utilities I
( ) Volume 45 Diversi-Copy ***

( ) Volume 70 Business/Math/Statistics
( ) Volume 71 Music
( ) Volume 72 Keyboard Games
( ) Volume 73 Text Adventure Games
( ) Volume 74 Paddle Games
( ) Volume 75 Color Graphics for Fun
( ) Volume 76 Education
( ) Volume 77 Utilities

( ) Volume 90 Spreadsheet C Genl. Bus.
( ) Volume 91 Spreadsheet D Investment
( ) Volume 92 Spreadsheet E Bus. Recd.
( ) Volume 93 VisiPlot & VisiTrend
( ) Volume 100 Utilities A
( ) Volume 101 Utilities B
( ) Volume 102 Games A
( ) Volume 103 Merry Christmas
( ) Volume 104 Business A
( ) Volume 106 Science Engineering
( ) Volume 107 Games B
( ) Volume 108 IAC 10 (Graphics)
( ) Volume 109 IAC 11 (Applesoft Tutorial)
( ) Volume 110 Personal/Education
( ) Volume 111 Games C
( ) Volume 112 Utilities C
( ) Volume 113 Business B
( ) Volume 115 IAC 12/13 Misc.
( ) Volume 116 IAC 14 MicromodemII
( ) Volume 117 Picture Packer
( ) Volume 118 Utilities D
( ) Volume 119 IAC 15 Misc.
( ) Volume 120 IAC 16 Misc.
( ) Volume 121 WAPABBS 1.1 Doc. **
( ) Volume 122 IAC 17 Misc.
( ) Volume 123 French Vocabulary
( ) Volume 124 Utilities E
( ) Volume 125 IAC 18 Misc.
( ) Volume 126 Sights and Sounds
( ) Volume 127 Math/Science
( ) Volume 128 Games D
( ) Volume 129 GLAQ
( ) Volume 130 Diversi-DOS ***
( ) Volume 131 Personal/Educ. 2
( ) Volume 132 IAC 19 - Utilities F
( ) Volume 133 IAC 20 - Pascal & DOS 3.3
( ) Volume 134 New Members Disk

DOS 3.3 contd.
( ) Volume 135 WAPABBS 1.1 Disk 1 **
( ) Volume 136 WAPABBS 1.1 Disk 2 **
( ) Volume 137 IAC 21 Spreadsheet A
( ) Volume 138 IAC 23 Utilities G
( ) Volume 139 IAC 24 Education 3
( ) Volume 140 Education 4
( ) Volume 141 Special Data Bases
( ) Volume 142 IAC 28 Pinball Games
( ) Volume 143 Sports
( ) Volume 144 IAC 27 Applesoft Prog.
( ) Volume 145 Apple Logo Tool Kit
( ) Volume 146 Logo Documentation
( ) Volume 147 Apple Logo Sample Prog.
( ) Volume 150 EDSIG1 (Elem. Math)
( ) Volume 151 1983 Tax Template
( ) Volume 152 IAC 31 Miscellaneous
( ) Volume 153 Investments A
( ) Volume 154 Investments B
( ) Volume 155 IAC 33 Miscellaneous
( ) Volume 156 IAC 35 Applesoft-AW//e
( ) Volume 157 IAC 36 Arcade Games
( ) Volume 158 Apple Logo Programs

Eamon Series
( ) Volume 180 Dungeon Designer
( ) Volume 181 Beginners Cave
( )*Volume 182 Lair of Minotaur
( )*Volume 183 Cave of the Mind
( )*Volume 184 Zyphur Riverventure
( )*Volume 185 Castle of Doom
( )*Volume 186 Death Star
( )*Volume 187 Devil's Tomb
( )*Volume 188 Caves of Treas.Isl.
( )*Volume 189 Furioso
( )*Volume 190 The Magic Kingdom
( )*Volume 191 The Tomb of Molinar
( )*Volume 192 Lost Isl. of Apple
( )*Volume 193 Abductor's Quarters
( )*Volume 194 Quest for Trezore
( )*Volume 195 Underground City
( )*Volume 196 Merlin's Castle
( )*Volume 197 Horgrath Castle
( )*Volume 198 Deathtrap
( )*Volume 199 The Black Death
( )*Volume 200 The Temple of Ngurct
( )*Volume 201 Black Mountain
( )*Volume 202 Nuclear Nightmare
( )*Volume 203 Feast of Carroll
( )*Volume 204 The Master's Dungeon
( )*Volume 205 The Crystal Mountain
( )*Volume 206 The Lost Adventure
( )*Volume 207 The Manxome Foe

Pascal   (See also Volume 133)
( ) Volume 300 PIG0: ATTACH 1.1/BIOS
( ) Volume 301 PIG1:
( ) Volume 302 PIG2:
( ) Volume 303 PIG3:
( ) Volume 304 PIG4:
( ) Volume 305 PIG5:
( ) Volume 306 PIG6:
( ) Volume 307 PIG7:
( ) Volume 308 PIG8:
( ) Volume 309 PIG9:
( ) Volume 310 PIG10:
( ) Volume 311 PIG11:
( ) Volume 312 PIG12:
( ) Volume 313 PIG13: Guerilla Guide
( ) Volume 314 PIG14:

CP/M
( ) Volume 401 Master Catalog
( ) Volume 402 Utilities 1
( ) Volume 403 Communications
( ) Volume 404 Utilities 2
( ) Volume 405 Utilities 3
( ) Volume 406 ZCPR2 Install
( ) Volume 407 ZCPR2 Documentation
( ) Volume 408 ZCPR2 Utilities
( ) Volume 409 Modem 730

Forth
( ) Volume 700 Assembler/Disassembler
( ) Volume 701 Full Screen Editor
( ) Volume 702 GoForth Tutorial
( ) Volume 703 Fig-Forth

Macintosh - @$7.00 (see above)
( ) SigMac 1 MS-BASIC Pgms
( ) SigMac 2 Atkinson's Goodies
( ) SigMac 3 Fonts
( ) SigMac 4 MS-BASIC Pgms
( ) SigMac 5 Desk Accessories
( ) SigMac 6 Mac Paintings
( ) SigMac 7 Desk Calendar & MS-BASIC
( ) SigMac 8 MacFORTH Programs
( ) SigMac 9 Not One Byte
( ) SigMac 10 Mostly BASIC
( ) SigMac 11 MacFonts} Recommended as
( ) SigMac 12 MacFonts} a pair.
( ) SigMac 13 RAM Disk and Altered Finder

* Volume 181 required with these disks.   ** Vols. 121, 135, 136 must be purchased together.
*** Use of this disk requires sending money directly to the author ($30 for Diversi-disks and $9 for One Key Dos.)

(NOTE: ALLOW 3 TO 4 WEEKS FOR MAILING.)   Total Order = ___ disks.; postage $___ ; Total amount enclosed $_____

NAME   _____

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Attn. Disketeria
8227 Woodmont Avenue, Suite 201
Bethesda, MD 20814

DATE _____

The following four WAP tutorials are being offered on Tuesday evenings from 7:30 to 9:00 PM, at the office, 8227 Woodmont Ave., Bethesda, MD. (The tutorials start promptly at 7:30; if you bring your computer please arrive 15 minutes early to set up.) You may sign up for any or all of the series. They are designed for the "beginner" and will be repeated monthly. A detailed outline of the tutorials was given in the January, 1985 WAP Journal.

```
( )  March  5   - INTRODUCTION TO APPLE COMPUTER HARDWARE   ( )  April  2
( )  March 12   - HOW TO USE YOUR APPLE SOFTWARE            ( )  April  9
( )  March 19   - BEGINNING APPLESOFT BASIC                 ( )  April 16
( )  March 26   - INTERMEDIATE APPLESOFT BASIC              ( )  April 23
```

The fee for each tutorial is $10.00 with an Apple, monitor and disk drive, $15.00 without (monitors available for 1st 5 registrants - call office). Please note that WAP does not have equipment for you to use; if you do not bring your own, you will have to look over someone's shoulder.

__ Tutorials at $10.00 (with equipment)   __ Tutorials at $15.00 (without equipment)

The following "non-regular" tutorials for the Apple // are being offered on Saturday mornings (also at the office). Please register in advance.

Telecommunications (4 sessions) - George Kinal, Bill Cook, Dave Harvey, Walt Mossberg, Gene Cartier et al.
  9:30 AM - 12:30 PM

```
( )  March  2 Introduction                      (don't bring computer)
( )  March  9 AE Pro                            (computer optional for hands on)
( )  March 16 CP/M & Other Comm. Programs       (don't bring computer)
( )  March 30 Serial Interfacing Tutorial & Workshop (computer optional for hands on)
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  Fees: $15 each tutorial or $45 for series, member $20 each tutorial or $60 for series, non-member
----

AppleWorks (2 sessions) - Walt Mossberg. Attendees should have an Apple //e or //c and AppleWorks.
  April 20 & May 11, 9:00 AM - 12:00 Noon

```
( )  $30 both sessions, with Apple, member        ( )  $40 both sessions, with Apple, non-member
( )  $40 both sessions, w/o  Apple, member        ( )  $50 both sessions, w/o  Apple, non member
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dBase II - Paul Bublitz - May 4, 9:00AM-12:00 | PFS File & Report, Jenny Spevak - May 18, 9:00AM-12:00

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( )  $15 with Apple, member ( )  $20 with, non-member  |  ( )  $15 with Apple, member ( )  $20 with, non-member
( )  $20 w/o  Apple, member ( )  $25 w/o , non-member  |  ( )  $20 w/o  Apple, member ( )  $25 w/o, non-member
```

Mac Tutorial: Data Base Managers - March 16, 9:00AM-12:00 - Our Lady of Lourdes, 7500 Pearl Streeet, Bethesda.

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( )  $10 with Apple, member ( )  $15 with, non-member
( )  $15 w/o  Apple, member ( )  $20 w/o, non-member
```

NOTE: An Apple Writer II tutorial given by Dianne Lorenz is tentatively scheduled for April 17.

Please check the desired tutorials and return this form with fee(s) made payable to Washington Apple Pi, Ltd. to:

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Washington Apple Pi, Ltd.       Name _____
Attn. Tutorials
8227 Woodmont Avenue, Suite 201 Daytime Phone _____ Evening Phone _____
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